

TW5394



When precision matters.®

TW5394 Smart GNSS Antenna for Precise Positioning & Heading

Overview

The TW5394 is a multi-band (L1/L2), multi-constellation integrated GNSS receiver/antenna with integrated L-Band augmentation receiver for stand alone PointPerfect® PPP- RTK applications. The TW5394 is capable of providing sub 6 cm PPP-RTK accuracy and sub 1 cm RTK accuracy to support the most demanding navigation, automation and precision mobility applications. Two TW5394's may be combined as a Moving Base and Rover arrangement to offer a Precise Heading solution.

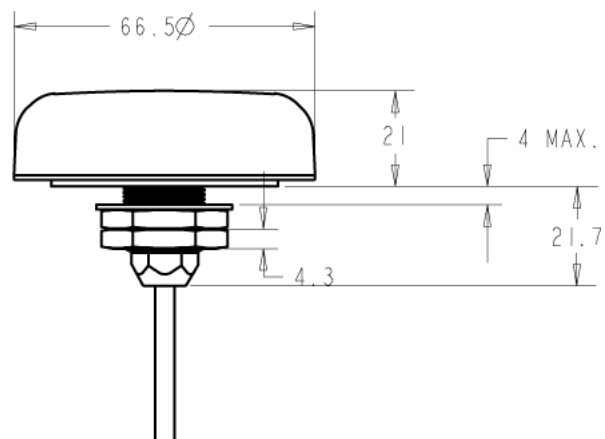
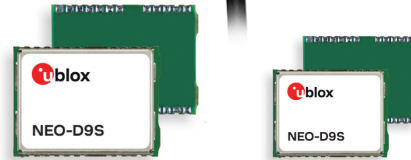
Interference Resilience

The TW5394 incorporates a latest generation multi-band (L1/L2) GNSS receiver with a Tallysman Accutenna™ multi-band 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 PPP-RTK or RTK solutions with a quick convergence time. The multi-band architecture has proven to be a highly effective method for the removal of ionospheric error. The TW5394 employs multi-stage XF™ filtering with low noise figure LNAs, combined with the dual feed Accutenna™, which greatly improves the rejection of multi-path signal interference.

Corrections Applications

The TW5394 incorporates an L-Band correction receiver which offers sub 6 cm accuracy through real-time PPP-RTK corrections via the PointPerfect subscription service. (No RTK base station is required, typical of traditional RTK applications.) TW5394 offers quick convergence and continuous corrections for North America and Europe for remote regions without IP/Network coverage. PointPerfect IP streaming corrections are available in continental US, Canada, Europe, South Korea and Australia.

The TW5394 may also be configured to operate in an RTK mode as either a base or rover for sub cm precision. For Precise Heading applications, two TW5394's may be arranged as a moving base and rover pair. The moving base device may receive PPP-RTK corrections while concurrently sending RTCM correction messages to the rover.



Features

- An Out-of-the-Box, Plug and Play, Precise Positioning Solution
- Integrated L-Band corrections receiver for remote precision deployments
- High position availability with XF™ filtering and expansive constellation
- Strong multi-path rejection with Dual feed Accutenna™
- Supports PointPerfect PPP-RTK and traditional RTK configurations
- Moving-base/rover pairing for Precise Heading
- Rugged Fixed Mount
- Industrial grade IP69K enclosure
- RS-422/485 or RS-232 signalling options
- Industrial grade IP69K enclosure
- Available with conical radome
- L1/L5 option available

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Specifications

Antenna		Environmental	
Architecture	Multi-band (L1/L2), Dual Feed	Operating Temperature	-40°C to +85°C
Axial Ratio	L1: < 1 dB typical	Storage Temperature	-40°C to +85°C
Signal Support	GPS L1C/A L2C, GLO L10F L20F, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C	Weatherproof	IP69K
SBAS L1 C/A	WAAS, EGNOS, MSAS, GAGAN	Shock	Vertical axis 50G, other axis 30G 3 axis sweep – 15 min
Channels	184-channel u-blox F9 engine	Vibration	10-200 Hz log sweep 3G
Anti-jamming	Active CW detection	Sensitivity	
Corrections Receiver	L-Band PPP-RTK (SSR)	Tracking & Nav	-167 dBm
Corrections Data Rate	Continental: 2400 bps	Reacquisition	-160 dBm
Regions	EU, US, AUS, KR	Hot starts	-157 dBm
Format	SPARTN, RTCM	Cold starts	-148 dBm
Interface (2 options)		Acquisition	
PWR, GND, DP, DM	RS-422/485, RJ45 (-09)	Cold start	.25 sec
PWR, GND, TX, RX	RS-232, RJ45 (-29)	Aided start	.2 sec
		Reacquisition	.2 sec
Serial Protocol		Horizontal Position Accuracy (4 Constellations)	
Output	NMEA 0183, UBX Binary, RTCM v3.3	Standard PVT	1.5m CEP
Baud Rate	Configurable	Standard SBAS	1.0m CEP
Update Rate (PVT)	9 Hz (4); 10 Hz (GPS+GAL+BDS); 20 Hz (GPS+GAL); 20 Hz (GPS+GLO); 16 Hz (GP+BDS); 25 Hz (GPS)	Corrected RTK	0.01m + 1ppm CEP
		Augmented SPARTN (PPP-RTK)	<0.06m CEP
		SPARTN Convergence	<45 sec
Mechanical		Heading	
Dimensions	66.5 mm dia. x 21 mm H	Dynamic Heading Accuracy	.0.3° (30 m/sec)
Weight	135 g	Precise Heading Accuracy	.0.4° (min 1m baseline)
Mounting Method	Fixed Mount	Operational Limits	
Cable Length	.5m	Dynamics	< 4g
Electrical		Altitude	.80,000m
Voltages	.5 VDC	Velocity	.500 m/sec
Current	.1 Watts (nominal operating) Measured @ 5VDC supply		

Ordering Information:

33-5394-09-yy-05-PC0 (RS422/485 RJ45, 00 = grey conical 10= grey low profile 01= white conical 11= white low profile)

33-5394-29-yy-05-PC0 (RS-232, RJ45, 00 = grey conical 10= grey low profile 01= white conical 11= white low profile)

RS-232 to USB Bridge for 33-5394-29-10-05-PC0: **33-0095-3** (applicable only to RS-232)

RS-422/485 to USB Bridge for 33-5394-09-10-05-PC0: **33-0095-11** (applicable only to RS-422/485)

DB9 Configurator Adaptor **27-0045-0** (applicable only to RS-232)

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



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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

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