

GPS1201

A GPL (General Public License) GPS Receiver

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

Key Features

- A General Public License GPS Receiver
- For installation inside a desktop PC
- 12 Parallel L1 Channels
- Windows or Linux operating system
- Interface and Configuration Ease

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 desk-top 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 re-boot 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

```
Time = 2008/1/19 2:52:0.449 (state:2)
ECEF = (X:2.437306e+04 Y:-5.224574e+06 Z:3.646447e+06) tb:4.220e-02
LLH = (Lat:35.09332 Lon:-89.73271 Hgt:182.44)
State: positioning = 1, last position valid = 1, busy = 1

Ch: PN C Pr V Ep V Pseudorange Elev Azim
0: 22 L 1 1 1 3.306172e+07 44.8 83.4
1: 14 L 1 1 1 3.358065e+07 71.2 55.9
2: 7 A 0 0 0
3: 19 A 0 0 0
4: 23 A 0 0 0
5: 1 L 1 1 1 3.432214e+07 73.8 216.0
6: 13 C 0 0 0
7: 21 A 0 0 1
8: 32 L 1 0
9: 18 L 1 1 1 3.488372e+07 6.7 92.6
10: 11 A 0 0 0
11: 20 A 0 0 0
```

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

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)

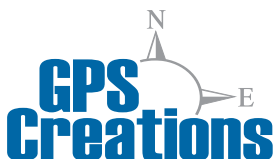
ORDERING INFORMATION

GPL-GPS OpenSource GPS Receiver - Part Number - GPS1201

OPTIONS:

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

Visit us on the web at www.gpscreations.com for more information on all our products



GPS Creations
P.O. Box 381272
Germantown, TN 38183
Tel: 949-547-0608
www.gpscreations.com

GPS Creations follows a policy of continuous product improvement; specifications and descriptions are therefore subject to change without notice. Please contact GPS Creations for the latest product information. Performance characteristics are subject to GPS system variables, US DOD operational degradation, ionospheric conditions, satellite geometry, signal multipath and assumes S/A is turned off.

© 2008 GPS Creations. All specifications subject to change without notice. All product and brand names are trademarks or registered trademarks of their respective owners.