

# TW5386

## TW5386 Smart GNSS UDR Antenna for High Accuracy Positioning

### Overview

The TW5386 is a multi-band (L1/L2), multi-constellation integrated GNSS receiver/antenna with Inertial Measurement Unit (Untethered Dead Reckoning) and RTK for Precise Point Positioning. The TW5386 is capable of providing sub 1 meter accuracy stand alone and sub 10 cm accuracy with RTK corrections to support the most demanding positioning applications in the most challenging environments such as a dense urban canyon.

### Interference Resilience

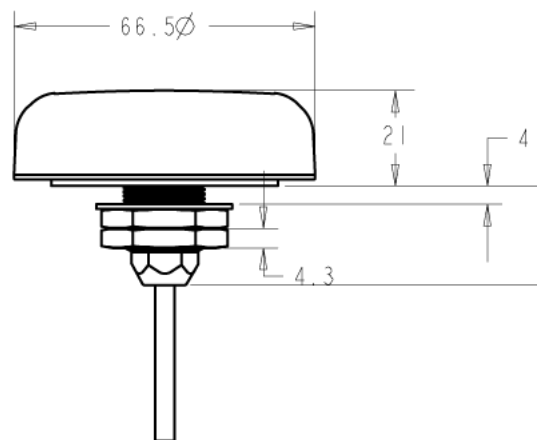
The TW5386 incorporates a latest generation multi-band (L1/L2) GNSS IMU receiver with a Tallysman Accutenna™ multi-band (L1/L2) dual feed patch. The state of the art GNSS receiver supports concurrent tracking of all four major constellations (GPS, BeiDou, Galileo and GLONASS) in multiple frequency bands. The multi-band (L1/L2) architecture is the most effective method for the removal of ionospheric error. The TW5386 employs multi-stage filtering with low noise figure LNAs, combined with the dual feed Accutenna™, which greatly improves the rejection of multi-path signal interference. The IMU Sensor Fusion further mitigates effects of severe multi-path reflections and provides continuous position availability during periods of GNSS outages caused by signal obstruction offering exceptional performance to meet the most challenging precise positioning applications.

### Precise Point Positioning

The TW5386 offers support for a broad range of corrections services (RTK base/rover or network) allowing performance optimization according to each application's unique requirements. The concurrent multi-band (L1/L2) access to all four satellite constellations improves the receiver's convergence capability to deliver a quick, precise and reliable position solution which is unaffected by ionospheric errors and improves resilience to jamming.

The TW5386 accepts RTCM RTK message from a base station, Virtual Reference Station or SPARTN SSR message type via the Point Perfect subscription service.

The TW5386 provides sub 10 cm positioning accuracy in conjunction with RTK applied corrections.



Mechanical Dimensions (mm)

### Features

- Improved noise immunity with multi-band GNSS receiver
- Improved multi-path rejection with Dual feed Accutenna™
- Multi-band GNSS receiver is unaffected by ionospheric errors
- High reliability timing with expansive constellation array
- IMU provides continuous availability during periods of signal loss
- Exceptional position performance without correction services
- 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

# TW5386 Smart GNSS Antenna

## Specifications

<b>Antenna</b>		<b>Environmental</b>	
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 L10F L20F, 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		
<b>Interface</b>		<b>Sensitivity</b>	
Pwr, Gnd		Tracking & Nav	-160 dBm
Tx, RX, Timepulse	RS-485 levels	Reacquisition	-160 dBm
		Hot starts	-158 dBm
		Cold starts	-147 dBm
<b>Serial Protocol</b>		<b>Acquisition</b>	
Output	NMEA 0183, UBX Binary, RTCM v3.3, SPARTN v2.0	Cold start	.25 sec
Baud Rate	Configurable	Aided start	.3 sec
Update Rate	Configurable, 2Hz* (30Hz via HNR)	Reacquisition	.2 sec
<b>Mechanical</b>		<b>Position Accuracy</b>	
Dimensions	.66.5 mm dia. x 21 mm H	Horizontal PVT	1.5m CEP
Weight	.135 g	Horizontal SBAS	1.0m CEP
Mounting Method	Industrial grade fixed Mount	Horizontal RTK	0.01 + 1ppm R50*
Cable Length	5, 15, 25m with RJ45 termination	Horizontal PPP-RTK (SPARTN)	<0.06m CEP
		Typical Convergence	<45 sec*
<b>Electrical</b>		<b>Timing</b>	
Voltages	.5 V to 36 VDC	Timing Accuracy	.30 ns RMS
Current	.0.5 Watts (nominal operating) Measured @ 5VDC supply		

## Ordering Information:

33-5386-7-yy-zz-PC0 (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)

**TW5386 SDK Test Adaptor required for programming 33-0095-1**

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



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

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

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