

# TW5390



## TW5390 Smart GNSS Antenna for Precise Positioning

### Overview

The TW5390 is a multi-band (L1/L2), multi-constellation integrated GNSS receiver/antenna with Inertial Measurement Unit (Untethered Dead Reckoning) and integrated L-Band corrections receiver for stand alone RTK for Precise Point Positioning. The TW5390 is capable of providing sub 10 cm accuracy to support the most demanding navigation, automation and precision agriculture applications.

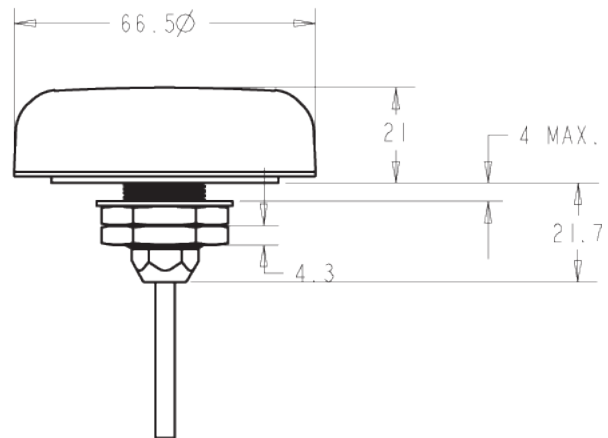
### Interference Resilience

The TW5390 incorporates a latest generation multi-band (L1/L2) GNSS receiver with a Tallysman Accutenna™ multi-band (L1/L2) dual feed patch. The state of the art GNSS receiver supports concurrent tracking of all four major constellations (GPS, BeiDou, Galileo and GLONASS) in multiple frequency bands, offering high availability for RTK solutions with a quick convergence time. The multi-band (L1/L2) architecture is the most effective method for the removal of ionospheric error. The TW5390 employs multi-stage filtering with low noise figure LNAs, combined with the dual feed Accutenna™, which greatly improves the rejection of multi-path signal interference. The IMU Sensor Fusion further mitigates effects of severe multi-path reflections and provides continuous position availability during periods of GNSS outages caused by signal obstruction offering exceptional performance to meet the most challenging precise positioning applications.

### Corrections Applications

The TW5390 incorporates an L-Band correction receiver which offers sub 10 cm accuracy through real-time PPP-RTK corrections via the Point Perfect subscription service. (No RTK base station is required, typical of traditional RTK applications.) The L-Band receiver offers quick convergence and continuous corrections in geographic regions without IP/Network coverage. Point Perfect streaming corrections are available in continental US and Europe.

The TW5390 may also be configured to operate with the IP/Network corrections stream when operating in a challenging urban environment where L-Band coverage may be less optimal.



Mechanical Dimensions (mm)

### Features

- Integrated L-Band corrections receiver for exceptional precision
- Improved noise immunity with multi-band GNSS receiver
- Improved multi-path rejection with Dual feed Accutenna™
- Multi-band GNSS receiver is unaffected by ionospheric errors
- High reliability timing with expansive constellation array
- High position availability in urban environment with UDR
- 5V operation
- RS-485 differential signalling
- Industrial grade IP69K enclosure
- Rugged fixed mount
- Multiple cable lengths (5m, 15m and 25m)
- Available with conical radome

# TW5390 Smart GNSS Antenna

## Specifications

Antenna	Electrical
Architecture ..... Multi-band (L1/L2), Dual Feed	Voltages ..... 5 VDC
Axial Ratio ..... L1: < 1 dB typical.	Current ..... 1 Watts (nominal operating) Measured @ 5VDC supply
Frequencies ..... GPS L1C/A L2C, GLO L10F L20F, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C	<b>Environmental</b>
SBAS L1 C/A ..... WAAS, EGNOS, MSAS, GAGAN	Operating Temperature ..... -40°C to +85°C
Channels ..... 184-channel u-blox F9 engine	Storage Temperature ..... -40°C to +85°C
Anti-jamming ..... Active CW detection	Weatherproof ..... IP69K
Corrections Receiver ..... L-Band PPP-RTK (SSR)	Shock ..... Vertical axis 50G, other axis 30G 3 axis sweep – 15 min
Signal Support ..... GPS: L1 C/A, L2P, L2C, L5 3	Vibration ..... 10-200 Hz log sweep 3G
..... GLONASS: L1 C/A, L2 C/A	<b>Sensitivity</b>
..... Galileo 3: E1, E5A/B	Tracking & Nav ..... -166 dBm
..... Beidou: B1I, B2I	Reacquisition ..... -160 dBm
Corrections Data Rate ..... Continental: 2400 bps	Hot starts ..... -158 dBm
Coverage ..... EU and US	Cold starts ..... -147 dBm
Format ..... SPARTN, RTCM	<b>Acquisition</b>
<b>Interface</b>	Cold start ..... 25 sec
Pwr, Gnd	Aided start ..... 3 sec
Tx, Rx, Timepulse ..... RS-485 levels	Reacquisition ..... 2 sec
<b>Serial Protocol</b>	<b>Position</b>
Output ..... NMEA 0183, UBX Binary	Standard Horizontal PVT ..... 1.5m CEP
Baud Rate ..... Configurable	Standard Horizontal SBAS ..... 1.0m CEP
<b>Mechanical</b>	SPARTN Corrected Horizontal ..... <0.06m CEP*
Dimensions ..... .66.5 mm dia. x 21 mm H	Convergence ..... <45 sec
Weight ..... 135 g	
Mounting Method ..... Fixed Mount	
Cable Length ..... 5m with RJ45 termination	

## Ordering Information:

33-5390-9-yy-zz-PCO (PCO = NMEA out, no adaptor cable.)

yy = Radome (00=grey conical, 10=grey low profile, 01=white conical, 11=white low profile)  
zz = Cable length in meters. Standard is 5m. (15m and 25m are special order only)

**TW5382 SDK Test Adaptor required for programming 33-0095-2**

Please refer to the Ordering Guide for the current and complete list of available products.

**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)

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