

# TW5390C



## TW5390C Smart GNSS Antenna for CLAS Precise Positioning

### Overview

The TW5390C is a multi-band (L1/L2/L6), multi-constellation GNSS receiver/antenna with Inertial Measurement Unit (Dead Reckoning) with integrated QZSS Centimeter Level Augmentation Service (CLAS) L6 receiver for **Subscription-Free** stand alone RTK Precise Point Positioning. The TW5390C is capable of providing cm level accuracy to support the most demanding navigation, automation and precision agriculture applications.

### Interference Resilience

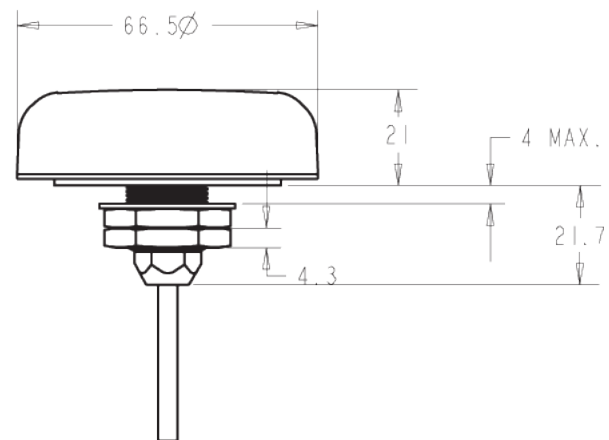
The TW5390C incorporates a latest generation multi-band (L1/L2) GNSS receiver with a Tallysman Accutenna™ (L1/L2/L6) dual-feed patch. The state of the art GNSS receiver supports concurrent tracking of all four major constellations (GPS, BeiDou, Galileo and GLONASS) in multiple frequency bands, offering high availability for RTK solutions with a quick convergence time. The multi-band architecture is the most effective method for the removal of ionospheric error. The TW5390C 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 TW5390C incorporates an L-Band correction receiver which offers cm level accuracy through real-time PPP-RTK corrections via the over-the air QZSS CLAS service. (Unlike traditional RTK, no base station is required.) The integrated CLAS receiver offers quick convergence and continuous corrections for Japan geographic regions with and without IP/Network coverage.

The TW5390C may also be configured to output QZSS MADOCA messages as a stand alone QZSS L6E message receiver.

The TW5390C may also be configured to operate in a traditional RTK mode as rover offering sub cm precision.



Mechanical Dimensions (mm)

### Features

- Integrated CLAS 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 less affected by ionospheric errors
- High position reliability with expansive constellation array
- High position availability in urban environment with Dead Reckoning
- 5V operation
- RS-485 differential signalling
- Industrial grade IP69K enclosure
- Rugged fixed mount
- Multiple cable lengths (5m, 15m and 25m)
- Available with conical radome

# TW5390C 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 L1OF L2OF, GAL E1B/C E5B, BDS B1L B2L, QZSS L1C/A L2C L6D/E	<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: L1C/A, L2C	Vibration	10-200 Hz log sweep 3G
	GLONASS: L1OF, L2OF	<b>Sensitivity</b>	
	Galileo: E1B/C, E5B	Tracking & Nav	-160 dBm
	Beidou: B1L, B2L	Reacquisition	-159 dBm
	QZSS: L2C L6D/E	Hot starts	-158 dBm
CLAS Corrections Data Rate	2000 bps	Cold starts	-147 dBm
CLAS/MADOCA	Japan Regional	<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>		CLAS Corrected Horizontal	0.04m 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:

33-5390C-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)

**TW5390C 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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