

GR-A013, SiRFstarV

Ultra-High Performance

GNSS Mouse Receiver



Overview

GR-A013 is an easy to use, ultra-high performance, low power, **industrial grade** mouse type GNSS receiver. Based on our experienced design and the built-in SiRFstarV chip, it provides fast acquisitions and excellent tracking performance. This IPX7 device supports USB/TTL/RS232-based mini-DIN interface.

Applications

- Automatic vehicle location
- Vehicle navigation device
- Fleet management
- Driving recorders

Features

- Based on SiRF's CSRG05e low power single chip
- High performance: -165dBm tracking sensitivity
- Low power: 33 mA at continuous tracking, TTL
- A-GNSS ready
- SBAS (WAAS, EGNOS, MSAS, GAGAN) support
- SiRFInstantFix™ extended ephemeris aiding
- Backup battery support for faster position fix
- Blue LED for position fix indication
- **IPX7** Waterproof
- Built-in magnet
- Industrial operating temperature range: **-40 ~ 85°C**

Technical Specifications

Receiver Performance Data*

| | |
|------------------------------|--|
| Receiver Type | 52 channels, GPS/QZSS: L1 1575.42MHz GLONASS L1OF 1598.0625 ~ 1605.375 MHz |
| Horizontal Position Accuracy | < 2.5m (Autonomous) (50% 24hr static, -130dBm) |
| Velocity Accuracy | <0.01 m/s (speed) <0.01° (heading) (50%@30m/s) |
| Time To First Fix | Autonomous Hot start <1sec Warm start <30sec Cold start <35sec (50% -130dBm) |
| Sensitivity (Autonomous) | Acquisition: -146dBm (GPS) Tracking: -165dBm (GPS), -163dBm(GLONASS) Navigation: -163dBm (GPS), -159dBm(GLONASS) |
| Update Rate | Default: 1Hz; Max. 5Hz |
| Max. Altitude | <18,000 m |
| Max. Velocity | <1,852 km/hr |
| Protocol Support | NMEA V4.00: 4800/9600/38400bps OSP: 115200bps N,8,1; GGA, GSA, GSV, RMC, VTG |
| SBAS Support | WAAS, EGNOS, MSAS, GAGAN |
| Dynamics | <4g |

* Note. According to IC Spec

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

Electrical Data







| | |
|---|---|
| Power Supply | 3.3 ~5.5 VDC (GR-A013R) 5 VDC (GR-A013U) |
| Power Consumption (average tracking) | 33 mA (GR-A013T) 35 mA (GR-A013R) 48 mA (GR-A013U) |
| TTL I/O $V_{IO} = 3.3V$ | $V_{IH}: 2.31 \sim 3.6V$ $V_{IL}: 0 \sim 0.4V$ $V_{OH}: \geq 2.48V,$ $V_{OL}: \leq 0.4V$ |

Environmental Data

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

Other Data

| | |
|--------------|--|
| Cable Length | 1.5m for GR-A013U 3m for GR-A013R <1m for GR-A013T |
| Dimension | 40 x 45 x 16 (mm) |

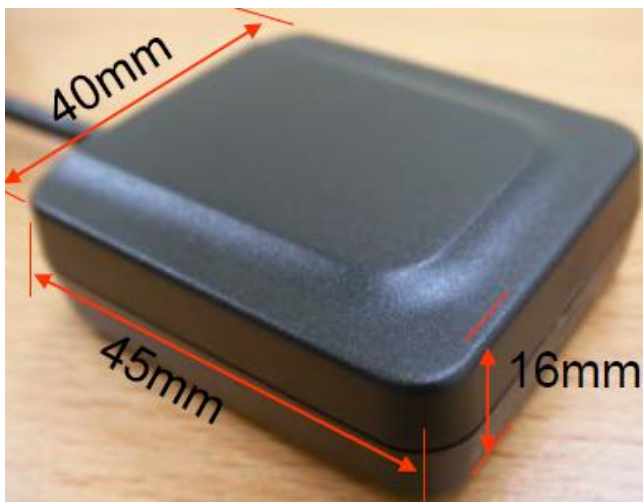
| | GR-A013T | GR-A013R | GR-A013U |
|------------|--|---|---|
| |  |  |  |
| |  |  |  |
| Pin | Mini-Din 6-pin PS/2 Male Plug | Mini-Din 6-pin PS/2 Male Plug | USB A type Male Plug |
| 1 | GND | GND | VDD 5V |
| 2 | VCC | VCC | D- |
| 3 | TXD-TTL | TXD-TTL | D+ |
| 4 | NC | RX-RS232 | GND |
| 5 | NC | TX-RS232 | |
| 6 | RXD-TTL | RXD-TTL | |

Ordering Information

GR-A013X

| | |
|---|--------------------------------------|
| T | TTL; mini-din 6-pin male connector |
| R | RS232; mini-din 6-pin male connector |
| U | USB; type A connector |

*This document is subject to change without notice.



Interfaces

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