

# WL-100 GPS/Bluetooth

*WatchLink GSM new WL-100 module adds powerful GPS/Bluetooth technology to your product or assets in less space and for less development time to ensure speed to market*

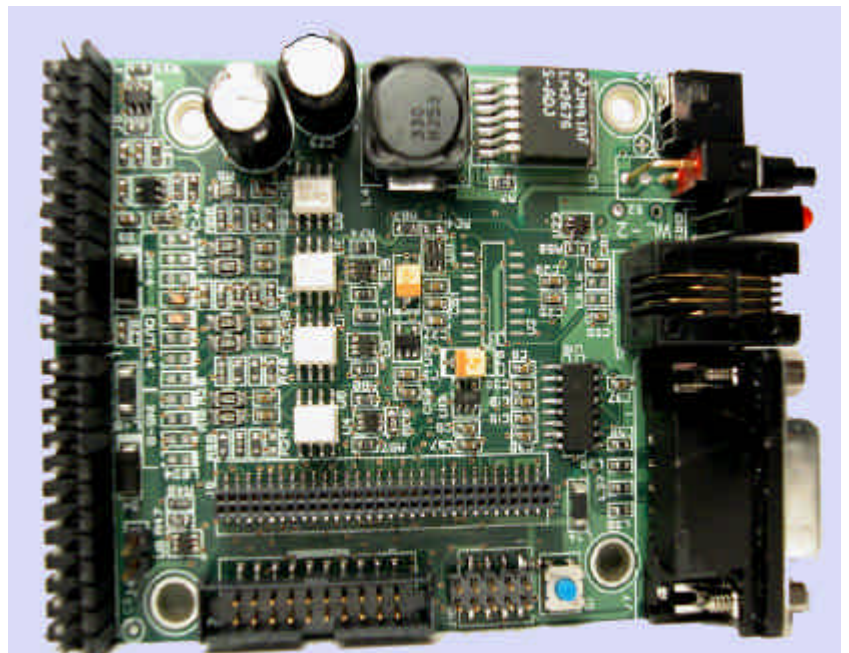
The WL-100 is a versatile module that combines the functionality of the GPS service for PVT (position, velocity, time) sensing and the convenience of Bluetooth for short range communications.

The WL-100 module is designed for quick and easy integration into your products and assets such as vehicles, Telemetry systems and plant equipment to allow tracking and remote monitoring. The WL-100 module will especially appeal to System Integrators and Original Equipment Manufacturers who want to add location tracking and wireless connectivity to their systems and products.

## Technical Features

The WL-100 is a highly integrated module that includes a sensitive 16 channel GPS receiver and a Bluetooth compliant transceiver. The module includes all the supporting circuitry such as 3V power supply, antennae connectors, serial interfaces for configuration and control, I/O and expansion connectors for external modules such as the WL-30 GSM Pod or other AT command based devices.

All these features are packed into a small form factor, approximately 65 x 85mm. The module is designed for ease of mounting to suit many applications ranging from DIN rail enclosures and board to board connection. The GPS receiver can be programmed over a standard serial cable using the Antaris software. With this Windows based program, you can set the WL-100 GPS receiver to various operating modes such as Continuous tracking or power saving Fix-NOW tracking and observe the tracking performance of the module. The GPS receiver incorporates a low noise amplifier(LNA) that connects to an external active antenna with short circuit detection. A backup battery is used to hot start the GPS receiver and to keep the correct time.



The integrated Bluetooth transceiver on the WL-100 module delivers a complete Bluetooth software stack solution over a standard UART connection. The module can support serial data rates up to 921Kbs using normal UART handshaking flow control. AT based modem type commands are used to configure and initiate a data connection. The Bluetooth antenna is mounted on the module. For custom Bluetooth applications there is an I/O connector that can be used to interface to external sensors and actuators.

## Applications

The WL-100 module can be used in a variety of location tracking and remote monitoring applications. The GPS receiver can be used stand alone via the RS232 serial interface or by using an external TTL based UART controller to extract the PVT data for fur-

ther analysis. The addition of a Bluetooth transceiver enables data to be sent wirelessly from the GPS receiver and remote sensors to computers and peripherals.

The WL-100 module has an interface connector which is directly compatible with the Expansion connector that is available on the WL-30 GSM Pod. The WL-30 Pod from WatchLink GSM integrates a quad band GSM engine. Combining both the WL-30 and WL-100 modules in a compact stacked package enables end users to create powerful and ready to go solutions for many wireless M2M applications and products such as ;

- POS Terminals
- Vehicle Tracking
- Biometric/Medical devices
- Pollution monitoring
- Remote display signs

## KEY FEATURES

- Small highly integrated GPS/Bluetooth module (65x85mm)
- Sensitive 16 channel GPS receiver and Bluetooth compliant transceiver
- Easy interface to WL-30 GSM Pod for powerful M2M applications
- Low power solution for tracking and remote sensing
- Flash and EEPROM memory for application software and data storage
- Interface connectors for I/O devices and AT command controllers
- Easy setup of GPS parameters for tracking using Windows program

## TECHNICAL SPECIFICATIONS

### MAIN FEATURES

#### GPS RECEIVER

- 16 channels and 4Hz position update rate
- NMEA, UBX, RTCM Protocols and DGPS support
- Position Accuracy 2.5m CEP ; Time pulse <100ns
- Sensitivity; Acquisition -140dBm, Tracking -149dBm
- Hot start < 3.5sec with Battery backup
- FixNOW power saving mode with remote wake up
- Active Antenna connector with short circuit detection
- Two serial interfaces and EEPROM memory for storage

#### BLUETOOTH

- Bluetooth compliant transceiver
- Pre-loaded Bluetooth serial software
- UART data rates up to 921Kbps
- Sensitivity; -80dBm
- AT command set interface
- 8 general purpose user I/O lines
- 512 Kbytes Flash and 128-bit encryption

## SOFTWARE INTERFACES & DEVELOPMENT

- Antaris GPS Software (Windows)
- Pre-loaded Bluetooth stack and serial software
- AT Command set for Bluetooth interface
- Bluetooth application development software

## ELECTRICAL CHARACTERISTICS

<i>Input Power Consumption</i>	9-12V DC Input supply, 12V Nominal GPS receiver max 50mA @ 3.3V GPS receiver sleep 100uA @ 3V battery GPS Active Antenna 22mA @ 3.3V Bluetooth TX max 40mA @ 3.3V
<i>Expansion</i>	3.3V TTL, 5V tolerant, ESD protected
<i>I/O</i>	3.3V TTL, ESD protected
<i>RF Power</i>	Bluetooth Class 2/3 power amplifier

## PHYSICAL CHARACTERISTICS

<i>Size</i>	65 x 85mm and 15mm height
<i>Weight</i>	90g

#### Mechanical mounting options :

- 4 x 3mm diameter mounting holes
- DIN Type4 enclosure
- Flat base plate
- Board to board connection
- Cable to equipment connection

## ENVIRONMENTAL SPECIFICATIONS

<i>Recommended Operating Temp</i>	0 ... +55 deg C
<i>Storage Temperature</i>	-10 ... +70 deg C
<i>Relative Humidity range</i>	5 ... 95% noncondensing
<i>Approvals</i>	CE

## INTERFACE CHARACTERISTICS

<i>Serial</i>	1 x 9pin D type serial RS232 socket (used for programming GPS) 1 x RJ type 4 pin serial RS232/CAN socket (GPS or Bluetooth) 2 x TTL(3.3V or 5V) serial ports available on Expansion connector with handshaking
<i>Power</i>	1.3mm DC socket (also via USB Interface and Expansion connector)
<i>Antenna</i>	SMA connector(GPS Antenna) Internal Antenna(Bluetooth)
<i>Expansion</i>	20 way IDC cable header or board to board connector
<i>I/O</i>	10 way IDC cable header or board to board connector
<i>USB</i>	4 way Type-B socket 5V
<i>Status</i>	2 x red LEDS and power led
<i>Auxillary</i>	12V Buzzer, 2 momentary switches, FixNOW switch, reset switch

## ORDERING INFORMATION & ACCESSORIES

#### GPS module (Standard)

GPS 16 channel receiver, 1 Serial RS232 9pin D, Expansion connector, FixNOW switch, Antenna connector  
[Order Code: WL-100S]

#### Bluetooth module (Standard)

Bluetooth transceiver, I/O connector, Expansion connector, Internal Antenna, USB connector  
[Order Code: WL-100B]

#### Combo module (Standard)

GPS + Bluetooth module  
[Order Code: WL-100SR]

#### Other Options

CAN interface, EEPROM, USB interface, extra RS232 serial port(RJ connector), Buzzer, 2 user switches

#### Accessories

GPS Active antenna(SMA), base plate, DIN base, 12V Power Supply, interface cables

\* Please visit our website [www.watchlinkgsm.com](http://www.watchlinkgsm.com) for more information on products, accessories & applications

### WatchLink GSM

The Stables, Huntsfield, Dooradoyle, Limerick, Ireland

*Tel* : +353-61-228562  
*E-mail* : [sales@watchlinkgsm.com](mailto:sales@watchlinkgsm.com)  
*Web* : [www.watchlinkgsm.com](http://www.watchlinkgsm.com)