RS232. TPMS 6-13
Connection

User Manual
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Necessary Tools, Equipment and Materials

To connect Galileosky tracking device (hereinafter – tracking device), you should have:

1. Electrical-installation tools.
2. A computer with Windows-based operating system and an installed configuration program for Galileosky tracking devices– «Configurator» or a more advanced version. It is recommended to download the latest version from the site.
General Information

Galileosky tracking devices (hereinafter – tracking device) can operate with a tire pressure monitoring system TPMS 6-13. Tire Pressure Monitoring System (hereinafter - TPMS) – is a remote wireless system of pressure and temperature measuring in vehicle tires.

When pressure is decreased, rolling resistance increases, it leads to increase of fuel consumption, increased tire wear and difficulties in vehicle maneuvering. TPMS allows to determine pressure and temperature in tires in real-time mode, thus, accidents due to tire damage can be prevented.

When Galileosky tracking device is connected, TPMS starts transmitting data to a monitoring server in tag 0x5C, format of structure is described in Galileosky protocol, you can find the protocol description in our site in the tabs Support -> User Manuals -> Galileosky Protocol -> “Server exchange protocol of Galileosky tracking devices” https://galileosky.com/podderzhka/dokumentaciya.html.

A full description of TPMS is given on the site of TPMS manufacturer https://www.parkmaster.ru/catalog/auto/tpms-systems-principle/

TPMS consists of the following functional parts:

1. Monitor (pic. 1) is a device that displays information on pressure in tires. Setting of TPMS configuring occurs with the help of it.

2. Pressure sensor (pic. 2). Pressure sensors can be external (they are wrapped on a nipple of a vehicle wheel) and internal (installed inside a tire casing). In case of pressure deviation in a tire, a monitor displays current pressure and a sound alarm occurs.
ATTENTION! Such functionality is implemented in the tracking devices by means of Easy logic technology (https://galileosky.com/products/easylogic.html). It is necessary to use tracking devices with support of Easy Logic. You can find out whether the tracking device supports Easy Logic or not in the following ways:

- in tracking device’s specification there should be abbreviation (AI) or sticker on the back of the device should have abbreviation (2) near IMEI (Pic.3).
- send Hardversion command to the tracking device, if you receive numbers different from zero after comma in response, algorithms are supported (example of reply: HARDVERSION=21,8243)
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To work with TPMS 6-13 minimal firmware version for Galileosky v.5.x, v.2.x tracking devices should be 230.5 or higher. Galileosky Base Block and 7.0 can cooperate with TPMS 6-13 with any firmware version installed.
Connection of TPMS to Galileosky tracking devices is carried out in accordance with the schemes, presented in Picture 4 of this manual.

**ATTENTION!** Grounds (GND) of the tracking device and TPMS must be connected, RS232 contacts must be connected strictly according to the scheme: RX of TPMS - TXD0 of the tracking device and TX of TPMS - RXD0 of the tracking device. TPMS is powered separately.
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Setting the Tracking Device to Operate with TPMS

Setting of Galileosky tracking device is carried out via Configurator in the following order:

1. Connect TPMS to the tracking device;
2. Connect the tracking device to PC and run Configurator;
3. Go to “Settings” tab -> “Track” and select “dynamic” value for “Archive structure mode” (pic.5);

**ATTENTION!** For tracking devices Galileosky Base Block and 7.0 versions the setting of dynamic structure mode is not needed.

4. Go to “Settings” tab -> “Protocol” and tick the field “Main packet” in “PressurePro” line (pic. 6).

5. Go to “Settings” tab -> “Digital inputs” and select “Nothing” for “RS232[0] peripheral type” (pic.7)

6. Apply settings by clicking “Apply” button;
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7. Go to “Commands” tab and send command "script galileosky/tpms613" (pic. 8);

**ATTENTION!** Algorithm is downloaded from the server, that is why SIM-card should be installed and GPRS-connection should be established on the tracking device.

8. Go to Device tab and check the Easy Logic parameter and make sure it includes information on the algorithm (Pic. 9);

9. Go to tab “Troubleshooting” and select “Data transmission” parameter, wait for confirmation of algorithm downloading: «GPRS.c.7gis.ru.Script download. Complete» (pic. 10);

10. On tab “Troubleshooting” select “Algorithm and script diagnostics” (pic. 11). As a result of script operation, you will get lines with prefix “TPMS”: 
a. «TPMS. Wheel [1] pressure is 26 psi» means, that the device sent the value of pressure equal to 26 psi, for the wheel with index 1 by indexing system of PressurePro Galileosky protocol (in TPMS indexing system wheel index will be equal to 2).

b. If there is no data on pressure and temperature for a long time, and the line «TPMS. Reset buffer» frequently appears on Troubleshooting tab, it means, that there is no connection between the device and the tracking device.

Pic. 11
Diagnostics of algorithm operation
Setting the Monitoring Software

Start the monitoring software and make sure, that TPMS data are being sent to the program (pic. 12).

If it is necessary, create a pressure and (or) temperature sensor, according to recommendations of monitoring software producer (pic. 13). Consider, that the tracking device transmits the data in PSI format and for its conversion to some other unit of pressure the following proportion is used:

1 psi [psi] = 0,0680459639099759 physical atmospheres [atm]

1 psi [psi] = 0,0703069579640175 kilogram-force per square centimetre [kgf/cm²]

Connection of TPMS to Galileosky tracking device is completed; the tracking device is ready to operate.

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.