GR-A013, SiRFstarV Ultra-High Performance GNSS Mouse Receiver

RoHS Compliant





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
- High air balloon

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
- Flies up to 99.99km for high air version.
- Electrical interface support: USB, RS232, TTL
- Connector: PS2, Microfit, RJ45, DB9, USB etc.
- Cable length: 0.1m ~ 15m.
- Power supply options: 12V/24V
- Backup battery support for faster position fix
- Blue LED for position fix indication
- **IPX7** Waterproof
- Built-in magnet
- Industrial operating temperature range: **-40 ~ 85℃**

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 Hot start Warm start Cold start	Autonomous <1sec <30sec <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 (normal version) 99.99 km (high air version)
Max. Velocity	<1,852 km/hr
Protocol Support	NMEA V4.00: 4800/9600/38400bps

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	OSP: 115200bps N,8,1; GGA, GSA, GSV, RMC, VTG
SBAS Support	WAAS, EGNOS, MSAS,GAGAN
Dynamics	<4g

+ Note. According to IC Spec

Electrical Data

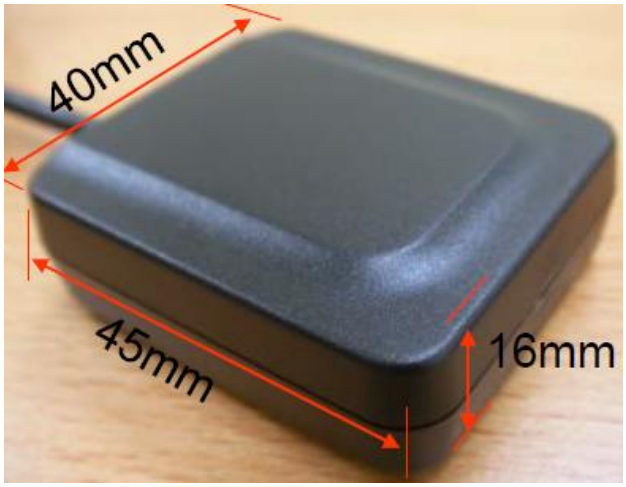
Power Supply	3.3 ~5.5 VDC (GR-A013R) 5 VDC (GR-A013U)
Power Consumption (average tracking)	33 mA (GR-A013T) 35 mA (GR-A013R) 48 mA (GR-A013U)
TTL I/O V_{IO} = 3.3V	V_{IH}: 2.31 ~ 3.6V V_{IL}: 0~0.4V V_{OH}: ≧ 2.48V, V_{OL}: ≦ 0.4V

Environmental Data

Operating temperature Storage temperature	-40 ~ 85℃ (battery: -20 ~ 60℃) -40 ~ 60℃
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)



Interfaces

	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, X=T, R, U etc.

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

* MOQ-based customizations are welcome.

* For non-standard demand (12V/24V power supply, connector, cable length, baud rate etc.), please specify them when ordering.

*This document is subject to change without notice.

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