

# TW5354

## TW5354 Multi-Constellation Smart Antenna

### Overview

The TW5354 is a multi-constellation GNSS Smart Antenna which provides simultaneous GPS/GLONASS+SBAS reception. It is designed for use in professional grade applications such as precision timing, network synchronization, low current applications, and tracking/positioning applications.

The TW5354 GNSS Smart Antenna uses a state of the art multiconstellation 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 TW5354 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 TW5354 can be configured to output a variety of NMEA 0183 message lists with navigation update rates up to 5Hz. An RS422 interface is provided for extended range data communication with input voltage range from 5V to 36V suitable for industrial and Automotive applications.

A configurable one pulse-per-second (1PPS) synchronized to 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.



### Features

- Multi-Constellation Receiver/Antenna
- Concurrent tracking of 3 constellations
- 72 Channel simultaneous operation
- High performance tracking (-164 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
- Industrial grade IP69K enclosure
- RoHS, Reach, RED compliant, CE Marking
- 5V to 36V automotive operation w/ low power standby

# TW5354 Smart GNSS Antenna

## Specifications

### Antenna

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

### Interface

Pwr, Gnd  
Tx, RX ..... RS422 (30kV protection)  
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 RJ45 termination  
Enclosure ..... Industrial grade fixed mount

### Electrical

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

### Environmental

Operating Temperature ..... -40 C to +85 C  
Storage Temperature ..... -45 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

## Ordering Information:

33-5354-7-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)

**TW5354 SDK Test Adaptor required for programming 33-0095-10**

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](http://www.calian.com/GNSS)

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