

# GPS1001

## GPSBLDR2 - OpenSource GPS Receiver

*Introducing the GPS1001 GPSBLDR2 - OpenSource Receiver for educational, engineering, scientific and R&D applications.*

### Key Features

- Open Source Code
- Plessey Code
- 12 Parallel Channels/WAAS Capable
- Multiple Screen Displays plus NMEA Output (OSGPS)
- Interface and Configuration Ease



### Hardware Description

GPS Creations now has the GPS1001, a revised version of the older and popular GPS1000 ISA AT board. The GPS1001 board is also hardware compatible with the Plessey GPSBLDR2 board. Now it is possible to use the GPS1001 board for running the Open Source GPS code or the older Plessey code. The GPS1001 board is half the size of the older GPSBLDR2 board but contains the same functionality of the original hardware.

The GPS1000 board uses a fixed bus address of 300 hex. However, the GPS1001 has on-board switch settings for selecting a bus address over the range of 200 to 3E0 hex. This feature also permits using more than one board in a system.

The GPS1001 uses the same plug-in RF/Correlator sub-assembly as the GPS1000. The RF front-end uses a Zarlink GP2015 and the correlator is a Zarlink GP2021.

### Innovative Features

The GPS1001 can be used to evaluate code changes in either Open Source GPS, the Plessey code or a custom version of code. Log files of actual real-time 50 b.pb.s. data information transmitted by the GPS satellites are available for examination and further analysis. It is easy to see how the satellites are synchronized together as the individual pages and sub-frames are decoded. One can examine, even modify the frequency and C/A code tracking loops!

### OpenSource Software

The GPS1001 Receiver is supplied with GPS Open Source code. The software displays all 12 satellite channels, PRN numbers, reception status, lat/lon/ele, sub-frame number, carrier phase information, etc. In addition, the Borland C++ compiler is included to allow one to make modifications as desired.

### Plessey Code

The Plessey code is not open source and therefore requires a license agreement for distribution. Contact GPS Creations for additional information.

### Applications

The GPS1001 Open Source Receiver is ideal for a wide range of GPS applications including:

- Educational
- Engineering
- Scientific
- Research & Development



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The GPS1001 Receiver board features a plug-in RF section called the GPSRF board (part number GPS500 - available separately to those who have purchased a GPS1000, GPS1005 or other designs using the GPSRF plug-in board). This smaller board contains two IC's - a RF chip and a GPS correlator chip. The GPSRF board has been designed to adapt to several different host board configurations. The GPSRF board is capable of being interfaced to single board computers (SBC's) or custom host processor boards. Using the GPS1001 as an evaluation system will help the user gain a greater knowledge and familiarity with GPS receiver design and become better equipped to utilize the GPSRF board in varied applications.

What do you get? The GPS1001 GPS Receiver board is supplied complete with the hardware and open source code that make all the above possible (no kits or circuit boards to assemble), The RF section of the receiver is integrated into a ISA AT bus card that installs in a PC. The PC runs the object code that is generated with the Borland C++ compiler included in the package. The CD includes a manual on C++ plus various examples of source code. All this is available at a fraction of the cost of most other GPS educational packages.

### STANDARD FEATURES

- PC based solution (Requires X486 or later, 100MHz)
- OpenSource code or Plessey code
- 12 parallel channels
- L1 band (1575.42MHz) operation
- C/A code (1.023MHz chip rate)
- Two serial ports implemented in hardware (not active in current version of OpenSource code)

### PHYSICAL CHARACTERISTICS

<b>Size:</b>	174.6 x 106.7mm (PCI Card) (6.875 x 4.2 in.)
<b>Weight:</b>	198g (7 oz.)
<b>Power Consumption:</b>	250mA max @ 5 volts
<b>Operating Temperature:</b>	0° to 55° C

### TECHNICAL SPECIFICATIONS

- RF Sensitivity: -135dBm for tracking
- TTFF: <30 sec hot start (with current almanac, ephemeris, time and position)  
<60 sec warm start (with current almanac, time and position)  
<15m cold start (with current time and position)
- Accuracy:  
Position: 25m 2dRMS without S/A  
Timing: 1pps<500 Nanoseconds (1 Sigma) of GPS
- Antenna connector: SMA female (on the ISA Card)
- GPSRF plug-in board (can be used on future upgrades)  
Consists of Zarlink GP2015 RF and GP2021 correlator IC's
- Warranty: One year parts and labor FOB Germantown, TN  
(Condition must be as original and unmodified)

### ORDERING INFORMATION

<b>ISA AT bus Open Source Receiver</b>	<b>Part Number - GPS1001</b>
<b>GPS Antenna Kit</b>	<b>Part Number - GPS1010</b>

Visit us on the web at [gpscreations.com](http://gpscreations.com) for more information



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