

# TW3010



When precision matters.®

## TW3010 Permanent Mount GPS L1 Antenna

Frequency Coverage: L1

### Overview

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

The TW3010 features a custom high performance, wide band patch element, a 28 dB gain LNA stage and a high-rejection out-of-band SAW filter. 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, strong multipath rejection and deep out-of-band signal rejection.

The TW3010 is housed in a permanent mount industrial-grade weather-proof enclosure. Optional components include a 10 cm ground plane (PN 23-0067-0), an L-bracket mount (PN 23-0040-0) or a pipe mount (PN 23-0065-0).



### Applications

- Mission-critical GPS tracking & timing
- Precision agriculture, mining & construction
- Safety & security
- Avionics
- Law enforcement & public safety
- Fleet management & asset tracking

### Features

- Great axial ratio
- Low noise LNA: 1.8 dB typ.
- High-rejection SAW filter
- High-gain: 28 dB typ.
- Low current: 9 mA typ
- ESD circuit protection: 15 KV
- Wide supply voltage range: 2.5 to 12 VDC
- IP69K weather-proof housing

### Benefits

- Excellent multipath rejection
- Increase system accuracy
- Excellent signal-to-noise ratio
- Deep out-of-band signal rejection
- Ideal for harsh environments
- RoHS and REACH compliant

**About Tallysman:** With global headquarters and manufacturing in Ottawa, Canada, Tallysman is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Tallysman's mission is to support the needs of a new generation of positioning systems by delivering unprecedented antenna precision at competitive prices. Learn more at [www.tallysman.com](http://www.tallysman.com)

Revision: 1

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## Antenna

Technology Single-feed RHCP ceramic patch

		Gain dBic typ. at Zenith	Axial Ratio dB at Zenith
<b>GNSS</b>			
GPS / QZSS	L1	4	≤ 4
	L2	-	-
	L5	-	-
GLONASS	G1	-	-
	G2	-	-
	G3	-	-
Galileo	E1	-	-
	E5A	-	-
	E5B	-	-
	E6	-	-
BeiDou	B1	-	-
	B2	-	-
	B2a	-	-
	B3	-	-
IRNSS / NavIC	L5	-	-
QZSS	L6	-	-
L-Band Services (1525 MHz - 1559 MHz)		-	-
<b>Satellite Communications</b>			
Iridium		-	-
Globalstar		-	-
<b>Other</b>			
Axial Ratio	5.0 dB max.	Efficiency	-
PC Variation	-		

## Mechanicals

Size 66.5 mm (dia.) x 21 mm (h.)  
 Weight 150 g  
 Radome Radome: EXL 9330, Base: Zamak White Metal  
 Mount -

## Environmental

Operating Temperature - 40 °C to + 85 °C  
 Storage Temperature - 50 °C to + 95 °C  
 Vibration MIL-STD-810-D  
 Shock Vertical axis: 50G, other axes: 30G  
 Salt Fog MIL-STD-810F Section 509.4  
 IP Rating IP69K (housing)  
 Compliance IPC-A-610, FCC, RED / CE Mark, RoHS, REACH

## Warranty:

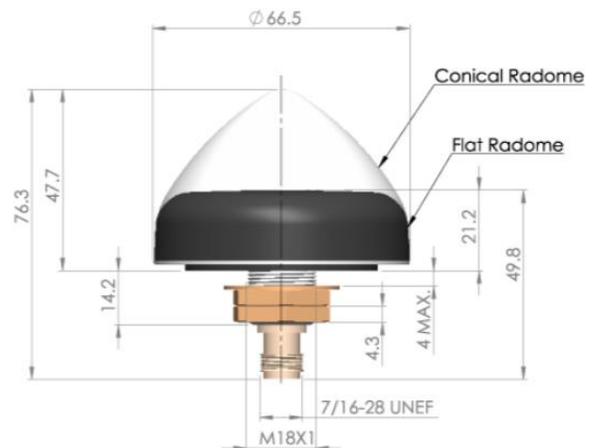
Parts and Labour One year (Extended warranty available)

## Low Noise Amplifier (LNA) - Measured at 3V and 25°C

Frequency Bandwidth		Out of Band Rejection	
		Upper Band	Lower Band
1575.42MHz ± 10MHz	-	<1560 MHz ≥ 40 dB >1600 MHz ≥ 26 dB >1620 MHz ≥ 48 dB	-

Architecture LNA Stage 1 → SAW filter → LNA stage 2  
 Gain 28 dB typ., 26 dB min.  
 Noise Figure 1.8 dB typ.  
 VSWR < 1.5:1 typ. | 1.8:1 max.  
 Supply Voltage Range 2.5 to 12 VDC nom. (16 VDC max.)  
 Supply Current 9 mA (typ) across all input voltages  
 ESD Circuit Protection 15 KV air discharge  
 P1dB Output 3.0 dBm @ 1575.42 MHz  
 Group Delay Variation 34 ns typ. @ (1570.42 - 1580.42 MHz)

## Mechanical Diagram



## Ordering Information

Part Number **33-3010-xx-yy-zzzz**

Where xx = connector type, yy = shape and colour of radome and zzzz = cable length in mm (where applicable)

Please refer to our **Ordering Guide** to review available radomes and connectors at: <https://www.tallysman.com/resource/tallysman-ordering-guide/>