

Quick Installation Guide

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Latest version always at:	https://goo.gl/ikwwb8 *

This document is purposed to guide through NumberOK trial installation and setting up process to receive quick results.

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Software Installation

Please, have activation code at hand.

If you did not request one please, inquire it from nok.licence@team.ff-group.org specifying the following details:

Product type: **NumberOK Lite** Trial or **NumberOK SMB** Trial (see the difference in the table below);

Number of channels: **2**

Your country / company name or web-site: e.g. **UK / SecCCTV.com**

Number of activations: **1** or **2**

Trial period, days: **15** by default or **30** days

Please, provide explanations if you need more than 15 days.

Important note: Should you request 2 activations trial period will end for both installations after trial period since 1st activation.

Product	Product features brief
NumberOK SMB	ANPR + business logics (checkpoint, parking)
NumberOK Lite	ANPR only

Download installation executable file from [NumberOk last version](#)

Launch the file as the **Administrator**.

Follow further on-screen installation instructions.

Important note: when asked to confirm the database engine, please, choose Firebird option, which is scalability friendly, offers better performance, and free as well.

Required supplementary software (e.g. database engine) and drivers will be installed.

Please, check part 4 of the Complete User Manual for system performance improvements before setting the system in permanent operation after trials.

Setting NumberOK up

Launch the application.

Go to **Settings > General**

For quick start we recommend to set:

- **Operation mode** section: choose **Checkpoint**
- **Settings for number plates comparison** section:
 - choose **Soft comparison** and
 - check **Ignore region**.

This will help you achieving first positive results early.

Checkpoint operation mode demonstrates basic business functionality (access control, knowing the vehicles within the controlled area and duration of their stay).

Soft comparison and region ignorance will relax ANPR semantics and will allow for special and old number plates. You can tighten ANPR semantics later after system general setup.

You can check the Complete User Manual later to fine tune these and other settings.

Fast test using video-file

You may skip to section **Connecting cameras**.

To run tests having no camera connected, but using a video file instead, please, follow instructions below.

Go to **Settings > Connection**

Check the box under **Zone 1** tab. A red rectangle with an arrow will appear on the right.

Adjust **Direction angle** so the arrow aims down (90°).

Download either of test videos:

- roadway in Lithuania (night, IR) <https://goo.gl/H4GQR8> (144Mb)
- roadway in Poland (daytime) <https://goo.gl/AJHqgE> (156Mb)

You may also use any other roadway video (H264 encoded).

There are three input field groups under **Connection** tab each with a radio-button on the left. Click the lowest one, click an **ellipsis** button on the right, next to Connect button. Find the test video you've just downloaded. Click **Connect** button.

You will see a video playing.

Click **Apply** in lower left corner of the window.

Go to **View** on the top toolbar. You will see the same video, recognized plate number overlays will be floating along with the vehicles. Check the video to see it contains no such overlays.

Go to **Results** on the top toolbar. You will see the list populating with ANPR results. You will notice that some results look like time indication (e.g. 130518 or I3O51B accompanied with crop image depicting

digital clock). Go to **Settings > Connection** and adjust zone so it doesn't cover OSD (date-time and Camera 01) and covers straight paths of vehicles trajectories. Click **Apply**.

To stop ANPR on video-file:

- go to **Settings > Connection**
- uncheck **Enable zone**
- under **Connection** choose a radio-button next to first input field
- click Connect button
- dismiss the empty rtsp-string error message
- click **Apply**

Connecting cameras

Go to **Settings > Connection**

You will see tabs on the left: Video source 1 and Video source 2. This guide is limited to setting up a single channel, i.e. video source over **rtsp**.

Please, refer to the Complete User Manual if your camera doesn't provide an **rtsp** stream or when you need to connect another camera later.

Find an **rtsp**-string for the camera you want to connect. Please, refer to your camera technical manual to find one. You can find typical **rtsp**-strings for cameras from 20 various vendors in section 7 of the Complete User Manual.

Click the radio-button next to an input field containing "**rtsp://**" sequence, then click the input field and type or paste the **rtsp**-string.

Click **Connect** button.

If you see green success message then connection is established. Red message indicates connectivity issues. Check the **rtsp**-string.

The most frequent issues with connectivity are:

- 1) typo in **rtsp**-string
- 2) **rtsp**-string refers to a LAN IP while NumberOK is located outside camera's LAN
- 3) **rtsp**-string refers to a WAN IP while router implies restrictions on protocol and/or port forwarding

Sometimes connection gets broken, especially if camera and NumberOK are connected over WAN/Internet. NumberOK will try reconnecting, eventually reporting the issue.

Please, refer to the Complete User Manual for connectivity issues troubleshooting.

Setting up recognition zones

Go to **Settings > Connection**

Choose either **Video Source**.

You can set up up to 4 zones per channel. Each zone is quadrangle.

Choose some zone. Check **Enable zone** is on. Default zone marking will appear in camera view.

Click and drag quadrangle vertices to fit the zone where plate numbers are expected to appear. The greater the zone the more it affects NumberOK performance. Try sticking to areas where number plates are most likely to appear and yet readable.

Adjust **Number plate size** (single row plate visible width) range. Default value of 130px-250px normally fits the ANPR needs. 130px is the minimal possible value for ANPR purposes. The greater the values the more it affects performance. Try sticking to real values, you can measure from camera snapshots.

Recognition sensitivity: 70% is a good start. Make it lesser if some plates are missed (provided other settings are set properly) or increase if you get recognized some irrelevant regular structures, which are not licence plates. Values below 50% and above 80% are not recommended and it is unlikely that values beyond these boundaries will improve ANPR. Start with setting it at 70%. Further adjusting this setting should be a last resort.

Adjust entrance **Direction angle** as required. From that NumberOK can tell whether a vehicle has entered or exited the controlled area.

Adjust **Interval of number plate loss** (seconds) as required. If a plate number stays within the frame after the indicated time, it will be recognized again.

You may want setting up other zones if more than one lane is in view.

Zones also can overlap or even match each other. In the latter case you may assign them opposite or perpendicular directions.

Collecting first results

Browse the views:

View - monitoring video sources.

Results - collected events.

Reports - use filters to search through results.

Collect some results. Initial collection is a good source of information to help tuning the cameras and system.

From Reports you can export any report into Excel document (check an icon in lower right corner of the window). You will also find **Open folder with snapshots** and **Open folder with reports** buttons in **Settings > General**.

Please, refer to the Complete User Manual for more details.

Managing listed cars and access control

Go to **Car database**.

There are three tabs available:

- **Vehicles** - add plate numbers to form access or alert lists
- **Groups and ACS** - vehicle groups to manage access and alerts
- **Reactions** - group related reactions management

There are two groups available by default - **Allowed** and **Denied**. Adding a vehicle you can assign one to either,

Adding vehicles

Click **Add** button. Click gray rectangle under **Plate number** heading and type a plate number, no spaces or other delimiters allowed. Assign a group, normally **Allowed**.

On the right choose **Country** and other details for the new vehicle.

Add as many vehicles as required.

Groups Management

You can also change access policy for each group. You may want set certain restrictions to group **Allowed**: check the relevant box and set date range, time of the day and weekdays the vehicles from **Allowed** group are really allowed to enter the territory.

Here you can add other groups assigning different access policy to each. For example, you expect some vehicles at the venue for a conference. Click **Add** button, new row will appear. Double click and edit

group name, check **Allowed** radio button, check the box on the right and adjust time period and weekdays as required. Then add vehicles on the **Vehicles** tab assigning those to the new group.

Reactions

Click **Add** button. Reaction editor window will appear.

Edit **Denomination** and **Description** fields (e.g. Open barrier).

Select event type, e.g. **Checkpoint**. Extra fields will appear.

Check **Select type of car or group** checkbox, click **Group** radio button, choose group **Allowed** from a drop-down list.

Check **Window** on the right.

Click **OK**.

Now you will get alerted every time a vehicle from **Allowed** group appears.

Please, refer to the Complete User Manual to find out how to manage a barrier and fine tune the reactions.