

# GR-111, GLONASS/GPS

## Ultra-High Performance

### Smart Antenna



RoHS  
Compliant



#### Overview

GR-111 is an easy to use, ultra-high performance, industrial grade GLONASS/GPS smart antenna. Our experienced design provides fast acquisitions and excellent tracking performance. Our flexible customization support of various connectors, cable length, power levels, and software output provide one fast and reliable adoption experience.

#### Applications

- Automatic vehicle location
- Vehicle navigation device
- Fleet management

#### Features

- Support both GLONASS and GPS
- UART TTL/RS232/USB support
- Backup battery or external backup power supply for faster position fix
- Precise time pulse option
- Power control support
- High performance: -159dBm tracking sensitivity
- LED for position fix indication
- IPX7 Waterproof
- Built-in magnet
- RoHS compliant
- Industrial operating temperature range: -40 ~ 85°C

#### Technical Specifications

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

Receiver Type	12-channel, GLONASS/GPS L1 frequency, C/A code
Horizontal Position Accuracy	2.5m CEP (50% 24hr static, -130dBm)
Velocity Accuracy	0.1 m/s
Time Accuracy	100ns (3D fix)
Time To First Fix	Autonomous
Hot start	<1sec
Warm start	<35sec
Cold start	<42sec (50% -130dBm)
Sensitivity (Autonomous)	-145dBm (acquisition) -159dBm (tracking)
Max. Update Rate	1Hz
Max. Altitude	<18,000 m
Max. Velocity	<1,852 km/hr
Protocol Support	NMEA v3.01 9600bps N,8,1 GPGGA, GPGSA, GPGSV, GPRMC, GPVTG
Dynamics	<4g

#### Electrical Data

Power Supply	3.3 ~5.5 VDC (GR-111R) 5 VDC (GR-111U)
Power Consumption	75mA/average tracking

#### Environmental Data

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

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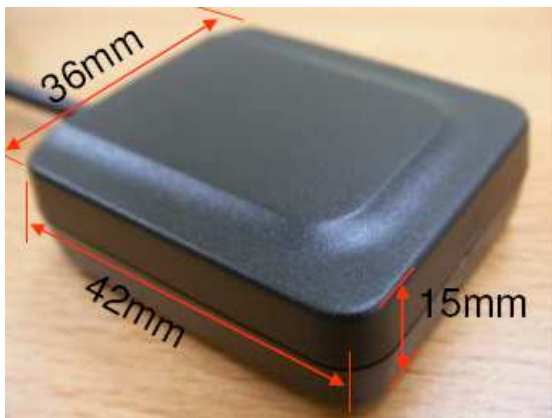
Operating humidity	5% ~ 95% non-condensing
Waterproof	IPX7

Feature \ Model	Q	R	S	T	U	V
Battery	-	Y	-	Y	Y	-
TTL	-	-	Y	Y	-	-
RS-232	Y	Y	-	-	-	-
USB	-	-	-	-	Y	Y

**Other Data**

Cable Length	1.5m for GR-111U 3m for GR-111R <1m for GR-111T
Dimension	36 x 42 x 15 (mm)

\*This document is subject to change without notice.



**Interfaces**

	GR-111T/S	GR-111R/Q	GR-111V/U
<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	TX-RS232	D+
<b>4</b>	RXD-TTL	RX-RS232	GND
<b>5</b>	TIMEPULSE/ <b>VBAT</b>	TIMEPULSE/ <b>VBAT</b>	-/ <b>VBAT</b>
<b>6</b>	PWR_CTRL	PWR_CTRL	-

**Ordering Information**

GR-111X

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