

# UR GLONASS REAL TIME GLONASS TRACKER

## INSTRUCTION MANUAL

### GENERAL

UR GLONASS Real Time GLONASS Tracker (hereinafter referred to as UR GLONASS) is used as a component of ORMA Vehicle Location / Tracking System. The device is used for:

- ✓ Receiving and processing navigation data from GLONASS and GPS (NAVSTAR) satellites;
- ✓ Reading connected vehicle sensors;
- ✓ Storing and transmitting the data to ORMA server in real time mode. The data are transmitted automatically either permanently, in the mode of vehicle tracking or in the mode of connecting the device to a GSM network periodically;
- ✓ Receiving car alarms from a driver;
- ✓ Stopping the vehicle engine upon receiving a relevant remote command from a Client computer.

UR GLONASS is to be installed on a motor vehicle (truck, lorry, and so on) and is to be powered by the vehicle battery.

The device is supplied with external GLONASS and GSM aerials and can be mounted secretly.

A fuel level sensor requiring either 12 V dc or 24 V dc can be connected to the UR GLONASS.

Power being applied to the UR GLONASS, this one finds GLONASS and GPS satellites to determine its coordinates and current time and reads installed sensors connected to it. If GSM is not available, the received data are stored in the internal flash memory of UR GLONASS. Otherwise, UR GLONASS transmits received data in GPRS packets to ORMA server. UR GLONASS operates only as a part of an ORMA system.

UR GLONASS is designed for round-the-clock operating.

## SPECIFICATIONS

<i>Input Voltage</i>	10.2 V dc to 28 V dc
<i>Consumed Current</i>	160 mA max (without fuel sensor)
<i>Pre-operation Time:</i>	
<i>Hot Start</i>	1 s
<i>Warm Start</i>	32 s
<i>Cold Start</i>	34 s
<i>Locate Precision</i>	2 meters max
<i>GPS/GLONASS Receiver Frequency</i>	L1
<i>GPS Receiver Sensitivity</i>	– 161 dBm
<i>Frequency</i>	GSM900 (Power 2 W)
<i>Entry Saving Interval</i>	1 s to 65536 s
<i>Memory Buffer Capacity</i>	14 days for saving 1 entry per minute
<i>Connectable Devices:</i>	
<i>Dry contact or open collector sensors</i>	2 sensors
<i>Analogue sensors</i>	3 sensor
<i>A fuel level sensor</i>	
<i>A car alarm</i>	
<i>An ignition lock relay</i>	
<i>Operating Temperatures</i>	From –40°C to +55°C
<i>Relative Humidity</i>	Up to 95% at +40°C
<i>Transportation and Storage Temperature</i>	From –50°C to +55°C
<i>Overall Dimensions</i>	135 mm × 48 mm × 18 mm
<i>Weight</i>	0.15 kg max

## STANDARD DELIVERY

UR GLONASS Real Time GLONASS Tracker	– 1
Instruction Manual	– 1
Fuse Holder K23411	– 1
Fuse 0.25 A	– 1
Connector	– 1
Aerial ANT GPS/GLONASS SG35C	– 1
Aerial GPS ANT GSM IG-0020-03-1	– 1
Double-sided adhesive tape AVIORA	– 1
Package	– 1

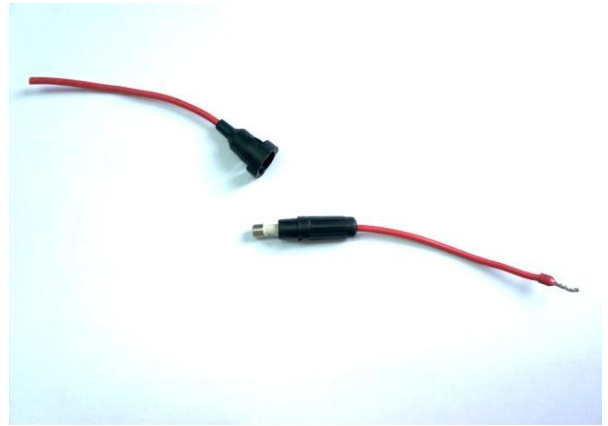


Figure 1. Fuse Holder with Fuse

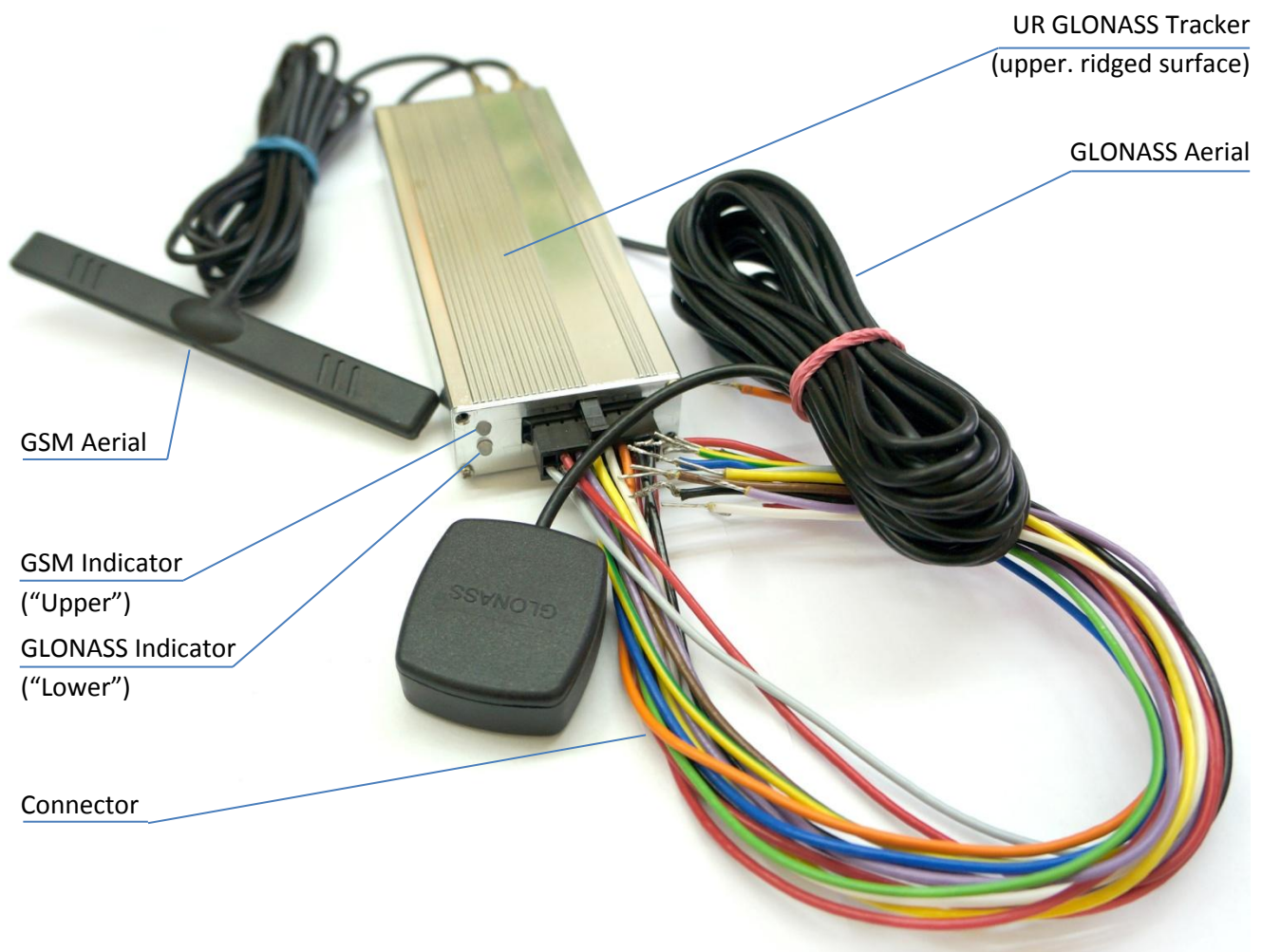


Figure 2. UR GLONASS Real Time GLONASS Tracker with Connector and Aerials

## OPERATING INSTRUCTIONS

### EXTERNAL CONNECTIONS

Table 1 represents functionality of UR GLONASS outputs.

Table 1

Terminal	Wire Color	Destination
1	Red	Tracker Power Input
2	Red	Fuel Level Sensor Power Input
3	Brown	Analog Sensor 2
4	Blue	Ignition
5	Green	Digital Sensor 1
6	Yellow	Lock Relay
7	Purple	Fuel Level Sensor Input
8	Grey	Fuel Level Sensor Output
9	Black	Earth
10	Black	Earth
11	Orange	Analog Sensor 3
12	White	Analog Sensor 1
13	Yellow and Green	Digital Sensor 2
14	Purple	Panic Button
15	Red	Relay Power Input
16	N/C	

#### Notes:

1. The device can be powered by either 12 V battery or 24 V battery.
2. The fuel level sensor requires 12 V dc or 24 V dc.
3. Input range for an analog sensor is 0 V to 5 V.
4. When the Ignition wire is in use, the device can be switched to the sleep mode.
5. Digital sensor values: *1* means being closed to earth, *0* means being open.
6. A car alarm is open when *inactive* and closed to earth in case of an *alarm*.

## INDICATION

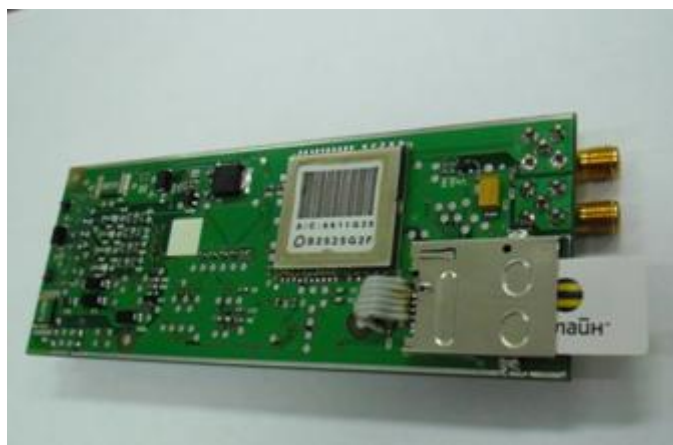
Table 2 presents light indication of the device. The “Upper” indicator is that one which is nearer to the upper, ridged surface of UR GLONASS. The “Lower” indicator is that one which is below the Upper indicator.

**Table 2**

Indicator	Color and Behavior	Condition
Lower	Red	Satellites have not yet been found
Lower	Yellow	One satellite has been found; the time has been detected
Lower	Green	Four satellites have been found and the coordinates have been detected
Upper	Flashing in green once per 10 s	Communicating data via GSM
Upper	Red	No GSM signal
Upper	Yellow	A problem with the SIM card

## BEFORE USING

**Step 1.** To be connected to ORMA server via Internet, UR GLONASS must be equipped with a GSM phone SIM card of one of cellular service provider, which needs SMS service and incoming caller ID display and GPRS function. This SIM card must be put into the special holder of the UR GLONASS (see Figure 3).



**Figure 3**

The SIM card account must have positive balance.

**WARNING!** If the SIM card is protected by a PIN code, before installing it to the card socket insert this one to any cell phone and either change the PIN code for 2403 or disable requesting for PIN code on turning the phone on. *Otherwise, after applying power and three unsuccessful attempts to initialize it, the SIM card will be blocked. If this happens, remove*

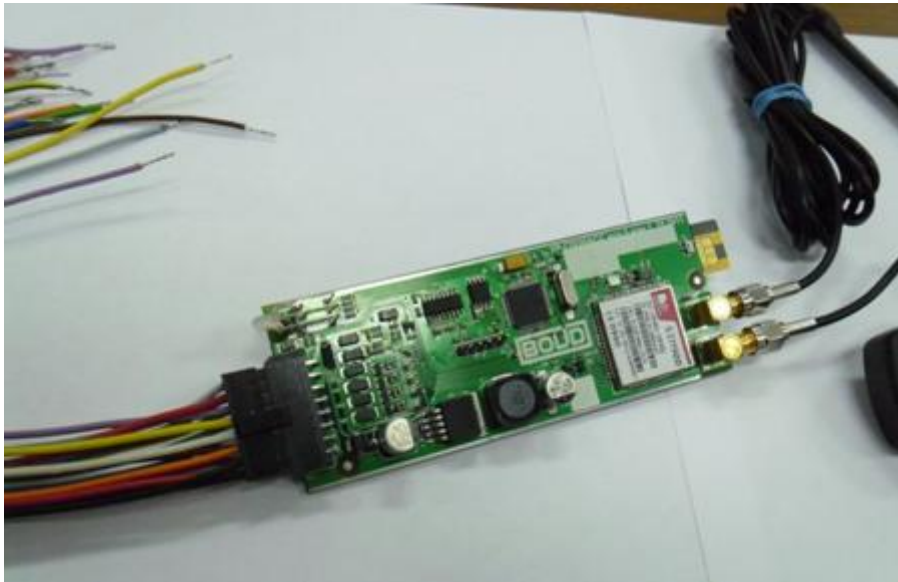
*the SIM card from UR GLONASS and put it in any cell phone, and then unblock it using its PUK code.*

**Step 2.** Connect aerials as shown in Figure 4. The terminal for connecting GLONASS aerial is closer to the edge, while the one for connecting GSM aerial is further from the edge.



**Figure 4**

**Step 3.** Attach Connector to UR GLONASS as shown in Figure 5.



**Figure 5**

**Step 4.** Apply power supply +12 V to the Connector lead 1 (red wire) connecting Connector lead 9 (black wire) to the protective earth. Connect UR GLONASS to the power supply via the Fuse Holder (see Figure 6) to avoid failures in case of short circuits in power line.



Figure 6

**Step 5.** Wait until LEDs light as follows:

- Lower LED's lighting in green means that UR GLONASS has captured four satellites;
- Upper LED's flashing in green once per 8-10 s means that GSM is available and UR GLONASS has been accessed to Internet.

### **INITIALIZATION**

To communicate data with its ORMA server, UR GLONASS must have the following information:

IP address of the server;  
Port of the server;  
APN of the cellular service provider;  
GPRS user name;  
GPRS password.

These data should be received by UR GLONASS via SMS sent from any cell phone or the site of the cellular service provider to the number of the SIM card installed into UR GLONASS. The format of the SMS should be as follows (“\_” means a blank space.):

**! \_ IP : Port \_ APN \_ GPRS name \_ GPRS password \_ !**

*WARNING: The settings should be clarified for your operator in your region.*

**WARNING!** Before sending the SMS please unset factory configuration. To do so, press the **reset button** near the SIM card socket, apply power to the device keeping the button pressed for 20 s, then release the button and turn the device power off.

When UR GLONASS receives the SMS with APN name and GPRS name / password from a cell phone, it automatically sends the settings back to this phone confirming initialization. Also, if you send the SMS «!?» from the cell phone to UR GLONASS, the tracker responds with its current settings.

If you need to change settings of UR GLONASS (for example, in case of changing GSM operator or IP address of the server), clear the current settings of the device using the reset button as described above and send new settings in a new SMS.

### **MOUNTING**

UR GLONASS is mounted secretly using the adhesive tape provided. Aerial GLONASS is mounted on the dashboard near the windscreen, and GPS aerial is mounted over the windscreen in the cabin.



# ORMA

ORMA Vehicle Location / Tracking System brings a lot of solutions for vehicle owners, tracking companies, and fleet management allowing them to improve vehicle utilization, workforce efficiency, safety and security, and customer service, whilst reducing the administrative burden on their business.

ORMA provides receiving vehicle location data from GPS satellites and reading a number of vehicle sensors, calculating vehicle speeding, MPG, idling time, vehicle weight, temperature, etc. and logging events such as vehicle stopping or door open / closed.

ORMA-3 also provides real-time vehicle location and blocking starter remotely when necessary.



## UR-02 Black Box GPS Tracker

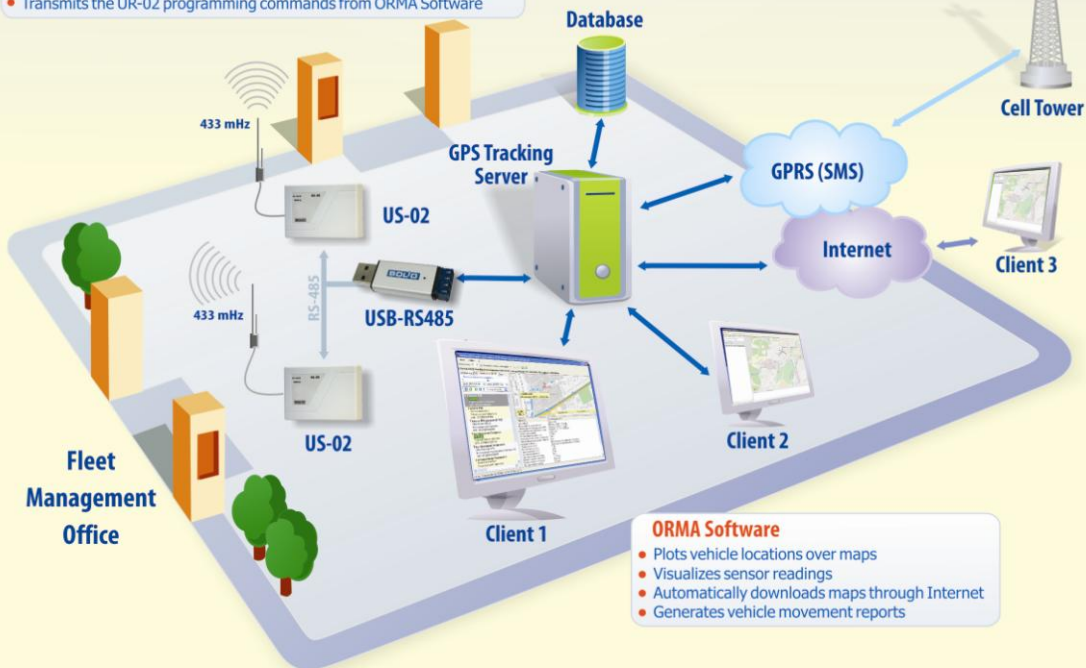
- Receives and processes GPS data from its built-in or external GPS aerial
- Reads vehicle sensors
- Stores the accumulated data in memory
- Indicates statuses of the GPS and RF communication channels
- Being located in the area covered by the US-02, transfers it all accumulated data

## US-02 Scanner

- Continuously scans received radio data; on «finding» an UR-02 with an enrolled address, captures the data collected by the UR-02 transmitting them to the GPS Server
- Transmits the UR-02 programming commands from ORMA Software

## UR-03 Real Time GPS Tracker

- Receives and processes GPS data from its built-in or external GPS aerial
- Reads vehicle sensors
- Receives car alarms
- Stores the accumulated data in memory
- Transfers data via the built-in GSM modem to the relevant GPS tracking server
- Indicates statuses of the GPS and GPRS communication channels
- Stops the vehicle's engine upon receiving a relevant remote command



## ORMA Software

- Plots vehicle locations over maps
- Visualizes sensor readings
- Automatically downloads maps through Internet
- Generates vehicle movement reports

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