TW5382

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Confidence. Engineered.

TW5382 Smart GNSS Antenna for High Accuracy Timing

Overview

The TW5382 is a multi-band (L1/L2), multi-constellation integrated GNSS receiver and precision timing reference antenna. The TW5382 is capable of providing nanosecond-level timing accuracy to support the most demandinginfrastructure 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 a highly effective method for the removal of ionospheric error. The TW5382 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 timing applications.

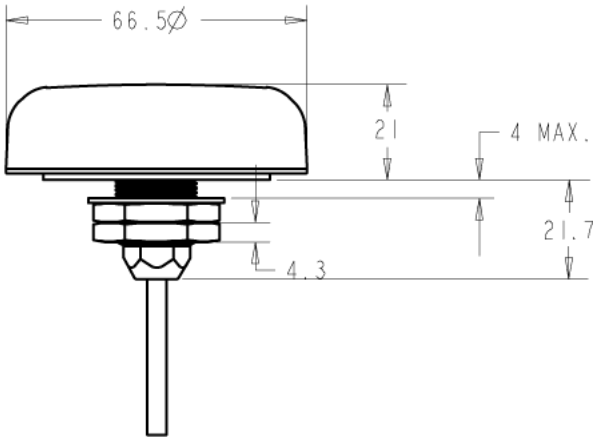
Precision Timing

The TW5382 is designed to meet the strictest timing synchronization applications in 5G mobile networks on a global scale. The concurrent multi-band (L1/L2) access to all four satellite constellations improves the receiver's capability to deliver a quick, precise and reliable solution which is unaffected by ionospheric errors, and improved resilience to jamming.

The TW5382 timing module's multi-band (L1/L2) capability reduces the timing error under clear skies to less than 5 ns without the need for external GNSS correction service.

The TW5382 offers an optional master and slave configuration that features a differential timing mode that exchanges correction data with a neighboring TW5382 timing receiver via a RS-485 communication link. Under optimal conditions the timing accuracy can be further improved to less than 2.5 ns.





Mechanical Dimensions (mm)

Features

- Improved noise immunity via multi-band ublox ZED-F9T GNSS receiver
- 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 timing performance standalone without correction services
- T-RAIM to support the highest level of timing integrity
- Broad 5V-36V operation
- RS-485 differential signalling
- Industrial grade IP69K enclosure
- Rugged fixed mount
- Multiple cable lengths (5m, 15m and 25m)
- Available with conical radome

TW5382 Smart GNSS Antenna

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

33-5382-07-yy-zz	Data, Timepulse, Optional TP2, RTCM IN or OUT: RS-422 levels.

Serial Protocol

Output	NMEA 0183, UBX Binary, RTCM v3.3,
Baud Rate	Configurable
Update Rate (PVT)	Configurable up to 20 Hz

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℃ 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	-166 dBm
Reacquisition	-160 dBm
Hot starts	-157 dBm
Cold starts	-148 dBm

Acquisition

Cold start	26 sec
Aided start	2 sec
Reacquisition	1 sec

Horizontal Posistion Accuracy (4 Constellations)

Standard PVT	2m CEP

Timing

Timing Accuracy	<5 ns (<2.5 ns Differential Mode)
Time Pulse Jitter	± 4 ns
Time Pulse resolution	8 ns
Survey-in period	Configurable
Integrity Reports	T-RAIM active, phase uncertainty, Time pulse/duty-cycle, inter-constellation biases

Ordering Information:

33-5382-07-yy-zz-PC0 (RJ45; Data and Timepulse, Optional TP2, RTCM IN or OUT: RS-422 levels; PC0 = 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)

33-5382-07-yy-zz-PC0 SDK Test Adaptor required for programming **33-0095-10**

About Calian GNSS: With global headquarters and manufacturing in Ottawa, Canada, Calian GNSS is a leading manufacturer of high-precision antennas and components for Global Navigation Satellite System (GNSS) applications. Calian GNSS' 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.calian.com/GNSS**

Contact us:
info.gnss@calian.com
T: +1 613 591-3131

Calian GNSS Ltd.
36 Steacie Drive,
Ottawa ON
K2K 2A9 Canada

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