Setting Galileosky Base Block Wi-Fi Tracking Devices with Retranslator Function

User Manual

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Setting Galileosky Base Block Wi-Fi Tracking Devices with Retranslator Function
(version 3 dated from June 5, 2018)

**Necessary tools, devices, materials**

To perform the work you will need:

1. Electrical tools.
2. Set of connecting wires.
3. Satellite monitoring tracking device Galileosky Base Block Wi-Fi with retranslator function (hereinafter referred to as retranslator-tracker).
4. Satellite monitoring tracking device Galileosky with support of data transmission via Wi-Fi (hereinafter referred to as sender-tracker).
5. A computer running Windows with the installed service program of configuration of Galileosky tracking devices—“Configurator”. For correct work it is required to install the version of the program 4.16.7 or higher, the latest version can be downloaded on the site https://galileosky.com/podderzhka/programmyi.html
General Information

Galileosky tracking devices determine the mobile object location, record the route as points with geographical coordinates and send the data to monitoring server for further procession and display to the traffic controller panel.

In case the tracking device is in a zone with a weak coverage of cellular communication, the monitoring data are recorded in the internal memory of the device or on the MicroSD card. The user has an additional task to unload the accumulated data to the monitoring server.

Retranslator-tracker is designed to solve the specified problem and provides data collection via Wi-Fi from the sender-tracker and the subsequent forwarding of the collected data to the monitoring server.

The following operation algorithm is assumed:

- retranslator-tracker is installed on the vehicle, which periodically detours the points with a weak coverage of cellular communication, we call it the collector-vehicle;
- Wi-Fi hotspot mode is activated on the retranslator-tracker, and we call it "mode 1 – Data collection";
- In the process of movement collector-vehicle stops near vehicles equipped with sender-trackers;
- The sender-tracker establishes communication with the retranslator-tracker and for some time performs the monitoring data sending. The data collection time depends on the size of the downloaded archive;
- At the end of the detour of the points with a weak coverage of cellular communication, GPRS-connection is established on the retranslator-tracker, or the mode of Wi-Fi hotspot turns off and the normal mode of data transmission activates, let's call it "mode 2-Data transmitting";
- retranslator-tracker automatically establishes communication with the monitoring server and performs the forwarding of the collected data.

Regardless of the set mode of data collection or forwarding, the retranslator-tracker determines its location and records its own track. The recorded track is unloaded in the monitoring software, when "mode 2-Data transmitting" is activated at the tracking device, simultaneously with the collected data transmitting.

Externally, the retranslator-tracker is no different from the sender-tracker. You can define the device support for the retranslator function in the following way:

1. Connect the tracking device to PC via Configurator;
2. Click the Device tab;
3. In the type line, hover over the tracker name;

The pop-up message displays all the information about the internal configuration of the tracking device, including the support of the device mode as an access point (Pic. 1).
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Pic. 1
Device type definition
Tracker Installation and Connection

Connection of the retranslator-tracker and all basic settings are made similarly with the standard model Galileosky Base Block Wi-Fi. The current tutorial on how to configure the tracking device can be found in our site: Support -> User Manuals -> General Information -> Connection of Galileosky Base Block Hard Wi-Fi -> Download pdf (https://galileosky.com/podderzhka/dokumentacziya.html).

ATTENTION! The collected data cannot be written to the internal memory of the retranslator-tracker. To collect data from other tracking devices, you need to install a MicroSD card in the retranslator-tracker. The MicroSD card is installed in the corresponding slot (Pic. 2).
Setting Tracking Devices to Collect and Transmit Data

To collect and transmit data, you must apply the appropriate settings for both the sender-tracker and the retranslator-tracker.

**Setting the sender-tracker:**

1. Go to the Settings - Data transmission tab, in the Wi-Fi section, enter the access point (SSID, type, password) settings that are configured in the retranslator-tracker;
2. Specify the IP address of the retranslator-tracker (192.168.1.1) and the data port in the primary server section of the Monitoring Data processing servers field.

**ATTENTION!** As the data port, you must enter the same value that is specified as the Main port of retranslator-tracker;
3. Select the data transmission protocol - Galileosky;
4. Click "Apply" button.

The settings may look in the following way (Pic. 3):

```
<table>
<thead>
<tr>
<th>Data servers</th>
<th>Primary data server</th>
<th>Secondary data server</th>
<th>Data transmission protocol of primary data server</th>
<th>Data transmission protocol of secondary data server</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>192.168.1.1</td>
<td></td>
<td>Galileosky</td>
<td>Galileosky</td>
</tr>
<tr>
<td>Wi-Fi</td>
<td></td>
<td></td>
<td>Network</td>
<td></td>
</tr>
<tr>
<td>SSID</td>
<td></td>
<td></td>
<td>WPA/WPA2</td>
<td></td>
</tr>
<tr>
<td>Authentication type</td>
<td></td>
<td></td>
<td>123</td>
<td></td>
</tr>
</tbody>
</table>
```

**Setting the retranslator-tracker.**

**Mode 1. Data collection:**

1. Run "Configurator" and make sure that the retranslator-tracker is correctly determined by the Configurator in accordance with picture 1;
2. Go to the Settings - Data transmission tab, in the Wi-Fi section, enter the same access point parameters (SSID, type, password) that are configured in the retranslator-tracker; Setting the fourth parameter - operation mode - affects whether the tracking device is in the mode of connection to an existing Wi-Fi network (client) or creates its own access point to unload the archive from other Galileosky devices (access point (Archive collection)) (Pic. 4);

**ATTENTION!** The IP address of the retranslator-tracker in AP mode is assigned automatically (192.168.1.1), and the port is determined by the port value in the Main server section of the Monitoring data processing servers; Make sure that the primary server port value is the same for both tracking devices.
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The above settings can also be made using the WIFI SSID, Type, Key, Mode, (Pic. 5) Where:

- SSID is the name of the point (arbitrary, for example, Network);
- Type is authentication type (0 – No authentication, 1 – WEP, 2 – WPA/WPA 2);
- Key is password (arbitrary, for example, 123; If you create an access point without authentication, the password will not be used);
- Mode is operation mode (0 – connection to existing Wi-Fi network, 1 – Access point mode, creation of own network).

ATTENTION! The tracking device will not be able to connect to an existing Wi-Fi network while the tracker is running in AP mode. To provide the retranslator-tracker with the possibility of Wi-Fi data transmit it is necessary to change the value of the Operation mode field to "Client".

After applying the settings of the tracking device, on the Troubleshooting tab at the selected point Wi-Fi will be visible diagnostic messages about the assignment of the device IP address 192.168.1.1 and the start of the installed mode (Pic. 6).

Mode 2. Data transmitting:

1. If you are using an existing Wi-Fi hotspot, switch the operating mode from the access point to the client;
2. On the Settings - Data transmission tab, specify the current Wi-Fi network or SIM-card settings, in which the retranslator-tracker will be able to send data to the server;
3. Specify the server to forward the data that corresponds to the server used by the sender-tracker.
Troubleshooting Messages

Data collection and data forwarding are accompanied by typical diagnostic messages in the Troubleshooting window in the Configurator.

Go to the Troubleshooting tab and check the Wi-Fi option.

The data collection messages appear in the following way (Pic. 7):

![Data reception](pic_7)

Examples of data transmission messages are provided in Pic. 8:

![Sending data to the server](pic_8)

Setting the Galileosky Base Block Wi-Fi with retranslator function is completed, the tracking device is ready for operation.

RSA “Galileosky”, LLC produces satellite monitoring equipment for GPS and GLONASS real time vehicles monitoring. The tracking devices determine the mobile object location recording the time and route as points with geographical coordinates and send the data to the server to be further processed and sent to the traffic controller panel.

In addition, a number of other vehicle parameters are recorded: the state of analog and discrete inputs of the tracking device and the state of digital interfaces.

The tracking devices can be used in any vehicle.