

TW5365

TW5365 Smart GNSS Antenna with UDR (RS-422)

Overview

The TW5365 is a multi-constellation GNSS Receiver/Antenna fused with inertial sensor data. It is an easy-to-use tracking solution that enables high performance positioning in places where GNSS signals are poor or not available.

The TW5365 incorporates a latest generation GNSS receiver that supports simultaneous GPS/GLONASS/Galileo reception and a Tallysman's Accutenna™ patch antenna. This dual feed antenna greatly improves rejection of multi-path signal interference, making it the most precise antenna for tracking in dense urban environments.

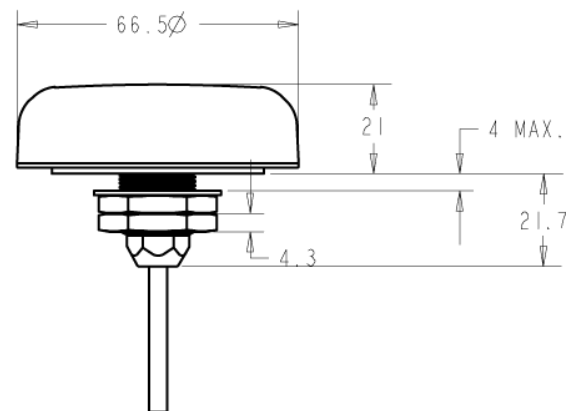
Untethered Dead Reckoning (UDR)

The TW5365 Untethered Dead Reckoning (UDR) technology provides continuous navigation without requiring speed information from the vehicle. This innovative technology brings the benefits of dead reckoning to installations previously restricted to using GNSS alone, significantly reducing the cost of installation for Dead Reckoning applications.

The strength of UDR is particularly apparent under poor signal conditions, where it brings continuous positioning in urban environments, even when the antenna is installed within the vehicle. Useful positioning performance is also available during complete signal loss, for example in parking garages or short tunnels. UDR positioning starts as soon as the ignition signal is applied and before the first GNSS fix is available.

The TW5365 may be installed in any position in a vehicle without electrical connection to the vehicle speed sensor. The on-board accelerometer and gyroscope sensors result in a self-contained UDR which is self-calibrating and provides reliable and consistent navigation.

A Timepulse output generates pulse trains synchronized with GPS or UTC time grid with intervals configurable over a wide frequency range.



Mechanical Dimensions (mm)

Features

- Complete positioning solution with integrated 3D sensors
- Positioning accuracy in dense cities and covered areas
- Independent of any sensor connection to the car
- Robust communication with RS-422 Differential Transceiver
- 5V-36V automotive operation
- Superior multi-path signal rejection
- Industrial grade IP69 enclosure
- RoHS, REACH, RED compliant. CE marking

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Specifications

Antenna

Architecture Dual Feed
Axial Ratio < 1 dB typical.
Frequencies GPS/QZSS L1 C/A, GLONASS L10F
BeiDou B1I, Galileo E1B/C
SBAS L1 C/A WAAS, EGNOS, MSAS, GAGAN
Channels 72-channel u-blox M8 engine

Interface

Pwr, Gnd, Ignition Input
Tx, RX RS422 (RS485) Half-Duplex
Timepulse RS232 level

Mechanical

Dimensions 66.5 mm dia. x 21 mm H
Weight 135 g
Mounting Method Fixed Mount
Cable Length 5 m with RJ45 termination
Enclosure Industrial grade fixed mount
weatherproof IP69

Electrical

Voltages 5 V to 36 VDC
Current <500 mW nominal operating

Environmental

Operating Temperature -40 °C to +85 °C
Storage Temperature -45 °C to +85 °C
Weatherproof IP69
Shock Vertical axis 50G, other axis 30G
3 axis sweep - 15 min
Vibration 10-200 Hz log sweep 3G

Sensitivity

Tracking & Nav -160 dBm 1
Cold starts -148 dBm
Hot starts -157 dBm

Acquisition

Cold start 26 sec
Aided 3 sec
Reacquisition <1 sec

Position

Position Accuracy 1.5m CEP (w/SBAS)
UDR Position Error Typically <10% of distance covered
without GNSS (up to 60 s)

Serial Protocol

Output NMEA 0183
Baud Rate Configurable
Update Rate Up to 30Hz (via HNR)

Ordering Information:

33-5365-7-10-05-PC0

PC0 = NMEA out, no adaptor cable.

TW5365 SDK/Configuration Kit 33-0095-5

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

About Calian GNSS Ltd.: 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

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