

# 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 1
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.



When precision matters.®

**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)

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