TW5394

TALLYSMAN ®
A **CALIAN** ® COMPANY

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.
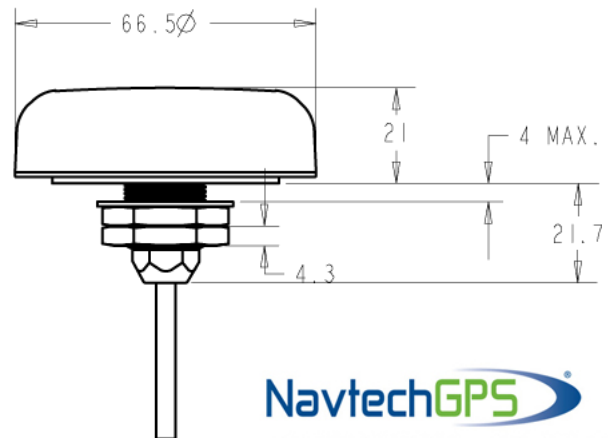
Interference Resilience

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.

NavtechGPS ®

+1-703-256-8900 or 800-628-0885
info@NavtechGPS.com
www.NavtechGPS.com

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
- USB 2.0 or RS-232 signalling options
- Industrial grade IP67 enclosure
- Available with conical radome
- L1/L5 option available

TW5394 Smart GNSS Antenna for Precise Positioning & Heading

Specifications

Antenna

Architecture	Multi-band (L1/L2), Dual Feed
Axial Ratio	L1: < 1 dB typical.
Signal Support	GPS L1C/A L2C, GLO L1OF L2OF, GAL E1B/C E5b, BDS B1l B2l, QZSS L1C/A L2C
SBAS L1 C/A	WAAS, EGNOS, MSAS, GAGAN
Channels	184-channel u-blox F9 engine
Anti-jamming	Active CW detection
Corrections Receiver	L-Band PPP-RTK (SSR)
Corrections Data Rate	Continental: 2400 bps
Regions	EU, US, AUS. KR
Format	SPARTN, RTCM

Interface (2 options)

PWR, GND, DP, DM	USB 2.0, Type A Male (-19)
PWR, GND, TX, RX	RS-232, RJ45 (-29)

Serial Protocol

Output	NMEA 0183, UBX Binary, RTCM v3.3
Baud Rate	Configurable
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)

Mechanical

Dimensions	66.5 mm dia. x 21 mm H
Weight	135 g
Mounting Method	Fixed Mount
Cable Length	5m

Electrical

Voltages	5 VDC
Current	1 Watts (nominal operating) Measured @ 5VDC supply

Environmental

Operating Temperature	-40℃ to +85℃
Storage Temperature	-40℃ to +85℃
Weatherproof	IP69K
Shock	Vertical axis 50G,other axis 30G 3 axis sweep – 15 min
Vibration	10-200 Hz log sweep 3G

Sensitivity

Tracking & Nav	-167 dBm
Reacquisition	-160 dBm
Hot starts	-157 dBm
Cold starts	-148 dBm

Acquisition

Cold start	25 sec
Aided start	2 sec
Reacquisition	2 sec

Horizontal Position Accuracy (4 Constellations)

Standard PVT	1.5m CEP
Standard SBAS	1.0m CEP
Corrected RTK	0.01m + 1ppm CEP
Augmented SPARTN (PPP-RTK)	<0.06m CEP
SPARTN Convergence	<45 sec

Heading

Dynamic Heading Accuracy	0.3° (30 m/sec)
Precise Heading Accuracy	0.4° (min 1m baseline)

Operational Limits

Dynamics	< 4g
Altitude	80,000m
Velocity	500 m/sec
Convergence	<45 sec

Ordering Information:

33-5394-19-yy-05-PC0 (USB 2.0, Type A Male, 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-PCO	**33-0095-3**	(applicable only to RS-232)
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.

TALLYSMAN®
A **CALIAN**® COMPANY

When **precision** matters.®

NavtechGPS®

Contact NavtechGPS for product details. www.NavtechGPS.com
+1-703-256-8900 • 800-628-0885 • info@navtechgps.com

www.tallysman.com