OMNICOMM

Omnicomm PORT Automatic Data Acquisition Module

User Manual

20.02.2025

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Omnicomm PORT Automatic Data Acquisition Module

General Information

The Omnicomm PORT Automatic Data Acquisition Module is onboard equipment designed for automatic data acquisition from Omnicomm Profi Wi-Fi terminals and data transfer to the Communication Server when connected to the Internet.

Main functions:

- data collection from Omnicomm Profi Wi-Fi terminals version 2.0 and up using the Wi-Fi network
- data storage in non-volatile memory
- data transfer to Omnicomm Online or to third-party software via the Internet using Wi-Fi or third (3G) and fourth (4G) generation mobile networks

Starting from version 1.3.1, the Omnicomm Port firmware does not support settings configuration and reading of Omnicomm Profi Wi-Fi 3.0 terminals and firmware updates of Omnicomm Profi Wi-Fi 3.0 terminals.

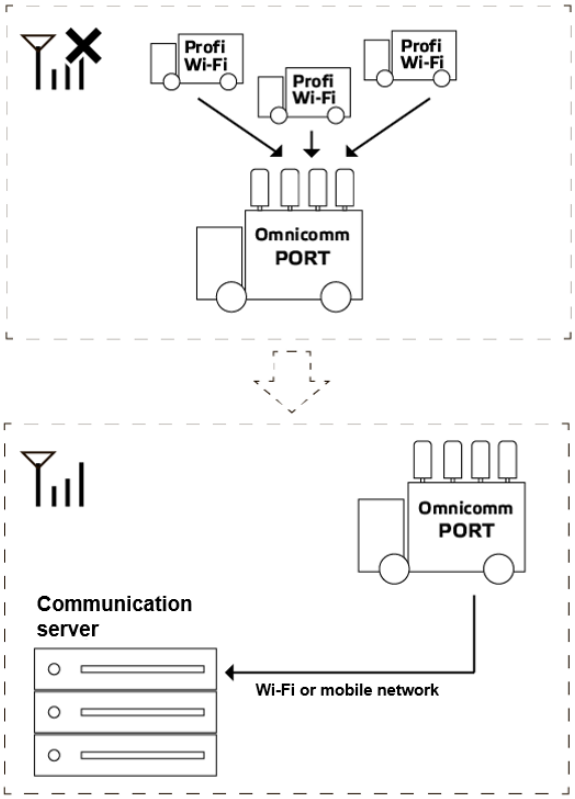
If you need to configure/read the settings and update the firmware of Omnicomm Profi Wi-Fi 3.0 terminals, please use Omnicomm Configurator version 7.6.5 and above.

Operation

The Omnicomm PORT Automatic Data Acquisition Module installed on a vehicle collects data from Omnicomm Profi Wi-Fi terminals that operate outside the mobile network access area.

Omnicomm PORT connects to an existing Wi-Fi access point or mobile network and enables data transfer to the communication server and remote configuration server. When both Wi-Fi and mobile connection are available, data transfer is performed via the Wi-Fi network.

General Information



Technical Specifications

	Omnicomm Port
General Information	
Overall dimensions	210 x 366 x 83 mm
Body ingress protection rating	IP66
Protocols	Omnicomm
Weight	4,1 kg
Operating mode	Continuous
Average service life	8 years
Power and energy consumption	
Power supply voltage	From + 9 to + 36 V
Power consumption, max	120 W
Data Collection	
Time of archive downloading from the Omnicomm Profi Wi-Fi reading, not more than	2 min [1]
Archive size	Storing data from 200 vehicles (at least 1 month)

Technical Specifications

	Omnicomm Port
General Information	
Maximum number of terminals connected simultaneously	10
Built-in hardware peripherals	
Real time clock	Yes
Data transmission channel	
Mobile network 3G / 4G (LTE)	Frequency range 850 / 900 / 1800 / 1900 / 2100 / 2200 MHz
Wi-Fi	2.4 GHz, 5 GHz

[1] Depends on the distance between the terminal and Omnicomm PORT, channel load, line of sight, and antenna type. To ensure a reliable connection with terminals at a distance of more than 50 meters, it is recommended to connect external Wi-Fi antennas AX-2408R to Omnicomm PORT.

Installation

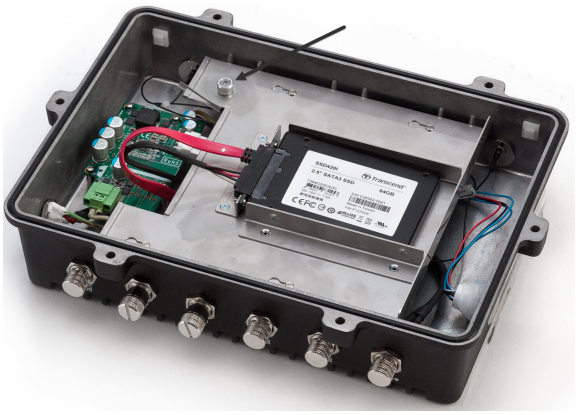
SIM Card Inserting

> To get remote technical support, consider using a SIM card plan that provides an external IP address.
>
> Before inserting the SIM card, disable PIN request at activation. To do this, insert the card in any cell phone and disable the request for PIN, following the phone's operating instructions.

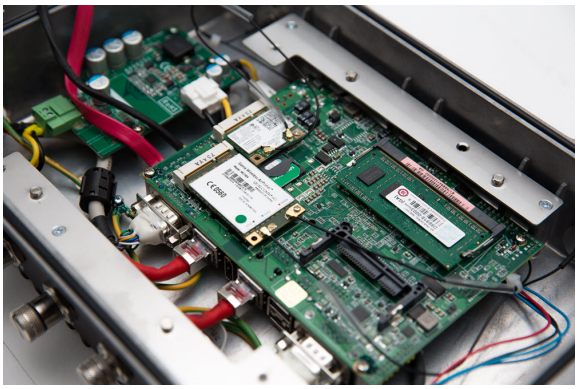
SIM card insertion procedure:

- Remove the 6 screws with a 3mm hex screwdriver from the base of the Omnicomm PORT and remove the cover:

- Remove the screw securing the protective plate



- Slide the protective plate and insert the SIM card into the slot



- Slide the protective plate back into place and tighten the screw
- Close the base cover and tighten the 6 screws

Antennas

LTE antennas must be connected to the “ANT1” and “ANT2” connectors.

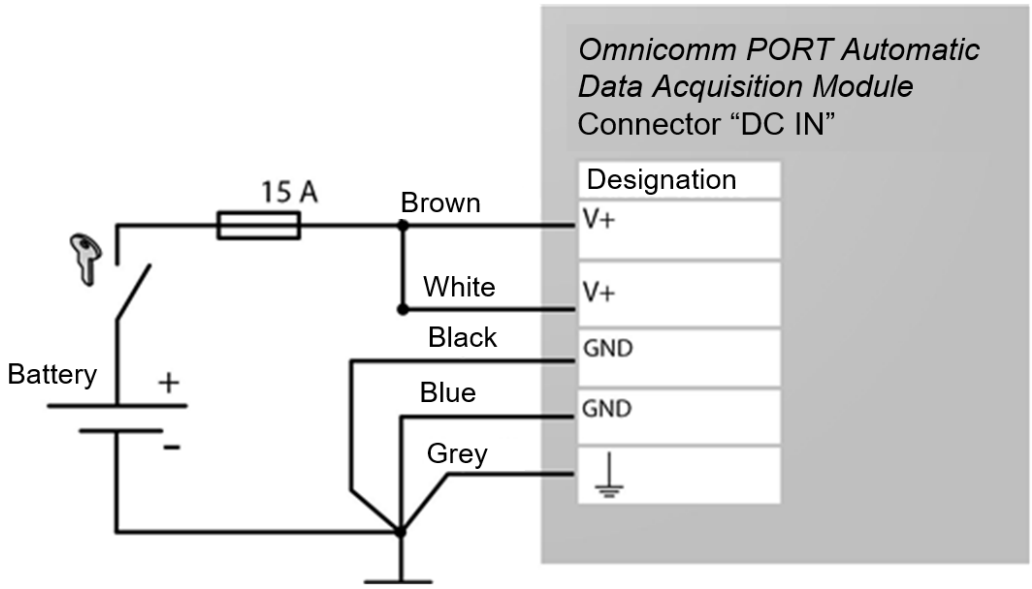
Wi-Fi antennas must be connected to the “ANT3” and “ANT4” connectors.

To ensure connection to terminals at a distance of more than 50 m, it is recommended to install onto Omnicomm PORT external Wi-Fi antennas AX-2408R (provided that Profi Wi-Fi terminals are equipped with an external Wi-Fi antenna “TRIADA - MA 2435 SOTA”.

Power

Connect Omnicomm PORT as shown in the diagram:

Installation



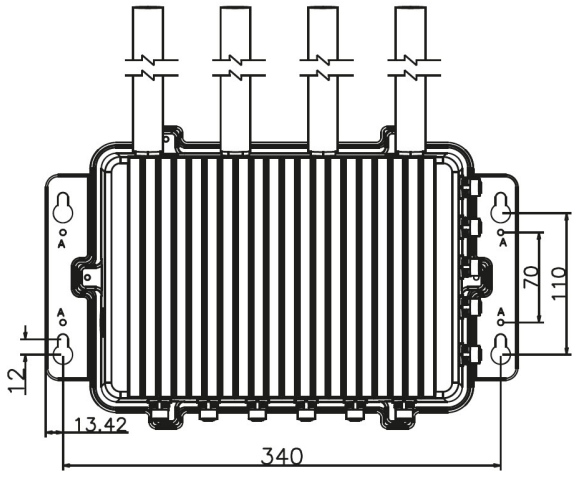
Connecting before the ground disconnect switch is not permitted.

Before turning the ignition off, switch off Omnicomm PORT by pressing the power button and waiting for the button backlight to turn off.

Omnicomm PORT Module

The Omnicomm PORT Automatic Data Acquisition Module can be installed either inside or outside a vehicle. If installing the module on the inside, mount the external Wi-Fi antennas outside the vehicle.

Omnicomm PORT must be installed on a flat surface. If using screws, drill holes as shown in the drawing:



Install Omnicomm PORT and secure it.

Setting

Omnicomm PORT Module

1. Power up Omnicomm PORT

2. Start your laptop and turn on Wi-Fi

3. Connect to the Wi-Fi network. Default network name – “Mobile-CS”, default password – “Mob1Com2Ser3”

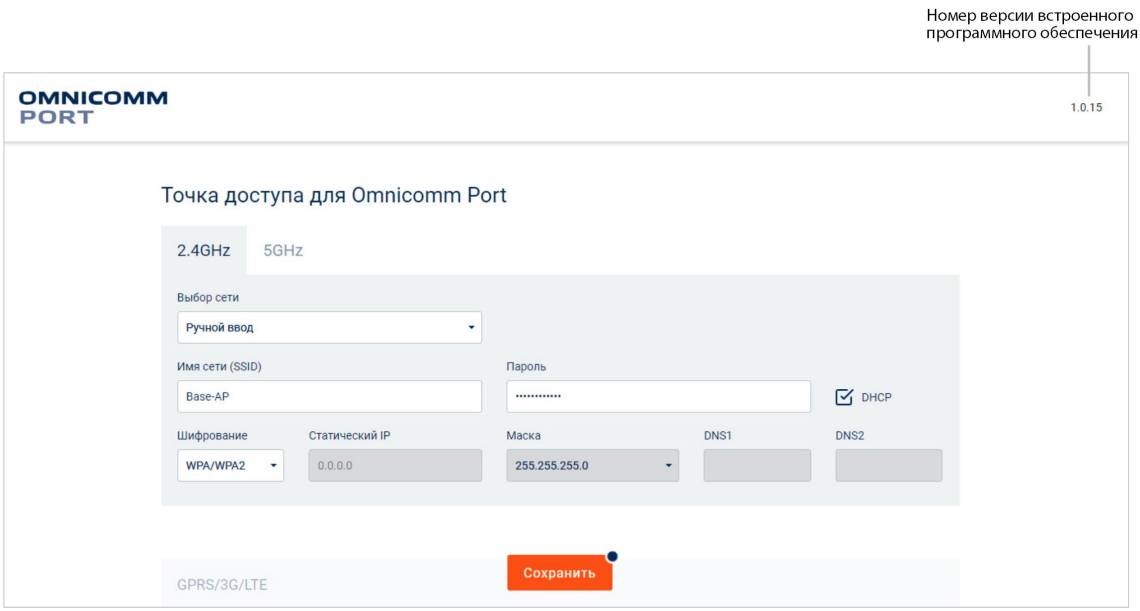
4. In the browser, enter the Omnicomm PORT setting interface address. Default value – 192.168.5.100:8088. A window will open:

Default values:

- “Login” – enter “admin”
- “Pass” – enter “lcsadm”

Click “Enter”. A window with Omnicomm PORT settings will open:

Setting



Data Transfer via Wi-Fi to the Communication Server

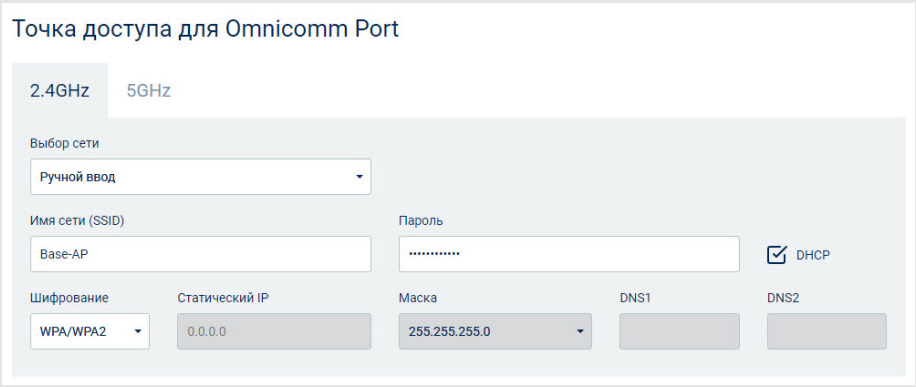
Configure the settings of the available Wi-Fi access point that will be used to transmit data to the communication server.

In the section “Access point for Omnicomm PORT”:

- Open the 2.4 GHz or 5 GHz tab, depending on the frequency of the Wi-Fi access point
- “Network selection” - select “Manual input” or find the network name in the list
- “Network name” - enter the name of the Wi-Fi access point if manual input was chosen. If you have selected a network name from the list, this field will be filled in automatically
- “Password” - enter the password for the access point
- “Encryption” - “WPA2-Personal”
- “DHCP” - enable to automatically assign an IP address to the device. In this case, the assigned IP address will be displayed in the “Static IP” field

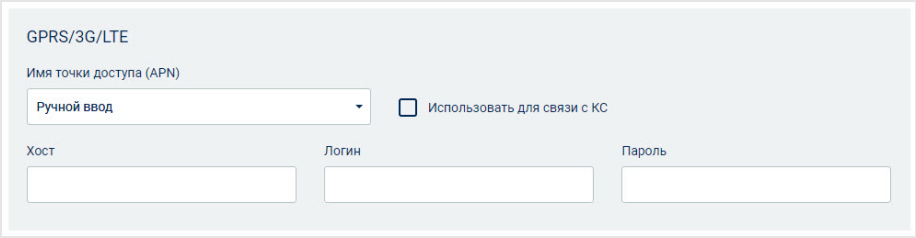
If you need to manually assign a static IP address to the device, uncheck the DHCP box. In the “Static IP” field, enter the IP address that you wish to assign to the device. Enter the subnet mask and addresses of DNS1 and DNS2 servers.

Setting



There is no data transfer via satellite Internet channels.

Data Transfer via Mobile Networks



- “Access point name (APN)” - select “Manual input” or choose from the list
- “Host” - enter the name of the GPRS access point if manual input was chosen. If you have selected an access point name from the list, this field will be filled in automatically
- “APN Login” and “APN Password” – enter the login and password for the APN access point. Some mobile network providers supply a login and a password together with the SIM card

When using second-generation (2G) mobile networks, stable Omnicomm PORT operation is not guaranteed due to the insufficient data transfer rate.

In order to transfer data, collected by PORT in 1 day by from 30 terminals to the CS within no more than 1 hour, the Internet channel must meet the following requirements:

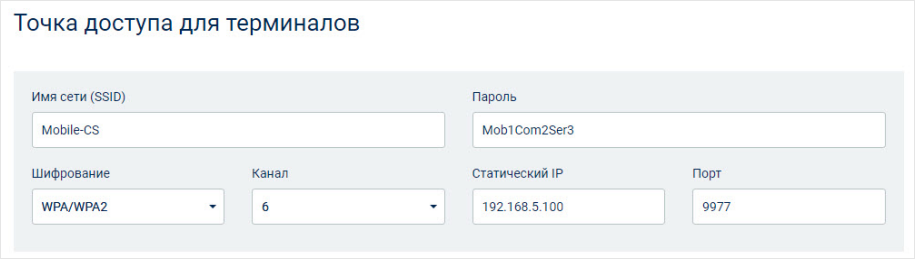
- Available uplink bandwidth - at least 64 kbit/s
- Available downlink bandwidth - at least 16 kbit/s
- Ping value from PORT to online.omnicomm.ru - up to 600 ms

Data Receipt via Wi-Fi from the Omnicomm Profi Wi-Fi Terminals

Setting

Configure the settings of the Omnicomm PORT Wi-Fi access point, which will be used to receive data from Omnicomm Profi Wi-Fi terminals.

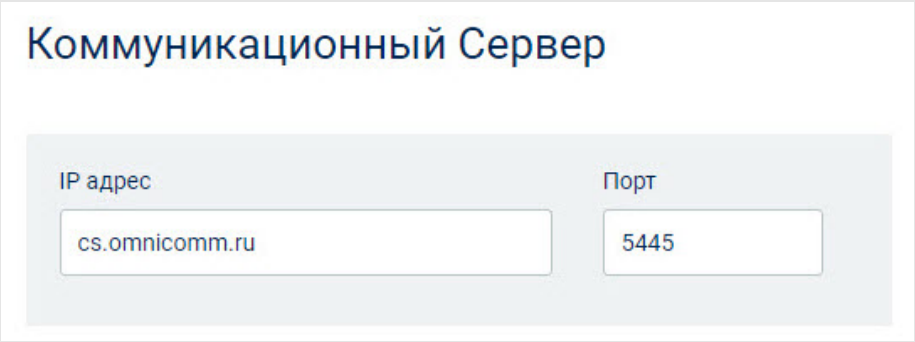
If the IP address is changed, the address of the Omnicomm PORT setup interface will change to the set address.



- “Network name (SSID)” - enter the name of the Omnicomm PORT Wi-Fi access point. Default value – Mobile-CS
- “Password” - enter the password to connect to the Omnicomm PORT Wi-Fi access point. Default value – Mob1Com2Ser3
- “Encryption” - select “WPA2-Personal”
- “Channel” - select the least busy channel
- “Static IP” - set the IP address of the Omnicomm PORT. Default value: 192.168.5.100
- “Port” - set the port value for Omnicomm PORT. Default value – 9977

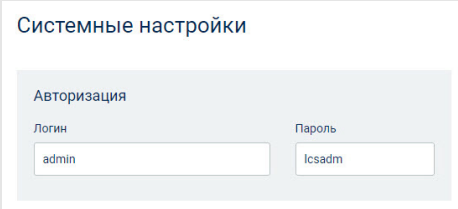
There is no data transfer via satellite Internet channels.

Connection to the Communication Server



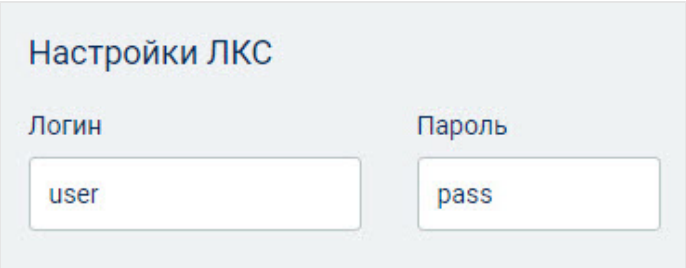
- "CS 1 IP address or domain name" – enter IP address or domain name of the communication server. Default value – cs.omnicomm.ru
- "Port" – specify the port to be used by the terminal to connect to the communication server. Default value – 5445

Access to Omnicomm PORT Settings



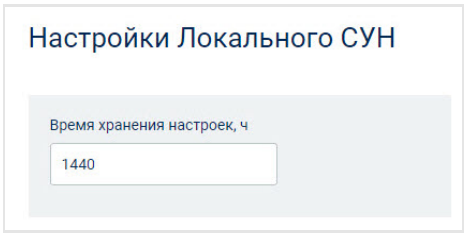
"Login" and "Password" - enter the login and password to be used for authorization in the Omnicomm PORT configuration interface.

Access to the Settings of Data Transfer to the LCS



"Login" and "Password" - enter the login and password to be used for authorization in the local communication server.

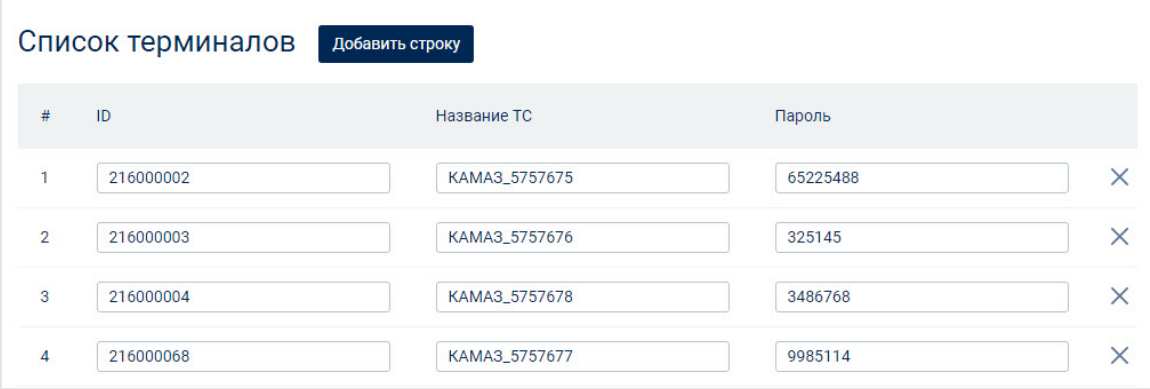
Setting Storage Time



“Setting storage time, h” - enter the period of time after which the terminal settings will be deleted from Omnicomm PORT. Possible values: from 12h to 1440h Default value – 1440.

List of Terminals

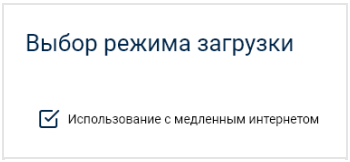
To configure the settings in the Omnicomm Profi Wi-Fi 3.0 terminal when you connect to Omnicomm PORT for the first time, add the terminal ID, vehicle name, and password to the table. Password - the terminal's password for access to the remote configuration server.



This table also establishes the correspondence between the terminal ID and the vehicle name to display in the local communication server.

Selecting the Loading Mode

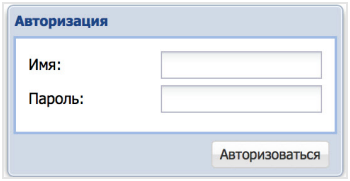
Omnicomm PORT supports two modes of data loading depending on the available Internet connection speed.



Check the “Use with slow connection” box if your Internet connection to the CS does not provide a response time (ping) of less than 150 ms, a download speed greater than 100 Kbps and a packet loss of less than 20%.

Automatic Data Transmission to the Communication Server

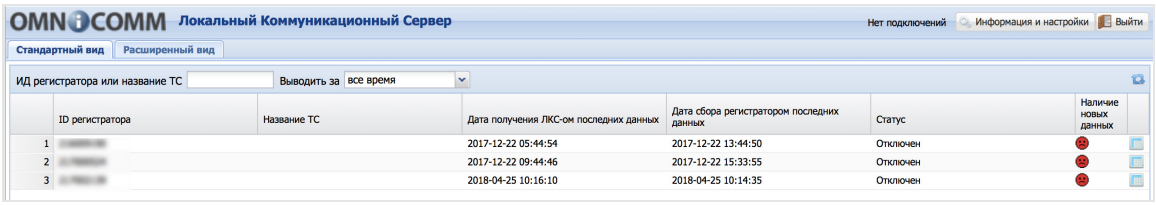
In the browser, enter the address of the local communication server. Default value – 192.168.5.100:8090. A window will open:



“Login” – enter “user”

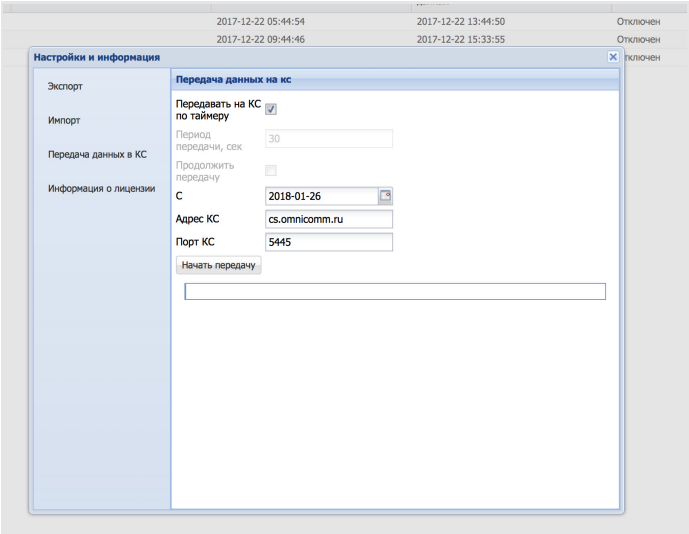
“Pass” – enter “pass”

Click “Log in”. A window will open:



Click the “Information and settings” button and go to the “Data transfer to the CS” section:

Setting



Check the “Transfer to the CS on timer” box.

Ensure that the values in the fields “CS1 IP address or domain name” and “Port” correspond to those indicated in the section Connecting to the communication server

Firmware Update

Updating the firmware to version 1.3.1 will reset the previous settings and clear the data archive. Export the data first if you wish to save the archive.

To update the firmware, you will need a USB flash drive that meets the following requirements:

- at least 4 GB of memory
- USB interface generation 2.0 or higher
- FAT 32 file system

Firmware update procedure:

1. Export the data first if you wish to save the archive (see “Archive data export” at the end of the section)

2. Download the archive (zip file) with the firmware to your PC by following this link:

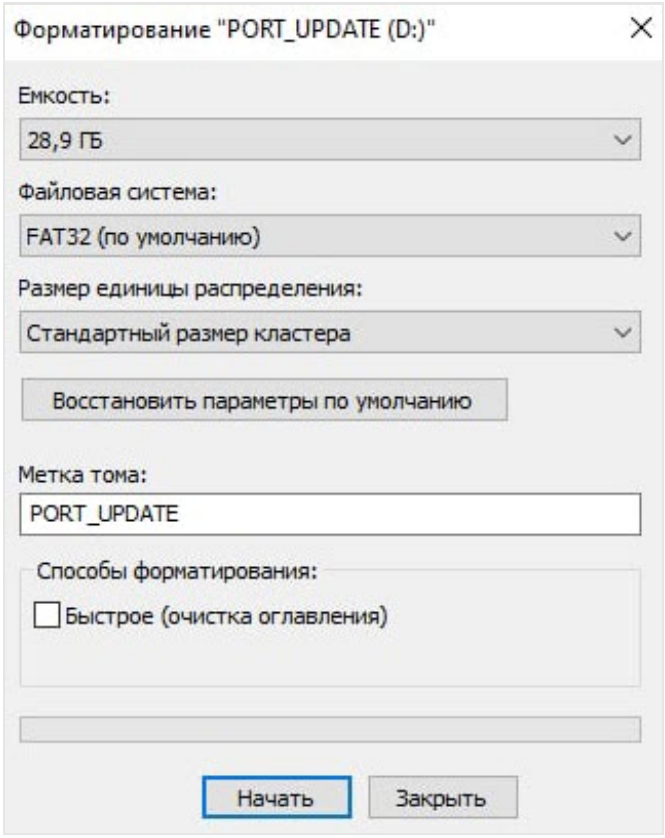
https://doc.omnicomm.ltd/port/images/port_update_1.3.1.zip

3. Format the USB flash drive with the FAT 32 file system

IMPORTANT! Full flash drive formatting is required.

- Insert the USB flash drive into the USB port of the PC
- In the File Explorer window on your PC, select the USB flash drive, right-click, and select “Format”

Setting



- Set the following formatting parameters:

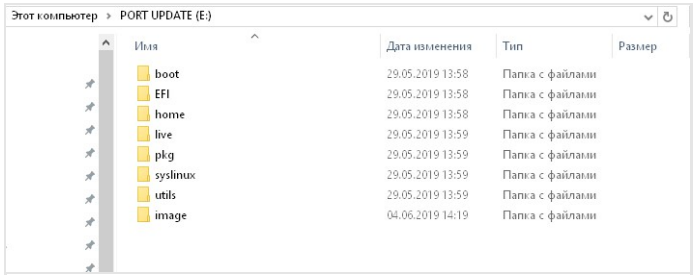
  “File system” – select “FAT32 (default)”

  “Allocation unit size” – select “Standard cluster size” кластера»

  “Formatting methods” – uncheck “Quick (clean the table of contents)”

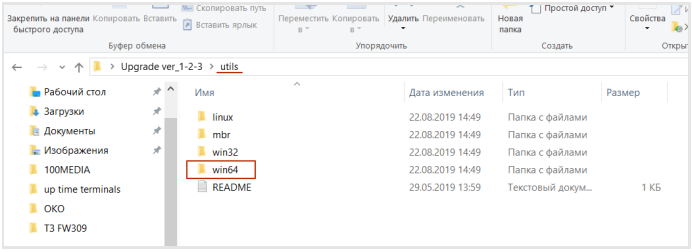
- Click the “Start” button and wait for the formatting to finish.

4. Extract the zip file to the prepared USB flash drive:

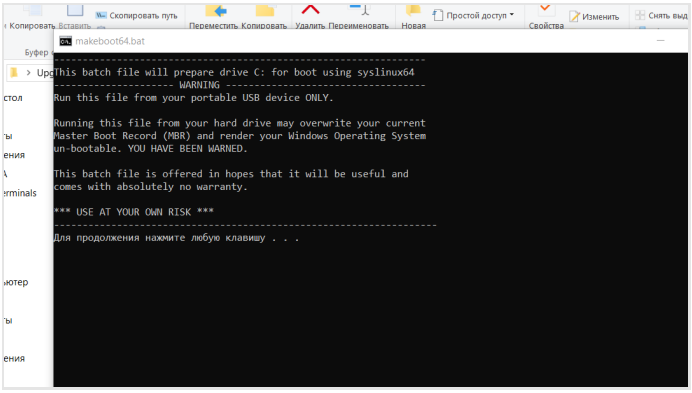


5. Go to the utils / win64 directory:

Setting



Launch the “makeboot64” file. A window will open:



Press “Enter” three times.

6. Safely remove the USB flash drive from the PC.

In Windows, click the USB icon in the system tray and select “Safely Remove Hardware”.

In Linux, use the **sync** command.

7. Turn off Omnicomm PORT by pressing the power button:

8. Connect the USB flash drive to Omnicomm PORT using the USB cable provided:

Setting

9. Turn on Omnicomm PORT by pressing the power button. The firmware update will start automatically and takes about 10 minutes

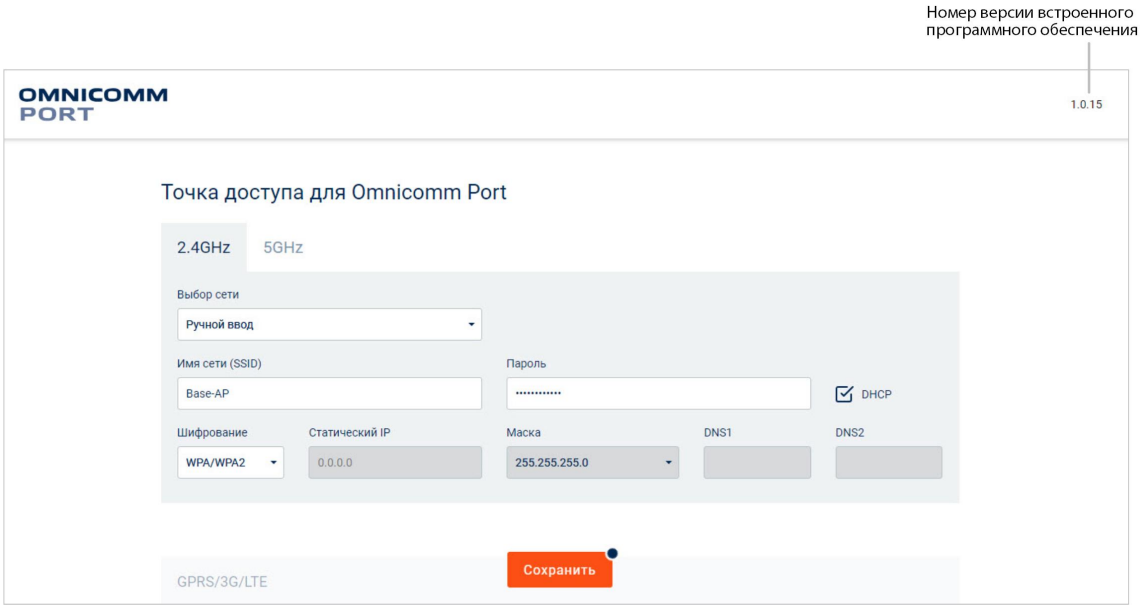
Do not disconnect Omnicomm Port and the USB cable (USB flash drive) until the update is completed

10. When the Omnicomm Port update process is completed, you will hear five short beeps, the device will automatically turn off, and the green indicator of the power button will turn off

Remove the USB flash drive to avoid running the update again.

11. Turn on Omnicomm PORT by pressing the power button. Ensure that the firmware version number is 1.3.1

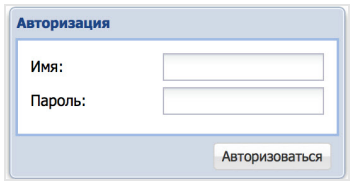
Firmware version number:



12. Set up Omnicomm PORT and import archive data if necessary

<u>Archive data export</u>

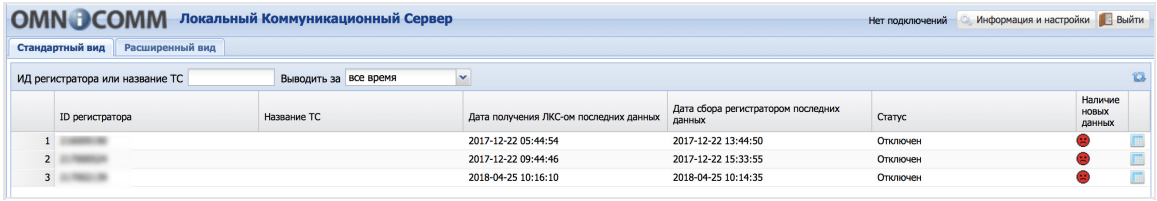
In the browser, enter the address of the local communication server. Default value – 192.168.5.100:8090. A window will open:



"Login" – enter "user"

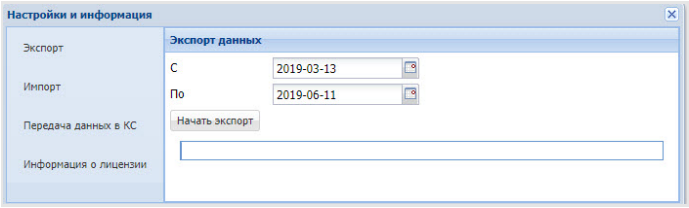
"Pass" – enter "pass"

Click "Log in". A window will open:



Click the "Information and settings" button and go to the "Data export" section:

Setting



Indicate the time period for which you want to save the data. Press the button “Start export”.

Omnicomm Profi Wi-Fi Terminal

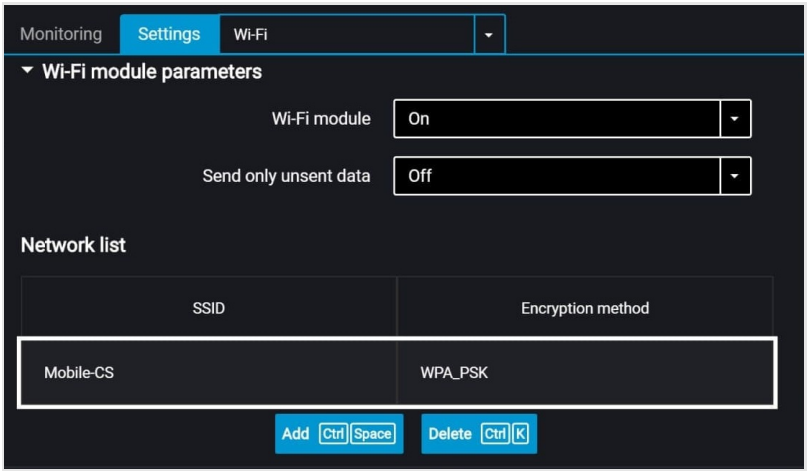
To achieve the highest speed and distance of data transmission, it is recommended to equip Omnicomm Profi Wi-Fi terminals with an external Wi-Fi antenna "TRIADA - MA 2435 SOTA".

Connect the Omnicomm Profi Wi-Fi terminal to a PC.

Run Omnicomm Configurator.

In the **“Settings”** tab select the **“Wi-Fi”** section from the list.

In the **“Wi-Fi module parameters”** section:



Click the “Add” button and set the following settings:

“Wi-Fi module” - enabled.

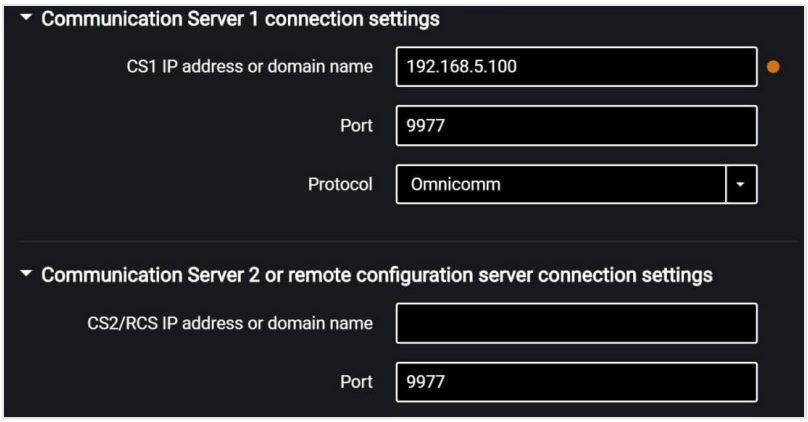
“Send only non-transmitted data” – enable/disable data duplication when using multiple Local communication servers. When the parameter is enabled, the data transmitted to one LCS will not be transmitted to other LCS operating on the same IP address.

“SSID” – Mobile-CS.

“Authentication and encryption method” – WPA_PSK.

"Password" – Mob1Com2Ser3.

In the **"Communication Server connection settings"** section:



To transfer data to the CS:

"IP address" – 192.168.5.100.

"Port" – 9977.

"Protocol" – Omnicomm.

If the default values have been changed, set the values as indicated in the section Data receipt via Wi-Fi from the Omnicomm Profi Wi-Fi terminals

OMNICOMM

info@omnicomm-world.com
www.omnicomm-world.com