

XNO-6120 R/FNP

Roadway ANPR Camera

OoB with FF ANPR application v.5.1.17

Installation Guide

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- List management and Reactions
- Integrations (NVR, JSON, Web API)

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- ANPR application features to come

Technical Support

SNO-6120 RH / FNP

Overview

Camera specifications

Max. 2 megapixel (1920 x 1080) resolution

0.03Lux@F1.6 1/30 sec (Colour)

0Lux (B/W: IR LED on)

5.2 ~ 62.4mm (Optical 12x) varifocal lens

2 SD card slots

32Gb SD card pre-installed

IR LED Viewable Length:

- 1) **20m / 66ft (Licence plate recognition)**
- 2) **70m / 230ft (Normal use)**

Operating Temperature **-40°C ~ +55°C / -40°F ~ +131°F**

Operating Humidity less than 90% RH

ANPR Application

Application comes pre-installed **out-of-box**

Solution Partner: FF Group

Recommended use: roadway ANPR

Requires SD card to store events and snapshots

For more details please visit

<https://www.hanwha-security.eu/business-security-products/xno-6120rfnp/>



Traffic speed limit, up to
km/h / mph

160 / 100
on a single lane

80 / 50
on two lanes

Click to jump to
contents



Camera Mounting

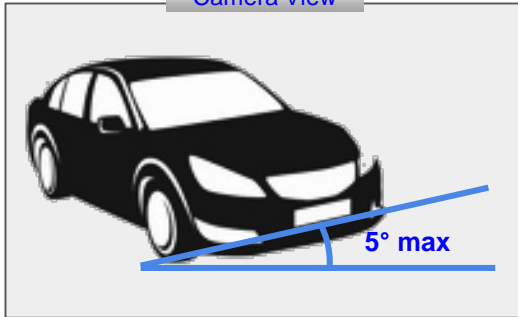
First steps to obtain best results

Camera Mounting

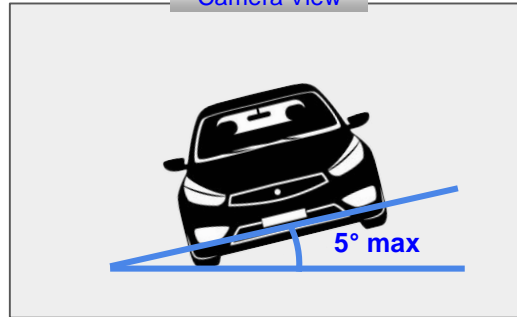
Perfect Installation Scenario - Camera tilt



Camera View

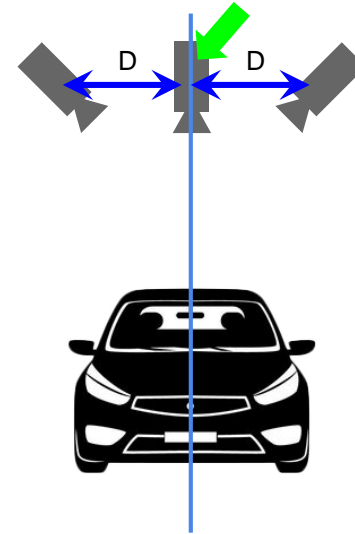


Camera View



Camera Mounting

Perfect Installation Scenario - Camera placement

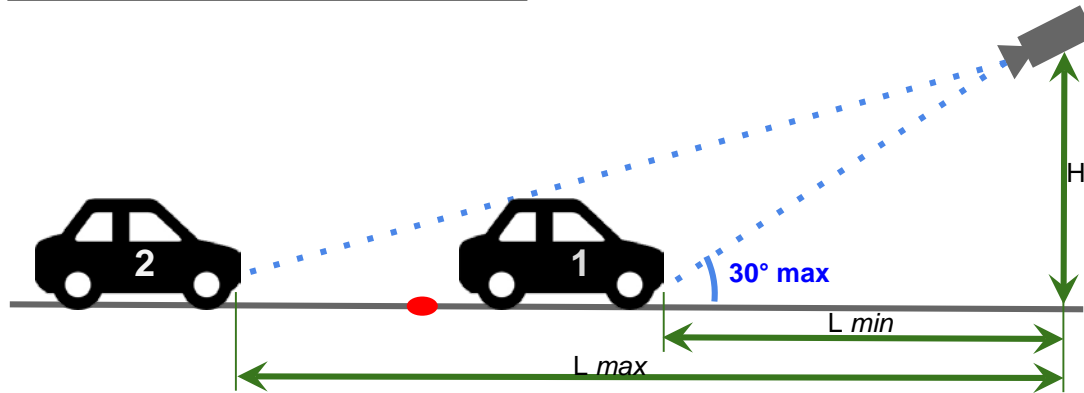
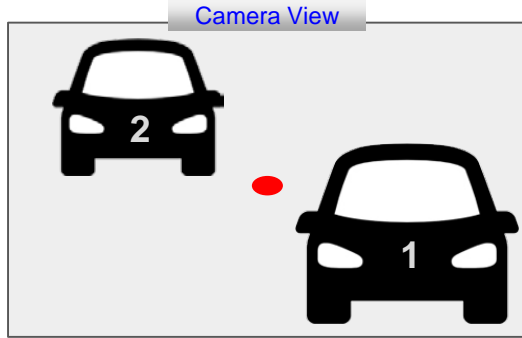


	D max
meters	1.5
feet	5



Camera Mounting

Perfect Installation Scenario - Recommended distances



H	L min		H	L min
meters			feet	
3.0	5.1		10	17.3
3.5	6.0		12	20.7
4.0	6.9		14	24.2
4.5	7.7		16	27.7
5.0	8.6		18	31.1
5.5	9.5		20	34.6
6.0	10.3		22	38.1

L max depends on lens zoom, however **should not exceed 20m / 66ft** considering effective IR range

Please consider using **external IR** for ranges longer than 20m / 66ft

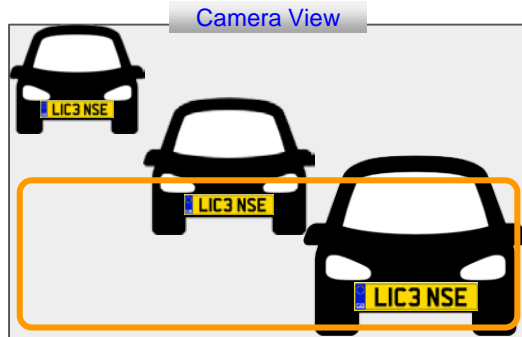


Camera Mounting

Perfect Installation Scenario - Plate number dimensions

If single row licence plate takes from **1/10 to 1/5** of FullHD (1920x1080) frame width then it fits ANPR requirements.

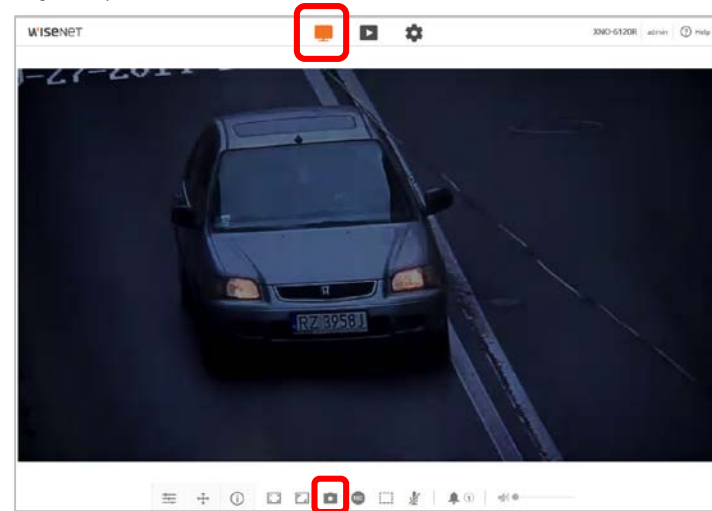
Normally, setting recognition zone (see yellow frame below) in lower half of camera view is sufficient and favours app performance.



Best results are achieved when single row number plate width is between **150** (better) and **400** pixels (acceptable). Greater width may affect performance.

To measure pixel width of plate numbers:

1) spread or move plate numbers (cars) across the scene (see illustration on the left below) and take snapshots using iPolis web viewer capturing feature (**Live -> Capture**);



2) use any free image processing or viewing software to measure plate number width and tilt angles.

NB! WN3 iPolis is supported by specific browsers.

Please, refer to notes on that in Camera Settings section below.

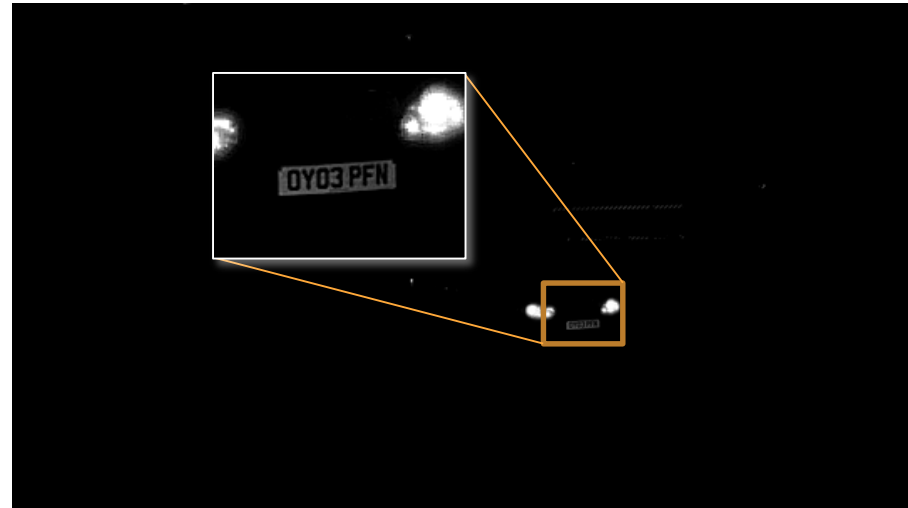


Camera Mounting

Proper installation – possible IR restrictions



The license plate is quite close to the frame boundary. You may notice a vignette effect.



The license plate is closer to the centre of the frame. The plate is lit better.

Pay special attention to IR vignette effect (see illustration on the left) when setting up recognition zone. The closer to the centre the more even lighting is.

Also in this particular case real pixel width of the number plate is ~70px.

The Automatic Gain Control effect will be illustrated in camera exposure settings section.



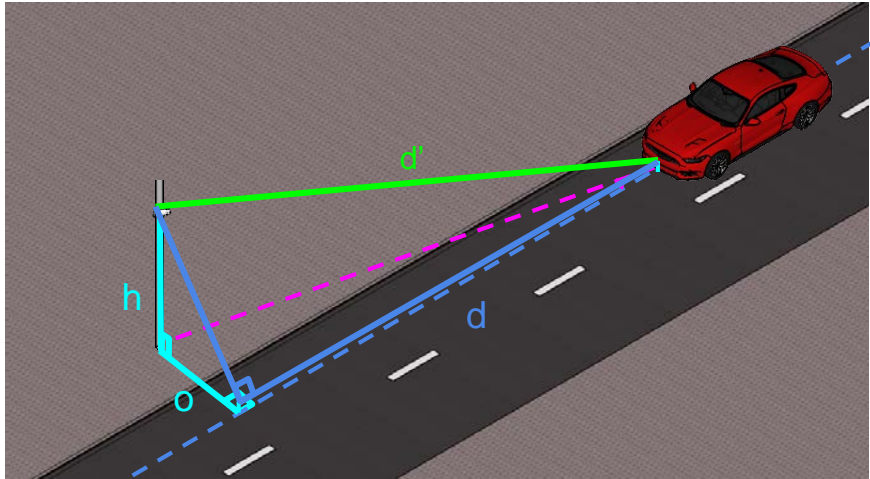
Camera Mounting

Other installation scenarios - Advanced guidelines

For installation under conditions that do not fit constraints above, please refer to the comprehensive manual:







<https://goo.gl/1KrM9W> – download

<https://goo.gl/pluVa1> – view



Consider referring to WiseNet toolbox to check XNO-6120R field of view

<https://www.hanwha-security.com/wisenettoolbox/index.html#!/en/home>

WISENET TOOLBOX			
New	Network	Analog	DVR
	XNO-8080R 2017 Year, Wisenet X Seri... NEW 	XNO-6080R 2017 Year, Wisenet X Seri... NEW 	XNO-6010R 2017 Year, Wisenet X Seri... NEW 
BULLET 26	Fov	Fov	Fov
	XNO-8030R 2017 Year, Wisenet X Seri... NEW 	XNO-8040R 2017 Year, Wisenet X Seri... NEW 	XNO-6120R 2017 Year, Wisenet X Seri... NEW 
	Fov	Fov	FoV
ONO-6010R	ONO-6020R	ONO-6030R	PNO-9080R

Camera Mounting

Proper installation - Best practices

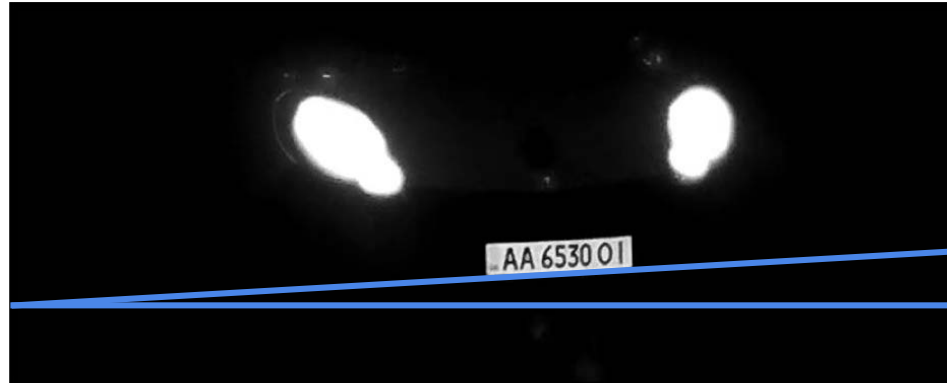
Daytime



NP/LP:

- good proportion to the frame width
- well lit
- sufficient contrast
- acceptable tilt angle

Night time



NP/LP:

- good proportion to the frame width
- perfect IR power
- sufficient contrast
- critical yet acceptable tilt angle



Camera Mounting

Installation don'ts - Worst practices



NP/LP:

- too small (less than 130px width)
- tilt angle exceeds 5°

Camera aspect view:

- too steep, much above 30°



Installation Summary

Scene requirements :



License plate is more than 130px in width



License plate is readable



Vertical angle is less than 30°



Horizontal angle is less than 30°



Tilt angle is less than 5°



Camera Settings

Tuning camera to work
even under nasty weather conditions

Camera Settings

Important note on web browsers

WisenetX cameras could be reached through Non-Plugin Web Viewer via:

- Google Chrome 56
- MS Edge 39
- Mozilla Firefox 49 (Win 64bit only)
- Apple Safari 10 (Mac OS X only)

Or Plug-in Web Viewer via:

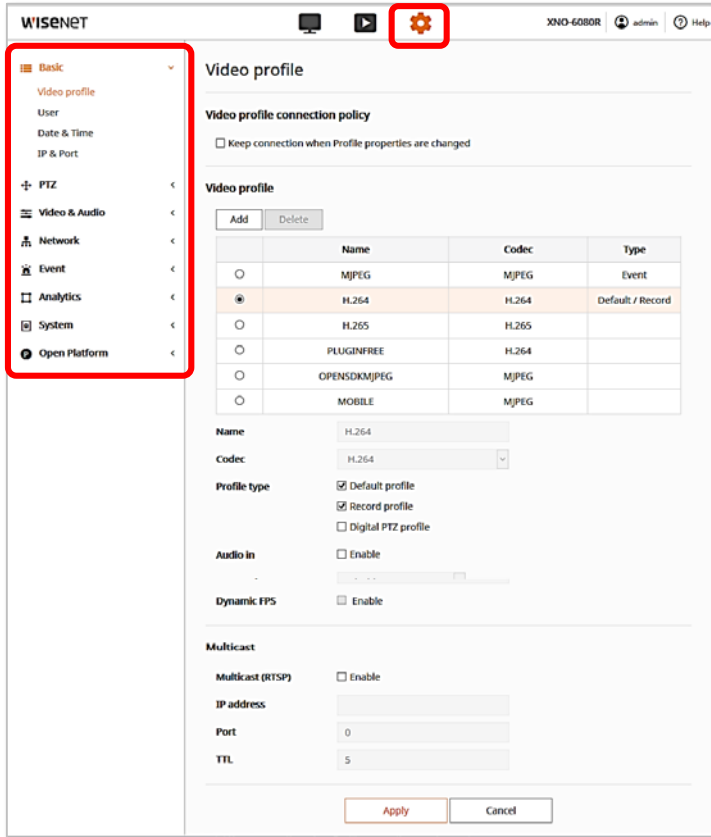
- Internet Explorer 11
- Apple Safari 10 (Mac OS X only)

The above is based on X-series datasheet.

NB! IE requires extra efforts to enable plug-in and doesn't support legacy styling required by ANPR application!



Camera Settings Overview



WISENET

XXNO-6080R admin Help

Basic

- Video profile
- User
- Date & Time
- IP & Port

PTZ

Video & Audio

Network

Event

Analytics

System

Open Platform

Video profile

Video profile connection policy

Keep connection when Profile properties are changed

Video profile

Add Delete

	Name	Codec	Type
<input type="radio"/>	MJPEG	MJPEG	Event
<input checked="" type="radio"/>	H.264	H.264	Default / Record
<input type="radio"/>	H.265	H.265	
<input type="radio"/>	PLUGINFREE	H.264	
<input type="radio"/>	OPENSIXMJPEG	MJPEG	
<input type="radio"/>	MOBILE	MJPEG	

Name H.264

Codec H.264

Profile type

- Default profile
- Record profile
- Digital PTZ profile

Audio in Enable

Dynamic FPS Enable

Multicast

Multicast (RTSP) Enable

IP address

Port 0

TTL 5

Apply Cancel

For proper operations, please, check and set properly:

- Camera Date Time
- IP settings
- SD card storage
- Camera exposure and focus

Some features like **SSDR**, **WDR**, **DIS**, **Defog**, **AGC** and **anti-flickering** are good for human eye but affect computer vision performance and therefore setting these to the least possible effect or turning off strongly advised.

Note on IR: SNO-6095 IR is controlled by an external sensor and cannot be managed via iPolis.

Note on native events: native events affect overall performance and also consume SD card storage when employed.



Camera Settings

Date and Time

The screenshot shows the WISENET camera settings interface. The left sidebar contains a menu with the following items: Basic (highlighted with a red box), Video profile, User, Date & Time (highlighted with a red box), IP & Port, PTZ, Video & Audio, Network, Event, Analytics, System, and Open Platform. The main content area is titled "Date & Time" and contains the following sections:

- Current system time**: Shows the current date and time as 2017-07-01 13:17:28.
- Time zone**: A red box highlights this section, which includes:
 - Time zone**: A dropdown menu showing "(GMT+02:00) Helsinki, Kyiv, Riga, Sofia, Tallinn, Vilnius".
 - Daylight saving time**: A checkbox labeled "Enable" which is checked.
 - Start time**: A text field showing "March.Last.Sun/03:00:00".
 - End time**: A text field showing "October.Last.Sun/04:00:00".
 - Buttons for "Apply" and "Cancel".
- System time setup**: A red box highlights this section, which includes:
 - Manual**: A radio button selected next to "Manual".
 - Y - M - D**: A date picker showing "2017 - 07 - 01".
 - h : m : s**: A time picker showing "13 : 17 : 16".
 - Synchronize with PC viewer**: A checkbox which is unchecked, with a text field below it showing "2017-07-01 13:16:44".
 - Synchronize with NTP server**: A radio button which is unselected, followed by five "Address" fields with the following values:
 - Address 1: pool.ntp.org
 - Address 2: asia.pool.ntp.org
 - Address 3: europe.pool.ntp.org
 - Address 4: north-america.pool.ntp.org
 - Address 5: time.nist.gov
 - Buttons for "Apply" and "Cancel".

Choose **Timezone** and set **Use daylight saving time** as appropriate.

Set **date and time** or opt to **synchronize** with your PC or NTP server.



Camera Settings

IP, DNS, ports

WISENET XNO-6080R admin Help

Basic

Video profile

User

Date & Time

IP & Port

PTZ

Video & Audio

Network

Event

Analytics

System

Open Platform

IP & Port

IP address	Port
IPv4 setup	
IP type	Manual
MAC address	00:16:6C:C3:9D:44
IP address	10.0.3.135
Subnet mask	255.255.255.0
Gateway	10.0.3.1
DNS 1	168.126.63.1
DNS 2	168.126.63.2
Host name	XNO-6080R
IPv6 setup	
IPv6	<input type="checkbox"/> Enable
IP type	Default
IP address	
Prefix	64

Apply Cancel

Proper IP, DNS and ports setting are important for:

- NVR and other integrations
- outside LAN access if required

NB! Reboot the camera whenever IP address gets changed.



Camera Settings

SD Card

The screenshot shows the Wisenet camera settings interface for the XNO-6080R camera. The left sidebar contains navigation options: Basic, PTZ, Video & Audio, Network, Event (highlighted), FTP / E-mail, Storage (highlighted), Alarm output, Alarm input, Time schedule, Network disconnection, App event, Analytics, System, and Open Platform. The main content area is titled 'Storage' and includes a 'Storage action setup' table, 'Record profile' settings, 'Record file type', 'Overwrite' options, 'SD File System' settings, and 'Normal record schedule' options.

Storage action setup

	Device	Record	Free size	Total size	Status	
<input checked="" type="radio"/>	SD Card	On	5.68 GB	7.39 GB	Recording	Format
<input type="radio"/>	NAS	Off	0 MB	0 MB	None	Format

Record profile H.264

Normal recording Full frame

Event recording Full frame

Pre event duration 3 seconds

Post event duration 120 seconds

Record file type AVI

Overwrite Enable

Auto delete 180 days (1 ~ 180)

SD File System

Type VFAT

Normal record schedule

Always Only scheduled time

Check SD card is present physically.

Enable it and **format** if required.
Check **SD status** is **Recording**.

If SD card is not present or its status is Off then:

- no ANPR snapshots stored
- no advanced integration available

Should native events (motion detection, scheduled recording etc) be employed consider

- 1) installing 2 SD cards
- 2) using **class 10 64-128 Gb** SD cards
- 3) setting **Overwrite** and **Auto delete** features



Camera Settings

Video setup

The screenshot shows the WISENET camera settings interface. The left sidebar contains a menu with the following items: Basic, PTZ, Video & Audio (highlighted with a red box), Video setup (highlighted with a red box), Audio setup, Camera setup, Smart codec, WiseStream, Network, Event, Analytics, System, and Open Platform. The main content area is titled 'Video setup' and includes the following elements:

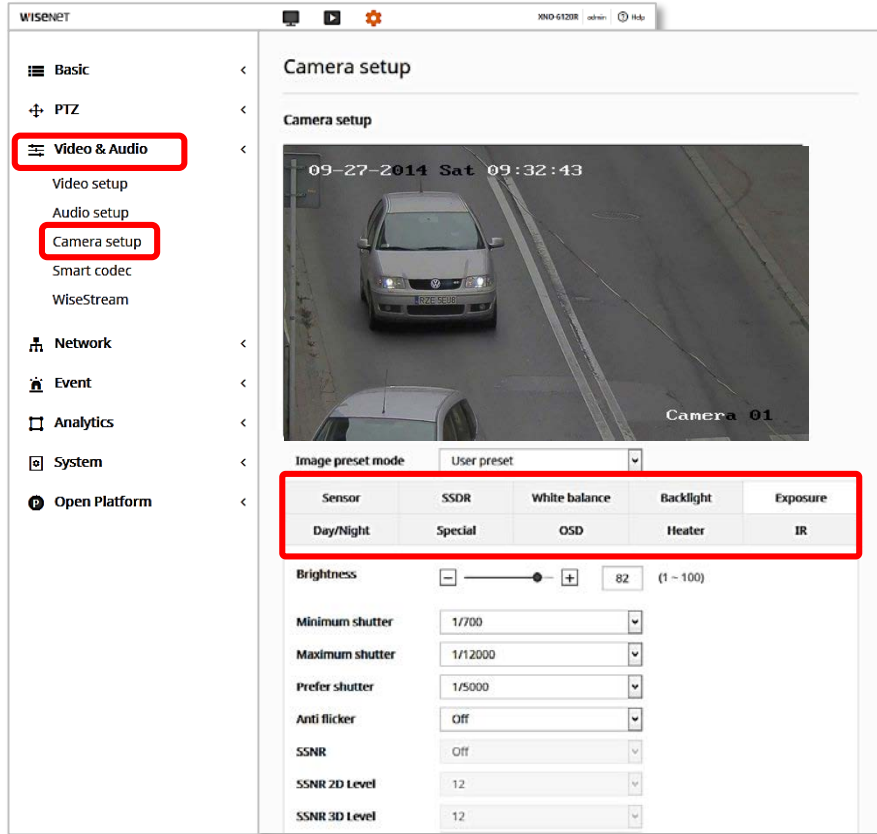
- Enable Privacy area:
- Make 4 dots on the video preview window. (Warning icon)
- Video preview window showing a camera view of a room.
- Pattern: Solid (dropdown menu)
- Delete button
- Table with columns: No., Name
- Video rotation section (highlighted with a red box):
 - Flip: On Off
 - Mirror: On Off
 - Hallway view: 0 degree (Clockwise) (dropdown menu)

Check video settings.



Camera Settings

Exposure adjustments



Camera setup

Camera setup

09-27-2014 Sat 09:32:43

Camera 01

Image preset mode: User preset

Sensor	SSDR	White balance	Backlight	Exposure
Day/Night	Special	OSD	Heater	IR

Brightness: 82 (1-100)

Minimum shutter: 1/700

Maximum shutter: 1/12000

Prefer shutter: 1/5000

Anti flicker: Off

SSNR: Off

SSNR 2D Level: 12

SSNR 3D Level: 12

Sensor: 25 fps

SSDR: Off

White balance: ATW

Back light: Off (try other settings only if camera gets blinded by headlights in the night)

Exposure:

- Minimum shutter: 1/700
- Maximum shutter: as much as possible
- Anti flicker: Off
- SSNR (noise reduction): default
- Lens: as appropriate (set to DC whenever available)
- P-Iris: set to maximum
- AGC (gain control): Off

Day/Night:

- Mode: B/W
- Simple focus after D/N: Off

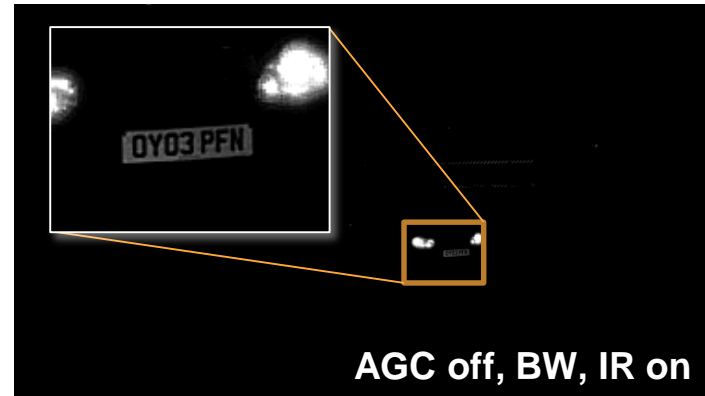
IR: manual, level 100

Other settings: default



Camera Settings

Exposure adjustments – Automatic Gain Control



Automatic Gain Control can improve overall scene visibility notably. However, even at low setting AGC produces noise that can ruin license plate images, also lighter areas tend to bleach out. See illustrations to the left.

Start with turning AGC off and setting IR power as much as possible (while controlling possible bleach out at closer ranges). See the illustration above. Set AGC to low or high to improve plates visibility unless only other methods are helpful.

Adjust zoom so that real plate pixel width is at least 130px. Consider adjusting recognition zone so it is closer to the centre of the frame to avoid IR vignette effect.



Camera Settings

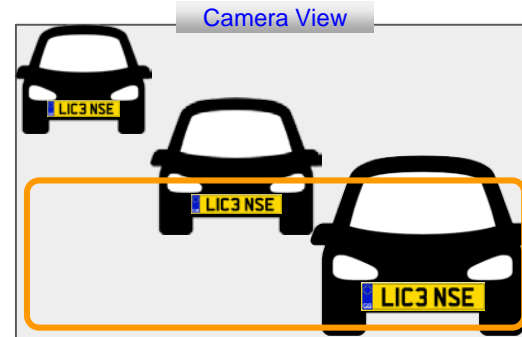
Focus setup

The screenshot shows the WISENET interface with the 'Focus setup' section selected in the left sidebar. The main area displays a camera view of a road with a car. Below the video feed is a 'Reset' button and a table of focus settings. The table has two rows of values: -100, -10, -1, 1, 10, 100. The bottom row of the table is highlighted with a red box.

	-100	-10	-1	1	10	100	▲
	-100	-10	-1	1	10	100	●

Adjust focus so number plates are sharp within intended recognition area.

Please, note that screen resolution pictures seem sharper than they actually are.



Camera Settings

Focus and Shutter faults

Depth of field is insufficient to cover foreground license plates.
Adjust the lens settings.



Improper focus settings.
Adjust the lens.



Blurry image due to long exposure.
Fix the shutter speed to obtain sharper picture.



Camera Settings

Exposure faults



Too much light. Either adjust the iris or shutter speed.
Night time: dim the IR or set AGC to Low.



Insufficient light. Adjust exposure settings or provide additional lighting.



ANPR Application

Installation & setup

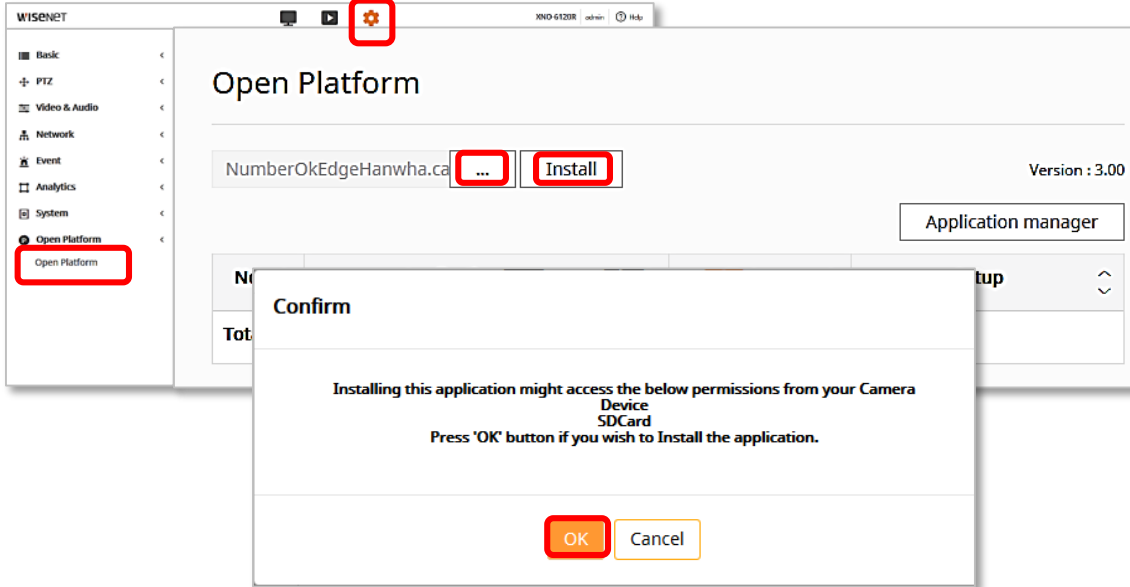
Event collection & search through results

List management & reactions

Integrations (NVR, JSON, WebAPI)

Application Installation Upload

The product is supplied out-of-box with FF ANPR application pre-installed and activated. The instructions below are provided to create awareness of installation and activation process.



Provided you've got an installation file. Make sure application being stopped and uninstalled and SD card being formatted prior to upgrading/replacing the application.

Check that filename **doesn't contain any spaces and other non-alphanumeric characters** (like red ones in an example below); single full stop is allowed.

`NumberOkEdgeHanwha_(1).cap`

In Web-viewer:

1. go to **Setup > Open Platform > Open Platform**
2. click [...] button and **upload** installation file
3. click **Install**
4. **Confirm** SD card permissions



Application Installation Launch

Open Platform

... Install Version : 3.00

Application manager

No.	Application name	Status	Setup
1	NumberOkEdgeHanwha Installed date : 2017-07-01 T 13:40:22 Version : 5.1.17	Stopped Start Health	Priority <input type="radio"/> Low <input type="radio"/> Medium <input checked="" type="radio"/> High Auto start <input checked="" type="checkbox"/> Enable <input type="button" value="Apply"/>

Uninstall Go App

1. set Priority to **High**
2. check **Auto start**
3. **Apply** changes
4. **Start** application
5. Status will change to **Started but not running**
6. Wait for 5 seconds and refresh the page
7. Click **Go App**
8. Allow Pop-up windows if browser alerts so

To relaunch the application just click **Stop** and then **Start** again.

Options

Allow pop-ups for 10.0.3.135

Edit Pop-up Blocker Options...

Don't show this message when pop-ups are blocked

Show 'http://10.0.3.135/home/setup/opensdk/html/NumberOkEdgeHanwha/inde...

10.0.3.129/wmf/index.html#/setup/openplatform_opensdk

The following pop-ups were blocked on this page:

<http://10.0.3.129/home/setup/opensdk/...index.html?AppName=NumberOkEdgeHanwha>

Always allow pop-ups from http://10.0.3.129

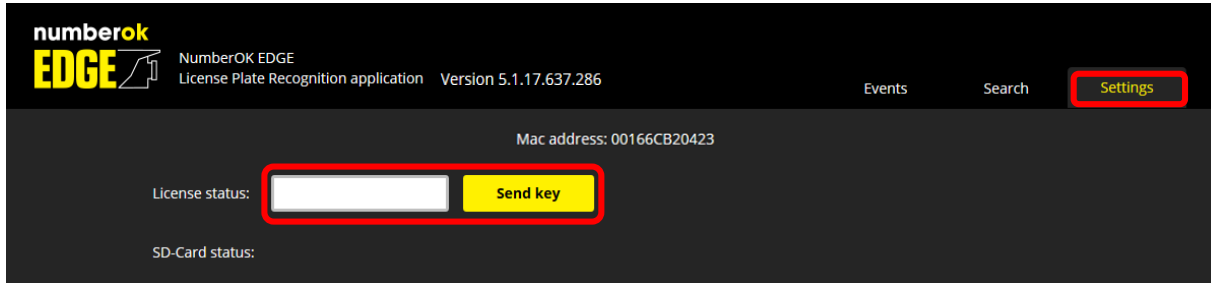
Continue blocking pop-ups

Manage pop-up blocking...

Done



Application Installation Activation



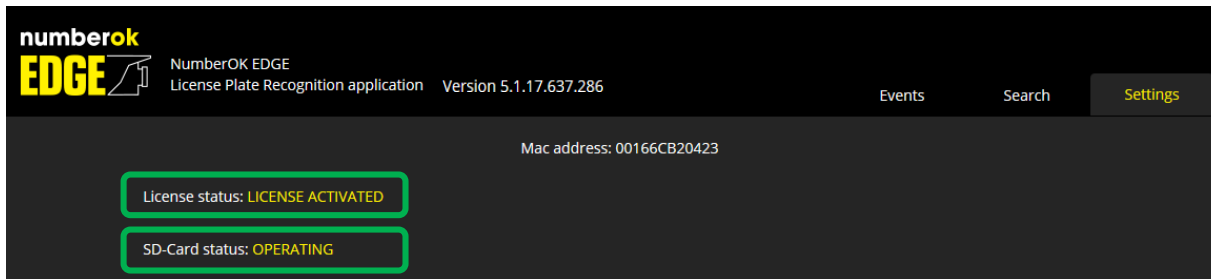
Provided you've got an activation key from **Hanwha support**:

1. go to **Settings**
2. paste the key in **License status** input field
3. **Send key**

Go to Web Viewer:

Setup > Open Platform > Open Platform

Stop application, wait for 10 seconds, then **Start** application.



Go back to Application settings

1. if the key is correct License status will say **Activated** and key input field will disappear
2. check that SD card status is **Operating**

Direct app URL (WiseNet5)

<http://x.x.x.x/home/setup/opensdk/html/NumberOkEdgeHanwha/index.html?AppName=NumberOkEdgeHanwha>



Application Setup

ANPR Settings - Recognition Area and Plate width

The screenshot displays the NumberOK EDGE application interface. At the top left, the logo 'numberok EDGE' is visible, along with the text 'NumberOK EDGE License Plate Recognition application Version 5.1.17.637.286'. The top navigation bar includes 'Events', 'Search', and a 'Settings' button highlighted with a red box. Below the navigation bar, the 'Mac address: 00166CC39D44' is shown. The 'License status: LICENSE ACTIVATED' and 'SD-Card status: OPERATING' are displayed in green text. A yellow 'Save setting' button is highlighted with a red box. The main area shows a live video feed from 'Camera 01' with a yellow recognition zone frame around a silver car. The frame has red square handles at the corners for repositioning and red circular handles at the midpoints for resizing. The timestamp '09-27-2014 Sat 09:32:43' is visible in the top left of the video feed. At the bottom, a slider for 'Min plate width, px' is highlighted with a red box, with the value '130' displayed next to it.

Adjust recognition zone.

Click and drag to reposition.

Click inside recognition zone frame to activate resize controls. Drag frame midpoints to resize.

Avoid OSD text and obstacles.

For better ANPR results ensure that plates enter and exit the zone through upper and lower borders of the frame.

Adjust **Min plate width** as appropriate.

Click **Save setting**

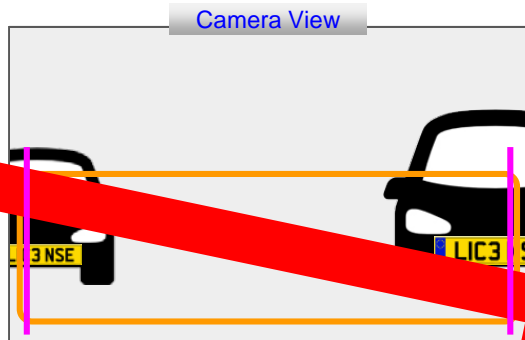
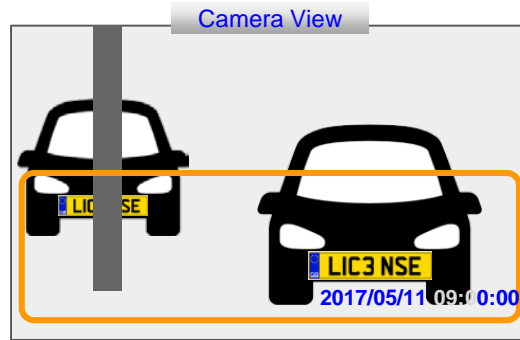
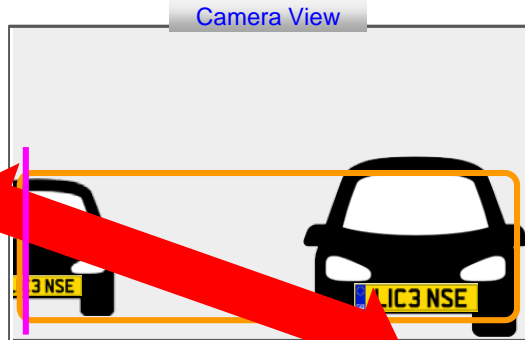


Application Setup

Recognition zone - Motion paths

ANPR unfriendly motion paths

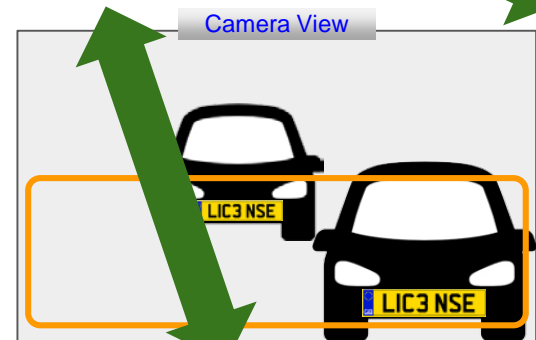
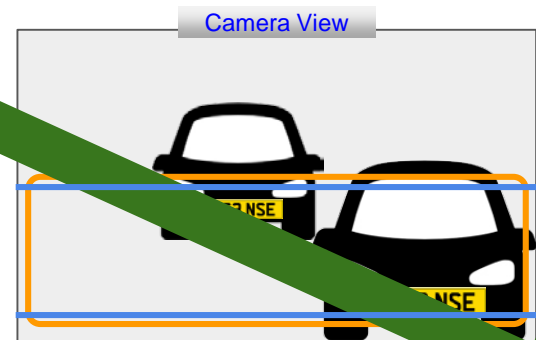
(partial plate number recognition may occur)



Also avoid having within the recognition area:

- any obstacles that can appear between plate numbers and camera;
- OSD.

ANPR friendly motion paths



Application



Test operations

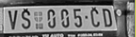







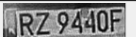

numberok
EDGE NumberOK EDGE
License Plate Recognition application Version 5.1.17.637.286

Events Search Settings

Version 5.1.17.637.286

This mode is provided for setup purposes only.
It is not intended for continuous monitoring as video process affects camera and application performance a lot.

Date / Time	Plate	List	Action	Photo	Country
05/07/2017 15:14:19	VSnn5CDI	Not in list	Saved to SD Sent to NVR		No Country
05/07/2017 15:14:16	VS005CD	Not in list	Saved to SD Sent to NVR		SRB
05/07/2017 15:00:38	EK86	Not in list	Saved to SD Sent to NVR		DEU
05/07/2017 15:00:33	RZELW90	Not in list	Saved to SD Sent to NVR		POL
05/07/2017 15:00:31	RPZY325	Not in list	Saved to SD Sent to NVR		POL
05/07/2017 15:00:15	RZ3958J	Not in list	Saved to SD Sent to NVR		POL
05/07/2017 15:00:02	RZ24791	Not in list	Saved to SD Sent to NVR		POL
05/07/2017 14:59:58	RZE2CV9	Not in list	Saved to SD Sent to NVR		POL
05/07/2017 14:59:55	RZ9440F	Not in list	Saved to SD Sent to NVR		POL
05/07/2017 14:59:54	3R9440F	Not in list	Saved to SD Sent to NVR		No Country

1

Events watch

Click camera/plus icons to reveal video stream.

Please, avoid permanent monitoring as video streaming affects overall system performance. Hiding video just saves some space on the screen but it doesn't stop video stream consumption. Prolonged monitoring affects the camera performance even more if accessed from multiple browsers simultaneously.



Application

Test operations

NumberOK EDGE
 License Plate Recognition application Version 5.1.17.637.286

Events
Search
Settings

Version 5.1.17.637.286
 This mode is provided for setup purposes only.
 It is not intended for continuous monitoring as video process affects camera and application performance a lot.

Date / Time	Plate	List	Action	Photo	Country
05/07/2017 15:14:19	VSnn5CDI	Not in list	Saved to SD Sent to NVR		No Country
05/07/2017 15:14:16	VS005CD	Not in list	Saved to SD Sent to NVR		SRB
05/07/2017 15:00:38	EK86	Not in list	Saved to SD Sent to NVR		DEU
05/07/2017 15:00:33	RZELW90	Not in list	Saved to SD Sent to NVR		POL

Events watch

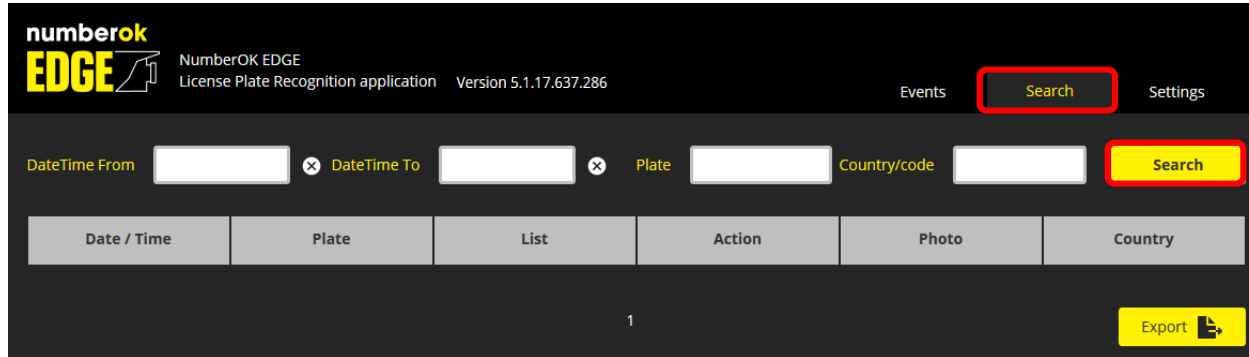
Cross-check licence plates appearance with recognition results.

Adjust camera settings (exposure, zoom, focus, tilt) or ANPR application settings (recognition zone, plate width) as appropriate.



Application

Features overview - Search




numberok
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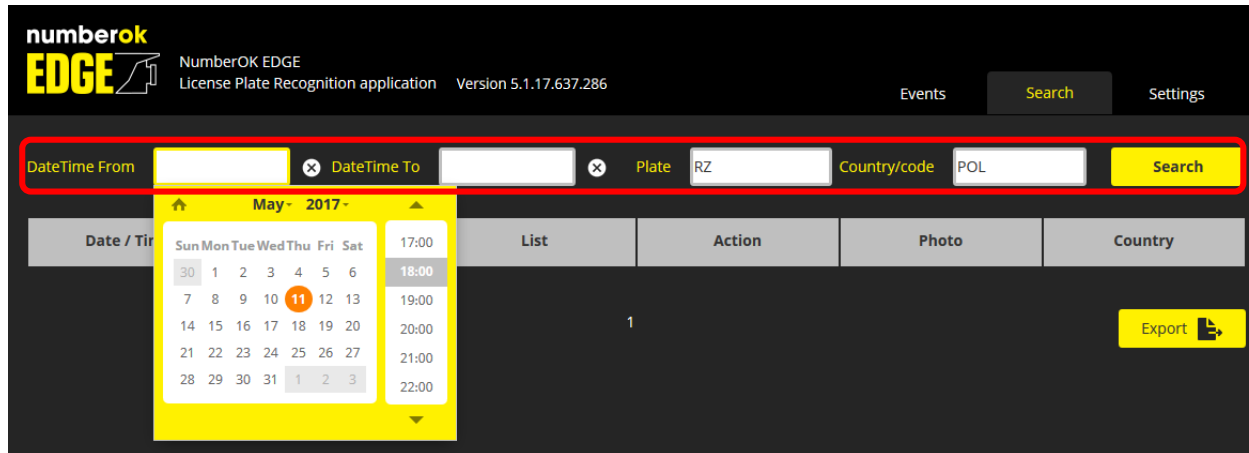
Events **Search** Settings

DateTime From × DateTime To × Plate Country/code **Search**

Date / Time	Plate	List	Action	Photo	Country
1					

Export 

Click Search to get all registered ANPR events.




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Events **Search** Settings

DateTime From × DateTime To × Plate RZ Country/code POL **Search**

Date / Time	List	Action	Photo	Country
1				

Export 

May - 2017 -

Sun	Mon	Tue	Wed	Thu	Fri	Sat
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	1	2	3

Use filters to narrow search down:

- DateTime from/to
- Plate: every plate number that contains given sequence will be found
- Country code:
- Use country code as per [ISO 3166-1 alpha-3](#)



Application

Features overview - Search

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Events Search Settings

Date/Time From x Date/Time To x Plate RZ Country/code POL Search

Date / Time	Plate	List	Action	Photo	Country
11/05/2017 18:03:12	RZ5336H	Not in list			POL
11/05/2017 18:03:18	RZ3628K	Not in list			POL
11/05/2017 18:03:24	RZ9440F	Not in list			POL
11/05/2017 18:03:33	RZ31033	Not in list			POL
11/05/2017 18:03:42	RZE4P99	Not in list			POL
11/05/2017 18:04:05	RZ93343	Not in list			POL
11/05/2017 18:04:06	RZ3160F	Not in list			POL
11/05/2017 18:04:12	RZEHF02	Not in list			POL
11/05/2017 18:04:17	RZ6854H	Not in list			POL
11/05/2017 18:04:22	RZE9EF7	Not in list			POL

1 2 3 4 5 ... 29 30 >

Export

Search results can be exported.

Notes on images associated with events:

- 1) images can be retrieved via physical access to SD card;
- 2) Web API provides for stored images file names;
- 3) each image filename contains date and time, plate number text, so it can be associated with a particular event;
- 4) precede retrieved file name with camera IP address and add *.bmp* extension to get fully qualified image URL. Please, refer to WebAPI Spec and Guide for further details.

Application

Features overview - Exported results (csv)

TS	LPR	COUNTRY	LIST	ACTION
2017-05-16 12:31:34 UTC	AI0719AT	UKR	Not in list	
2017-05-16 12:30:33 UTC	AA92130	RUS	Not in list	
2017-05-16 12:30:25 UTC	AI0719AT	UKR	Not in list	
2017-05-16 12:29:32 UTC	AA9606BT	UKR	Not in list	
2017-05-16 12:29:26 UTC	AA4878IK	UKR	Not in list	
2017-05-16 12:28:55 UTC	BC3218BO	UKR	Not in list	
2017-05-16 12:28:21 UTC	AA7381HK	UKR	Not in list	
2017-05-16 12:28:01 UTC	BA9587AC	UKR	Not in list	
2017-05-16 12:27:35 UTC	AA09800A	UKR	Not in list	
2017-05-16 12:26:41 UTC	D037012	PRT	Not in list	

Note that TS (timestamp) is specified as UTC (Coordinated Universal Time).

Simplified, UTC is equivalent to GMT (Greenwich Mean Time) and never observes DST (Daylight Saving Time)



Application

Features overview - Reactions, Black and White lists

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Events Search Settings

Category	Reaction 1	Reaction 2
Any license plate	No action	No action
Black list	No action	No action
White list	No action	No action

Black list

White list

Input Plate Number Input Input

Import from Import from

Save setting

Set up 1 or 2 reactions upon

- any ANPR event or
- black or white listed plate number detection

Available reactions are:

- Save to SD card
- Send to NVR
- Open barrier

Populate Black and White lists **one by one** or **import** in bulk. Each list capacity is limited to 2000 entries.

Source file is plain text file, one line per plate number; must contain empty line in the end.

Save settings every time.



Application Integrations - NVR side

Setup

System

Device

No.	Device	Use checks	CH	Port	Encoding type
1	TEXT 01	Use	CH 1	7001	US-ASCII
2	TEXT 02	Use	CH 2	7002	US-ASCII
3	TEXT 03	Use	CH 2	7003	US-ASCII
4	TEXT 04	Use	CH 4	7004	US-ASCII
5	TEXT 05	Use	CH 5	7005	US-ASCII
6	TEXT 06	Not Use	None	7006	US-ASCII
7	TEXT 07	Not Use	None	7007	US-ASCII
8	TEXT 08	Not Use	None	7008	US-ASCII

Text admin Quick Setup Manual Backup Status Help

Camera

Cam Registration

Camera Setup

Live Setup

Channel Setup

Storage Device

Device/Format

HDD Alarm

Monitor

Text

Device

Event

OK

Check the NVR settings to obtain corresponding Port number in **Device > Text > Device setting** (by default port 7001 for CH 1, 7002 for CH 2, etc.)

Set **Use** for desired channel

Modify the text device

No. 1

Device Name TEXT 01

Use of a device Use Not Use

CH All CHs

Port 7001

Encoding type US-ASCII

Start <LPR>

End <LPR>

OK Cancel

Click the channel row to open channel settings.

Set

- **Encoding type : US-ASCII**
- **Start string : <LPR>**
- **End string : </LPR>**

NB! NVR may not show LPR events if there is no video stream bound to the same channel!



Application

Integrations - NVR settings in Application

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Events Search Settings

NVR integration settings: 10.0.3.98 7002

Category	Reaction 1	Reaction 2
Any license plate	No action	No action
Black list	No action	No action
White list	No action	No action

Black list

N7158DA [Delete]

Save setting

Set NVR IP/port.

Assign **Send to NVR** reaction for either ANPR event.

Save settings.

Restart Application via Web Viewer whenever NVR settings being changed:

Setup > Open Platform > Open Platform Stop

Wait for 10 seconds

Start

Incorrect NVR settings or bad connectivity may affect overall performance and result in timeouts.



Application

Integrations – JSON structure

JSON field	Value type	Content value description
sensorProviderID	string	Device ID (“Camera ID Provider” from Settings)
geotag	dictionary	Coordinates from camera Cloud connection settings {"lat": float, "lon": float }
datetime	string	Plate recognition time, format “YYYYMMDD HHMMSS000”
timeProcessing	string (integer)	Frame processing time, ms
plateText	string	Plate number, alpha-numeric escaped Unicode (“\u0000”)
plateCountry	string	ISO 3166-1 alpha-3 country code
imageType	string enum	Plate image type: “plate” for cropped image. Image itself is sent as a part of multi-part POST request. (Full frames sending will follow in future release)

JSON field	Value type	Content value description
plateImageType	string	Image file type (png)
plateCoordinates	[integer...]	Plate coordinates on the full frame [upper left y, upper left x, height, width]
plateImageSize	string (integer)	Reserved for future use
plateConfidence	string(float)	Reserved for future use
packetCounter	string (integer)	Reserved for future use
carState	string	Reserved for future use
carMoveDirection	string	Reserved for future use
carID	string (integer)	Reserved for future use
GEOtarget	string	Reserved for future use

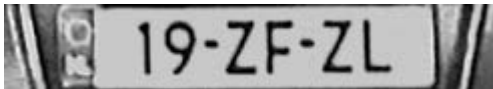


Application

Integrations – JSON

Multipart HTTP POST payload contains JSON data and associated image.

```
{
  "packetCounter"      : "0",
  "datetime"          : "20170707 072158000",
  "plateText"         : "\u0031\u0039\u005a\u0046\u005a\u004c",
  "plateCountry"      : "NLD",
  "plateConfidence"   : "0.855269",
  "carState"          : "new",
  "geotag"            : {"lat": 50.418114,"lon": 30.476213},
  "imageType"         : "plate",
  "plateImageType"    : "png",
  "plateImageSize"    : "0",
  "carMoveDirection"  : "in",
  "timeProcessing"    : "567",
  "plateCoordinates"  : [0, 1271, 44, 236],
  "carID"             : "1",
  "GEOtarget"         : "",
  "sensorProviderID" : "SAMSUNG00-00166CFB7C20"
}
```



Application Integrations - JSON

The screenshot shows the 'Settings' page of the NumberOK EDGE application. At the top, it displays 'NumberOK EDGE License Plate Recognition application Version 5.1.17.637.286'. Below this, there are tabs for 'Events', 'Search', and 'Settings'. The 'Settings' tab is active, showing a section for 'FF-cloud settings' which is checked. This section contains four input fields: 'Geo Latitude' (50.418114), 'Geo Longitude' (30.476213), 'Cloud URL' (sovabi-dev.cloudapp.net:8081/receiver/), and 'Camera ID Provider' (SAMSUNG00). A 'Save setting' button is located at the bottom of the settings section.

This integration is intended for integration with FF Limbio cloud solution.

However any system that is able to receive data via HTTP POST and parse JSON can benefit from this method.

Tick **FF-cloud settings** check-box.

Assign **Geo Latitude** and **Geo Longitude**; these values will be sent along with each ANPR event.

While values above are optional these will help visualize results on a map correctly when required.

Put data receiver URL to **Cloud URL**.

Assign **Camera ID Provider**; this value will be sent along with ANPR event data and used to identify camera at FF Limbio cloud. **Please, make it unique e.g. by adding MAC address.**



Application

Integrations - Web API

Web-API allows to:

- search and retrieve events
- populate lists
- remove particular plate numbers

Command	Description
SEARCH	Search by criteria
EXPORT	Export last search data
IMPORT	Import 1 to 2000 Number Plates (comma-separated text strings) to a particular (Black or White) list
ADD	Add 1 NP (text string) to a particular (Black or White) list
REMOVE	Remove particular NP (text string) from a particular (Black or White) list

Please, refer to [Web API Specifications and Guide \(https://goo.gl/3QZM9c \)](https://goo.gl/3QZM9c) for further details.



What's Next

ANPR App features

WiseNet X

New Products

What's Next

Features; WiseNet X; New products

ANPR App features

UI translation

HTTPS

Direction detection

WiseNet X

XNB-6000 General purpose ANPR

XNB-8000 Multi lane ANPR

Other

High performance ANPR platform

Business & Traffic Analytics platform

Scalability



Technical Support

Useful Resources

HTE Support

Useful Links

Product page	https://www.hanwha-security.eu/business-security-products/xno-6120rfnp/
XNO-6120 Installation Guide (<i>this document</i>)	ppsx: https://goo.gl/q3Fxye pdf: https://goo.gl/XRZd3D
Installation Checklist	pdf: https://goo.gl/v29ZTW
ANPR Application quick access link template	<a href="http://<IP>/home/setup/opensdk/html/NumberOkEdgeHanwha/index.html?AppName=NumberOkEdgeHanwha">http://<IP>/home/setup/opensdk/html/NumberOkEdgeHanwha/index.html?AppName=NumberOkEdgeHanwha
Tech support contacts	https://www.hanwha-security.eu/support/support-faqs/
Online tools	https://www.hanwha-security.eu/online-tools/
More resources	https://www.hanwha-security.eu/support/



Thank you!

Your feedback and use experience
are most valuable!

Please, share with us!

A decorative orange ribbon graphic that starts as a wide horizontal band at the bottom left, curves upwards and to the right, and then continues as a narrower band extending to the right edge of the slide.