



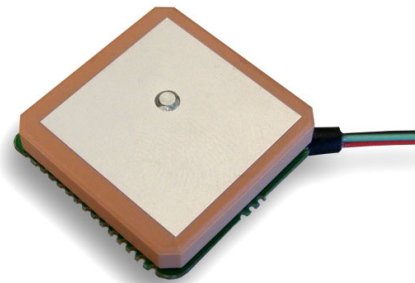
a time and place...  
for everything

# Wi-Sys Communications Inc.

## WS5012-E Embedded High Sensitivity Tracking & Timing GPS Receiver+Antenna

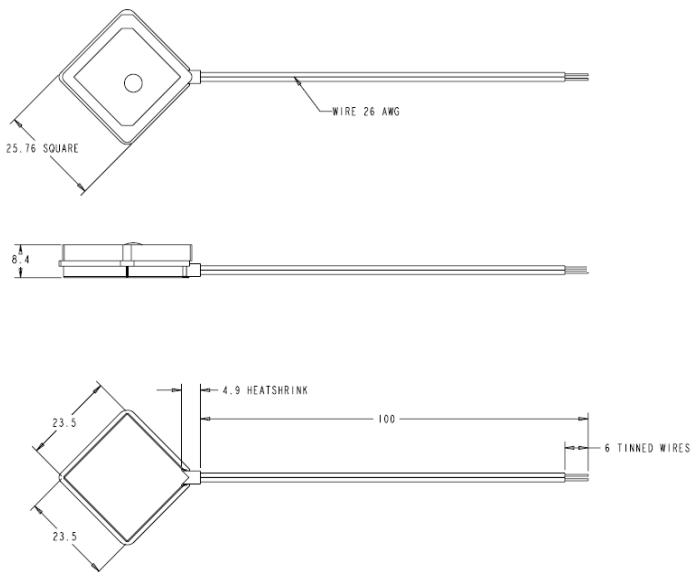
### Applications:

- ◆ High Performance GPS Tracking
- ◆ Portable Navigation
- ◆ Automotive Navigation
- ◆ Fleet Management
- ◆ Military, Security & Public Safety
- ◆ WiMAX & Wireless Timing/Synchronization



The WS5012-E Embedded GPS Receiver + Antenna, incorporates a highly sensitive 16-channel, very quick time-to-fix GPS Receiver, and a high performance active/filtered GPS antenna. It features the STMicroelectronics STA8058 Teseo™ high performance GPS Engine with embedded flash memory, a Low Noise Amplifier, a SAW filter, as well as a perfectly tuned ceramic patch element for maximum GPS signal reception. The WS5012-E Embedded High Sensitivity GPS Receiver + Antenna has a very compact form factor and comes with a CMOS interface.

### Mechanical Dimensions (mm)



### Features:

- ◆ Integrated GPS receiver, antenna, LNA & SAW filter
- ◆ Very High Sensitivity: -159dBm tracking
- ◆ Quick Time to Fix: 39 sec cold start
- ◆ 16 channel ST Teseo™ GPS Engine
- ◆ Flash memory: upload embedded GPS Firmware, settings & history
- ◆ Standard NMEA 0183 GPS output
- ◆ 1PPS output: 50n second accuracy
- ◆ WAAS and EGNOS supported
- ◆ Low power & standby modes
- ◆ Low current: 80 mA typ., 3.3V operation
- ◆ Compact form factor: 25.76 mm square
- ◆ CMOS interface
- ◆ RoHS compliant



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## Specifications:

Mechanical	
Dimensions	25.76 mm x 25.76 mm x 8.4 mm
Weight	14 g
Interface / Cable	CMOS, 10cm - 4 x 26AWG
Attachment method	Adhesive (not provided)
Shock	Vertical axis 50G, other axis 30G
Vibration	3 axis sweep = 15 min 10-200 Hz log sweep: 3G
Environmental	
Operating Temperature	-40 to +85 C
Storage	-45 to +85 C
Humidity	95% max (non-condensing)
Electrical	
Voltage	3.3V (+/- 10%)
Current	85 mA max
Antenna Response	
Frequency	1575.42 MHz
Gain	@ 90° 3 dBic @ 20° -2 dBic
Polarization	Right Hand Circular
Axial Ratio	@ 90° 4 dB @ 20° 6 dB
Out-of-band rejection	+15 MHz: 10 dB/- 15 MHz: 30dB +20 MHz: 20 dB/- 20 MHz: 30dB +40 MHz: 40 dB/- 40 MHz: 40dB

GPS Performance	
Frequency	L1, 1575.42 MHz
Channels	16 channels parallel
Sensitivity	Acquisition: -146dBm Tracking: -159dBm
Accuracy	2m (autonomous) <1 metre (SBAS)
Time to First Fix	Cold start: 39 sec Warm start: 34 sec Hot start: 2.5 sec Reacquisition: <1 sec
1PPS Output	(WS5012-E-T version only) Resolution: +/- 31nS Accuracy: 50nS
Serial Protocol	Output: NMEA 0183 Baud Rate: 4800 bps (default), user configurable up to 115kbps Update Rate: 1Hz NMEA Message: GGA, VTG, GSA, GSV, RMC
Wiring Information	
Red	VCC
Black	Ground
White	Tx
Green	Rx (WS5012-E) 1PPS (WS5012-E-T)

Specifications subject to change without notice.  
Please visit our website or contact us for additional information.

## Ordering Information:

**WS5012-E-10cm-CMOS:** 10 cm flying leads, CMOS interface

**WS5012-E-T-10cm-CMOS:** 10 cm flying leads, 1PPS output, CMOS interface

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