

GR-601, u-blox 6

Ultra-High Performance

GPS Mouse Receiver



Overview

GR-601 is an easy-to-use, ultra-high performance, low power, industrial grade GPS receiver. The built-in u-blox 6 chip and our experienced design provide fast acquisitions and excellent tracking performance. It supports either USB or TTL/RS232-based mini-DIN interface.

Applications

- High-precision PPS time service
- Automatic vehicle location
- Vehicle navigation device
- Fleet management

Features

- Based on u-blox 6 low power single chip
- High performance: -161dBm⁺ tracking sensitivity
- SBAS (WAAS/EGNOS/MSAS) support
- AGPS support
- Backup battery support for faster position fix
- LED for position fix indication
- **IPX7** Waterproof
- Built-in magnet
- Compatible with GPSD PPS support
- Windows **location sensor** support
- Industrial operating temperature range: **-40 ~ 85°C**

Technical Specifications

Receiver Performance Data⁺

| | |
|------------------------------|---|
| Receiver Type | 50-channel, L1 frequency, C/A code |
| Horizontal Position Accuracy | < 2.5m (Autonomous) < 2.0m (WAAS) (CEP, 50% 24hr static, -130dBm) |
| Velocity Accuracy | <0.1 m/s (speed) <0.5° (heading) (50%@30m/s) |
| PPS Signal Accuracy | 30ns (RMS); <60ns (99%) 0.5ms for PPS over USB |
| Time To First Fix | Autonomous Hot start <1sec Warm start <32sec Cold start <32sec (50% -130dBm) |
| Sensitivity (Autonomous) | -147dBm (acquisition) -161dBm (tracking) |
| Max. Update Rate | 5Hz |
| Max. Altitude | 50,000 m |
| Max. Velocity | <1,852 km/hr |
| Protocol Support | NMEA 0183 v2.3(compatible to 3.0) UART: 9600 bps N,8,1; GGA, GLL, GSA, GSV, RMC, VTG, TXT |
| SBAS Support | WAAS, EGNOS, MSAS |

Electrical Data

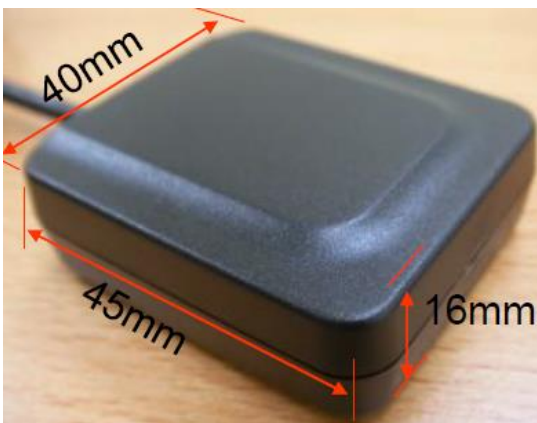
| | |
|-------------------|---|
| Power Supply | 3.3 ~5.5 VDC (GR-601R) 5 VDC (GR-601U) |
| Power Consumption | 56mA/average tracking |

Environmental Data

| | |
|-----------------------|----------------------------------|
| Operating temperature | -40 ~ 85°C (battery: -20 ~ 60°C) |
| Storage temperature | -40 ~ 85°C |
| Operating humidity | 5% ~ 95% non-condensing |
| Waterproof | IPX7 |

Other Data

| | |
|--------------|---|
| Cable Length | 1.5m for GR-601U 3m for GR-601R <1m for GR-601T |
| Dimension | 40 x 45 x 16 (mm) |



§: RS232 signal level for longer distance transmission

The GR-601W makes PPS events visible to a compatible USB host system; they appear as DCD state changes to the PL2303 driver. Time precision will be limited by the USB polling interval, usually 0.5 millisecond

Ordering Information

GR-601X

| | |
|---|--|
| T | TTL; mini-din 6-pin male connector |
| R | RS232; mini-din 6-pin male connector |
| U | u-blox USB; type A connector |
| W | Prolific USB, PPS connected to DCD; type A connector |

*This document is subject to change without notice.

Interfaces

| | GR-601T | GR-601R | GR-601U/W |
|------------|----------------------------------|----------------------------------|-------------------------|
| | | | |
| | | | |
| Pin | Mini-Din 6-pin PS/2 Male Plug | Mini-Din 6-pin PS/2 Male Plug | USB A type Male Plug |
| 1 | GND | GND | VDD 5V |
| 2 | VCC | VCC | D- |
| 3 | TXD-TTL | TX-RS232 | D+ |
| 4 | RXD-TTL | RX-RS232 | GND |
| 5 | PPS | §PPS | - |
| 6 | PWR_CTRL | PWR_CTRL | - |

NaviSys Technology Corp.

Tel : +886-3-5632598

Sales contact: sales@navisys.com.tw

Address: 2F, No.56, Park Ave. II, Science-Based Industrial Park, Hsinchu 300, Taiwan (R.O.C.)

<http://www.navisys.com.tw/>

Fax: +886-3-5632597

Technical support: service@navisys.com.tw