



**October 2017**

**v1.0**

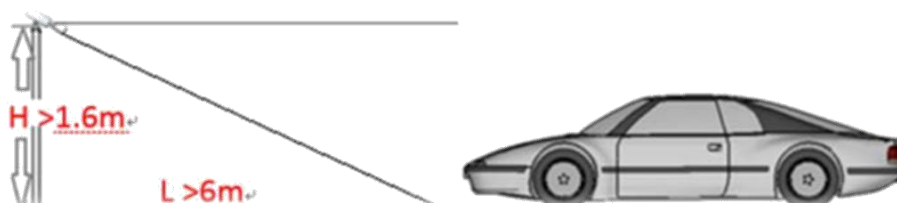
For the correct working of the Automatic Number Plate Reading camera, you must strictly follow the instructions in this manual. Before committing to any installation recommended to review the environmental conditions, as well as the relative size with the image of the number plates to be read.

It is also recommended to check that the camera has the latest firmware upgrades installed. Please note that this manual may change without prior notice and may differ with regard to future firmware releases.

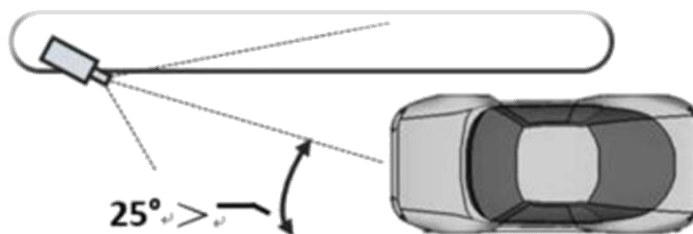
## 1. CAMERA INSTALLATION.

For correct operation of the Automatic Number Plate reading function, the following installation recommendations *should* be closely followed.

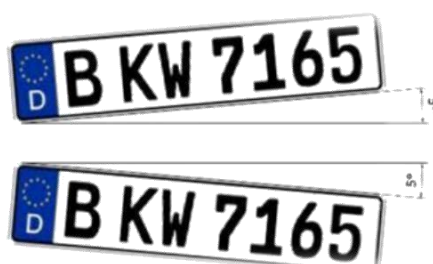
Firstly, the camera must be installed at a minimum height of **1.6 meters** and a maximum height of **2 meters**. Ensure that between the camera and the reading position of the vehicle there must be a minimum of **6 meters**:



The lateral angle of inclination of the camera is also relevant to the installation process, and it is recommended that the camera is positioned at an **angle greater than 25°**:



Once the camera is installed, check that the number plate is not too far off-horizontal in such a way as to **exceed 5°** in either direction as this could make it difficult to correctly read the registration.

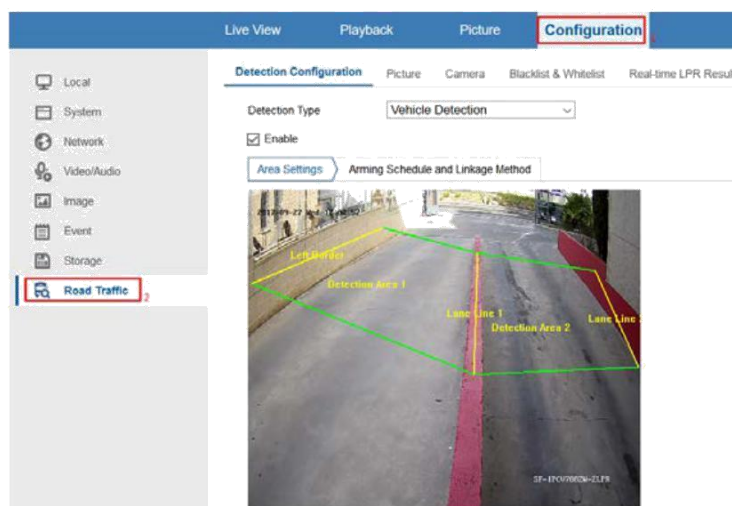


With the number plate now correctly positioned it is important that its size is **at least 130 pixels high**, and up to a maximum of 500 pixels.

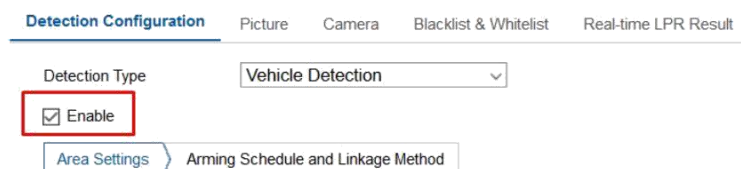
## 2. CONFIGURATION PARAMETERS

### 2.1 Activating the Number Plate reading function

The camera is accessed by introducing its IP Address into your web browser once it has been activated using the SADP software (see the General Installation Guide for further details). To configure the Number Plate reading functions, first go to the "*Configuration*" section of the "*Road Traffic*" tab.



Activate the Number Plate detection by clicking on the "*Enable*" check-box, as shown in the following screenshot:



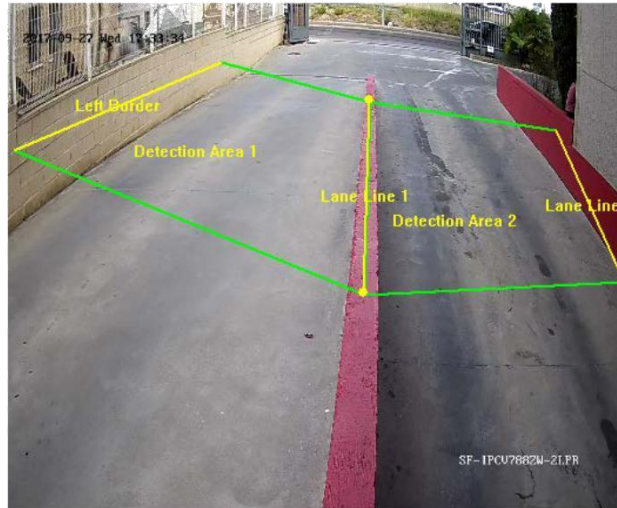
### 2.2 Setting up basic Number Plate detection and reading

Now you can go ahead and draw the lane(s) where you would like to have the Number Plate detection activated. For this you need to first setup certain parameters:

- Select the Total Number of Lanes you require.
- Now select the correct region. This is important as this defines the Registration Plate styles.
- Input the minimum and maximum HEIGHT of the Number Plate in pixels.  
Recommended values: min.: 130 & max.: 150.
- Select the Plate Reading mode: Entrance or Exit (in a public Car Park for example), or City Street (to record vehicles which pass without stopping for example).

Total Number of Lanes	<input type="text" value="2"/>
Region	<input type="text" value="Europe Region"/>
License Plate Width	Min. <input type="text" value="130"/> Max. <input type="text" value="500"/>
Select Mode	<input type="text" value="City Street"/>

Once the parameters have been setup, the virtual lanes must be placed in such a way as to coincide with the physical lanes of the road and also cover the area from which Number Plate information will be obtained, as below:



Remember to click on “Save” in order to store the parameters and areas which you have defined.

**\*It is important adjust the image parameters (brightness, contrast, saturation, etc.) correctly to suit the lighting conditions**

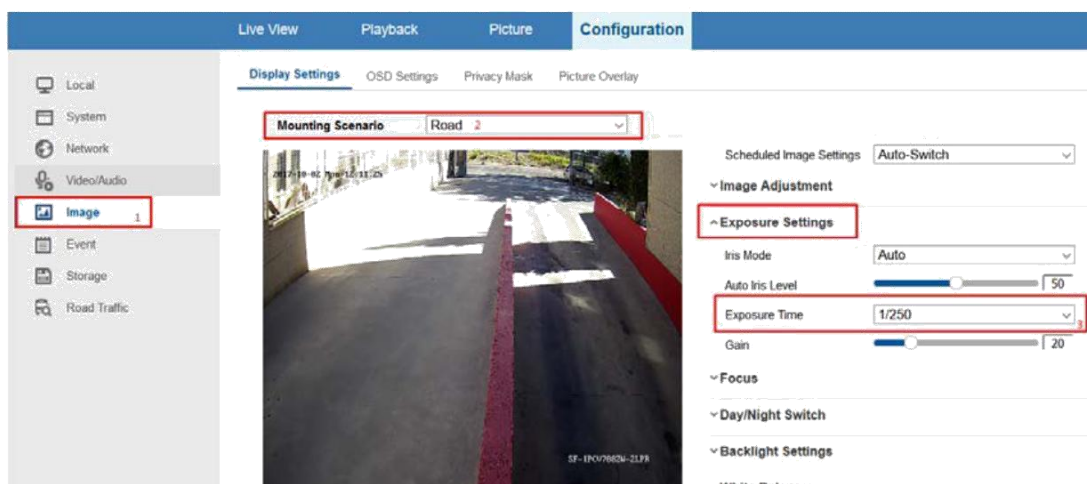
### 2.3 Exposure time adjustment and scene settings

Ensure that the exposure time is correct, this enables the camera to process vehicles at speed. It is recommended to begin with exposure times less than 1/175 to 1/250. Use these values as starting points and adjust according to the individual circumstances.

To change this parameter, click on “Image” from within the Configuration menu then select the drop-down menu “Mounting Scenario” and select the “Road” mode.

*\*This will modify the image parameters of the camera.*

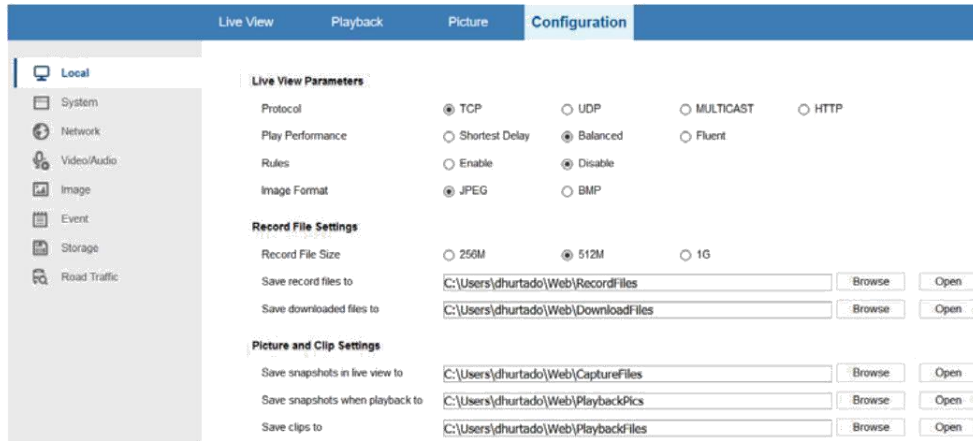
Under “Exposure Settings” you can regulate the exposure time, which should be reduced in relation to the average speed of vehicle movement increases.



### 3. NUMBER PLATE MANAGEMENT FROM THE WEB BROWSER

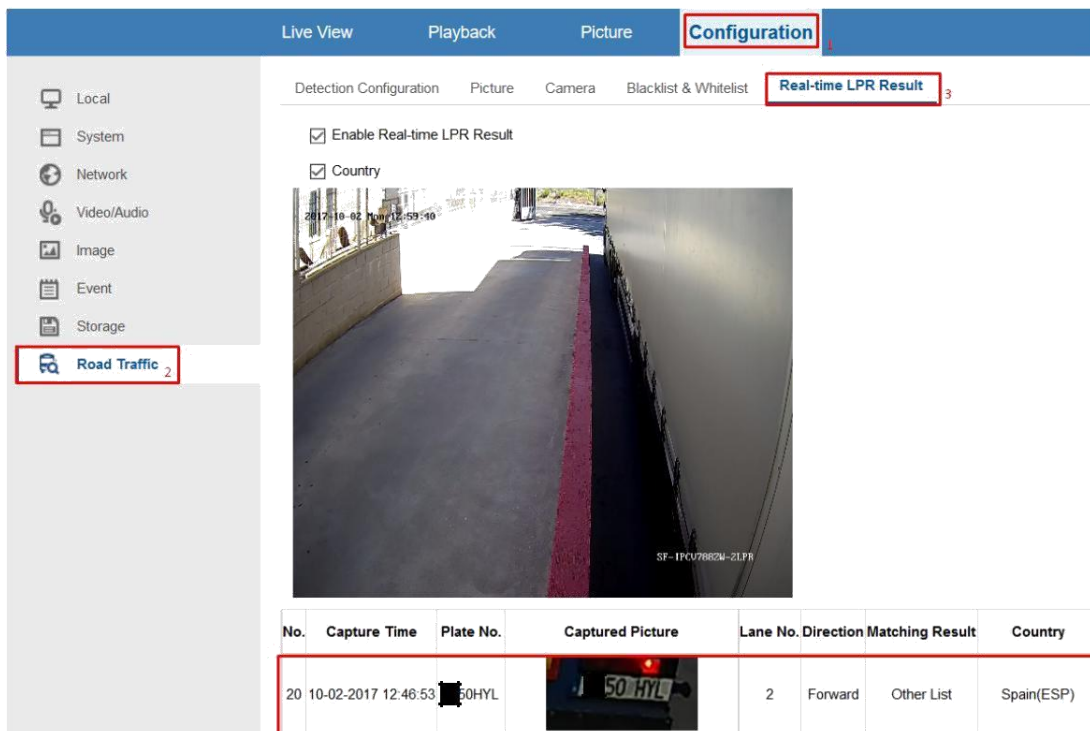
#### 3.1 Path configuration for data exportation

You must configure the path which points to where the exported data from the camera will be stored on your local computer. In the "Configuration" section go to "Local" on the left-side menu and configure the path for data downloaded from the camera:



#### 3.2 Real-time visualisation of Number Plate reading

A quick visualisation of the last Number Plates that have been identified can be made. To do this go to "Configuration", select the "Road Traffic" menu and finally click on "Real-Time LPR Result"



In this instant-view you can see the date and time of the capture, the Registration Plate as read by the OCR, the captured image of the same, the lane number in which the detection

occurred, the direction of travel (Forward direction is from bottom to top of the image), the Vehicle List in which the plate appears (if found), and the country of origin.

### 3.3 Number plate search and associated data

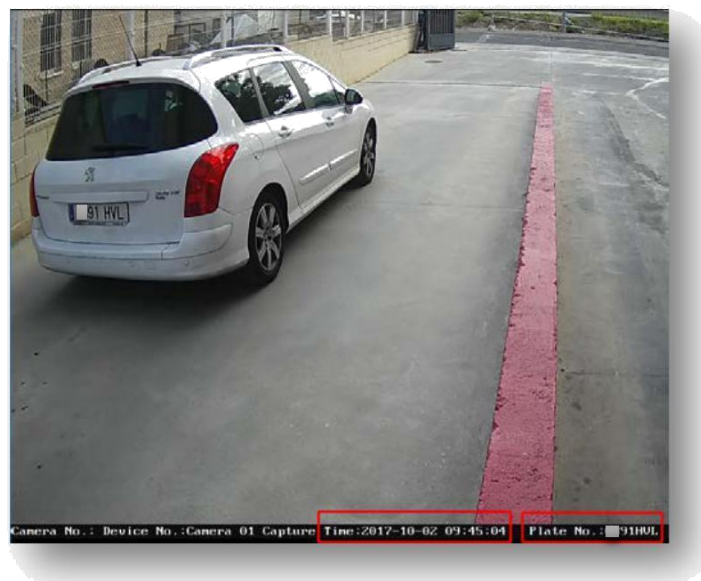
In the "Picture" menu you can download the still images where Number Plates were detected. You can also filter by Number Plate, date, time, or even visualise the whole list:



In this section, you must select the file type as "Vehicle Detection". You are then able to filter by registration number and date/time, click on "Search" to show the results.

Search Conditions		File List					Download	Stop Downloading			
File Type	<input type="checkbox"/>	No.	File Name	Time	File Size	Progress					
Vehicle Detection	<input type="checkbox"/>	1	20171002094504_91HVL	2017-10-02 09:45:04	242 KB						
Plate No.	<input type="checkbox"/>	2	20171002095737_77TM	2017-10-02 09:57:37	207 KB						
Number plate: 1111B8B	<input type="checkbox"/>	3	20171002100143_77TM	2017-10-02 10:01:43	215 KB						
Start Time	<input type="checkbox"/>	4	20171002102224_8DDF	2017-10-02 10:22:24	248 KB						
2017-10-02 00:00:00	<input type="checkbox"/>	5	20171002104643_762YM	2017-10-02 10:46:43	236 KB						
End Time	<input type="checkbox"/>	6	20171002112227_8GWM	2017-10-02 11:22:27	220 KB						
2017-10-02 23:59:59	<input type="checkbox"/>	7	20171002114453_65FYW	2017-10-02 11:44:53	221 KB						
Search	<input type="checkbox"/>	8	20171002124618_50HYL	2017-10-02 12:46:18	202 KB						
Export	<input type="checkbox"/>	9	20171002124630_50HYL	2017-10-02 12:46:30	192 KB						
	<input type="checkbox"/>	10	20171002124653_50HYL	2017-10-02 12:46:53	197 KB						
Total 10 Items							<<	<	1/1	>	>>

Finally, you can select the Number Plates of interest and click "Download". This will download an image with Registration information and date/time, as you seen below.



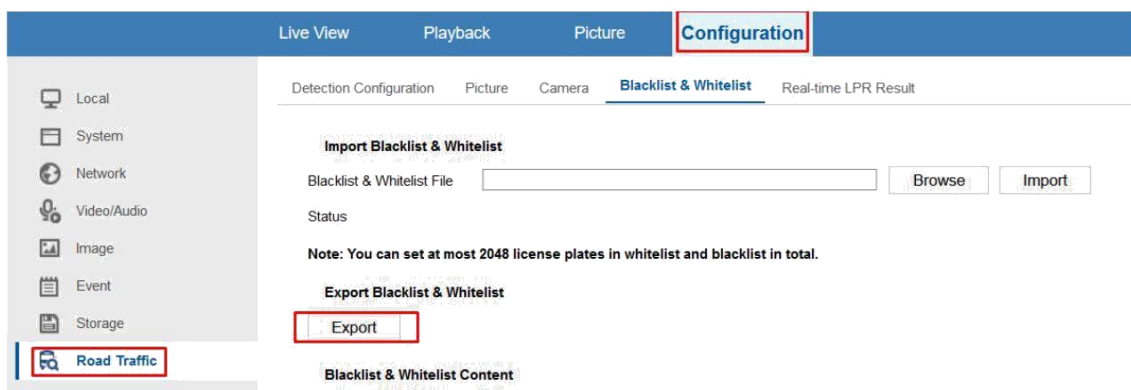
### 3.4 Setting up known Vehicle lists

Different vehicle lists can be managed in the web interface. This allows, depending on which list the number plate is in, the use of the inbuilt relay to activate a barrier or siren to send an email containing the capture.

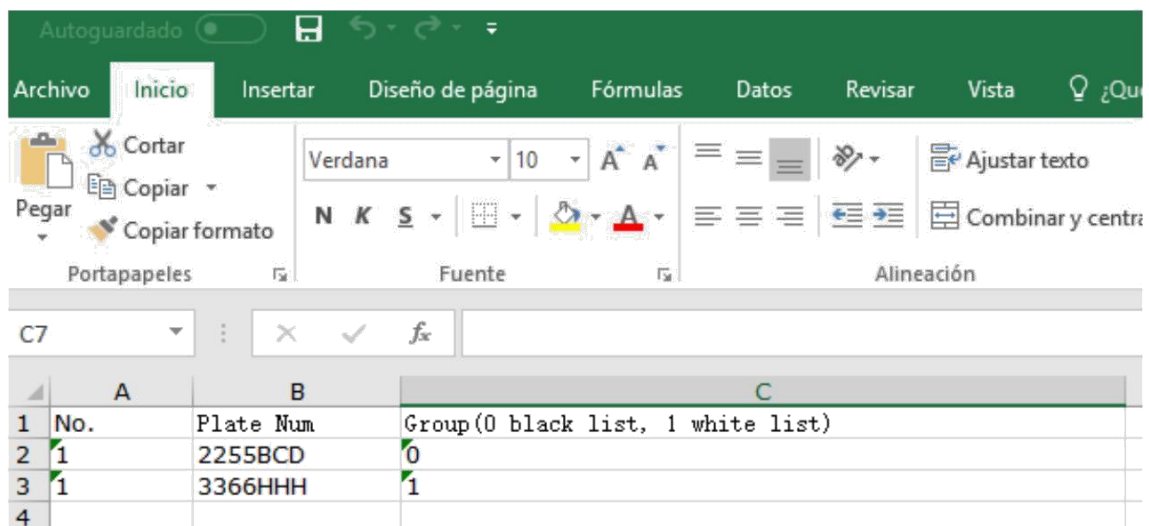
There are two types of list:

- White List (for known, good, Registrations)
- Black List. (for known, bad, Registrations)

To configure these, go to "Configuration", in the "Road Traffic" section and click on "Black list & White list". To download to an Excel spreadsheet, select "Export". The resulting Excel sheet is a template you can use to now add the Number Plates:



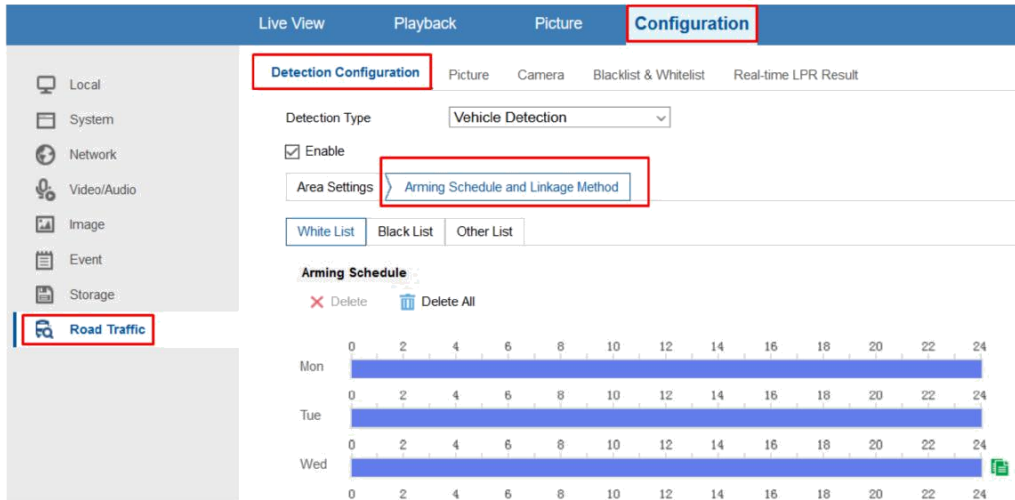
In the Excel sheet, spaces and hyphens should NOT be used. To assign a Number Plate to the White List, place a 1 in the "group" column, however, if you want to put the Number Plate in the Black List, then a 0 (zero) will be entered in the column (See sample image below).



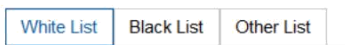
When your Excel table is completed you can import it into the system (in the same location, "Configuration" / "Road Traffic") by selecting "Browse". You will be prompted to select the Excel spreadsheet with the Number Plate database. Then click on "Import" to complete the vehicle List configuration.

### 3.5 Known Number Plate lists

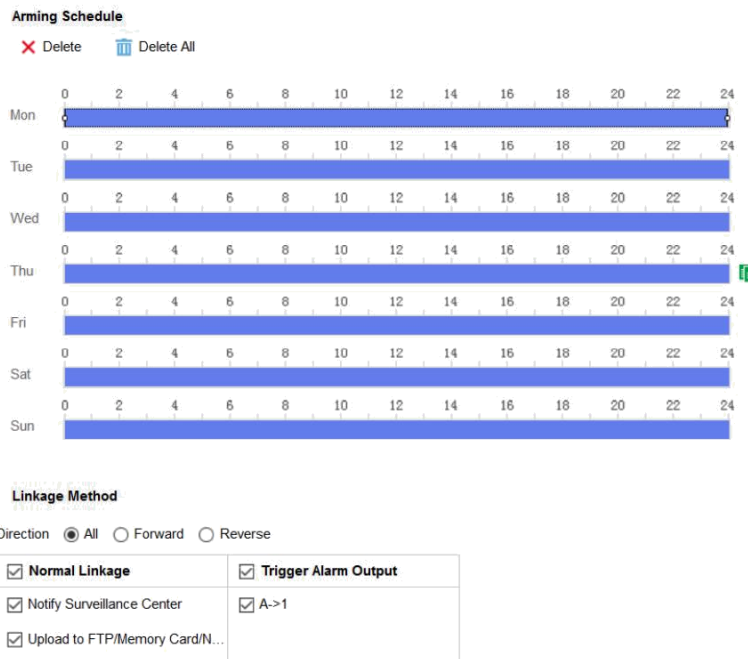
To use the list of known vehicle registrations, click on "Configuration" then, on the menu to the left, select "Road Traffic" and select "Arming Schedule and Linkage" in the area settings.



In this section you can schedule when the camera is required to do some type of action like activating an alarm or the relay. First select the type of list:



Then select the days and times that you want the actions to be active and the action you want to carry out when a vehicle that is included in the selected list is detected:



Finally press the "Save" button to store the configuration.

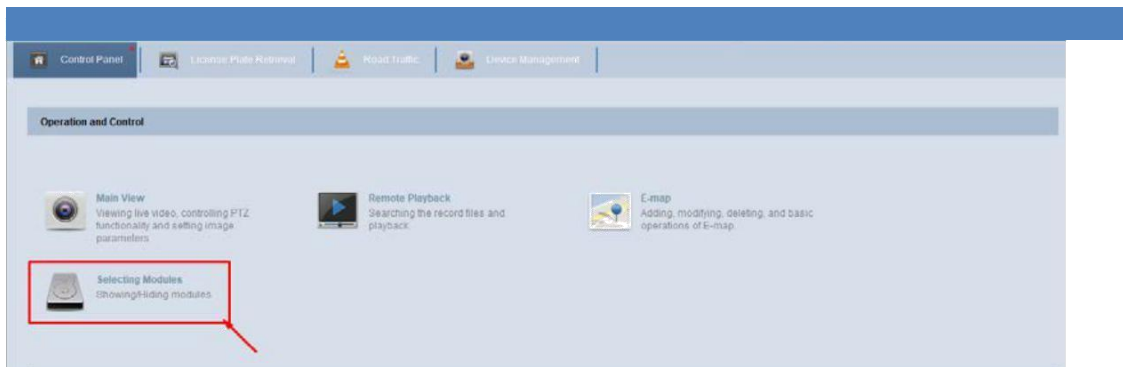


## 4. ANPR FUNCTIONS IN CONTROL CENTRE

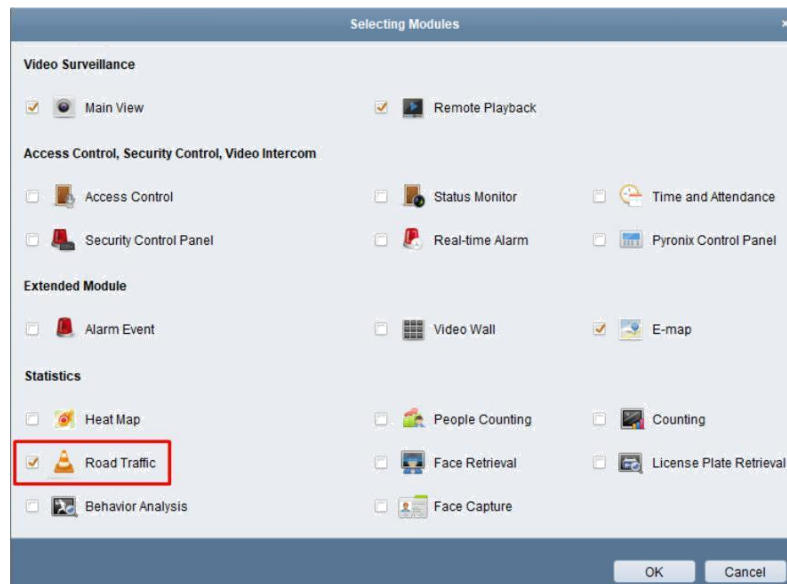
### 4.1 Control Centre, basic configuration

To view registration data through the Control Centre application, it is recommended you use, or upgrade to, version v2.6.2.7\_70 or later. This will ensure the correct operation of the Number Plate reading functions.

In the main Control Panel tab, click on "*Selecting Modules*", as shown in the following image:



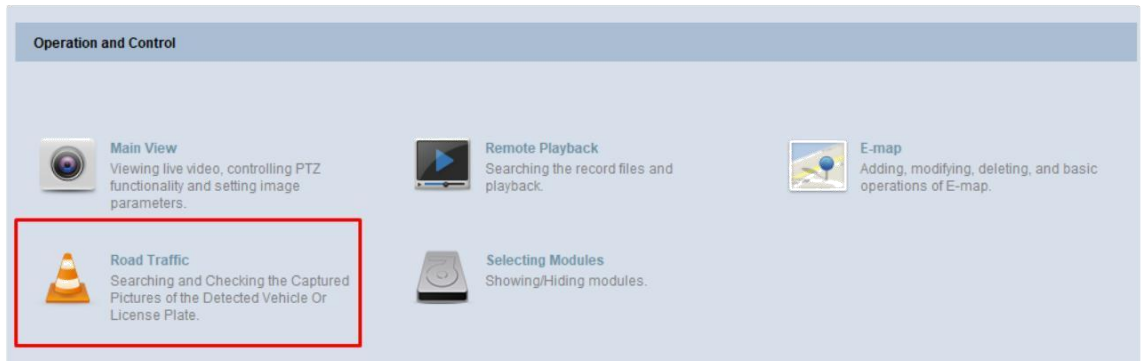
In this module enable the option "*Road Traffic*" to enable the Road Traffic module when adding/selecting cameras with this function enabled.



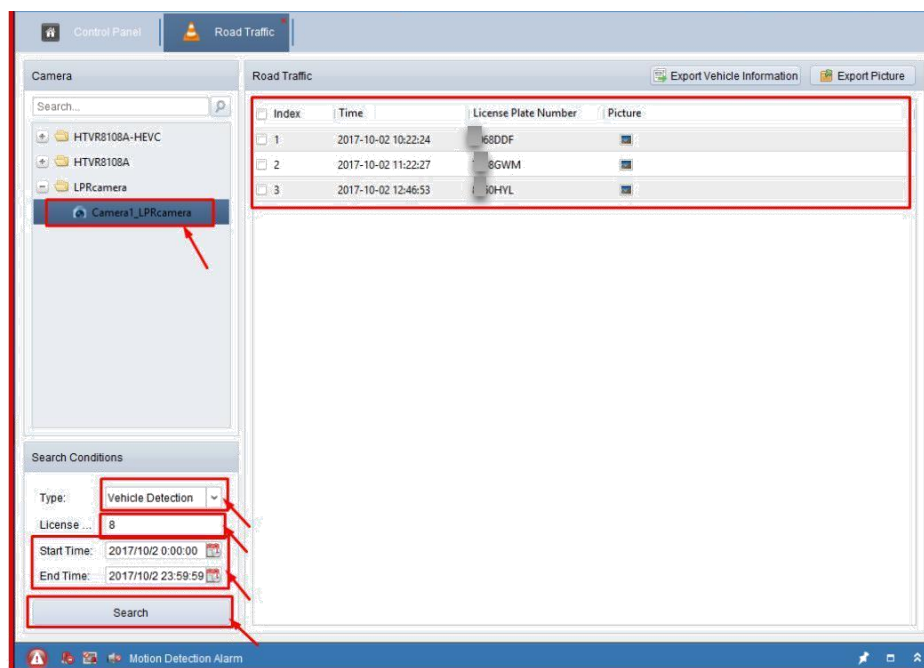
Once this is done, the camera can be added using the usual procedure for adding any IP camera.

#### 4.2 Number Plate search and data visualisation

Once an IP camera with the ANPR function has been added, proceed to select the "Road Traffic" operation and control module in the central window.



In this module, you can select the camera from which the Registration information will be found. Select search Type as "Vehicle Detection". You can search for any characters contained in the registration number as well as within a date/time range. Once ready, click "Search"



From the search results you can obtain a still image of the vehicle and even export the image and the registration data and create an Excel spreadsheet containing all the information.

## 5. ANPR FUNCTIONS WITH A VIDEORECORDER

Registration information, captured by an ANPR camera, is also accessible from the video recorder. It is necessary, for this to function correctly to have the camera connect an NVR or a Hybrid HTRV analogue recorder which is also able to display IP channels.

From the main menu, under "VCA Search" select "Plate Search" (Registration plate)



A new window opens similar to the one below. Here you can perform a search for the registration by date/time, as can be seen in the following image.



You can filter by the requested registration, within the date and time range specified, then click on the "Search" button and the search will begin.



A new window will then open which shows the matching registration plates. You can also reproduce recorded clips of the exact moment in time when the vehicle passed and the Registration was detected.

