

TW5382



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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 demanding infrastructure applications.

Interference Resilience

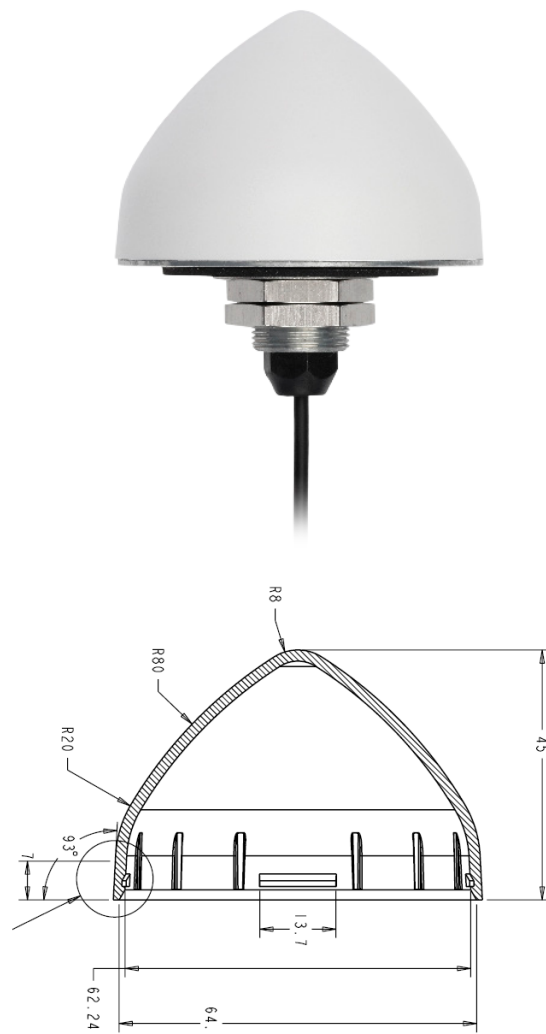
The TW5382 incorporates a latest generation multi-band (L1/L2) GNSS receiver with a Tallysman Accutenna™ multi-band (L1/L2) dual feed patch. The state of the art GNSS receiver supports concurrent tracking of all four major constellations (GPS, BeiDou, Galileo and GLONASS) in multiple frequency bands. The multi-band (L1/L2) architecture is the most effective method for the removal of ionospheric error. Combined with the dual feed Accutenna™, which greatly improves the rejection of multi-path signal interference, the TW5382 offers exceptional performance to meet the most stringent 5G timing requirements, significantly reducing the time error of the primary source of cellular network synchronization.

Precision Timing

The TW5382 is designed to meet the strictest timing synchronization requirements 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 precise and reliable solution which is unaffected by ionospheric errors, and provides resilience to jamming.

The TW5382 timing module's multi-band (L1/L2) capability reduces the timing error under clear skies to less than 5ns without the need for an 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 2.5ns.



Mechanical Dimensions (mm)

Features

- Improved noise immunity with multi-band GNSS receiver
- Improved multi-path rejection with Dual feed Accutenna™
- A Multi-band GNSS receiver is unaffected by ionospheric errors
- High reliability timing with expansive constellation array
- Exceptional timing performance 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 L10F L20F, 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	
Tx, RX, Timepulse	.RS-485 levels
Opt: TP2, RTCM IN or OUT	.RS-485 level

Serial Protocol

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

Mechanical

Dimensions	.66.5 mm dia. x 21 mm H
Weight	.135 g
Mounting Method	.Industrial grade fixed Mount
Cable Length	.5, 15 and 25m with RJ 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	..-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

Position

Position Accuracy	..2.0m CEP
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Timing

Timing Accuracy	..<5ns (<2.5ns Differential Mode)
Time Pulse Jitter	..+/- 4ns
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:

33-5382-7-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)

TW5382 SDK Test Adaptor required for programming 33-0095-1

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



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Tallymatics manufactures high performance GNSS smart antennas, telematics products and solutions for a wide range of applications. With support for both RF wireless and data networks, Tallymatics enables high-resolution location awareness of mobile field assets across any type of wireless network. Tallymatics is a division of Tallysman.

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

Tallymatics Inc.
36 Steacie Drive,
Ottawa ON
K2K 2A9 Canada

www.tallymatics.com