RS232/RS485. Connection of Camera ZM-CAM30

User Manual

www.galileosky.com
RS232/RS485. Connection of Camera ZM-CAM30
(version 2 dated from August 10, 2018)

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Necessary Tools, Devices, Materials

To set Galileosky tracking device (hereinafter - tracking device, GPS vehicle tracker) for operating with camera ZM-CAM30 manufactured by QQZM company (hereinafter - the camera) one should have:

1. Galileosky Base Block or Galileosky v.7.0 tracking devices with firmware 17 or higher.
2. A computer running Windows version 7.0 or higher with the installed service program of configuration of Galileosky tracking devices-“Configurator” of version 4.0 or higher.
   We recommend you install the latest version of the service program in our site https://galileosky.com/podderzhka/programmyi.html
3. ZM-CAM30 Installation Kit
General Information

Galileosky tracking devices have functionality to work with cameras manufactured by third-party companies, in particular camera ZM-CAM30. Cameras with infrared light can be used in controlling systems or transport control. Collaboration with Galileosky trackers gives opportunity to receive, save on microSD card and transmit images from the monitoring object to the monitoring server.

This functionality is implemented by means of Easy Logic technology and is available for tracking devices Galileosky Base Block and Galileosky 7.0 with firmware 17 or higher. Besides, operation with the camera requires RS232 or RS485 interfaces and microSD card, inserted into the tracking device.

The manufacturer offers a wide range of cameras with RS232/RS485 interfaces. You can study a complete list of the manufactured photo cameras compatible with galileosky tracking devices in the following link. You can purchase cameras from the manufacturer's website http://www.zmvideo.com or from the online-store.
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The main technical characteristics of the camera:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image sensor</td>
<td>1.4&quot;, 640x480</td>
</tr>
<tr>
<td>Focal length</td>
<td>2.8</td>
</tr>
<tr>
<td>Focusing</td>
<td>Fixed</td>
</tr>
<tr>
<td>Interface</td>
<td>RS232/485 (optional)</td>
</tr>
<tr>
<td>Power supply</td>
<td>9-36V (optional)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>IR Off: 130-150mA</td>
</tr>
<tr>
<td></td>
<td>IR On: 350-360mA</td>
</tr>
<tr>
<td>Protocol</td>
<td>ZMID</td>
</tr>
</tbody>
</table>
Connection of photo camera and GalileoSky 7.0 and Base Block tracking devices via RS232 interface is carried out in accordance with the schemes presented in pictures 2 and 3 correspondingly.

Power supply is provided separately.

**ATTENTION!** Grounds (GND) of the tracking device and the photo camera must be connected, RS232 contacts must be connected strictly according to the following scheme - RX of the photo camera to TXD0(1) of the tracking device and TX of the camera to RXD0(1) of the device.

Tracking Device Settings for Working with the Photo Camera via RS232 Interface

1. Connect the tracking device to the PC and launch Configurator software, go to tab Commands and depending on the necessary number of pictures send one of the commands - "script galileosky/Camera_qqzm_H" or "script galileosky/Camera_qqzm_L" (Pic. 4).

Explanation: The Camera_qqzm_H algorithm performs higher-quality images with a larger file size of ~ 35 kilobytes, the Camera_qqzm_L algorithm performs lower-quality photos with a smaller file size of ~ 25 kilobytes.

![Commands](image)

ATTENTION! The algorithm is downloaded from Galileosky information resources that's why a working SIM-card with supported GPRS should be inserted into the device.

2. Go to tab Device and make sure the algorithm is downloaded. Note that the loading can take up to 10 minutes (Pic. 5).

![Device](image)
3. Go to tab Settings -> Digital inputs and select "Easy Logic photocamera handler" for "RS232[0]" or "RS232[1]" (Pic. 6).

4. Specify the period of camera shooting in the appropriate fields (Pic. 7).

- "Recording period" is a period at which the pictures are taken and saved in the SD-card. When the value "0" is set, captures are taken only by event - when the makephoto command is given or when signalling conditions are met.
- Parameter "Recording and send period" defines an interval at which pictures are taken, stored in the microSD card and sent to the server. When the value is up to 120, recording is carried out only by event.

**ATTENTION!** The camera takes pictures in resolution 640 x 480, the image size is set in the algorithm and cannot be changed.

5. If necessary, set up the camera to shoot by the event on the tab Settings -> Signaling settings, as it is shown in Picture 8.

6. Go to tab Troubleshooting and tick the option "Algorithm and script diagnostics". If you connect and configure correctly, you'll see the diagnostic messages presented in Picture 9.
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7. Depending on the interface that the camera is connected to, the pictures are stored either in catalog /Pic/RS2320/DDMMYY or /Pic/RS2321/DDMMYY, where DDMMYY is current date, month and year correspondingly. Photo file names are generated as hhmmss.jpg, where hhmmss is the time the file was created. Example:/Pic/RS2320/150617/152344.jpg
Photo Camera Connection via RS485 Interface

Connection of photo camera and Galileosky 7.0 and Base Block tracking devices is carried out in accordance with the schemes presented in pictures 10 and 11 correspondingly.

Power supply is provided separately.

**ATTENTION!** Grounds (GND) of the tracking device and the photo camera must be connected, RS485 contacts must be connected strictly according to the following scheme - A of the photo camera to 485A of the tracking device and B of the camera to 485B of the device.
Tracking Device Settings for Working with the Photo Camera via RS485 Interface

Setting Galileosky tracking devices to work with ZM-CAM30 photo camera is carried out similar to setting up the camera to work via RS232 interface. The only difference is that in the tab Settings -> Digital inputs setting RS485 peripheral type is configured. To work with the camera, you need to select the peripheral type "Easy Logic photocamera handler and FLS, dozometer DBG-S11D". (Pic. 12)

![Setting digital input RS485](Pic.12)

The photos are stored in the catalog /Pic/RS485/DDMMYY, where DDMMYY shows current date, month and year correspondingly. Photo file names are generated as hhmmss.jpg, where hhmmss is the time the file was created.

Example:/Pic/RS485/150617/152344.jpg
Setting the Monitoring Software

Photos transmission to the monitoring server is carried out in accordance with the current Galileosky protocol. Galileosky protocol description is available for downloading from our site https://galileosky.com/podderzhka/dokumentacziya.html.

The photos are presented in the column "Images" in the monitoring software (Pic. 13).

Connection of photo camera ZM-CAM30 to Galileosky tracking device is completed, the tracking device is ready for use.

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.