



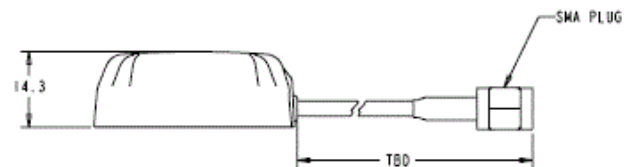
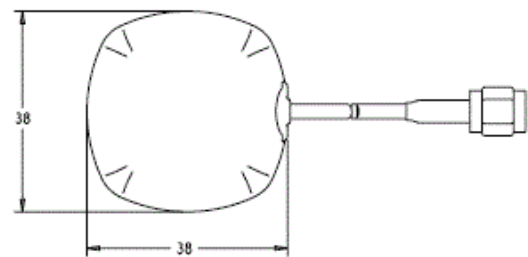
TW4027/TW4029 Low Current GPS Antenna

The TW4027/TW4029 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 TW4027/TW4029 has among the lowest power consumption available, yet still provides 21dB nominal gain and an excellent Noise Figure. The TW4027/TW4029 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 TW4029 variant provides a “Brick-Wall” pre-filter to protect against saturation by high level sub-harmonics and L-Band signals.

It is housed in a compact IP67 magnetic mount enclosure.



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. (TW4027/TW4029)
- Axial ratio: 4 dB max (GPS)
- TW4122 “Brick-Wall” pre-filter option
- High gain: 24dB/18dB Typ. (TW4027/TW4029)
- IP67 weather proof housing

Benefits

- Longer battery life
- Excellent signal to noise ratio
- RoHS compliant
- Ideal for harsh environments
- Excellent out of band signal rejection



TW4027/TW4029 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	TW4027: Patch -> LNA1->SAW -> LNA2 TW4029: Patch -> Pre-filter SAW-> LNA1> SAW -> LNA2,	
Gain @ 1575.42 MHz	24dB Typ, 21dB Min (TW4027); , 21dB Typ, 18dB Min (TW4029)	
Gain flatness	+/- 2 dB	
Out-of-Band Rejection	<1500 MHz	>32 dB (TW4027) >50dB (TW4029)
	<1550 MHz	>25 dB >50dB
	>1640 MHz	>35 dB >70dB
VSWR (at LNA output)	<1.5:1 typ. 1.8:1 max.	
Noise Figure	1 dB typ. (TW4027)	3.5dB typ. (TW4029)
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	38mm x 38mm dia. x 14.3mm H
Cable	RG174
Operating Temp. Range	-40 to +85 °C
Enclosure	Radome and base: EXL9330
Weight	73g (enclosure 34gm, 3m cable 39gm)
Attachment Method	Magnetic
Environmental (housing)	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

Ordering Information

Part Numbers:

TW4027 – Wideband GPS Antenna	33-4027-xx-yyyy
TW4029 – Prefiltered Wideband GPS Antenna	33-4029-xx-yyyy

Please refer to the Ordering Guide(<http://www.tallysman.com/wp-content/uploads/Current-Ordering-Guide.pdf>) for the current and complete list of available radomes and connectors.

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