GR-401, SiRFstarIV

Ultra-High Performance

GPS Mouse Receiver

RoHS Compliant





Overview

GR-401 is an easy to use, ultra-high performance, low power, **industrial grade** mouse type GPS receiver. Based on our experienced design and the built-in SiRFstarIV 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 GSD4e low power single chip
- High performance: -163dBm tracking sensitivity
- Low power: 30 mA at continuous tracking, TTL
- A-GPS ready, local ephemeris prediction
- SBAS (WAAS, EGNOS, MSAS, GAGAN) support
- Flies up to 80km 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
- 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**℃

Technical Specifications

Receiver Performance Data+

Receiver Type	48 channels, GPS/QZSS: L1 1575.42MHz
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 <35sec <35sec (50% -130dBm)
Sensitivity (Autonomous)	-147dBm (acquisition) -163dBm (tracking)
Update Rate	Default: 1Hz; Max. 5Hz
Max. Altitude	<18,000 m (normal version) 80 km (high air version)
Max. Velocity	<1,852 km/hr or 1,000 knots
Protocol Support	NMEA v3.00 (default), OSP 4800 (defaut), 9600, 19200, 38400, 57600 bps N,8,1; GGA, GSA, GSV, RMC (default) GLL, VTG, ZDA (option)
SBAS Support	WAAS, EGNOS, MSAS,GAGAN

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Dynamics	<4g

+ **Note. According to IC Spec**

Electrical Data

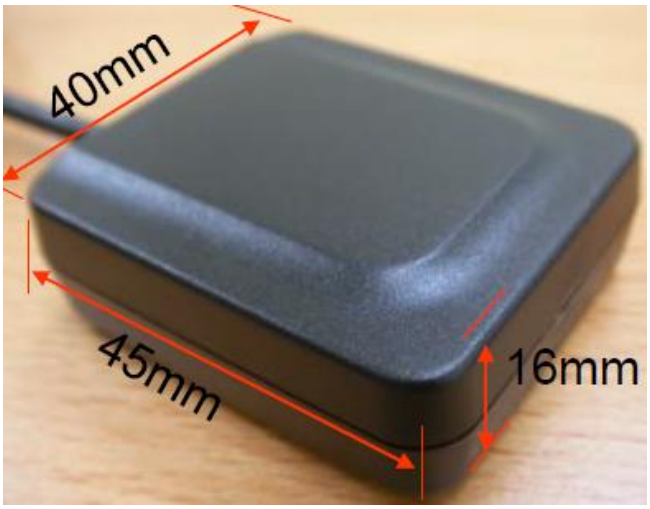
Power Supply	3.3 ~ 5.5 VDC (GR-401R) 5 VDC (GR-401U)
Power Consumption (average tracking)	30 mA (GR-401T) 32 mA (GR-401R) 45 mA (GR-401U)
TTL I/O	V_{IH}: ≧ 2.0V, V_{IL}: ≦ 0.8V V_{OH} ≧ 2.4V, V_{OL} ≦ 0.4V

Environmental Data

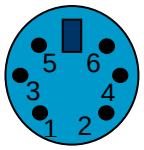
Operating temperature Storage temperature	-40 ~ 85℃ (battery: -20 ~ 60℃) -40 ~ 60℃
Operating humidity	5% ~ 95% non-condensing
Waterproof	IPX7

Other Data

Cable Length	1.5m for GR-401U 3m for GR-401R <1m for GR-401T
Dimension	40 x 45 x 16 (mm)



Interfaces

	GR-401T	GR-401R	GR-401U
			
			
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-401X, 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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