TW5384 Datasheet

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TW5384 High-Precision Smart GNSS Antenna with L-Band PPP-RTK

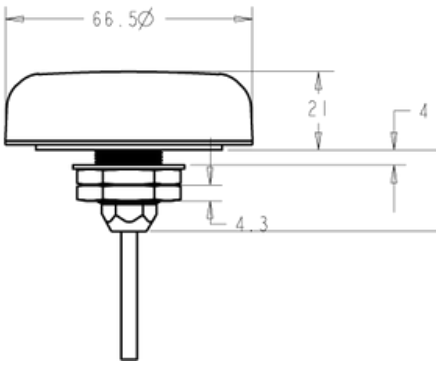
Overview

The TW5384 is a multi-band (L1/L2), multi-constellation integrated GNSS receiver/antenna with RTK for Precise Point Positioning. The TW5384 is capable of providing sub 1 meter accuracy stand alone, sub 6 cm accuracy with PPP-RTK corrections, and sub 1 cm with RTK corrections to support the most demanding positioning applications.



Interference Resilience

The TW5384 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. The multi-band (L1/L2) architecture is highly effective method for the removal of ionospheric error. The TW5384 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, to offer exceptional performance to meet the most stringent precise positioning applications.



Mechanical Dimensions (mm)

Precise Point Positioning

The TW5384 is designed to meet the most demanding of positioning applications. The receiver offers support for a broad range of corrections services (RTK base/rover or network) allowing performance optimization according to each application's unique requirements. The concurrent multi-band (L1/L2) access to all four satellite constellations improves the receiver's convergence capability to deliver a quick, precise and reliable position solution which is unaffected by ionospheric errors, and improved resilience to jamming.

The TW5384 accepts RTCM RTK messaged from a base station, Virtual Reference Station or SPARTN SSR message type via the PointPerfect Flex subscription service. TW5384 may also be configured as an RTK base station or moving RTK base for Precise Heading.

The TW5384 provides sub 6 cm positioning accuracy in conjunction with PPP-RTK applied corrections and sub 1 cm with RTK.

Features:

- Improved noise immunity with multi-band ublox ZED-F9P GNSS receiver
- PointPerfect Flex PPP-RTK, RTK Base/Rover, Moving Baseline Precise Heading
- Improved multi-path rejection with Dual feed Accutenna ®
- Multi-band GNSS receiver is resilient to ionospheric errors
- High reliability timing with expansive constellation array
- Exceptional position performance standalone without correction services
- Broad 5V-36V operation
- RS-422 differential (or RS-232) signalling
- Industrial grade IP69K enclosure
- Rugged fixed mount
- Multiple cable lengths (5m, 15m and 25m)
- Available with conical radome

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Specifications

Antenna

Architecture . . . . . Multi-band (L1/L2), Dual Feed
Axial Ratio. . . . . L1: < 1 dB typical.
Frequencies . . . . . GPS L1C/A L2C, GLO L1OF L2OF, GAL E1B/C E5b, BDS B1I B2I, QZSS L1C/A L2C

SBAS L1 C/A . . . . . WAAS, EGNOS, MSAS, GAGAN
Channels. . . . . 184-channel u-blox F9 engine
Anti-jamming . . . . . Active CW detection

Interface (Pwr, Gnd)

33-5384-07-yy-zz. . . . . Data, Timerpulse: RS-422 levels
33-5384-27-yy-zz. . . . . Data: RS-232; Timepulse: RS-422
33-5384-67-yy-zz . . . . . UART1 Data: RS-232; UART2 Data: RS-232

Serial Protocol

Output . . . . . NMEA 0183, UBX Binary, RTCM v3.3, SPARTN v2.0
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 . . . . . Industrial grade fixed Mount
Cable Length . . . . . 5, 15, 25m with RJ45 termination

Electrical

Voltages . . . . . 5 V to 36 VDC
Current . . . . . 0.5 Watts (nominal operating) Measured @ 5VDC supply

Environmental

Operating Temperature. . . . . -40°C to +85°C
Storage Temperature. . . . . -40°C to +85°C
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 Posistion 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 (static) . . . . . 0.4°(min 1m baseline)

Timing

Timing Accuracy . . . . . 30 ns RMS

Ordering Information:

33-5384-07-yy-zz-PC0	(RJ45; Data and Timepulse: RS-422; PC0 = NMEA out, no adaptor cable)
33-5384-27-yy-zz-PC0	(RJ45; Data: RS-232, Timepulse: RS422; PC0 = NMEA out, no adaptor cable)
33-5384-67-yy-zz-PC0	(RJ45: UART1 and UART2: RS-232; PC0 = UART 1 NMEA out, UART 2 RTCM)

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)

33-5384-07-yy-zz-PC0 SDK Test Adaptor required for programming	**33-0095-10**
33-5384-27-yy-zz-PC0 SDK Test Adaptor required for programming	**33-0095-13**
33-5384-67-yy-zz-PC0 SDK Test Adaptor required for programming	**33-0095-24**

About Calian
We keep the world moving forward. Calian® helps people communicate, innovate, learn and lead safe and healthy lives. Every day, our employees live our values of customer commitment, integrity, innovation and teamwork to engineer reliable solutions that solve complex problems. That's Confidence. Engineered. A stable and growing 40-year company, we are headquartered in Ottawa with offices and projects spanning North American, European and international markets. Visit **calian.com** to learn about innovative healthcare, communications, learning and cybersecurity solutions.

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