



iVSEC

INTELLIGENT VIDEO SECURITY

<https://ivsecurity.com.au/support/analytics-ai-ivs/>
LICENCE PLATE RECOGNITION FEATURE

ABOUT THIS DOCUMENT

Some of the iVSEC camera range have the Licence Plate Recognition feature using AI and can log detection on the recorded timeline, send push notifications to a user, or email the results if required. The AI can also trigger a relay on cameras or NVRs that include alarm relay outputs if the device that have these included and are setup to trigger when a face is detected.

All instruction contained within this document are using the Web Interface, though similar steps are performed using the NVR Interface.

Cameras with this feature start at the following and include the later revisions :

[NC323XD](#), [NC323ADX](#), [NC512ADX](#), [NC512XD](#), [NC528XD](#), [NC531XD](#), [NC531ADX](#), [NC542XA](#), [NC691XB](#)

GETTING STARTED

To adjust these settings, you will have the following:

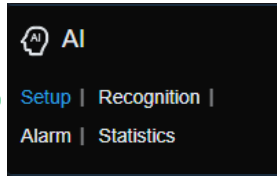
- LCD monitor and USB mouse connected to iVSEC recorder.
- Laptop (if you are logging into recorder using a web browser).
- iVSEC X mobile app installed and your iVSEC recorder added to the app.

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LICENCE PLATE DETECTION – SETUP

1 Open the **Remote Settings** of the Camera and navigate to the **AI** section. Select the **Setup** option.



2 Select the **Licence Plate** tab and toggle.

3 Select the camera **Channel** that you are wanting to use to detect licence plates.

4 Change the **Snap Mode** from **Default** to **Real Time**. If you would like a periodic snapshot, then choose then choose **Interval Mode** and choose your desired interval.

5 Change the **Detection Target** to **Australian Licence Plate**. In older versions of the firmware, this might not be available.

6 Change the **Detection Mode** from **Hybrid Mode** to **Motion Mode**; unless you are wanting to analyse stationary plates as well.

7 There are extra features that can be adjusted, such as **Sensitivity** (for motion),

8 **Min/Max Pixel** (so that licence plates in the far distance don't register), and **Detection**

9 **Area** (so that the whole screen or a specific region can be defined).

A screenshot of the 'Licence Plate' setup interface in a camera's remote settings. The interface is dark with white text and features a live video feed on the right. The video feed shows a parking lot with several cars and a set of stairs in the foreground. The setup options are as follows:

- Channel:** CH1 (dropdown menu)
- Enable:** Schedule (toggle)
- Sensitivity:** 60 (range 1-100)
- Dynamic Marking:** On (toggle)
- Snap Mode:** Default (dropdown menu)
- Min Pixel:** 64 to 1080 (slider, currently at 309)
- Max Pixel:** 320 to 1080 (slider, currently at 552)
- Detection Target:** Australian licence plate (dropdown menu)
- Detection Mode:** Hybrid Mode (dropdown menu)
- Detection Area:** Full Screen (dropdown menu)

At the bottom, there are 'Save' and 'Refresh' buttons. Numbered callouts (1-9) are placed over the interface to correspond with the instructions on the left.

LICENCE PLATE DETECTION – SETUP

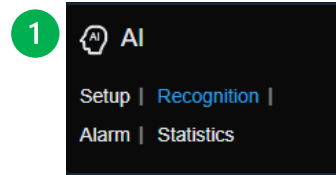
- 1 Select the **Schedule** tab and toggle.
- 2 Select the camera **Channel** that you are wanting to use to detect licence plates.
- 3 Toggle the **Enable** slider so it is blue.
- 4 Click on the Licence Plate radio button.
- 5 Draw over the timeline for when you would like the Licence Plate Detection to trigger.
- 6 Click Save when done
- 7 If this schedule is greyed out, please go through the other AI schedules and find the one that is all green, deselect this and click Save.

NOTE : Only one AI can be scheduled at a time.

The screenshot shows the 'Schedule' tab of an AI configuration interface. The interface is dark-themed with a grid for scheduling. The 'License Plate' tab is selected, indicated by a green circle '1'. The 'Channel' dropdown is set to 'CH1', marked with a green circle '2'. The 'Enable' toggle is turned on (blue), marked with a green circle '3'. Below the toggle, several radio buttons are visible: 'Face Detection', 'Pedestrian & Vehicle', 'Line Crossing', 'Object Detection', 'Cross Counting', 'Crowd Density', 'Queue Length', 'License Plate' (selected, marked with a green circle '4'), 'Heat Map', and 'Intrusion'. A timeline grid below these options shows days of the week (SUN to SAT) and hours (0 to 24). A green circle '5' is positioned over the timeline grid. At the bottom left, there are 'Save' and 'Refresh' buttons, with a green circle '6' over the 'Save' button. A note at the bottom right states 'Functions are mutually exclusive'.

LICENCE PLATE DETECTION – RECOGNITION – GROUP MANAGEMENT

1 Navigate to the **AI** section.
Select the **Recognition** option.



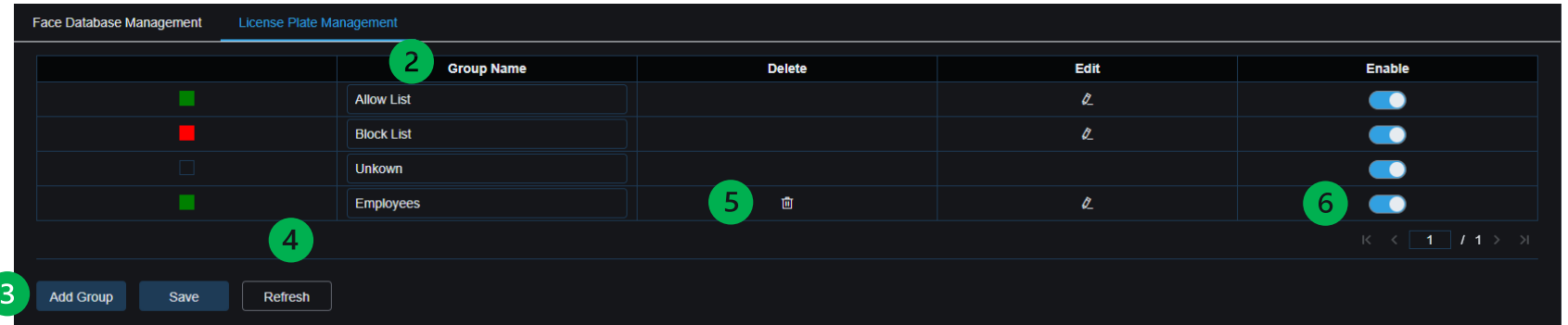
2 Here you have three predefined **Groups** :
Allow List, **Block List**, and **Stranger**.
These can not be deleted, only disabled.

3 If you require extra **Groups**, simply click on
the **Add Group** button.

4 You can change the **Group Name** by
entering a new name and clicking the **Save**
button.

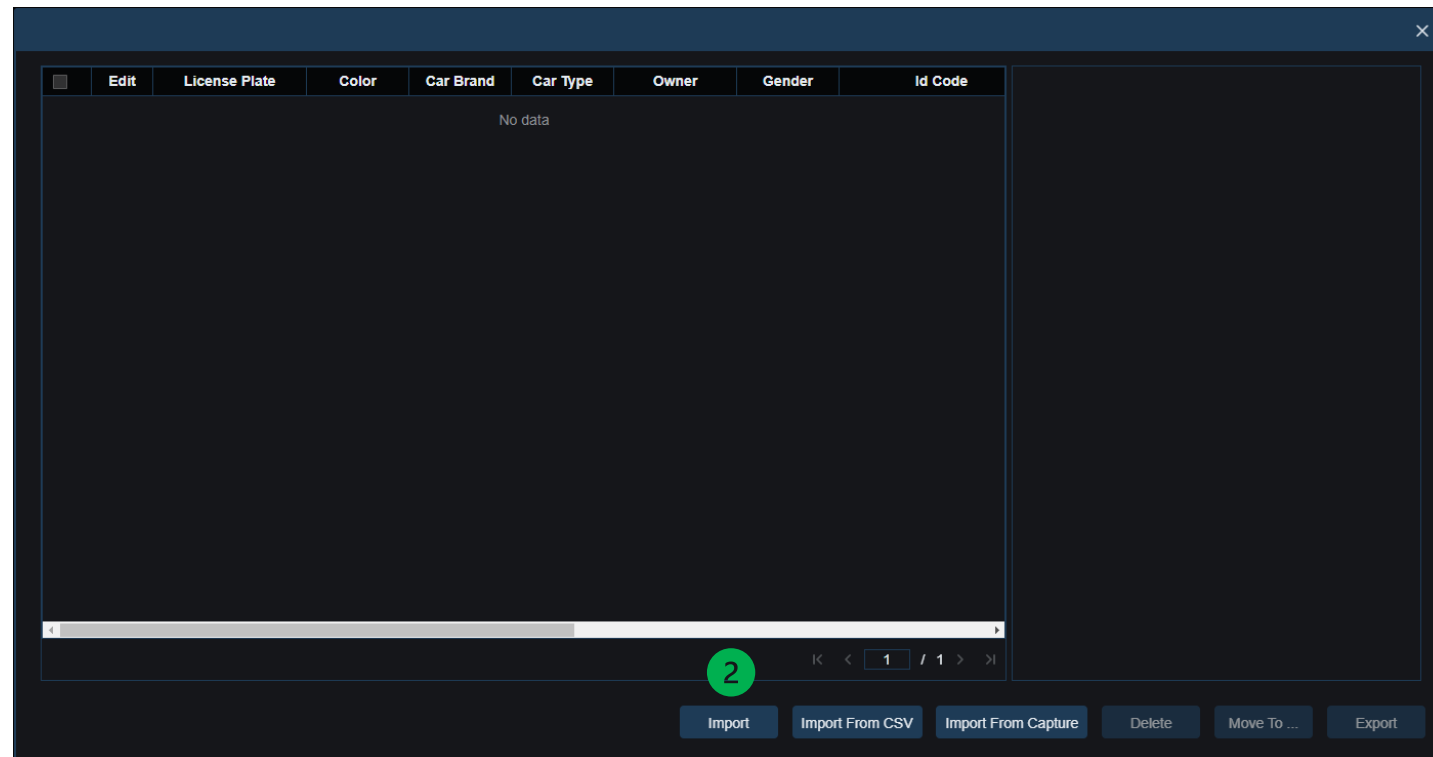
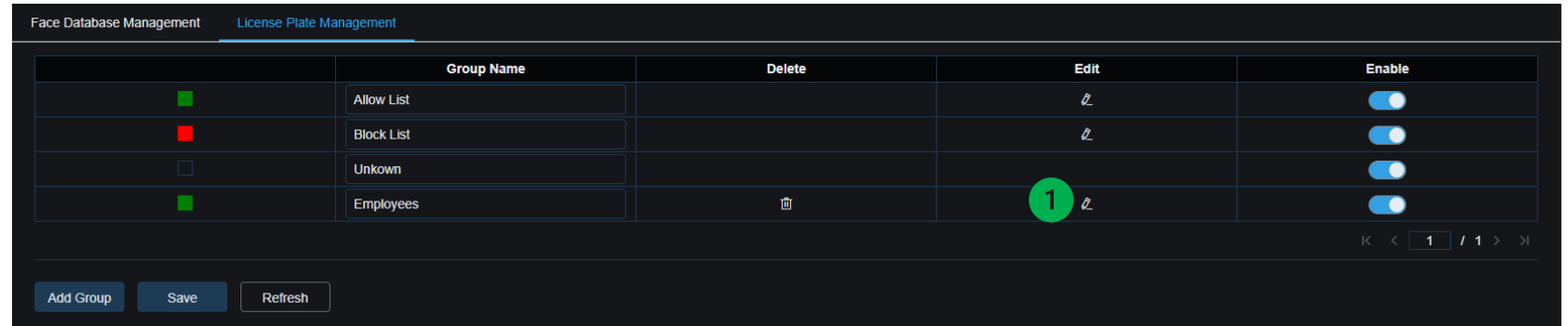
5 To delete a **Group** and all the data along
with it, click the **Trash Bin** icon and select
the **OK** option when presented.

6 You will need to ensure a **Group** is **Enabled**
otherwise you will receive no notifications
from this group.



LICENCE PLATE DETECTION – RECOGNITION – ENROLMENT

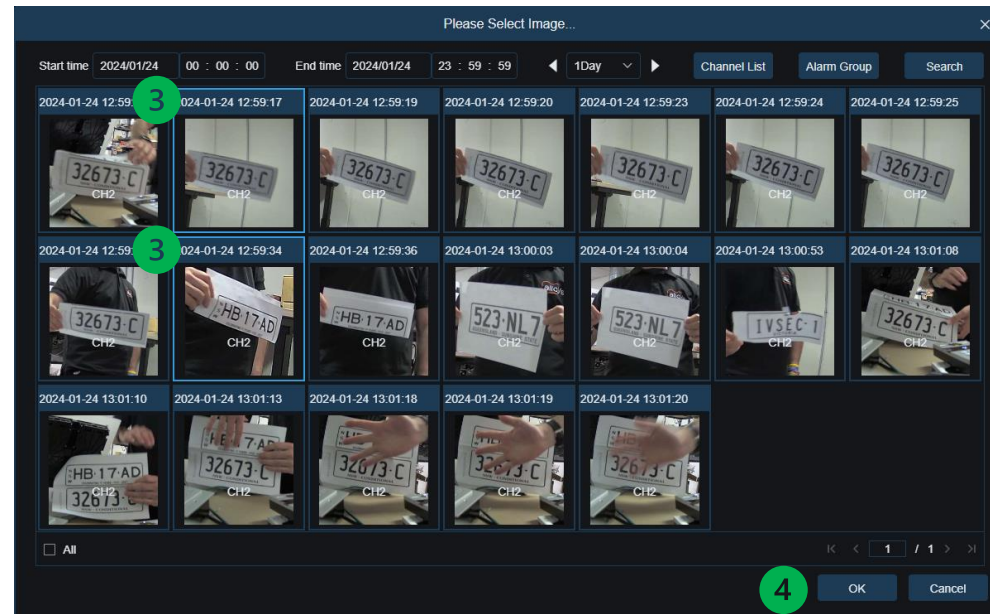
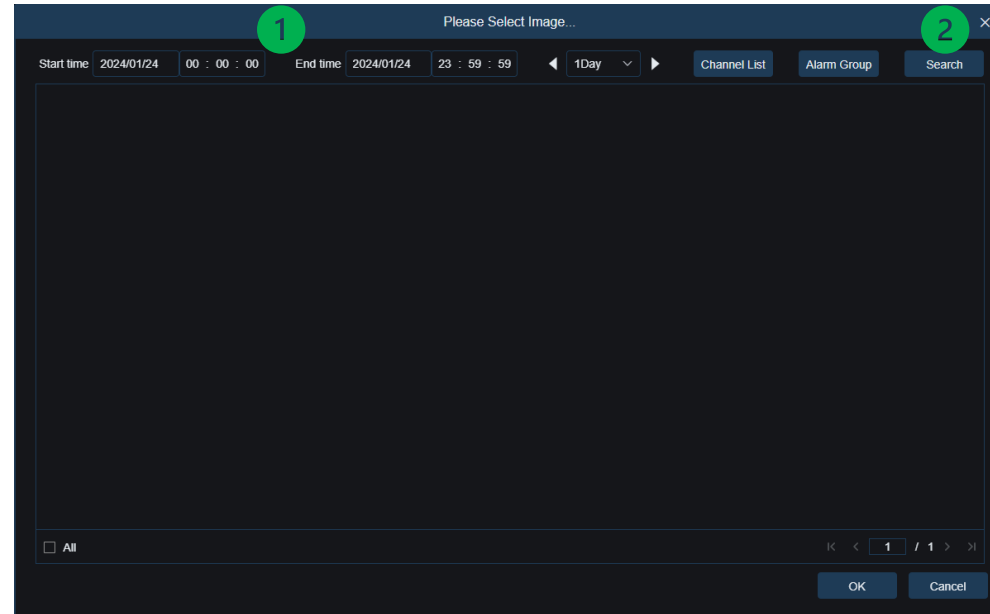
- 1 Select the **Edit** pencil icon to enroll a person into the Licence Plate Management **Group**.
- 2 Here you can either add a new face by using the **Import**, **Import From CSV**, **Import From Capture** or **Delete** feature.



LICENCE PLATE DETECTION – RECOGNITION – ENROLMENT – FROM EXISTING FOOTAGE

Selecting the **Import From CSV** option will result in a popup appearing.

- 1 Enter in the **Start Time** and **End Time** that you know the licence plates you are wanting to enroll has passed by the camera.
- 2 Click **Search** and all licence plates that were detected during this period will turn up.
- 3 Click on all the licence plates you wish to enroll; it is recommended that at least two different angles are uploaded for the best results.
- 4 Click **OK** when you have selected all the licence plates you wish to use.



LICENCE PLATE DETECTION – RECOGNITION – ENROLMENT – FROM EXISTING FOOTAGE

- 5 A new popup window will appear where you need to tick all the cameras that you want to enroll.
- 6 If you want to add more information or amend the licence plate data click on the particular licence plate number you would like to edit.
- 7 On the right hand side, you will be able to enter in the data.
- 8 When you are finished entering in all the data, simply click **Import**.
- 9 Once done, you can click the **X** in the top right-hand corner of the popup window.

Status	Edit	Licence Plate	Colour	Car Brand	Car Type	Owner	Gender
<input checked="" type="checkbox"/>		32673C	Blue				Male
<input type="checkbox"/>		HB17AD	Blue				Male

Plate Detail

Licence Plate: 32673C

Colour: Blue

Car Brand: []

Car Type: []

Owner: []

Gender: Male

Phone: []

Id Code: []

Occupation: []

Residence: []

Remark: []

1 / 1

Import Delete

LICENCE PLATE DETECTION – RECOGNITION – ENROLMENT – MANUAL ENTRY

Selecting the **Import** option will result in a popup appearing with several fields that can be filled out. These are all free text fields except for **Colour** and **Gender**.

- 1 The only mandatory field is **Licence Plate**, the rest make searching and general filtering easier.
- 2 Once the data has been entered, simple click on the **Import** button.

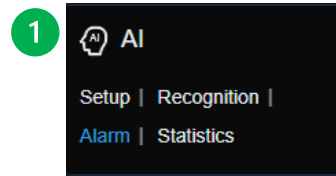
The screenshot shows a 'Plate Edit' form with the following fields and values:

Field	Value
Licence Plate	IVSEC
Colour	Blue
Car Brand	Ferrari
Car Type	Sedan
Owner	Bob Smith
Gender	Male
Id Code	CAR000001
Occupation	Food Delivery Driver
Phone	1300 291 066
Residence	5 Adelaide Avenue, Deakin, Australian Capital Territory
Remark	VIP Client

At the bottom right of the form, there are two buttons: 'Import' (highlighted with a green circle and the number 2) and 'Exit'.

LICENCE PLATE DETECTION – ALARM – SETUP - GENERAL

- 1 Navigate to the **AI** section.
Select the **Alarm** option.



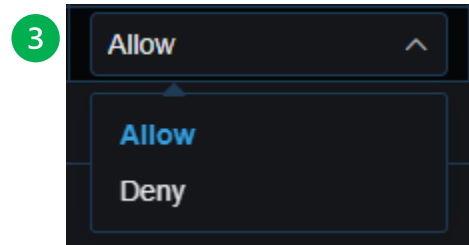
- 2 Select the **Licence Plate** tab and toggle the **Enable** feature to on for each of the groups you wish to activate alarms for.

A table with columns: Group Name, Enable, Policy, Similarity, Alarm, Alarm Schedule, and Alarm Channel. The 'Enable' column has toggle switches. The 'Similarity' column has input fields and dropdown menus. The 'Alarm' column has gear icons. The 'Alarm Schedule' and 'Alarm Channel' columns also have gear icons. A 'Save' button and a 'Refresh' button are at the bottom left. A pagination indicator shows '1 / 1'.

	Group Name	Enable	Policy	Similarity	Alarm	Alarm Schedule	Alarm Channel
■	Allow List	2 <input checked="" type="checkbox"/>	Allow	4 ≥ 70 %	⚙️	⚙️	⚙️
■	Block List	<input checked="" type="checkbox"/>	Deny	≥ 70 %	⚙️	⚙️	⚙️
□	Stranger	<input type="checkbox"/>	Stranger	< 70 %	⚙️	⚙️	⚙️
■	Employees	<input checked="" type="checkbox"/>	3 Allow	≥ 70 %	⚙️	⚙️	⚙️

- 3 For any of the custom **Groups** that you have created you can choose either to add these to an **Allow** or **Deny** list.

- 4 You will also be able to change the **Similarity** parameter here, which determines how similar the face detected by the camera is the same as the one you have enrolled.
The higher the number, the better quality **and** clarity the image from the camera needs to be.
The typical value is between 70%-85%.



LICENCE PLATE DETECTION – ALARM – SETUP – GROUP ALARMS

1 Under the **Alarm** section is a **Gear** icon. Clicking this will show you the settings for the different actions that can be taken when some one on the associated list is detected.

2 The **Latch Time** relates to how long the alarm output for that camera will be latched. This can be used to trigger an audible security alarm, a visual alarm indicator, or trigger the release of a doors lock/unlock feature.

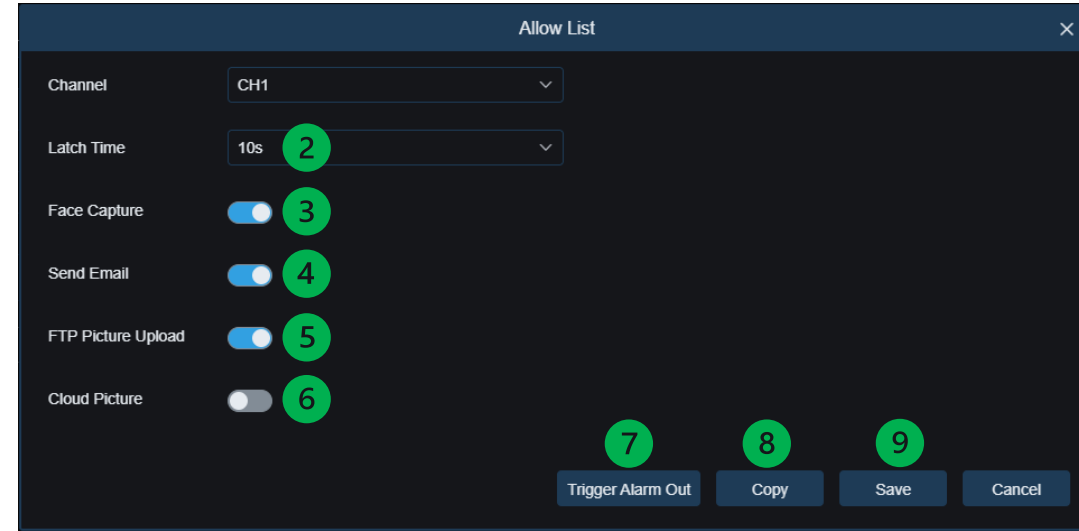
3 The **Face Capture** is to choose whether to record the face as saved image on the storage.

4 The **Send Email** option is so an email can be sent to a nominated email account. This is set up under **Network >> Email**.

5 The **FTP Picture Upload** option is similar to the email one above, but is configured under **Network >> FPT**.

6 The **Cloud Picture** option is to allow the face that is captured to be uploaded to the cloud.

This is configured under **Device >> Cloud**.

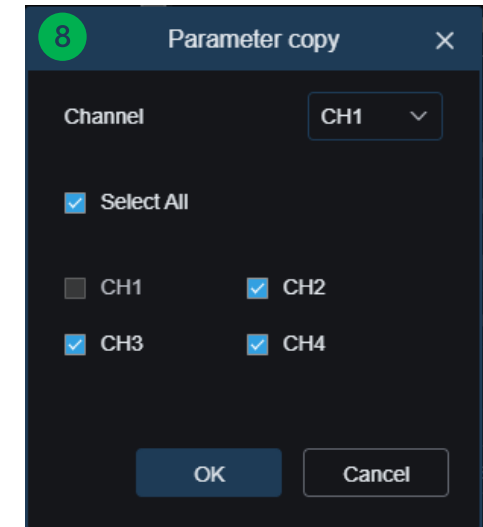
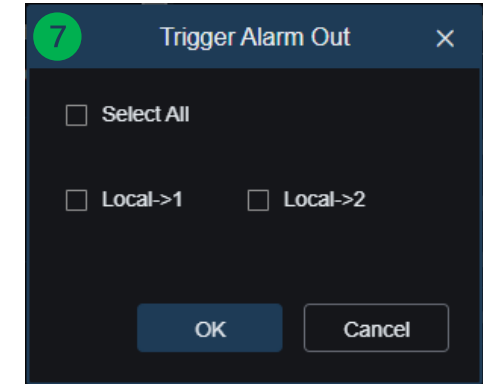


7 The **Trigger Alarm Out** button opens the menu to select which physical outputs will be triggered when a face is detected.

8 The Copy button allows you to copy the settings you have to other channels (if the device has more than one channel).

NOTE: You must have saved the changes before copying to other channel or it will not work.

9 Finally, there is the **Save** or **Cancel** options, which do exactly what they say.



LICENCE PLATE DETECTION – ALARM – SETUP – SCHEDULE

1 Under the **Alarm Schedule** section is a **Gear** icon.
Clicking this will show you the alarm schedule for the different methods of **Group Alarms**.

2 If a square is coloured in orange, then it means that at that time of day a face that matches one in the database will cause that **Group Alarm** to trigger.

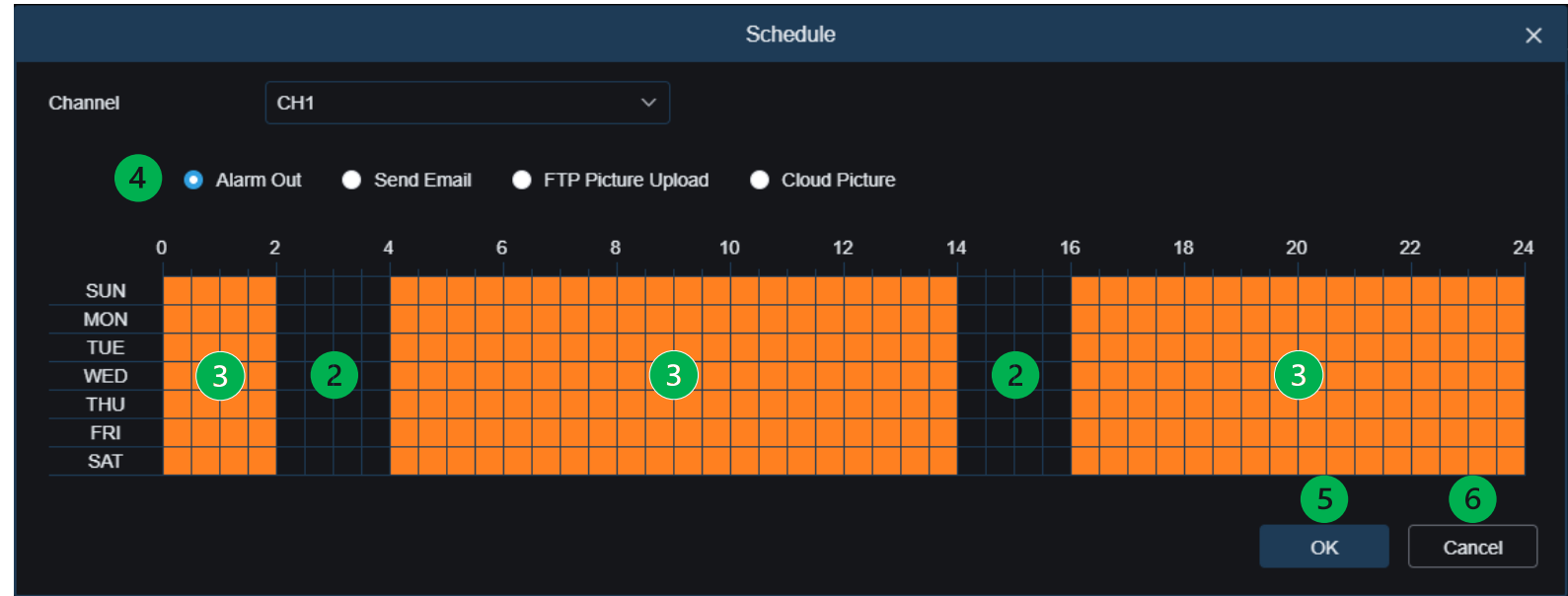
3 If a square is coloured in black, then it means that at that time of day nothing will cause that **Group Alarm** to trigger.

In the example an alarm will not trigger between 02:00-04:00 or 14:00-16:00, even if a face in the database matches.

4 These times are individual for each **Group Alarm** and for each **Channel** (if available).

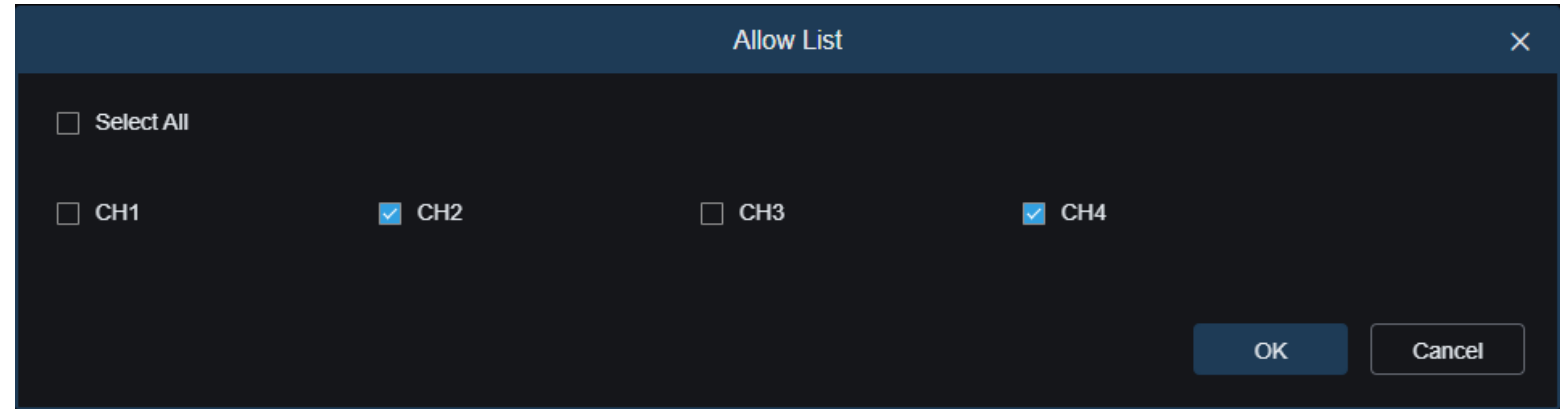
5 The **OK** button will confirm the schedule that you have created.

6 The **Cancel** will not apply any changes



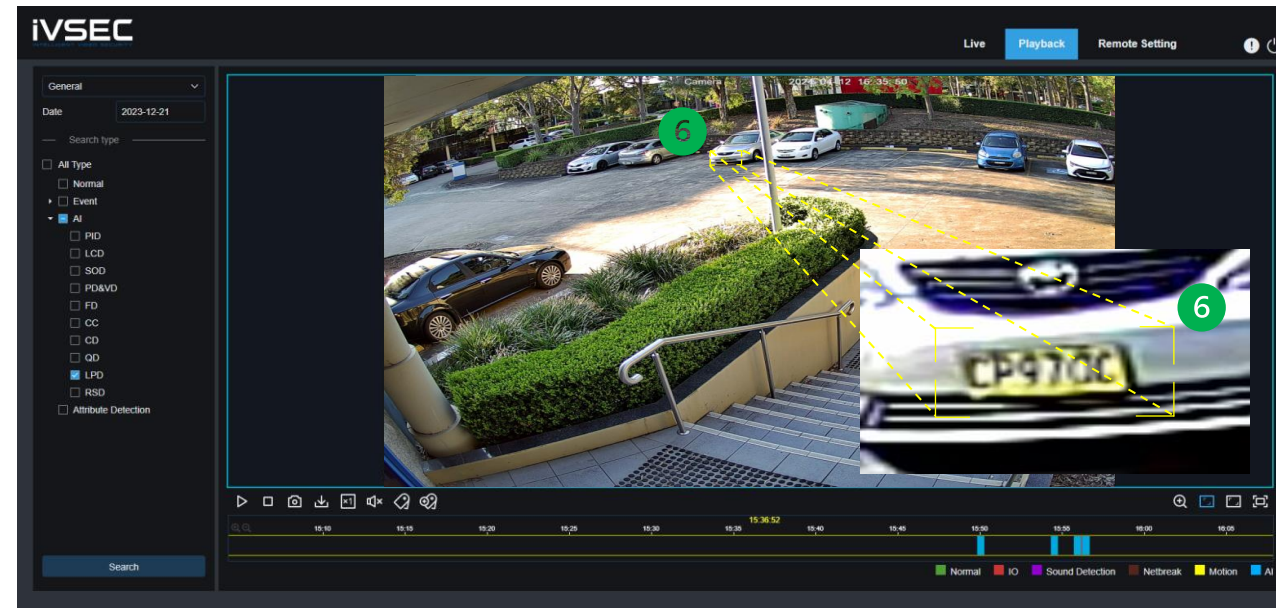
LICENCE PLATE DETECTION – ALARM – SETUP – ALARM CHANNEL

- 1 Under the **Alarm Channel** section is a **Gear** icon.
Clicking this will show you each of the different channels that can be triggered by **Group Alarms**.
- 2 If a channel is ticked it means that the **Group Alarms** that have been set will apply.
- 3 If a channel is not ticked it means that the **Group Alarms** that have been set will not be applied.
- 4 The **OK** button will confirm the schedule that you have created.
- 5 The **Cancel** will not apply any changes



LICENCE PLATE DETECTION – PLAYBACK

- 1 Click on the **Playback** tab.
- 2 Select the **Date** that you wish to review footage for
- 3 Unselect all **Search Types** except for **LPD**. This will then only show when a licence plate has been detected.
- 4 Click the **Search** button
- 5 This will show only the times that the cameras that were set to detect for licence plates will show content.
- 6 When watching the playback, you will see a yellow rectangle drawn around the face of the person detected. This can help you see which licence plate was being identified if there is more than licence plate in the frame.





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Ver 8.2.4