

# TW5382

## 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

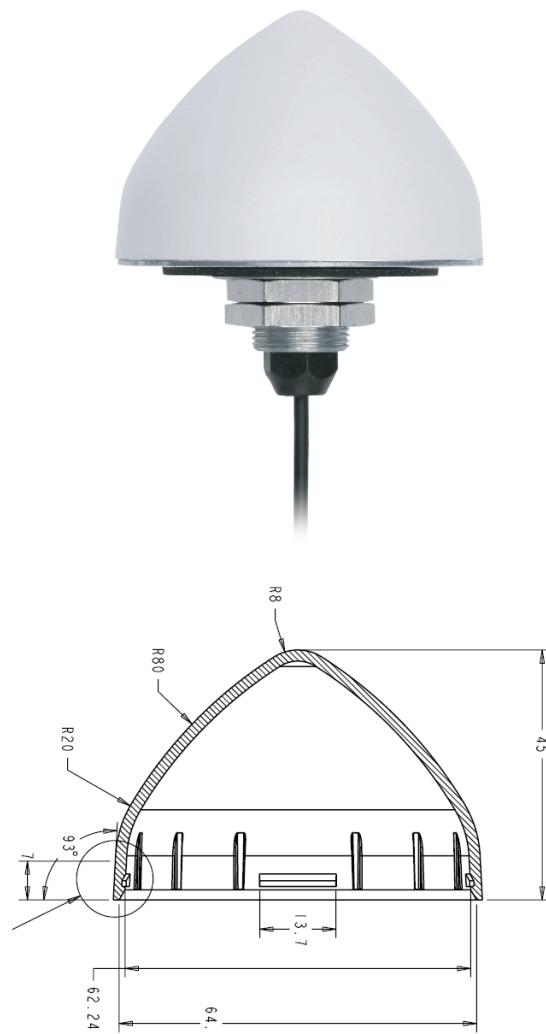
The TW5382 incorporates a latest generation multi-band (L1/L2) GNSS receiver with a Tallysman Accutenna™ multi-band (L1/L2) dual feed patch. The state of the art GNSS receiver supports concurrent tracking of all four major constellations (GPS, BeiDou, Galileo and GLONASS) in multiple frequency bands. 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	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
Frequencies.....GPS L1C/A L2C, GLO L1OF L2OF, 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	
Interface	Sensitivity
Pwr, Gnd	Tracking & Nav.....-166 dBm
Tx, RX, Timepulse.....RS-485 levels	Reacquisition.....-160 dBm
Opt: TP2, RTCM IN or OUT.....RS-485 level	Hot starts.....-157 dBm
	Cold starts.....-148 dBm
Serial Protocol	Acquisition
Output.....NMEA 0183, UBX Binary, RTCM v3.3	Cold start.....26 sec
Baud Rate.....Configurable	Aided start.....2 sec
Update Rate.....Configurable up to 20Hz	Reacquisition.....1 sec
Mechanical	Position
Dimensions.....66.5 mm dia. x 21 mm H	Position Accuracy.....2.0m CEP
Weight.....135 g	
Mounting Method.....Industrial grade fixed Mount	Timing
Cable Length.....5, 15, 25m with RJ45 termination	Timing Accuracy.....<5ns (<2.5ns Differential Mode)
	Time Pulse Jitter.....+/- 4ns
Electrical	Time Pulse resolution.....8 ns
Voltages.....5 V to 36 VDC	Survey-in period.....Configurable
Current.....0.5 Watts (nominal operating) Measured @ 5VDC supply	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.

**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](http://www.tallysman.com)

© 2023 Tallysman Inc. All rights reserved. Tallysman, the "When Precision Matters" tag line and the Tallysman logo are trademarks or registered trademarks of Tallysman Inc. and/or its affiliates in Canada and certain other countries. All other trademarks mentioned in this document are the property of their respective owners. The information presented is subject to change without notice. Tallysman assumes no responsibility for any errors or omissions in this document. Tallysman Wireless Inc. hereby disclaims any or all warranties and liabilities of any kind.

**Contact us:**  
[info@tallysman.com](mailto:info@tallysman.com)  
T: +1 613 591-3131

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

[www.tallysman.com](http://www.tallysman.com)