

TW5350/TW5351



Multi-Constellation Smart Antenna

Overview

The TW5350 is a multi-constellation GNSS Smart Antenna which provides simultaneous multi-constellation GNSS reception. It is designed for use in professional grade applications such as precision timing, network synchronization, low current applications, and tracking/positioning applications.

The TW5350 GNSS Smart Antenna uses the state-of-the-art multi-constellation GNSS receiver which provides 72 high sensitivity tracking channels which can be configured to acquire and track 3 concurrent GNSS constellations (GPS, Galileo, GLONASS and Beidou) plus SBAS (WAAS, EGNOS, MSAS and GAGAN) and QZSS augmentation signals simultaneously. Differential GPS corrections may also be supplied via RTCM formatted corrections messages.

The TW5350 employs Tallysman's Accutenna™ dual feed antenna patch technology which greatly improves rejection of multi-path signal interference, across the whole GNSS band. The addition of pre- and post- filtering within the RF signal chain greatly improves immunity to jamming carriers typical within urban environments.

The TW5350 can be configured to output a variety of NMEA 0183 message lists with navigation update rates up to 5Hz. An RS232 interface is provided for data communication with input voltage options of 3.3V and 5–36V with over-voltage protection.

A configurable one pulse-per-second (1PPS) synchronized to UTC time is made available as a RS422 differential signal.

Tallymatics' Windows™ based Configurator enables simple configuration of parameters such as baud rates, output message rates, constellation, tracking parameters and 1PPS configuration and Standby mode parameters.

A non-magnetic version is available with Part Number TW5351.



Features

- Multi-Constellation Receiver/Antenna
- Concurrent tracking of 3 constellations
- 72 Channel simultaneous
- High performance tracking (-167 dBm)
- WAAS, EGNOS, MSAS & GAGAN + QZSS
- DGPS corrections using RTCM input
- Navigation rates 1 to 5 Hz
- 1 PPS RS422 outputs
- Accutenna™ Technology
- Pre- and Post- LNA filtering
- Superior multi-path signal rejection
- Low Current Standby Mode
- Industrial grade IP69K enclosure
- LSZH cable option for indoor application
- RoHS, REACH and RED Compliant.
- CE, UKCA, ISO:13766-1

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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	
Tx, RX	RS232
Timepulse	RS422 (30kV protection)

Mechanical

Dimensions	66.5 mm dia. x 21 mm H
Weight	135 g
Mounting Method	Fixed Mount
Cable Length	5 m with RJ12 termination
Enclosure	Industrial grade fixed mount weatherproof IP69K

Electrical

Voltages	5–36 VDC (Overvoltage Protection)
Current	<500 mW nominal Operating

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
Cold starts	–148 dBm
Hot starts	–157 dBm

Acquisition

Cold start	26 sec
	Aided 3 sec
Reacquisition	1 sec

Accuracy

Position Accuracy	2.5m CEP (Horizontal)
Velocity Accuracy	0.05 m/s
Heading Accuracy	0.3 deg
Timing Accuracy	30ns RMS

Operational Limits

Dynamics	4 g
Altitude	50,000 m
Velocity	500 m/s

Serial Protocol

Output	NMEA 0183
Input	RTCM
Baud Rate	Configurable up to 230400 bps
Update Rate	Configurable up to 5Hz

Time Pulse

Duty Cycle	Configurable
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Ordering Information:

33–5350–7–yy–zz–PC0 Standard GNSS Smart Antenna, 33–5351–7–yy–zz–PC0 Non-magnetic GNSS Smart Antenna
–PC0 (Default factory configuration) Please inquire regarding custom factory configuration options.

DB9 Test adaptor 27–0045–1

Please refer to the [Ordering Guide](#) for the current and complete list of available product options.

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

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