Audio inputs. Connection and operation with microphones, loudspeakers, push-to-talk

User Manual
Audio inputs. Connection and operation with microphones, loudspeakers, push-to-talk
(version 3 of 27.11.2018)

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Necessary tools, devices, materials

To connect a microphone, a loudspeaker or a push-to-talk to the Galileosky tracking device it is necessary to have:

1. A computer running Windows with the installed service software for configuration of Galileosky tracking devices - "Configurator". We recommend you to install the latest version of the service software from our site https://galileosky.com/podderzhka/programmyi.html
2. Electrical tools.
3. Power supply: 10÷30V, not less than 1A
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General Information

Sound functions of Galileosky tracking devices (hereinafter - tracking device) allow you to provide two-way voice GSM communication between a driver and a traffic controller. The following devices can be used as sound equipment (Pic. 1):

To get the sound of high quality the applied equipment should correspond to the following characteristics:

Microphone parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min. Val.</th>
<th>Middle Val.</th>
<th>Max. Val.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating voltage, V</td>
<td></td>
<td>1.60</td>
<td>2.2</td>
</tr>
<tr>
<td>Operating current, microA</td>
<td>70</td>
<td></td>
<td>300</td>
</tr>
<tr>
<td>Load resistance, kOhm</td>
<td>1.2</td>
<td>2.2</td>
<td></td>
</tr>
</tbody>
</table>

Loudspeaker parameters:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min. Val.</th>
<th>Middle Val.</th>
<th>Max. Val.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance of the connected loudspeaker, Ohm</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating current, microA</td>
<td></td>
<td></td>
<td>~250</td>
</tr>
<tr>
<td>Power with the 32 Ohm loudspeaker, mW</td>
<td></td>
<td>250</td>
<td></td>
</tr>
</tbody>
</table>
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Audio equipment connection

Ways of sound equipment connection differs depending on the version of the used Galileosky tracking device:

1. For Galileosky v1.x and 2.x tracking devices connection of a microphone and a loudspeaker is carried out by means of specially separated contacts of the main connector (Pic. 2).

**Attention!** To reduce the level of mutual influence and parasitic distortion it is necessary to connect cables shields from the microphone and the loudspeaker to special AGND contact.

2. Various ways of connection are applied to Galileosky v5.0 tracking devices depending on the modification (Pic. 3-4):

**Attention!** To connect a loudspeaker and a microphone Jack 3,5 Stereo connectors are used. It is inadmissible to use Jack 3,5 Mono connector.
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It is possible to connect a push-to-talk KMC-25 or a compatible one directly to the tracking device. Separate connection of a loudspeaker and a microphone is allowed. The loudspeaker may have Jack 2,5 Stereo or Jack 2,5 Mono connectors.

3. For separate connection of the microphone and the loudspeaker to Galileosky 5.1 tracking device it is necessary to clear the tick box "Push-to-talk switch" in the "Sound" tab of the Configurator settings. Connection is made according to the scheme shown in Picture 5.

It is possible to connect a push-to-talk KMC-25 or a compatible one directly to the tracking device. Separate connection of a loudspeaker and a microphone is allowed. The loudspeaker may have Jack 2,5 Stereo or Jack 2,5 Mono connectors. The connector of the microphone should be 3,5 Jack Stereo.

4. Connection to Galileosky 7.x or Galileosky Base Block tracking devices (only modifications with voice communication connector) is carried out as follows (Pic. 6):
A push-to-talk from VX-1R/VX5R/VX-7R or compatible radio stations can be directly connected to the tracking device. To work with a push-to-talk it is necessary to run the «tangenta 1» command or to set this parameter in the Configurator. When there is an incoming call you can lift the handset by single pressing the button of PTT.

For separate connection of the loudspeaker Jack 3,5 Stereo or Jack 3,5 Mono are used.

The loudspeaker and the microphone can be connected via Y-adapter at the same time (Y-splitter cable for headphones and microphone). The wiring diagram of the Y-adapter contacts must match the connection diagram of the loudspeaker and the microphone shown in picture 6.

Connection of telephone headset with OMPT wiring diagram (Nokia headset connector), matching Picture 6 is available.
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Settings of sound equipment parameters

After connection of the equipment, it is necessary to set it. There are two different ways to do it.

1. Setting via Configurator.

Go to the “Setting” tab-> “Sound” of the Configurator, set the necessary parameters and press “Apply” button.

Parameter «Push-to-talk switch» defines the mode of connected PTT. In case if this parameter is set the loudspeaker of the PTT will give out a signal when there is an incoming call. You can lift the handset by single pressing the button of PTT. Further switching between the loudspeaker and the microphone of PTT is carried out by pressing the button. If the button is pressed – the microphone is on, if not – the loudspeaker is on.

At removal of this parameter the button of PTT isn't used, and the microphone and the loudspeaker are connected at the same time.

2. Setting via commands.

Remote setting of the tracking device sound functions is possible by means of the below-mentioned commands.
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Command format

GSMVolume k,m

Parameters
k – GSM-channel sound gain [1÷100];
m – GSM-channel microphone gain [1÷15].
The greater the parameter, the greater the gain.

Explanation
Allows speakerphone sound gain parameters to be customized.

Example
Request: GSMVolume 75,15
Reply: GSMVOLUME=75,15

Command format

AutoAnswer n

Parameters
n – the number of calls before autoanswer. [0÷10]

If the parameter is equal to 0, the function is disabled.

Explanation
Incoming call results in the tracking device automatic answer.

Example
Request: AutoAnswer 1
Reply: AUTOANSWER=1

Command format

Calls N

Parameters
N – the number of call attempts.

Example
Request: Calls 3
Reply: CALLS:3;
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Command format

RingTo N

Parameters
N – a telephone number.

Explanation
Making a call from the tracker to the given telephone number.

Example
Request: RingTo 89119988899
Reply: RINGTO=89119988899

Connection of audio equipment to 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.