LoRa Scaner

Manual

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LoRa Scaner Description

LoRa Scaner application is designed for adding of LoRaWAN end devices on the server and has a simple friendly interface.

Also, application helps to easy set a connected device.

Application works with the scanner which needed for QR-code scanning. You should find a QR-code on a box/device, which is looked like the picture:

QR-code contains information for a registration on the server:

- DevEui
- DevAdd
- NwkSKey
- AppSKey
- AppEui
- AppKey

Abilities

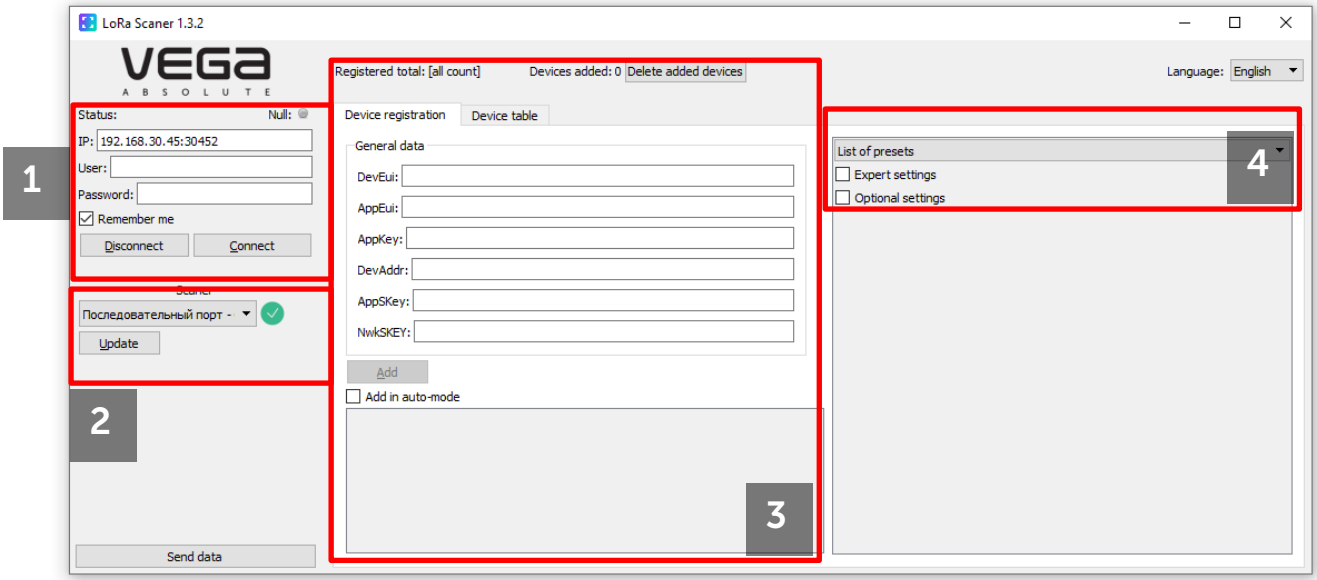
- Supporting of all end devices LoRaWAN 1.0.1
- Supporting of devices with class A and C
- Supporting of barcode scanners
- Setting of devices which are connected to the server
- Adding of devices to the server in automatically mode
- Reading of keys from the device

Installing

The program works under **Windows OS** and does not require an installation. Just unpack archive and launch the EXE file.

Application interface

When application launches, the window below appears. Sort out the interface through functionality.



Pic. 1. Functional areas of the application.

1 – connecting to the server

2 – connection of the scanner

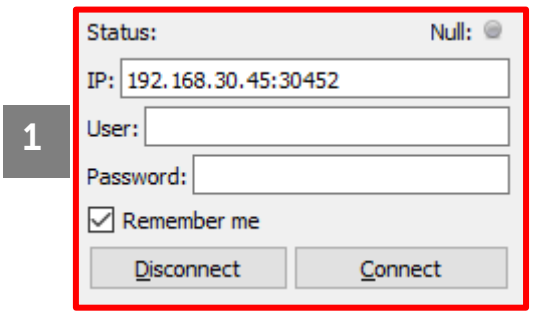
3 – information about device which is adding

4 – settings of the adding devices

Let's learn each area separately.

Connecting to the server

The first area consists of fields “Status”, “IP”, “User”, “Password”, setting “Remember me” and two buttons “Disconnect” and “Connect”.



Pic. 2. Connecting to the server.

For connecting to the server, you should to:

1. Enter IP-address and port of the server into “IP” field in format xxx.xxx.xxx.xxx:yyyy, where xxx.xxx.xxx.xxx – IP-address of the server, and yyyy – server port number.
2. Enter login of server administrator into “User” field and password into “Password” field.
3. Press “Connect” button.

“Status” field displays current status of the connection with the server and may be the following:

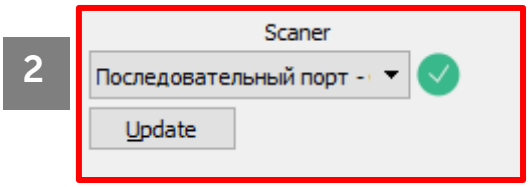
Null – there are no attempts to connect to the server

Online – the client is connected to the server

Offline – the client is not connected to the server

Connection of the scanner

Menu of scanner connection is just below dis/connection buttons.



Pic. 3. Connection of the scanner.

For scanner connection you should to:

1. Connect the scanner to the computer.
2. Press the button “Update”.
3. Choose scanner COM-port in the list.

Sign near COM-port field has three states:

Orange – there are no devices connected through the COM-port

Green – the device was successfully connected through the COM-port

Red – the device cannot connect through the chosen COM-port

Adding of devices

Devices adding can occur by the two ways: hand or automatic mode. You can switch between modes by ticking the corresponding check box on the bottom of area.

There is a field “Registered total” in the upper part of window – when server is connected, a current number of end devices is displayed here, which are registered on the server.

“Devices added” – the number of devices which are added in current session, you can delete them all by pressing the corresponding button.

Pic. 4. Area of devices adding.

For hand mode adding you should to:

1. Scan QR-code of the device
2. Press the “Add” button

3. The message about successful adding of the device on the server will appear in the "Information" field[1].

Settings, which are selected in the right field, are recorded on the server with the device at moment of "Add" button pressing.

For automatic mode adding of the devices you should to:

1. Scan QR-code of the device
2. The message about successful adding of the device on the server will appear in the "Information" field.

Settings, which are selected in the right field, are recorded on the server with the device at moment just after scanning.

Also, the "Devices.txt" file is created at the root folder of the program, when device is added to the server independently on adding mode. In this file, a list with the data of devices that were added to the server is created and updated.

You can see a list of all devices that were registered on the server in the "Device table" tab, or you can delete a device from the server by pressing the corresponding button.

Device registration | Device table

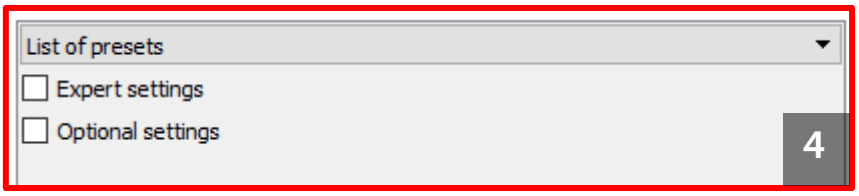
	Device name	DevEUI	Action
411	ТД-11 № 8	333133374E38610A	Delete
412	ТД-11 № 9	333133378338650B	Delete
413	ТД-11 № 10	333133374D386A0A	Delete
414	HS0101 № 1	3239343463386F09	Delete
415	HS0101 № 2	323934343E38820D	Delete
416	HS0101 № 3	323934343E387009	Delete
417	HS0101 № 4	323934345938830A	Delete
418	HS0101 № 5	323934343A38820D	Delete
419	СИ-21 № 1	3434383557376D0F	Delete
420	СИ-21 № 2	343438356937520E	Delete
421	СИ-21 № 3	3434383572375E0E	Delete
422	СИ-21 № 4	393337386937770C	Delete

Pic. 5. "Device table" tab.

[1] device is not existed on server before and is registered with corresponding registration information

Settings of the added devices

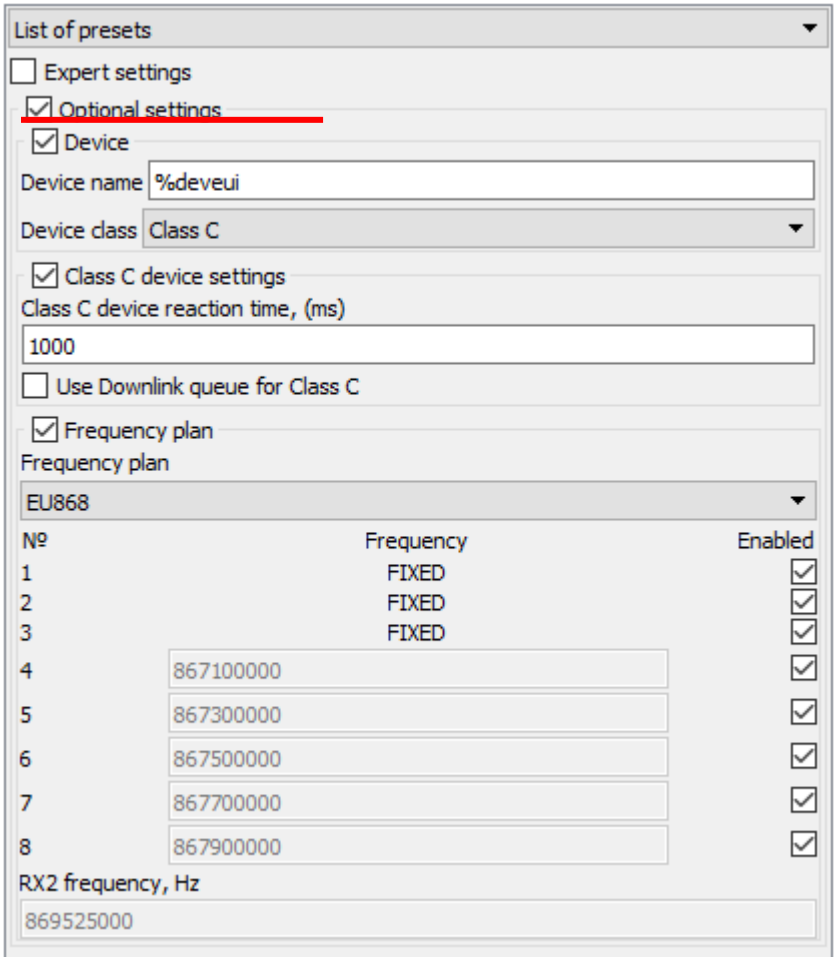
At the right side of the window, there are settings that apply to all added devices.



Pic. 6. Settings.

Pay attention. If the device is already added to the server, then the repeat adding with other settings just will rewrite settings.

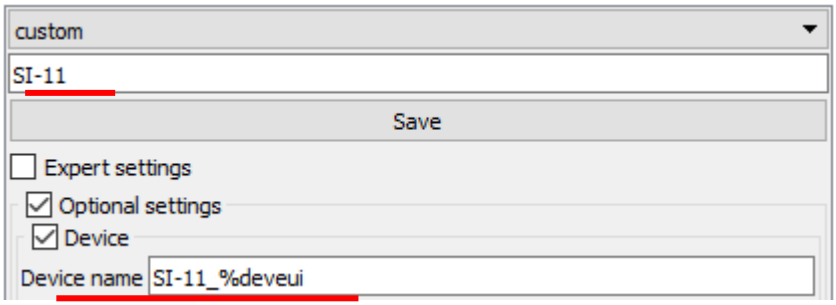
Settings are divided on “Expert” and “Optional”. Let’s see “Optional” settings, to open them you need to tick at opposite.



Optional settings have the submenu:

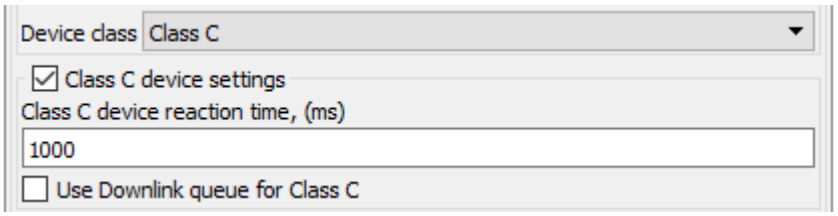
- **Device** (you can set the device name and class)

By default, the device name will be equal “DevEui” of that device. You can use presets – for that you need to choose in the “List of presets” menu the **custom** and write name, *SI-11* for example and press **Save** button.
After that the device will be added on the server with the name is SI-11_%deveui, and in the **Name** field it will be displayed as it’s shown below:

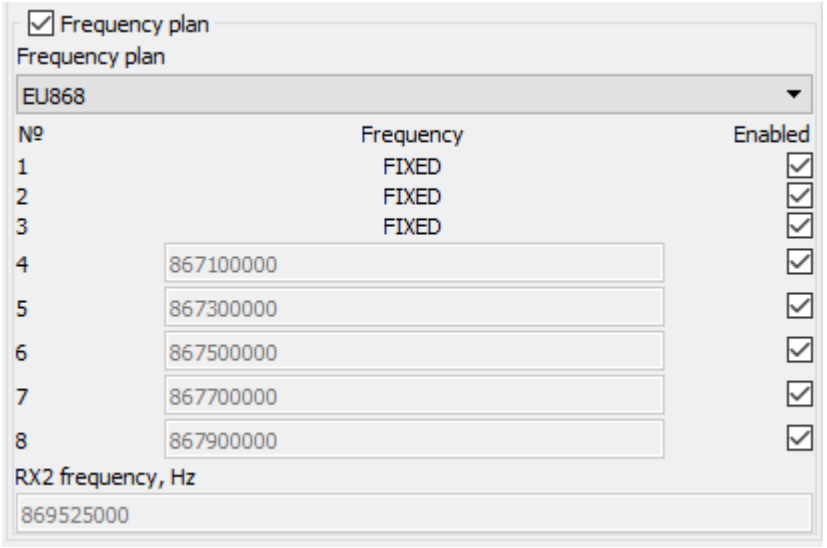


Also, you can add data key %date in the device name, so the device name will have the data of registration on the server, and in the Name field it will be displayed for example as: SI-11_%deveui_%date.

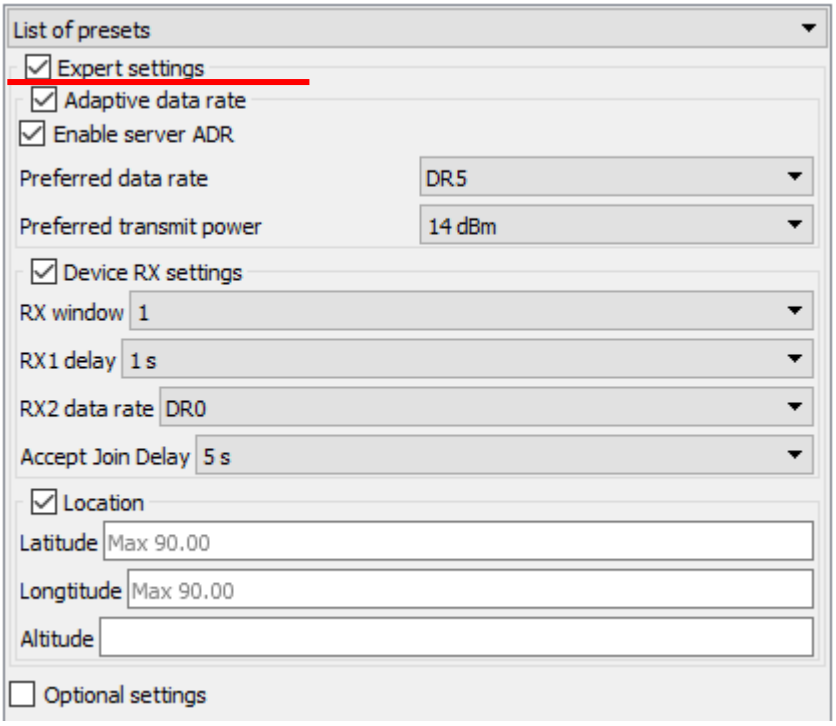
- **Calss C device settings** (if the class C is selected, otherwise it’s not displayed)



- **Frequency plan**



Now let's see "Expert" settings.



They include the next submenu:

- Adaptive Data Rate –**ADR** settings – speed and power of data transmission.
- Device **RX** settings – settings of the receiving windows duration and the delays between the windows, as well as the transmission speed of the second receiving window.
- **Location** – there are the coordinates of the device for displaying in the client software on the map.

Important. Don't change the "Expert" setting if you are not sure about their meaning.

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Product name	Type number
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01	02.07.2019	KEV	Document creation date
02	14.01.2020	KEV	Screenshots are replaced, minor changes
03	25.11.2020	KEV	Removed the wrong information about Linux OS

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