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TW3101 Non Magnetic GPS L1 Antenna

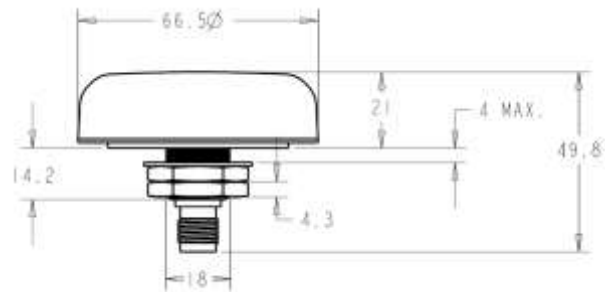
The TW3101 by Tallysman Wireless is a precision grade, permanent mount GPS L1 antenna with no magnetic properties, specially designed to be used in close proximity with compass based instruments.

The TW3101 features a custom high performance, dual-feed, wide band patch element. Its LNA configuration provides a LNA for each feed, a mid section high rejection SAW for the combined signal, followed by a final stage of LNA. It provides ± 10 MHz bandwidth centred on 1575.42 MHz and covers all GPS L1 and SBAS (WAAS/EGNOS/MSAS) signals. It features great axial ratio over the entire frequency range (< 3 dB), excellent circular polarized signal reception, great multipath rejection and out-of-band signal rejection.

The TW3101 is housed in a permanent mount industrial-grade weather-proof enclosure and two options for pole mounting are available an L-bracket (P/N#23-0040-0) or a pipe mount (P/N#23-0065-0).



TW3101 Dimensions (mm)
Low Profile Radome shown. Conical Radome also available



Applications

- Inertial Navigation (IMU) Systems
- Compass based Systems
- Heading Reference Systems
- Military & Security
- Precision Tracking & Navigation
- Machine Control Systems

Features

- Non magnetic composition
- Great axial ratio: 1 dB typ., 3 dB max
- Low noise LNA: 1 dB
- High rejection SAW filter
- High gain: 28 dB typ.
- Low current: 14 mA typ.
- ESD circuit protection: 15 KV
- Weather proof housing: IP67

Benefits

- No compass interference
- Excellent multipath rejection
- Increase system accuracy
- Excellent signal to noise ratio
- Great out of band signal rejection
- Ideal for harsh environments
- RoHS compliant



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

Antenna

Architecture	Dual, Quadrature Feeds
Antenna Element Gain (100mm ground plane)	4.25 dBic at 90°
Axial Ratio (over full bandwidth)	1dB typ., 3 dB max

Electrical

Architecture	One LNA per feed line, mid section SAW filter
Frequency Bandwidth	1575 MHz \pm 10 MHz
Polarization	RHCP
Gain	28 dB min. (at 1575.42 MHz)
Out-of-Band Rejection	<1560 MHz >42 dB >1600 MHz >31 dB >1620 MHz >45 dB
VSWR (at LNA input)	<1.5:1 typ. 1.8:1 max.
Noise Figure	1 dB typ.
Supply Voltage Range	+2.5 to 16 VDC nominal
Supply Current	14 mA typ., 20mA max
ESD Circuit Protection	15 KV air discharge

Mechanicals & Environmental

Properties	Non Magnetic
Mechanical Size	66.5 mm dia. x 21mm H
Operating Temp. Range	-40 to +85 $^{\circ}C$
Enclosure	Radome: EXL9330, Base: Zamak White Metal
Weight	150 g
Attachment Method	18mm/M18 mast or 19mm bracket mount
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

Product Number: TW3101 – NonMagnetic GPS L1 Antenna 33-3101-xx-yy-zzzz

Where xx = connector type, yy = type and colour of radome and zzzz = cable length in mm (where applicable)
Please refer to the Ordering Guide (<http://www.tallysman.com/orderingguide.php>) for the current and complete list of available radomes and connectors.

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