

## 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<sup>+</sup> 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\*
- Backup battery support for faster position fix
- LED for position fix indication



RoHS  
Compliant



- **IPX7** Waterproof
- Built-in magnet
- Industrial operating temperature range: **-40 ~ 85°C**

Notes

\* Some features need commands programmed by customers

### Technical Specifications

#### Receiver Performance Data<sup>+</sup>

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	Autonomous <1sec Hot start <24sec Warm start <28sec Cold start (50% -130dBm)
Sensitivity (Autonomous)	-148dBm (acquisition) -165dBm (tracking)

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Update Rate	Default 1Hz, max. 10Hz,
Max. Altitude	18,000 m
Max. Velocity	<1,852 km/hr
Protocol Support	NMEA 0183 v3.01 UART:4800/9600(default)/38400/115200 bps N,8,1; GGA, GLL, GSA, GSV, RMC, VTG
SBAS Support	WAAS, EGNOS, MSAS, GAGAN

**Electrical Data**

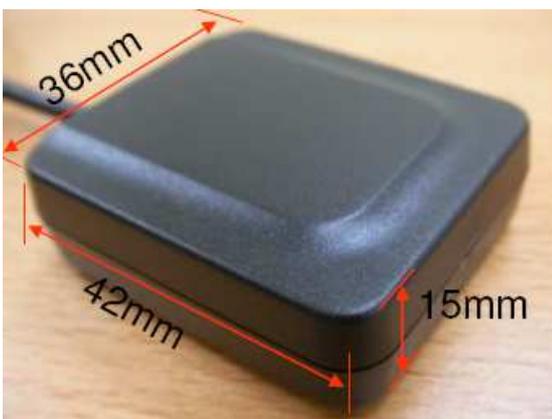
Power Supply	3.3 ~5.5 VDC
Power Consumption	29 mA/average tracking

**Environmental Data**

Operating temperature	-40 ~ 85°C (battery: -20 ~ 60°C)
Storage temperature	-40 ~ 85°C (battery: -20 ~ 60°C)
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	36 x 42 x 15 (mm)



**Interfaces**

	GR-5013T	GR-5013R	GR-5013U
<b>Pin</b>	Mini-Din 6-pin PS/2 Male Plug	Mini-Din 6-pin PS/2 Male Plug	USB A type Male Plug
<b>1</b>	GND	GND	VDD 5V
<b>2</b>	VCC	VCC	D-
<b>3</b>	TXD-TTL	TXD-TTL	D+
<b>4</b>	NC	RX-RS232	GND
<b>5</b>	NC	TX-RS232	
<b>6</b>	RXD-TTL	RXD-TTL	

**Ordering Information**

**GR-5013X**

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

\*H/W (connector, cable length etc.) or S/W (baud rate, sentence etc.) customization are welcome.

\*This document is subject to change without notice.