



## TW3010/TW3012 Permanent Mount GPS L1 Antenna

The TW3010/TW3012 by Tallysman is a professional grade, permanent mount GPS L1 antenna, specially designed for precision tracking and timing applications.

The TW3010/TW3012 features a custom high performance, wide band patch element, a 30dB gain LNA stage and a high rejection out-of-band SAW filter. The TW3012 includes a tight SAW pre-filter to provide strong protection against out-of-band signals. It provides  $\pm 10$ MHz bandwidth centred on 1575.42 MHz and covers the GPS L1, and SBAS (WAAS/EGNOS/MSAS) signals. It provides great axial ratio, excellent circular polarized signal reception, great multipath rejection and great out-of-band signal rejection.

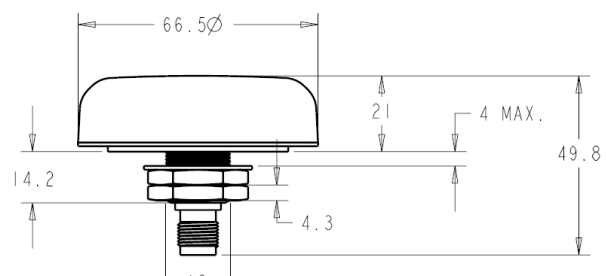
The TW3010/TW3012 is housed in a permanent mount industrial-grade weather-proof enclosure. Optional Mounts of an L Bracket (PN 23-0040-0) or Pipe Mounts (PN 23-0065-0) are available.

### Applications

- Mission Critical GPS Tracking & Timing
- Precision Agriculture, Mining & Construction
- Military & Security
- Avionics
- Law Enforcement & Public Safety
- Fleet Management & Asset Tracking



TW3010/TW3012 Dimensions (mm)  
Flat Radome shown. Conical Radome also available



### Features

- Great axial ratio
- Low noise LNA: <4 dB
- High rejection SAW filter
- High gain: 26 dB typ.
- Low current: 10 mA
- ESD circuit protection: 15 KV
- Wide supply voltage range: +2.5 to 16 VDC
- Weather proof housing: IP67

### Benefits

- 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 Vcc = 3V, over full bandwidth, T=25°C

### Antenna

Antenna Element Gain (100mm ground plane)	>4 dBic at 90°
Axial Ratio (over full bandwidth)	4 dB at 90°

### Electrical

Architecture	2 stage LNA circuit + a mid section SAW filter.	
Frequency Bandwidth	1575 MHz ± 10 MHz	
Polarization	RHCP	
Gain	30 dB typ.(TW3010) 26 dB min (TW3012)	
Out-of-Band Rejection	<1560 MHz	TW3010 >42 dB
	>1600 MHz	TW3012 >65 dB
	>1620 MHz	>31 dB
		>50 dB
VSWR (at LNA input)	>45 dB	>70 dB
Noise Figure	<1.5:1	
Supply Voltage Range	1 dB typ. (TW3010) <4 dB typ. (TW3012)	
Supply Current	+2.5 to 16 VDC nominal (12VDC recommended maximum)	
ESD Circuit Protection	10 mA across all input voltages	
	15 KV air discharge	

### Mechanicals & Environmental

Mechanical Size	66.5 mm dia. x 21 mm H
Operating Temp. Range	-40 to +85 °C
Enclosure	Radome: EXL 9330, Base: Zamak White Metal
Weight	150 g
Attachment Method	19mm surface or bracket mount, L-Bracket and Pipe Mount available
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

Legacy Part Number	TW3010 – GPS L1 antenna,	32-3010-xx-yy	TW3012 – GPS L1 Antenna w/pre-filter	32-3012-xx-yy
Connector:	xx	00 TNC	xx	01 N Type (premium applies)
Radome Colour	yy	00 Dark grey conical	yy	01 White conical
profile	yy	11 White low profile	yy	10 Dark grey low

\* As a result of a growing product portfolio, Tallysman has rationalized its part number system. No changes have been made to the mechanical or electrical properties of these products. Where administratively possible, please use the following Part Numbers.

TW3010 – GPS L1 antenna 33-3010-xx-yy-zzzz TW3012 – GPS L1 Antenna w/pre-filter 33-3012-xx-yy-zzzz

Where xx = connector type, yy = radome type and colour and zzzz = cable length (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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