GR-5013, MT3333

Ultra-High Performance,

GNSS Mouse Receiver



Overview

GR-5013 is an easy to use, ultra-high performance, low power, industrial grade GPS receiver. It supports multiple satellite positioning systems – **GPS, GLONASS**, QZSS and SBAS.

The IP67 waterproof feature makes this cable receiver an ideal solution for outdoor applications.

Our experienced design fully exhibits the excellent performance of MT3333 chip. It works in GPS signal difficult environment, provides fast acquisitions and excellent tracking performance.

Applications

- High-precision clock/timing
- Automatic vehicle location
- Vehicle navigation device
- Timing (GPS clock, FEMTO cell, traffic lights etc)
- DGPS (RTCM SC-104)*

Features

- High performance: -165dBm+ tracking sensitivity
- Low power: 29mA at continuous tracking (RS232)
- GPS/QZSS/SBAS support
- Supported SBAS: WAAS/EGNOS/MSAS/GAGAN
- 12 multi-tone active interference cancellers
- Indoor/outdoor multi-path detection & compensation
- Up to 10Hz update rate*
- 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
- LED for position fix indication
- **IPX7** Waterproof
- Built-in magnet
- Industrial operating temperature range: **-40 ~ 85**℃

Notes

* Some features need commands programmed by customers

Technical Specifications

Receiver Performance Data+

Receiver Type	GNSS Chipset: MT3333 GLONASS:1598.0625~1605.375MHz Channels: Tracking: 33 /acquisition: 99
Horizontal Position Accuracy	< 3.0m (Autonomous) < 2.5m (WAAS) (CEP, 50% 24hr static, -130dBm)
Velocity Accuracy	< 0.1 m/s (autonomous) < 0.05 m/s (SBAS) (50%@30m/s)
PPS Signal Accuracy	±10ns RMS (1PPS output)
Time To First Fix Hot start	Autonomous <1sec <24sec

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Warm start Cold start	<28sec (50% -130dBm)
Sensitivity (Autonomous)	-148dBm (acquisition) -165dBm (tracking)
Update Rate	Default 1Hz, max. 10Hz,
Max. Altitude	18,000 m
Max. Velocity	<1,852 km/hr
Protocol Support	NMEA 0183 V4.1 UART:4800/9600(default)/38400/115200 bps N,8,1; GGA, GLL, GSA, GSV, RMC, VTG
SBAS Support	WAAS, EGNOS, MSAS, GAGAN

Electrical Data

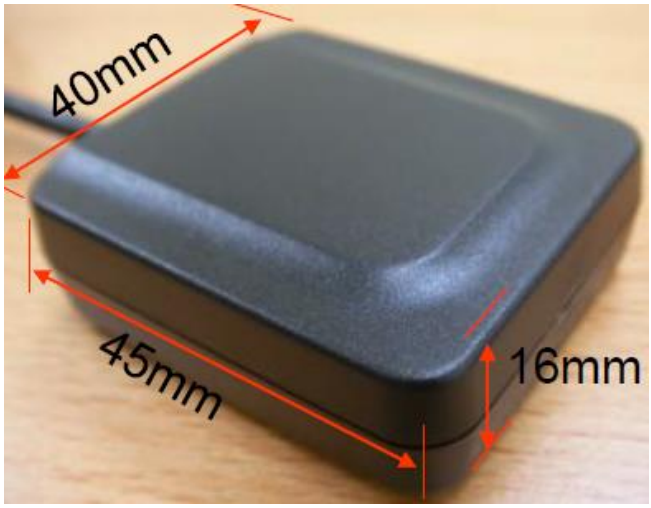
Power Supply	3.3 ~5.5 VDC
Power Consumption	29 mA/average tracking

Environmental Data

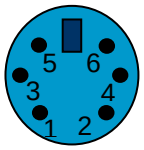
Operating temperature Storage temperature	-40 ~ 85℃ (battery: -20 ~ 60℃) -40 ~ 85℃(battery: -20 ~ 60℃)
Operating humidity	5% ~ 95% non-condensing
Waterproof	IPX7

Other Data

Cable Length	1.5m for GR-5013U 3m for GR-5013R <1m for GR-5013T
Dimension	40 x 45 x 16 (mm)



Interfaces

	GR-5013T	GR-5013R	GR-5013U
			
			
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	NC	D+
4	NC	RX-RS232	GND
5	NC	TX-RS232	
6	RXD-TTL	NC	

RTCM models:

Pin	C	D	E
1	GND	GND	GND
2	VCC	VCC	VCC
3	1PPS	TX1	TXD1
4	RXD0	RX0	RXD0
5	TXD0	TX0	TXD0
6	RXD1	RX1	RXD1

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Ordering Information

GR-5013X, 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

*H/W (12V/24 power supply,, connector, cable length etc.) or S/W (baud rate, sentence etc.) customization are welcome. Please specify them when ordering.

*This document is subject to change without notice.

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