GPS1201
A GPL (General Public License) GPS Receiver

Introducing the GPS1201 Receiver for educational, engineering, scientific and R&D applications.

Innovative Features
The all new GPS1201 is a commercial GPS receiver board which can be programmed using “Open Source” code under the GNU General Public License for educational purposes - see: http://www.gnu.org/licenses/ for more information.

The GPS1201 receiver is designed to be installed inside a desktop PC. The board communicates with the PC using the standard PCI bus and appears as standard serial I/O ports.

The GPS1201 is designed to work with either a Windows or Linux operating system and comes with the “RedBoot” loader and mini OS already installed in flash memory.

Hardware
The GPS receiver hardware is based on a Novatel SuperStar II board which has been modified with additional RAM memory for larger GPL-GPS program storage space. The GPS correlator and ARM microprocessor are combined into one IC, a GP4020 made by Zarlink Semiconductor. The GPS receiver is a plug-in assembly attached to the GPS1201 PCI board.

The GPS1201 PCI bus interface uses a Netmos 9835 Integrated Circuit to communicate with the PC. The data from the GPS receiver is made available internal to the PC just the same as if it were a standard serial I/O port (factory set to Com Ports 3 and 4 but this can be changed if needed). The GPS1201 includes an on/off switch on the rear bracket for disabling the GPS receiver, if needed, as well as a momentary reset switch to reboot the GPS receiver independently from the computer. All communications and timing signals to/from the GPS receiver is by way of the PCI bus.

Software
The GPS1201 Receiver is supplied with a working version of GPL-GPS software for ease of initial setup. The software processes all 12 satellite channels simultaneously. The sample program provided with the board shows things like pseudorange information, C/A code, sub-frame data, satellite position, tracking as well as diagnostic information.

Applications
The GPS1201 Receiver is ideal for a wide range of GPS applications including:

- Educational
- Engineering
- Scientific
- Research & Development
- Testing & Manufacturing
**GPS1201**

**12 Channel OpenSource GPL-GPS Receiver**

The picture to the left shows the position solution (LLH) screen which is one of eight different screens in the sample GPL-GPS software included with the GPS1201. The source code for each screen is also supplied making it very easy to examine to see how it works and/or modify to meet specific functions. The screens, keyboard selectable, used in the sample code are as follows:

D=Debug Information
E=Ephemeris Information
L=Logging Information
M=GPS Satellite Message Information
T=Tracking Information
P=Position Information (LLH)
R=PseudoRange Information
S=Stop/Start Screen Display

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**STANDARD FEATURES**

- PC based solution (PCI bus driver requires Windows 98 or later)
- GPS firmware fully Open Source
- 12 parallel channels
- L1 band (1575.42MHz) operation
- C/A code (1.023MHz chip rate)
- 1PPS output synchronized to GPS
- GPS receiver based on original Plessey Orion design
- Gold contact pins on PCI board

**PHYSICAL CHARACTERISTICS**

- Size: 120 x 101mm (PCI Card)
  (4.725 x 3.95 in.)
- Weight: 114g (4 oz.)
- Power Consumption: 200mA max @ 5 volts
- Operating Temperature: -20° to 75° C

**TECHNICAL SPECIFICATIONS**

- RF Sensitivity: -154 dBm for tracking
- TTFF: <10 sec hot start (with current almanac, ephemeris, time and position)
- <2 min. cold start (with no information)
- Accuracy:
  - Position: 10m 2dRMS without S/A
  - Timing: 1pps < 1 Microsecond (1 Sigma) of GPS
- Antenna connector: SMA female (on the PCI Card Bracket)
- Current limiting (50 mA) voltage feed to GPS antenna (+5 volt)
- Warranty: One year parts and labor FOB GPS Creations factory
  (Condition must be as original and unmodified)

**ORDERING INFORMATION**

GPL-GPS OpenSource GPS Receiver - Part Number - GPS1201

OPTIONS:

GPS Antenna Kit (for use with the GPS1201) - GPS1010

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