

Embedded GPS Module

WI-GPS-XX



GPS Protocols:
NMEA v3.0, TSIP, TAIP

SBAS Support:
WAAS, EGNOS, MSAS

12-Channel Receiver

AGPS Support

PPS Output Signal

LED Status Indicators

The WI-GPS-XX Embedded GPS Module delivers proven performance and quality for a new generation of position enabled products, allowing OEMs to quickly and easily add GPS support for virtually any application.

Powered by the 12-Channel Trimble Copernicus II receiver, the Embedded GPS Module features extremely fast startup times and high performance in foliage canopy and urban canyon environments. The GPS receiver can autonomously acquire satellite signals and quickly generate reliable time and position fixes in extremely challenging environments and under poor signal conditions.

The module's small size and low power usage also make the WI-GPS-XX an excellent candidate for mobile applications and those requiring low power.

The Embedded GPS Module provides up to three interfaces to the host CPU, allowing OEMs to choose between USB, RS232, or UART. On-board status LEDs provide visual indicators for USB Activity, Antenna Connection, and the GPS Pulse Per Second (PPS) signal. A terminal block also provides access to the PPS signal allowing easy system integration of GPS Timing. Furthermore, the module can be configured to receive power through the USB connector or an external system power source via a terminal block.

The WI-GPS-XX can be purchased Module only, with a Magnetic-Mount Antenna, a Compact Embedded Antenna, or a Bulkhead Antenna. A Development kit is also available allowing OEMs to quickly evaluate the product and its features.

Form Factor:
2.5" x 2.5"
(63.5mm x 63.5mm)

Operating Temp:
-40°C to +85°C

Operating Humidity:
5% to 95%
non-condensing

Storage Temp:
-55°C to +85°C

Software Support

USB Drivers:
Windows XP/Vista/7 (32/64-bit)
Windows XP Embedded
Windows CE 4.2, 5.0, 5.2, 6.0
Linux (2.6.9 or newer)

Example Software:
C/C++ MCU Code

Development Tools

Trimble Studio

Electrical:

Supply Voltage.....+5V DC
 Typical Operating Current.....<220mA
 Max Operating Current.....660mA

Acquisition:**(Autonomous, -130dBm, 50%)**

Reacquisition 2s
 Hot Start 8s
 Warm Start35s
 Cold Start 38s

Accuracy:**(24-hr static)**

Horizontal<2.5m 50%, <5m 90%
 SBAS<2.0m 50%, <4m 90%
 Altitude<5m 50%, <8m 90%
 SBAS<3m 50%, <5m 90%
 Velocity<0.06 m/sec
 Static PPS ±60ns RMS
 PPS (Stationary @-145dBm..... ±350ns

Sensitivity:**(unaided)**

Tracking-160 dBm
 Acquisition-148 dBm
 Receiver Dynamics..... 2G

LEDs:

Power (Green)..... D1
 Antenna Open (Blue).....D2
 Antenna Short (Blue).....D3
 PPS (Blue)D4
 USB RX (Yellow)D5
 USB TX (Yellow).....D6

Jumpers:

Input Power Select.....W1
 USB LED Enable.....W2
 GPS LED EnableW3

External Connectors:

USB 2.0 High Speed..... J1
 Reset.....J2
 RS232 (±15kV ESD Protected).....J3

RX	1	2	NC
TX	3	4	NC
NC	5	6	NC
GND	7	8	NC

MCX Antenna J4
 PowerTB1
 UART (TTL) / PPS TB2

PPS	1	2	TX
RX	3	4	GND

Magnetic Mount Antenna:

Cable Length.....5m
 Weight.....25g
 Frequency Range.....1575.42MHz
 ±1.023MHz
 Gain.....27dbi ±4dbi
 Output Impedance.....50Ω
 LNA Noise @25°C.....1.5dB Max
 LNA Noise @85°C.....2.2dB Max
 Typical Operating Current.....15mA
 Max Operating Current.....20mA

Compact Embedded Antenna:

Cable Length.....85mm
 Weight.....20g
 Frequency Range.....1575.42MHz
 ±1.023MHz
 Gain.....27dbi ±4dbi
 Output Impedance.....50Ω
 LNA Noise @25°C.....1.5dB Max
 LNA Noise @85°C.....2.2dB Max
 Typical Operating Current.....5mA
 Max Operating Current.....13mA

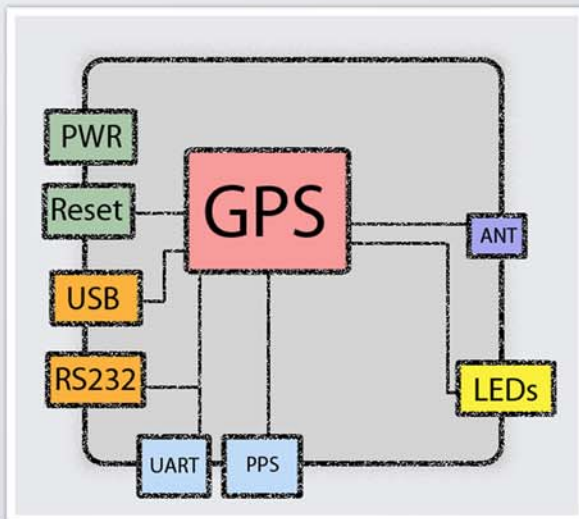
Bulkhead Antenna:

Thread Nut Mount (Drill Size).....19mm
 Weight.....150g
 Frequency Range.....1575.42MHz
 ±1.023MHz
 Gain.....28dbi ±4dbi
 Output Impedance.....50Ω
 LNA Noise @25°C.....1.8dB Max
 LNA Noise @85°C.....2.3dB Max
 Max Operating Current.....35mA

**Cable Set
(optional)**

USB Cable (3ft).....(1)
 RS232 Cable.....(1)
 DB9 Female to DB9 Female (5ft)..... (1)

**Development Kit includes GPS Module,
 Cable Set, and all three antenna options.**

**Ordering Information**

WI-GPS-00GPS Module Only
 WI-GPS-01GPS Module /w Magnetic Mount Antenna
 WI-GPS-02GPS Module /w Compact Embedded Antenna
 WI-GPS-03GPS Module /w Bulkhead Antenna
 WI-GPS-CS.....Cable Set
 WI-GPS-DKDevelopment Kit

**Stand-offs, Nuts, and Screws are provided with all boards



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