Eagle Eye Application Note - AN102

LPR Setup and Configuration Guide

2025-08-13 Revision 2.0

Target Audience

This Application Note is intended for Eagle Eye Networks Cloud VMS administrators responsible for configuring License Plate Recognition (LPR) in the Cloud VMS and making significant VMS-related settings changes. Working knowledge of the VMS is required before making any changes to LPR configuration settings.

Introduction

Eagle Eye License Plate Recognition (LPR) is a camera-agnostic LPR engine from Eagle Eye Networks. Using Eagle Eye LPR, any suitable ONVIF camera connected to a compatible bridge can function as an LPR camera. The LPR runs on the bridge, and the data is visualized in the VSP (Vehicle Surveillance Package) feature in the Eagle Eye Cloud VMS. This document discusses the basics of LPR camera setup, including how to install LPR functionality and the appropriate configuration for LPR cameras and software.

What is LPR?

The Eagle Eye License Plate Recognition System (LPR) is an AI-powered, cloud-managed, highly accurate license plate recognition technology that works with any surveillance camera in all kinds of challenging conditions, increasing business security and efficiency while lowering costs. LPR is a video analytics solution that enables the reading of vehicle license plate information from the associated video data. See Figure 1.

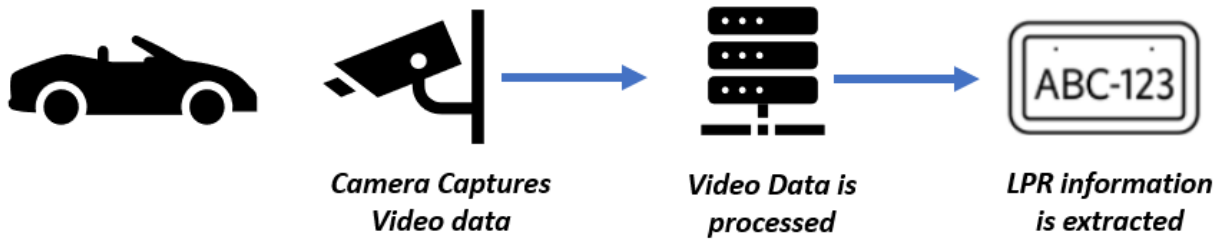

Figure 1: Basic LPR workflow

Eagle Eye LPR: AI-based License Plate Recognition

Eagle Eye Network's License Plate Recognition (LPR) system uses an AI-based model for the accurate reading of license plates. This AI model ensures high detection rates without false and repeated reads as well as high accuracy reading both standard and non-standard number plates.

Eagle Eye LPR allows any standard ONVIF cameras connected to the Eagle Eye Cloud VMS to run LPR as opposed to requiring an LPR-specific camera. The LPR analytic runs on the Bridge and data is viewed through the Vehicle Surveillance Package module of the Cloud VMS. See Figure 2.

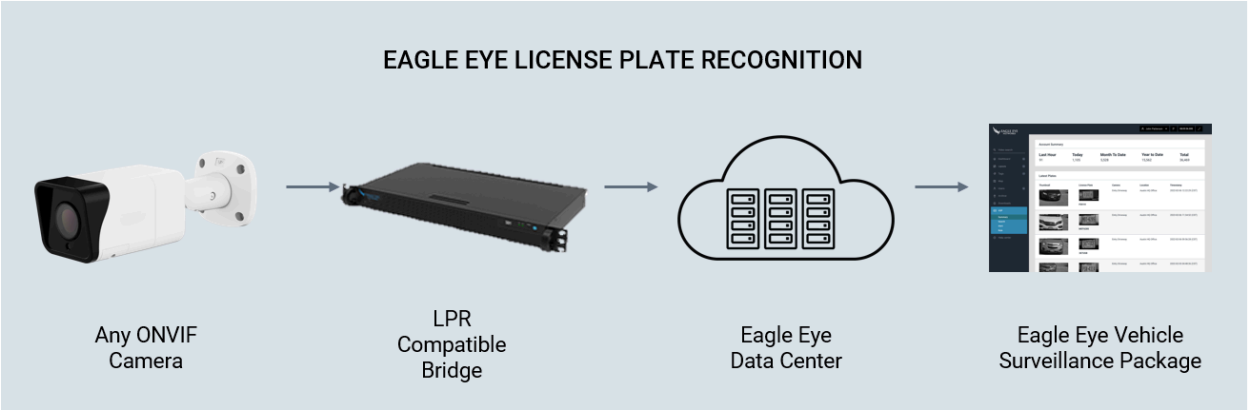

Figure 2: Eagle Eye LPR Architecture

Prerequisites for LPR Installation

LPR Compatible Bridge/CMVR

Eagle Eye LPR is supported only on specific bridges. See Table 1 below for supported bridges/CMVRs and their camera limits.

Bridges/CMVR	Max Cameras	Max LPR Cameras for Gate/Street Configurations	Additional Analytics	Local Display
304+/324+	5	1/0	0	No

Bridges/CMVR	Max Cameras	Max LPR Cameras for Gate/Street Configurations	Additional Analytics	Local Display
401/403/420	5	2/1	0	No
406+/426+	10	2/1	2	No
524+/504+	10	4/2	2	No
501/520	15	4/2	5	Yes
620e/701/820e/901	50	8/5	10	Yes

Table 1: Supported Hardware and Number of Cameras

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[1] The number of supported cameras changes when LPR is activated. Reference the latest datasheet and discuss with your sales representative before purchasing.

[2] Number of additional analytics supported on the same bridge running LPR.

Find the LPR Product feature datasheet here.

LPR Compatible Cameras

Table 2 below provides the minimum recommended specifications for the cameras in each use case.

Specification	Gate LPR 10MPH (20 km/h)	Street LPR 30MPH (50 km/h)	Highway LPR 70MPH (110 km/h)
Resolution	1920 x 1080	1920 x 1080	1920 x 1080
FPS	25	30	60
Lens*	2.8mm - 12mm	2.8mm - 12mm or	5mm - 50mm

		5mm - 50 mm	
Exposure & Gain	Manually Controlled	Manually Controlled	Manually Controlled
Image Enhancement	HLC, BLC	HLC, BLC	HLC, BLC
IR	50 meters	100 meters	External IR

Table 2: Use case camera specifications

Recommended Eagle Eye LPR cameras can be found here.

Accessories for Access Control Application

Eagle Eye LPR supports two types of integration to the Access control system:

1. For using **BRIVO** as the Access Control System, you will need the following accessories.
    a. RS485 USB Converter, which can be purchased from here.
    b. Shielded Twisted Pair Cable.
    c. Brivo Compatible Panels, which can be found here.
2. For using **MOXA** to control the Access Control System, you will need the following accessories.
    a. Moxa ioLogix E1214, which can be found here.

Checklists for LPR Installation

Use the checklists in this section to ensure correct LPR installation.

Part 1: Before Installation

SL No	Description	Complete?
1	LPR Compatible Bridge/CMVR	☐
2	LPR Compatible Camera	☐
3	Accessories for Camera Installation	☐
4	Accessories for Access Control System (Only applicable if LPR is used for Access Control Application).	☐

Part 2: After Installing the Camera and Bridge/CMVR

SL No	Description	Complete?
1	Camera is Installed?	☐
2	Bridge is Installed and Online?	☐
3	Camera has been added to VMS Account	☐
4	Camera Settings are Configured	☐
5	LPR Analytics is Enabled	☐
6	LPR Configuration is Set	☐
7	LPR Events are generated	☐
8	Access Control is Configured (If Applicable)	☐

Camera Installation Considerations

The right choice of camera is crucial to attaining high accuracy for LPR reads. Factors such as resolution, lens, image enhancement, and Infrared (IR) power determine the quality of the imaging. The major factors in camera choice are the distance from the camera to the vehicle license plate capture position and the width of the lane. These two factors affect the choice of lens and IR power. The greater the distance from the camera to the vehicle imaging area, the higher the need for increased zoom and higher-power IR.

Similar to camera choice, proper camera installation determines the success of license plate reads. Factors like the angle of imaging, height of installation, and pan angle affect the LPR accuracy. If local law requires license plates on the front of vehicles, install cameras to read these plates. Front plates provide better results because the camera can track the vehicle across multiple frames as it approaches, capturing the best image possible. Also, the distance

between the camera and the vehicle is always the same for front plates. To read rear license plates, the trigger point has to be chosen based on the longest vehicle, which may not be optimal for all vehicles. Optimal camera placement varies from site to site based on the layout and the camera mounting location (ground, ceiling, wall, etc.).

If motorcycles are to be captured, rear license plates are preferred, as many of them do not have front license plates, and, if present, the size is typically much smaller than that of typical vehicles. The mounting varies depending on the application. See below for the preferred mounting suggestions to achieve optimal imaging and the best LPR reading.

LPR for Gate Installation

See Table 2 and Figure 3 below for gated installation specifications and setup.

Note: The maximum distance from the camera to the plate is 4 meters/12 feet.

Maximum Distance from Camera to Plate	12 feet / 4 meters
Maximum width of road	12 feet / 4 meters
Preferred height of install	6 - 10 feet /2 - 3 meters

Table 2: Gated Installation Specifications

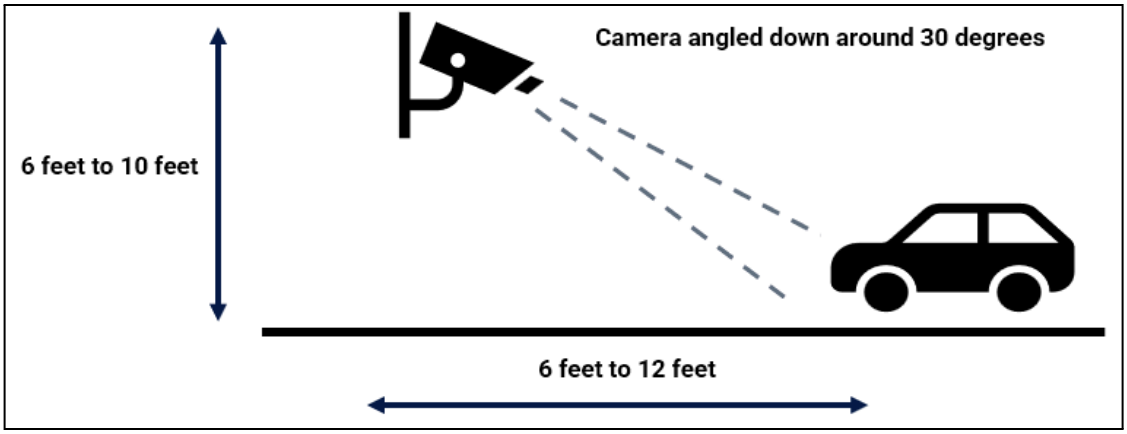


Figure 3: LPR setup for gated installation

Figure 4 shows an example of a front license plate capture in a front-facing camera installation for gated LPR.

Figure 4: Front License Plate Capture Example

Figure 5 shows example images from a rear-facing camera installation for gated LPR.

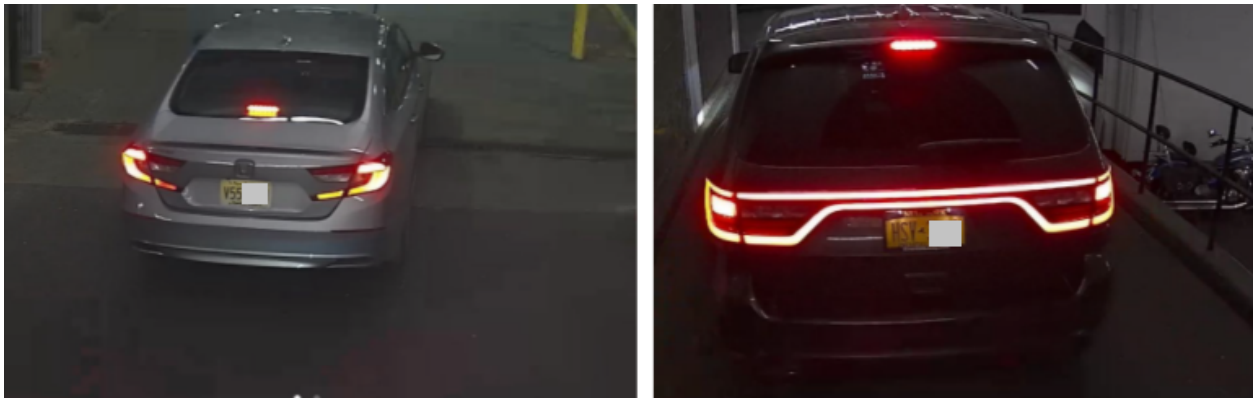


Figure 5: Rear license plate capture examples

LPR for Street Installation

See Table 3 and Figure 6 below for gate/street installation specifications and setup. Installation recommendations apply for both front and rear LP capture.

Note: The maximum distance from the camera to the plate is 15 meters/50 feet

Maximum Distance from Camera to Plate	50 feet / 15 meters
Maximum width of road	20 feet / 6 meters
Preferred height of install	6 - 15 feet /2 - 5 meters

Table 3: Gate/Street Installations

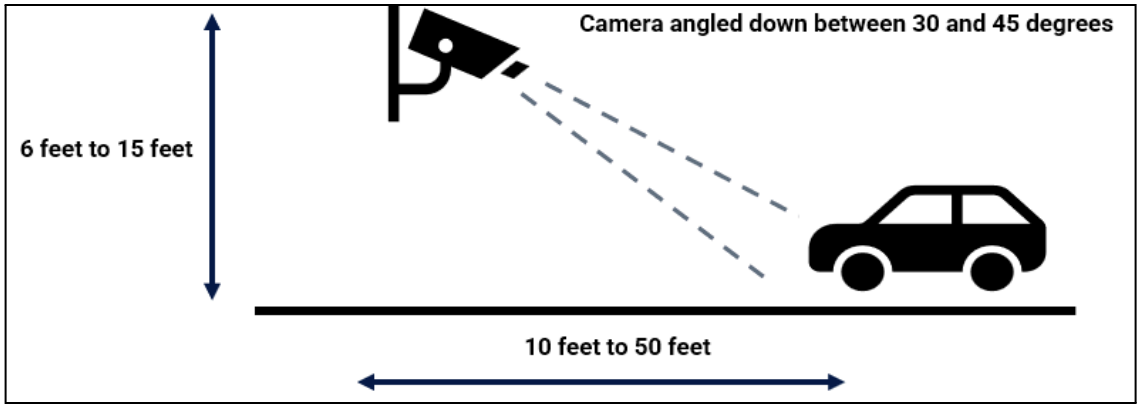


Figure 6: LPR setup for gate/street installation

Figure 7 shows an example of a front license plate capture in a front-facing camera installation for street LPR.

Figure 7: Reference image from an LPR for street installation

Camera Placement and Alignment

The angle of camera installation is crucial for LPR to avoid license plate readings at an acute angle.

1. **Vertical angle** - The camera should always be angled down to prevent sunlight and car headlights from falling directly on it, and to ensure rain or snow droplets do not fall onto the lens.
2. **Pan angle** - The pan angle of the camera must be limited to 30° as the perspective view would impact the plate reading. See Figure 8 for an example.

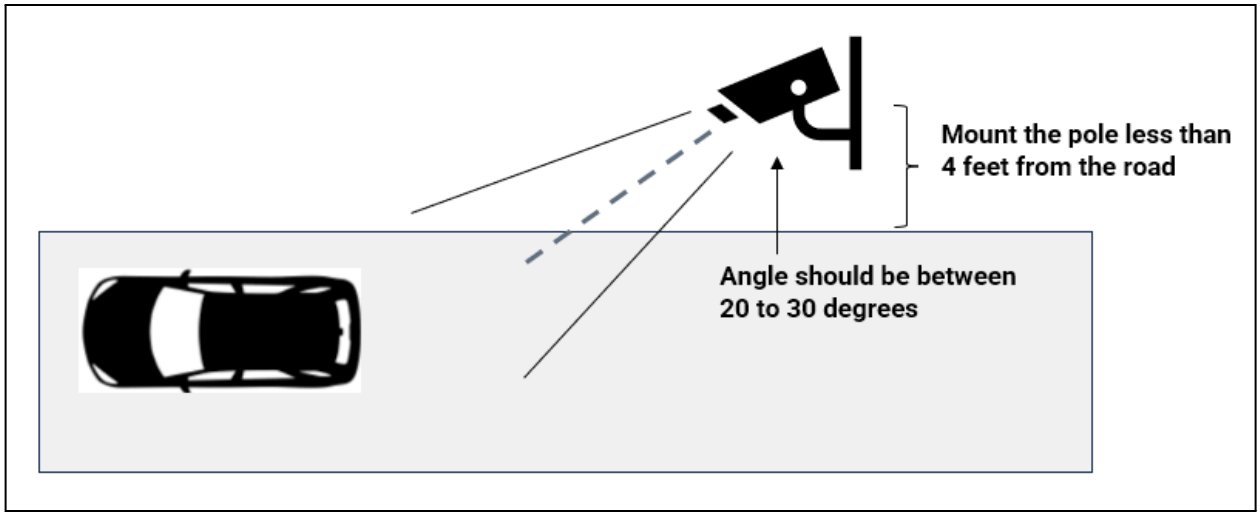


Figure 8: Representation of pan angle and distance from the road to the camera installation pole

After mounting cameras, it is necessary to make tilt and rotation adjustments to ensure that the license plate is centered and horizontally oriented when the vehicle is at the ideal capture distance. To do this:

1. Position a vehicle in the middle of the lane. Look at the camera view and tilt the camera such that the license plate is at the center of the camera view.
2. Rotate the camera to ensure that the license plate is horizontally aligned with the image. It may be harder to figure out which is horizontal, so use a speed bump or gate entry barrier as a reference.

After positioning the vehicle at the preferred area of capture and tilting the camera, the view of the camera indicates that the license plate is centered. See Figure 9 for an example.

Figure 9: Reference image to ensure that the camera is centered for optimal performance

Camera Settings

Table 4 below covers camera specifications that will help to get optimal readings for license plates in each use case.

Specification	Gate LPR 20MPH (20 km/h)	Street LPR 40MPH (50 km/h)	Highway LPR 70MPH (110 km/h)
Resolution	**1280×720**	**1920×1080**	**1920×1080**
Quality	**Medium**	**High**	**High**
FPS*	**10**	**15**	**20**
Day and Night Settings	Switching from day mode to night mode should be ***Auto***. If the camera supports profile mode, then two profiles can be set, one for day time and one for night. If a monochrome image is ok, then night mode can be set permanently.		
Maximum Exposure/Shutter **(Mentioned are maximum exposure, if plates are saturated, you may reduce the shutter)**	1/250 If motion blur is observed, this can be changed to 1/500.	1/500 - 1/1000 Depends on motion blur. Shutter can be set to 1/1000 to prevent motion blur.	1/1000 - 1/2000 Depends on motion blur. Shutter can be set to 1/2000 to prevent motion blur.
HLC	Turned on.		
Gain	Needs to be kept below 20% to minimize noise in the image. Different cameras have different settings, so you may need to adjust the Gain to have proper imaging.		
IR Power	Set to **a high value.** It's always advised to keep IR power to a high value and compensate by reducing gain.		

Table 4: Additional camera specifications

*FPS of the camera and LPR processing FPS to be the same for optimized performance

Camera Day & Night Mode Settings

Ideally, the LPR camera should be configured to capture in color during both daytime and nighttime. So that vehicle color can be captured correctly during both day and night conditions. See Figure 10 for an example.

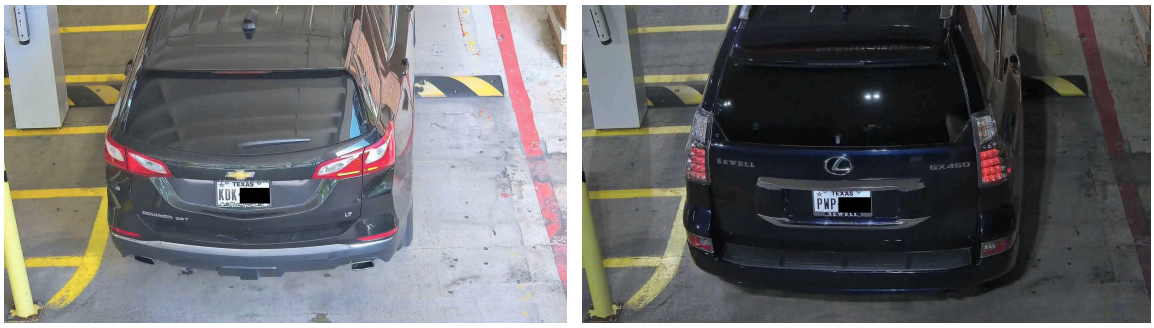


Figure 10: Images from a camera that runs on color during the day and night. Vehicle attributes such as Make are also visible here.

Often, during night hours or if the camera is indoors, there is insufficient light from external sources to capture number plates clearly and brightly. In that case, the camera is set up with two configurations: one for daylight in normal color mode, and the second during the night in IR mode (black and white). See Figure 11 for examples of day and night modes.

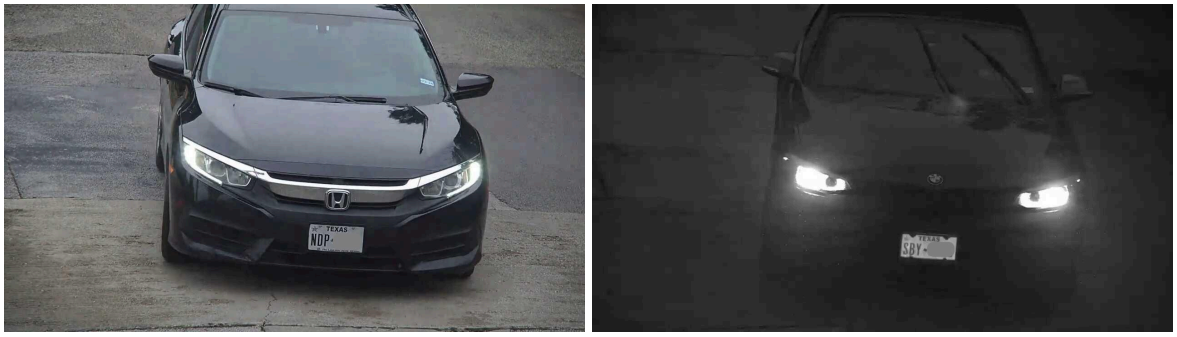


Figure 11: a) Daytime - Color mode, b) Nighttime - Night (IR) mode

However, suppose LPR performance is impacted due to poor imaging, especially during dawn or dusk hours when the camera is incorrectly switched from day to night mode settings. In that case, we recommend keeping the black and white (IR mode) active at all times. If the camera fails to switch to night mode when required or does not support two modes of operation, you may need to configure it for full-time IR mode operation. See Figure 12 for an example of IR mode used during the daytime.

Figure 12: LPR detection using monochrome (IR mode) during daytime

The ability of a camera to capture vehicle attributes like the make or body type of the vehicle at night depends on the ambient light. In many circumstances, night-view images will show only the license plate. See Figures 13 and 15 for examples of license plate capture during no-light (zero lux) or low-light environments.

Figure 13: License plate capture at night under zero-lux environment

Figure 14: Both the license plate and vehicle make are visible in this IR mode image, due to sufficient light from an external source

As mentioned previously, capturing the color of a vehicle at night or in indoor conditions requires sufficient illumination (from external sources) so that the camera does not need to switch to IR at any point when capturing license plate numbers. Capturing the color of the vehicle while the camera is in IR mode is not possible.

Test License Plate Image Clarity - Sharpness and Brightness

Follow the steps below to ensure you have the proper setup. You should perform these steps in both day and night environments. These settings are configured on the camera separately; LPR does not do any auto-configuration.

1. Park a vehicle in the camera's view and adjust the settings as described in this application note.
2. Adjust the settings to have the optimal image quality. Exposure should be limited as mentioned in Table 4 in Camera Settings above.
3. Drive the vehicle at the maximum speed expected at the site and ensure there is no motion blur.
4. Adjust the gain as required to have clear images of the plates.
5. Verify the results for the next 24 hours and adjust the settings as needed to ensure all plates are clearly visible.

Basic Configurations of License Plate Recognition (LPR) Analytics

This section explains the basic LPR analytics configurations for both Bridge and Cloud deployments. While LPR on Bridge offers additional configurations, these are specific to access control and webhook integrations and will be covered in a later section, as they are not part of the basic setup.

LPR Activation in Cloud VMS Analytics

Eagle Eye LPR is configured completely from within the Cloud VMS.

1. Navigate to the **Camera Settings** for your LPR camera.
2. Click the **Analytics** tab.
3. You should see **License Plate Recognition (LPR)** listed here, as shown below.

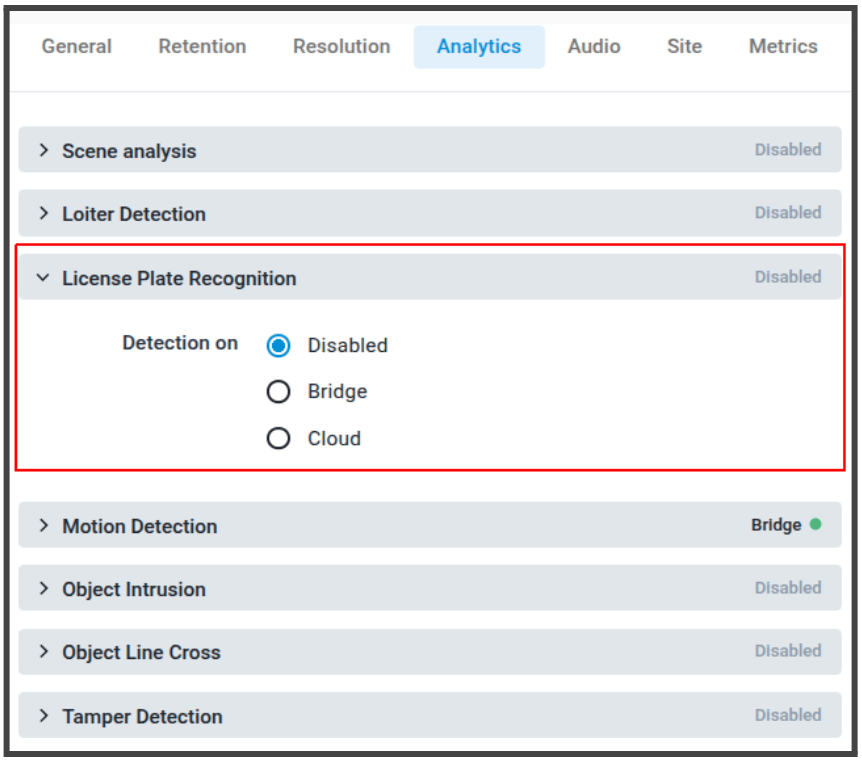


Figure 15: Analytics Settings

4. Select your preferred LPR option based on where you want to run the LPR, either on the Bridge or in the Cloud. The corresponding settings will then appear below.

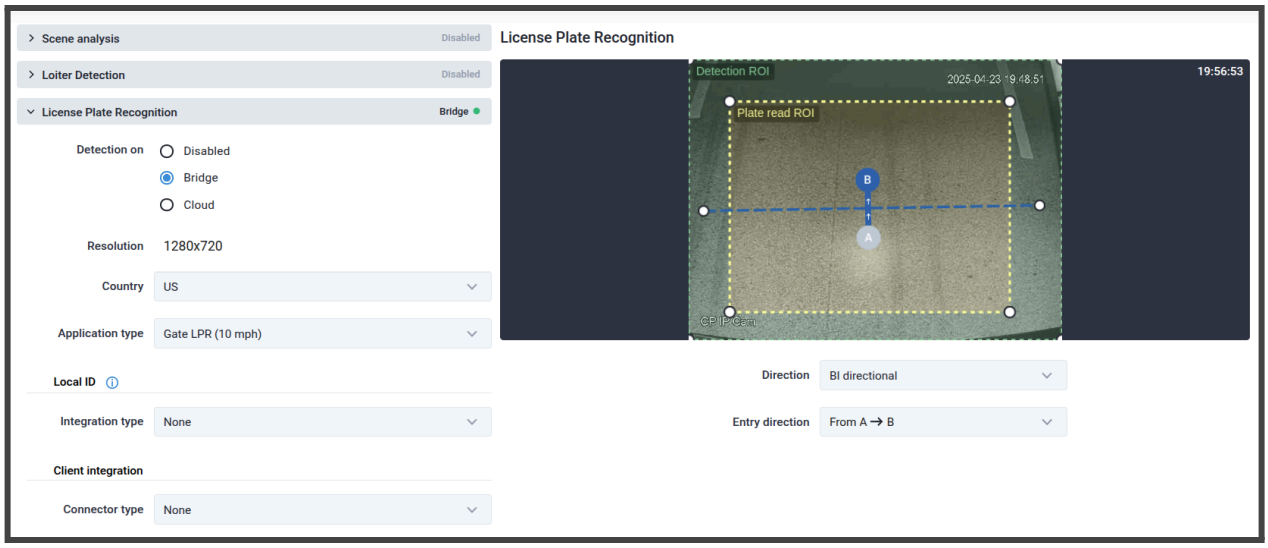


Figure 16: License Plate Recognition Settings on Bridge

Fields	Description
Resolution	This shows the input resolution of the camera's full video stream for LPR. Higher resolutions increase the processing load on the bridge. Use the following guidelines to choose the optimal resolution based on lane width: • **1280 x 720:** For lane widths under 3.5 meters • **1920 x 1080:** For lane widths between 3.5 and 7 meters Adjust the resolution in the **Resolution** tab—LPR uses this same resolution for processing.
Country	The AI model is tuned for a specific country to have enhanced accuracy and understanding of the pattern of plates from the country.
Application type	This refers to the frame rate at which the LPR will be processed. Application type should be chosen based on the expected vehicle speed; higher frame rates increase the load

	on the bridge. The following guidelines can help you select the optimal value: ● Gate (10 MPH) – 10 FPS ● Street (30 MPH) – 15 FPS ● Highway (70 MPH) – 20 FPS **Note:** Ensure the FPS on the camera matches the one specified in the LPR configuration.
Detection ROI	The region of interest inside which the license plate would be detected. The Detection ROI should typically cover at least 90% of the camera's field of view. A smaller ROI may result in missed vehicle detections.
Plate Read ROI	The Plate Read ROI is a subset of the Detection ROI, specifically defined as the area where license plates are most clearly visible. This helps the system focus on the optimal region for license plate detection and recognition.
Example for ROI Settings:	

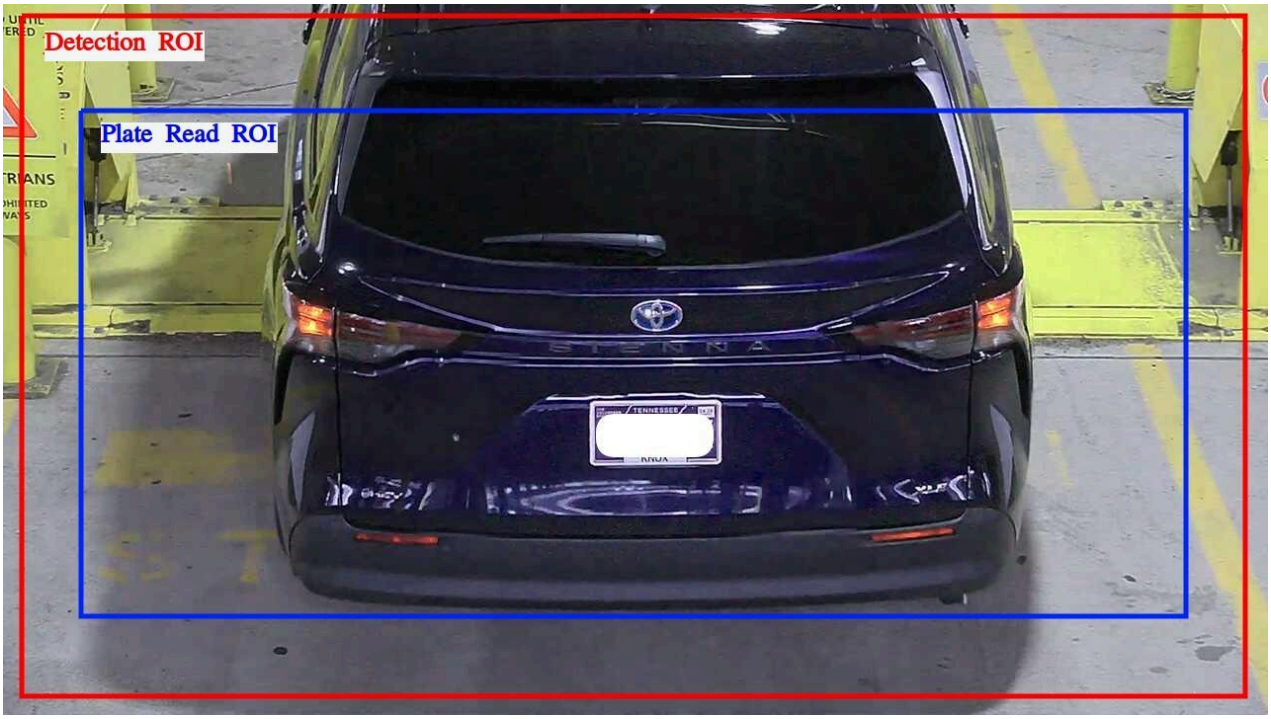


Figure 17: LPR Region of Interest (ROIs)

Direction	This setting defines the vehicle travel direction and enables filtering based on movement. It helps the system ignore vehicles going in the opposite direction. • **Entry:** Captures only vehicles entering; ignores exiting vehicles. • **Exit:** Captures only vehicles exiting; ignores entering vehicles. • **Bi-Directional:** Captures vehicles moving in both directions.
Entry/Exit Direction	This is to define the direction of vehicle movement. To configure the Entry direction, adjust the **blue line** in the ROI settings. The line should be **perpendicular to the vehicle flow**.
Example for Direction Settings:	

If vehicles move from **bottom to top**, set the blue line horizontally across the view. Then select the correct entry direction (either **A → B** or **B → A**) based on vehicle flow.

Refer to the screenshot below for an example of a bottom-to-top Entry configuration.

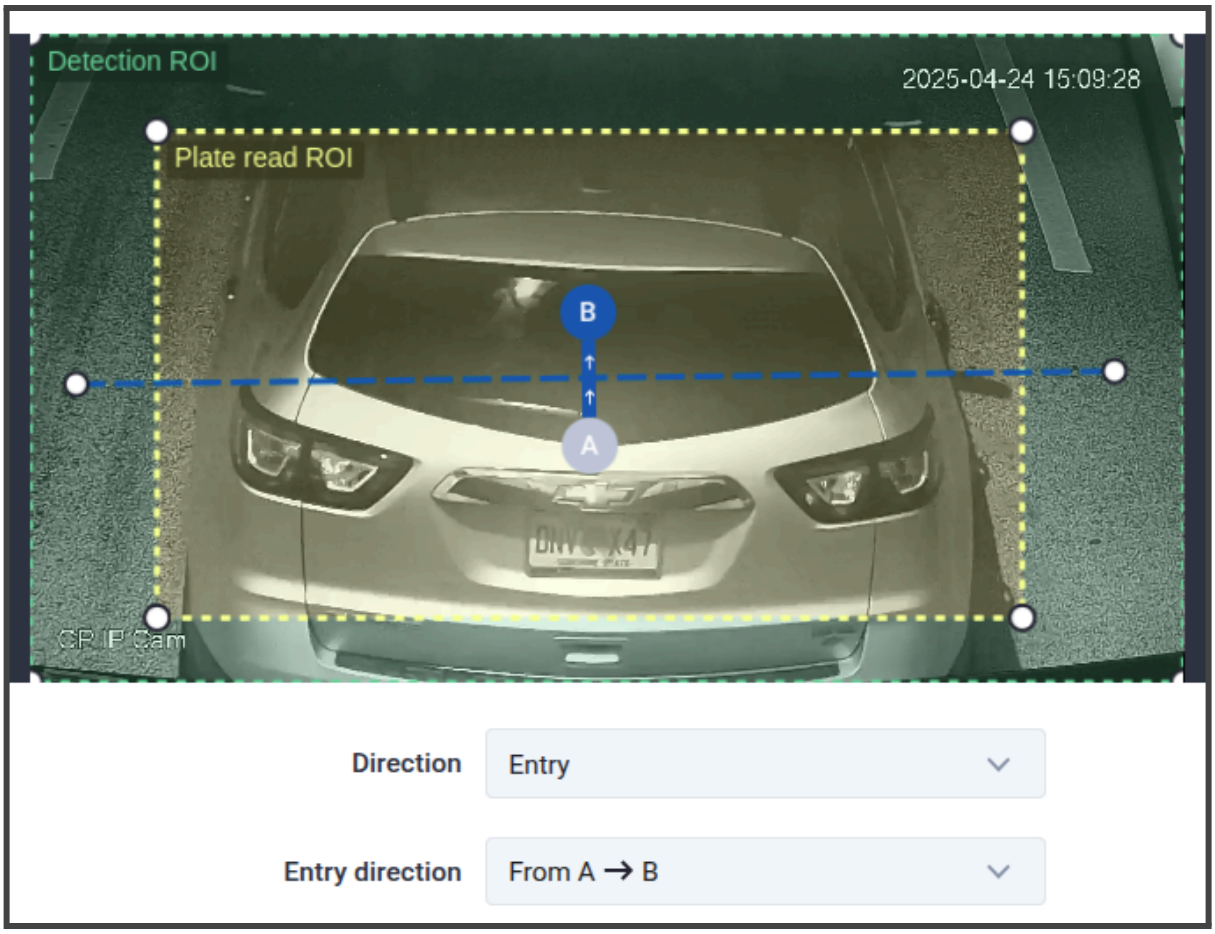


Figure 18: LPR Direction Settings

After updating the LPR configurations, click **Save Changes** to apply and enable LPR. Results will appear on the **Vehicle Surveillance Package (VSP)** dashboard in the VMS for the configured camera.

Note: After enabling LPR, the service may take 2–3 minutes to start.

Viewing License Plate Recognition (LPR) Results

To view the LPR results, go to the **VSP** section in the VMS and select the **Events** page, where all detected license plates will be listed. If you have multiple LPR cameras enabled, filter the events based on the camera.

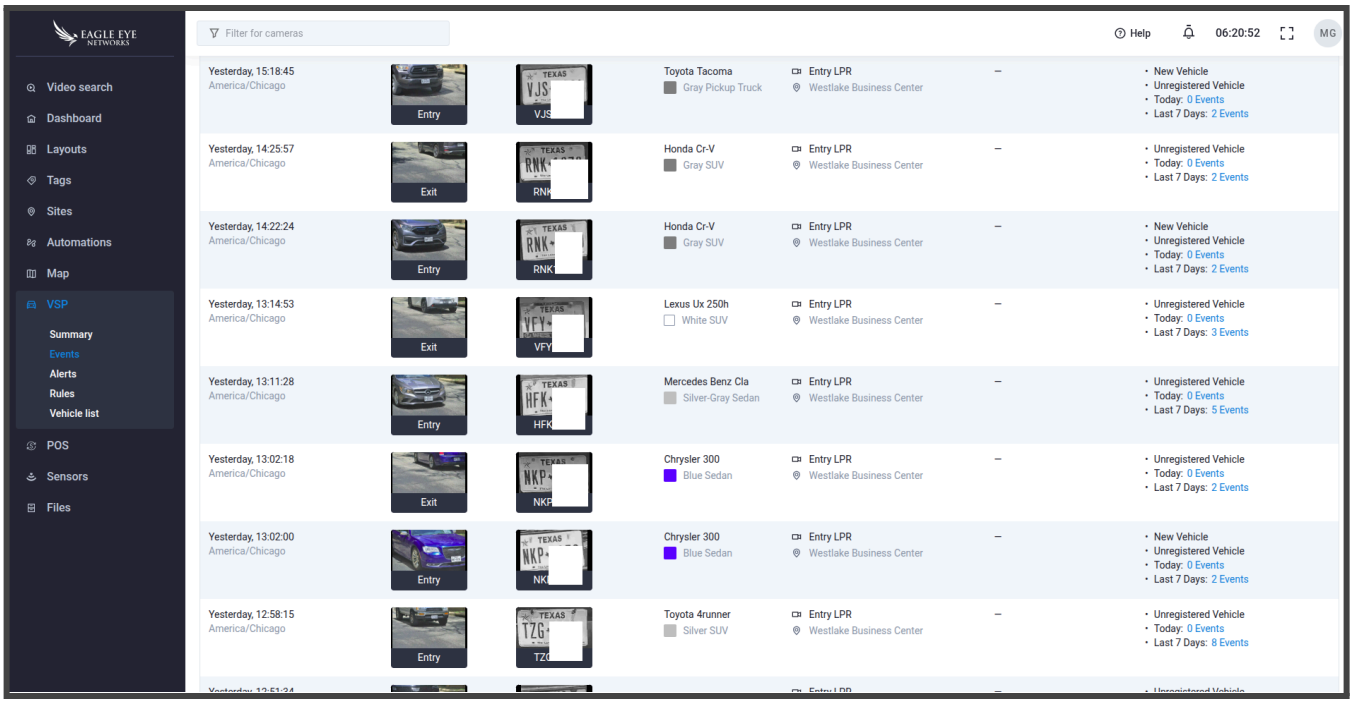


Figure 19: VSP Events Page

Configuring LPR for Access Control Applications

This section provides information about integrating LPR with Brivo and Moxa access control systems.

Brivo Integration

Integrating Eagle Eye LPR with Brivo Access enables the use of License Plate Credentials for automated access management of parking facilities. This is achieved by implementing LPR technology, which captures license plate information, to authorize entry for registered vehicles or generate alerts for unauthorized vehicles.

In the context of access control systems, credentials serve as authentication mechanisms for granting entry to secured areas. Traditional examples include physical badges, keyfobs, and mobile credentials. For customers utilizing both Brivo and Eagle Eye systems, the option to employ a vehicle's license plate as a credential is available. The License Plate Credential procedure is detailed in the following sections.

License Plate Registration on the Brivo Access Platform

Users must register the vehicle license plate within the Brivo Access platform. The registered license plate is then transformed into a credential and stored in the Brivo Panel for authentication purposes. See Figure 23.

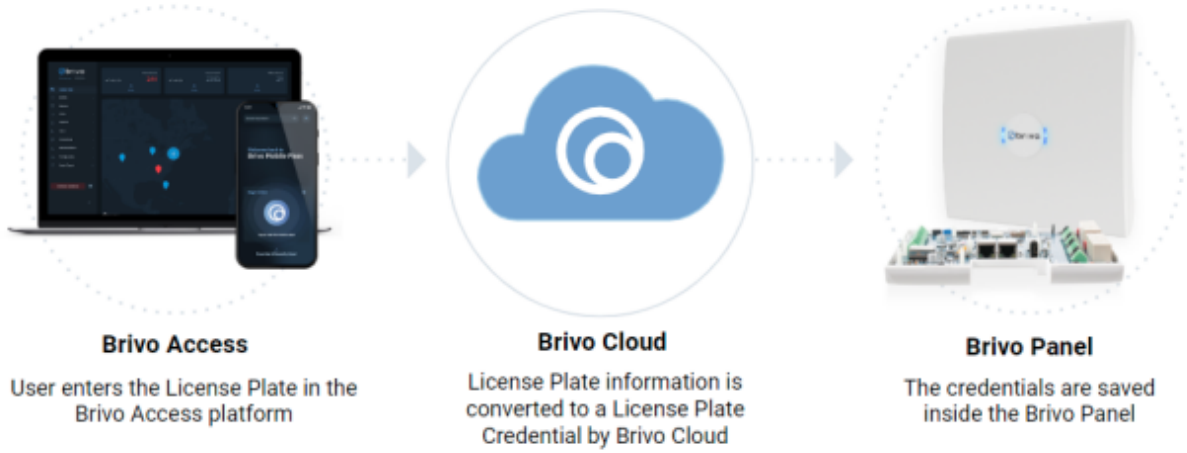


Figure 23: Brivo access workflow

License Plate Capture and Transmission to the Brivo Panel

Eagle Eye LPR operates on the Bridge/CMVR, where captured license plate data is converted into a credential. This credential is transmitted to the Brivo Panel via the Open Supervised Device Protocol (OSDP). See Figure 24.

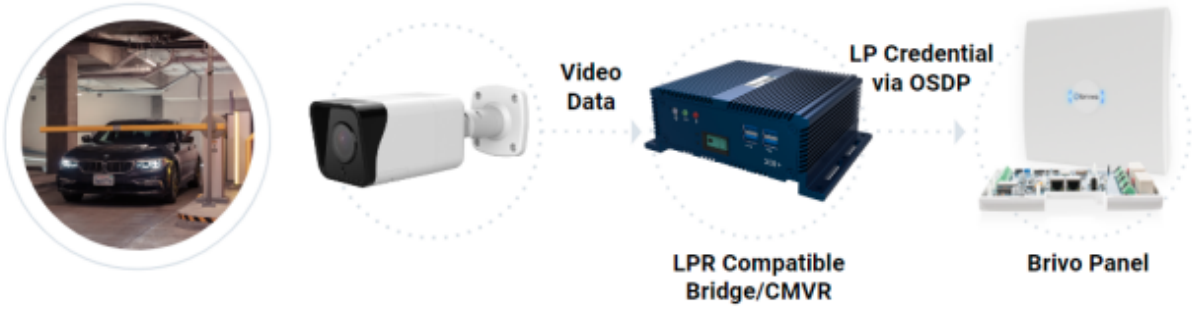


Figure 24: License plate transmission to the Brivo panel

The integration of Eagle Eye and Brivo operates locally, guaranteeing uninterrupted access control functionality during internet outages, with updates synchronized to the Eagle Eye Cloud upon restoration of connectivity.

Following the transmission of credentials from Eagle Eye, Brivo undertakes credential verification. Upon confirmation of authorization, Brivo activates gate access corresponding to the validated credential status.

Brivo Connections

The Eagle Eye and Brivo systems are physically connected via a serial interface using the OSDP protocol. This connection requires a USB to RS485 converter and an interface between the Eagle Eye Bridge/CMVR and the panel.

RS485 - Reference Product: Link

Note:

- Ensure that **Shielded Twisted Pair (STP)** cables are used for the connection. It's essential to cross-verify this directly with the technician on-site. If STP cables are not used, it may lead to connectivity issues caused by external interference or signal degradation. Such problems can be intermittent and challenging to diagnose or troubleshoot remotely through the Bridge or CMVR. Using proper STP cabling helps maintain stable and consistent communication between devices. See Figure 25.

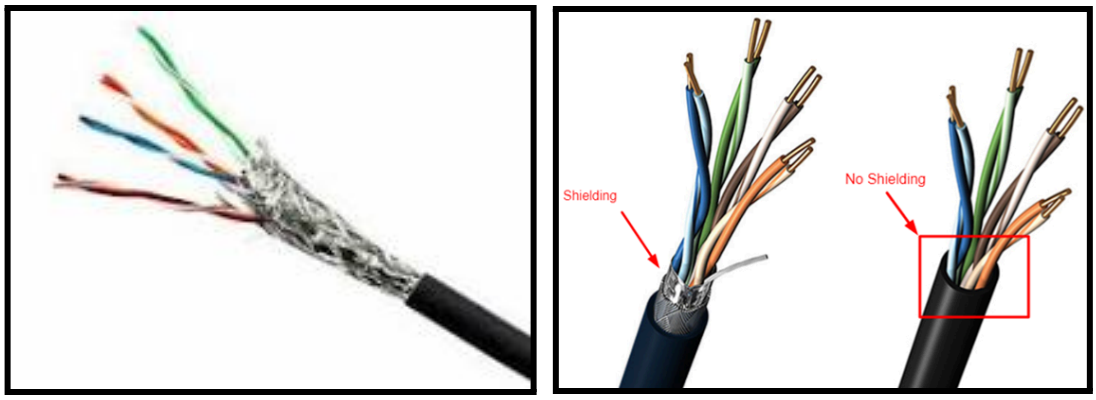


Figure 25: STP Cable reference image

- **The distance between the Eagle Eye Bridge/CMVR and the Brivo Panel should be less than 1 meter.** If the cable length exceeds 1 meter, it can impact connectivity due to signal loss, and it will be more difficult to diagnose remotely via Bridge/CMVR. See Figure 26 for a diagram of Eagle Eye and Brivo connections.

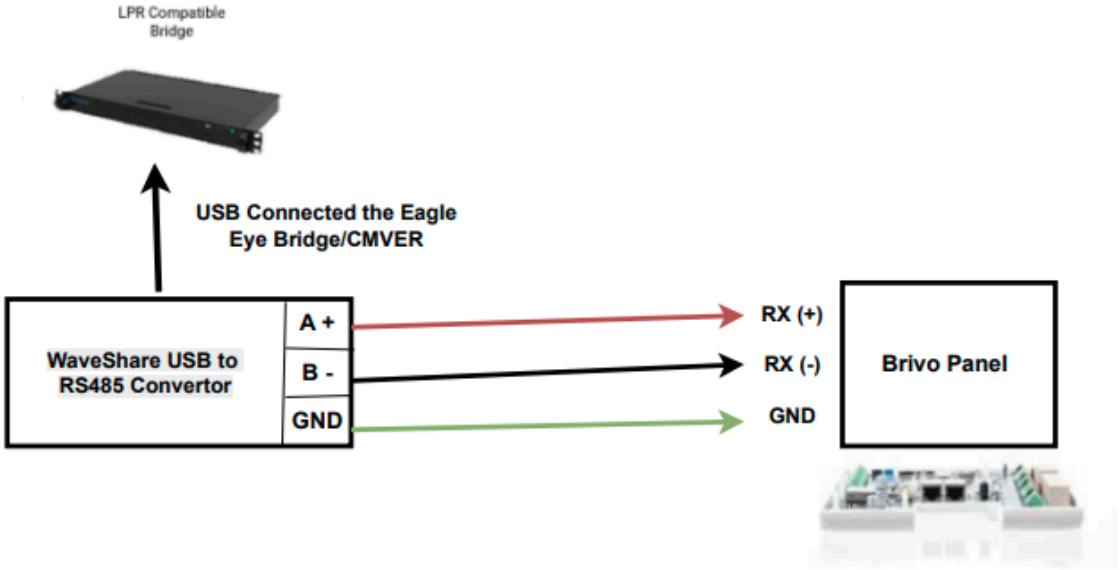


Figure 26: Eagle Eye/Brivo connections diagram

Configuring Eagle Eye LPR with Brivo

To Configure Eagle Eye LPR with Brivo Access Control:

1. Navigate to **Camera Settings** → **Analytics** → **License Plate Recognition** → **Local ID**
2. Set the **Integration Type** to **Brivo**.
3. If the USB to RS-485 converter is connected to the bridge, the corresponding USB serial number will automatically appear. Select the listed serial number.
    a. If multiple USB-RS-485 converters are connected, configure them one at a time. This will help you identify the correct USB serial number for each configuration.
4. Choose the appropriate **Peripheral Device ID** based on the physical connections—this determines which Device ID corresponds to which peripheral.
    a. Typically, one Peripheral Device ID is assigned for LPR and another as a backup reader for access control. By default, **PD0** is selected.
    b. Set P**eripheral Device ID as PD0** if you do not have a backup reader with Brivo. If you have a backup reader, set the value to 1.

5. Click **Save Changes** to apply the configurations. See Figure 27.

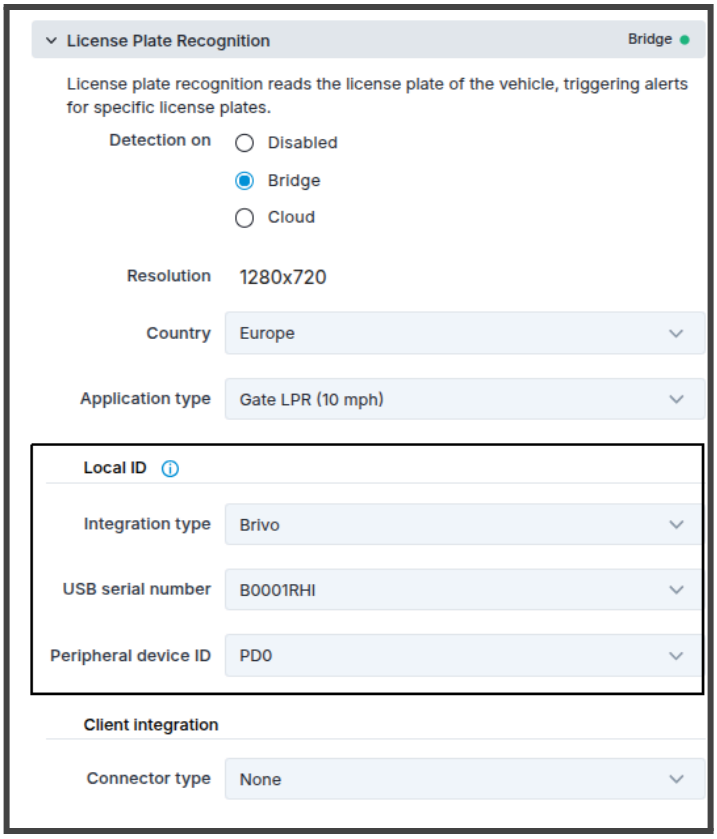


Figure 27: LPR configurations with Brivo

Eagle Eye LPR with Moxa ioLogik Integration

This section provides information for integrating Eagle Eye LPR with the MOXA ioLogik E1214 I/O module for access control applications. The license plate recognition from Eagle Eye can be used for applications such as access control to open gates.

Eagle Eye LPR with Local ID enables verifying license plates with a preconfigured allow list and/or deny list, and triggering an I/O event on detection of an allowed or denied vehicle. The LPR service running on the Bridge is integrated with the MOXA ioLogik E1214 I/O module for access control applications (e.g., triggering a gate to open or close). This section describes how to configure this setup.

Supported MOXA Device

Eagle Eye currently supports the MOXA IoLogik E1214, which needs to be purchased separately. The user manual for Moxa ioLogik can be found here.

Physical connection

- The MOXA unit incorporates six relay outputs, designated NO-1 through NO-6, which are utilized to actuate gate mechanisms. Each relay output possesses a corresponding common terminal, marked 'C', adjacent to the respective NO pins. It is imperative to distinguish relay outputs from digital outputs. Only the relay outputs, identified as RX_NO (where X denotes the output number), are employed in this configuration.
- Should the gate be connected to R1_NO, it is necessary to configure output 1 within the LPR Configuration page of the Eagle Eye Cloud VMS for the allow list functionality. An illustrative connection diagram for channeling signals to the barrier and lighting systems is shown in Figure 30.

For comprehensive wiring specifications, consult the manufacturer's documentation here.

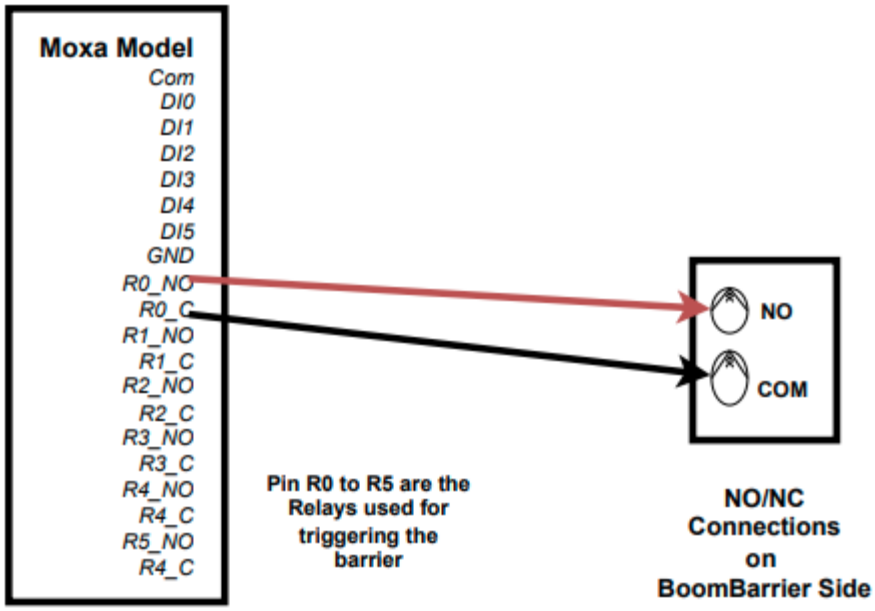


Figure 28: Moxa connection diagram for channeling signals

Configuring Eagle Eye LPR with Moxa ioLogik

To Configure Eagle Eye LPR with Moxa ioLogik:

1. Navigate to **Camera Settings** → **Analytics** → **License Plate Recognition** → **Local ID**
2. Set the **Integration Type** to **External I/O**
3. The **External I/O Module** will automatically be selected as **Moxa ioLogik**.
4. Enter the **IP Address** of the Moxa device.
    a. If you're unsure of the IP address, provide the **MAC address** of the Moxa to your Network Administrator. They can help locate the correct IP address and share it with you.
5. Enter the **Allow**, **Deny**, and **Unlisted** PINs based on the physical wiring and access control logic:
    a. **Allow**: This PIN is triggered when the LPR recognizes an authorized vehicle.
    b. **Deny**: This PIN is triggered when the LPR recognizes a registered vehicle with "Deny" access type.
    c. **Unlisted**: This PIN is triggered when the LPR recognizes an unregistered vehicle.
6. Click **Save Changes** to apply the configurations. See Figure 31.

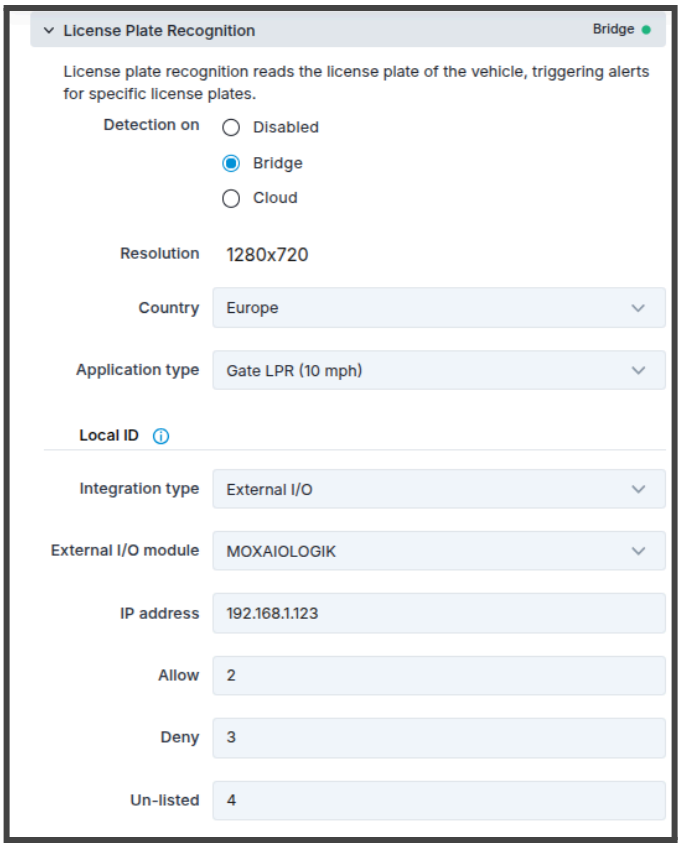
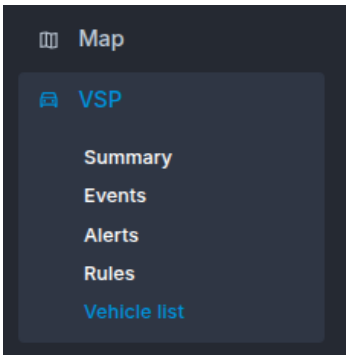


Figure 31: LPR Configuration with Moxa

Managing Vehicle Lists in Eagle Eye VSP

A Vehicle List is a list of plates grouped under a single name for easy management. The Vehicle List has an access category and access control schedule for LPR-based access control automation, which is integrated with Eagle Eye LPR (with Local ID). A Vehicle List can be integrated with an external database for its automatic update and management. A Vehicle List allows users to group vehicles under a list and map them to specific cameras and locations.

Adding a New Vehicle List



- To add a new Vehicle List to the user account, go to the **VSP** section that is seen on the bottom left-hand menu of the Eagle Eye Cloud VMS and click **Vehicle list**.

Figure 32: Creating a new Vehicle List

- The Vehicle List page is empty if no vehicle lists have been added. To add your first vehicle list, click **Add Vehicle List** as shown below, which will navigate you to the appropriate page.
- If some vehicle lists already exist and you want to add another, click the Menu (three vertical dots) icon located in the top right corner of the Vehicle List page, and select **Add Vehicle List.** Refer to the screenshot below. See Figure 33.

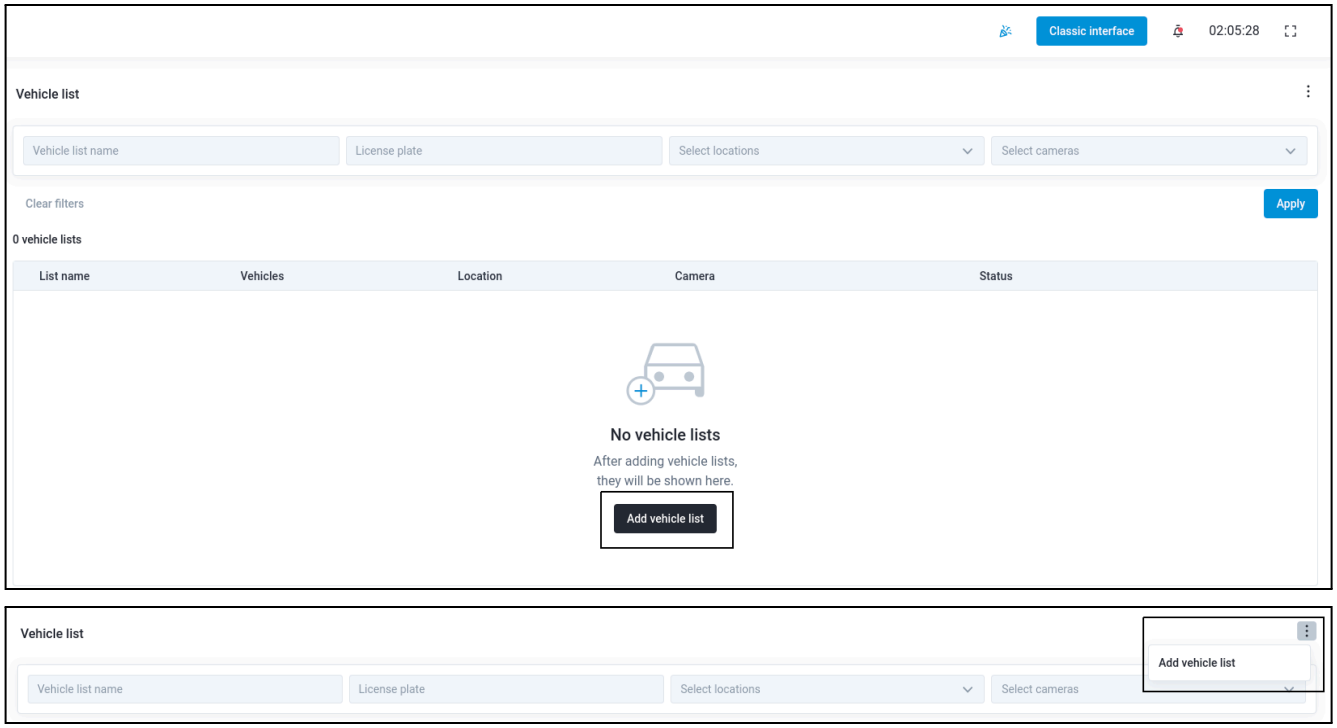


Figure 33: Adding a new Vehicle List

- Once you click **Add Vehicle List,** you will be directed to the page shown in Table 5.

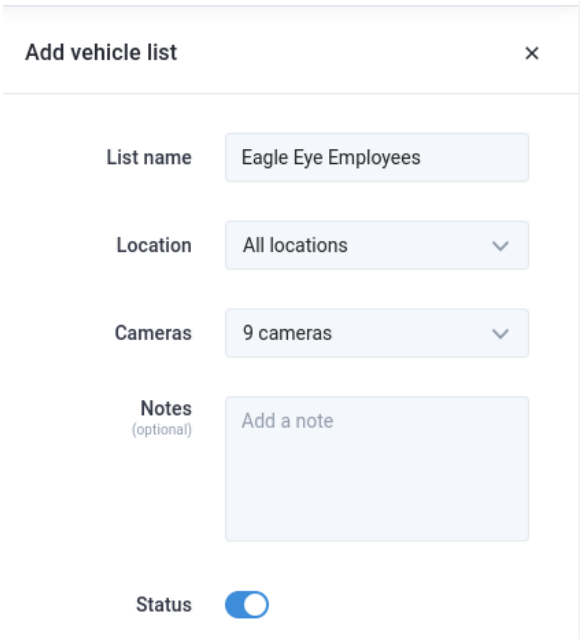
	Please fill in the details required to create a vehicle list: • **List Name**: Enter a unique name for the list. • **Location**: Select the locations where this vehicle list will be applied. • **Cameras**: Choose the cameras to associate with this vehicle list. • **Notes** (Optional): Add any relevant notes, or leave this field blank if not needed. • **Status**: Choose whether to enable this vehicle list immediately or create it in a disabled state.
	Once you have entered all the information, click **Add Vehicle List**.

Table 5: Adjusting Vehicle List settings

- The new vehicle list appears under **Vehicle List**. See Figure 34.

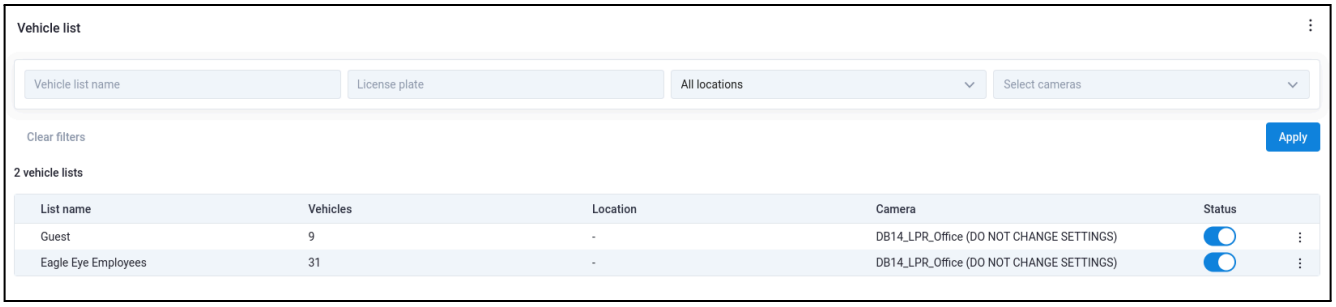


Figure 34: Viewing the new Vehicle List

Vehicle list details**:**

- **List Name:** Displays the name of the created vehicle list.
- **Vehicles:** Indicates the number of vehicles added to the vehicle list.
- **Location:** Shows the location associated with the vehicle list.
- **Camera:** Displays the number of cameras linked to the vehicle list.
- **Status:** Indicates the current status of the vehicle list.

Add Vehicles to the Vehicle List

To add vehicles to a Vehicle List, click the **Vehicle List** where you want to add vehicles. See Figure 35.

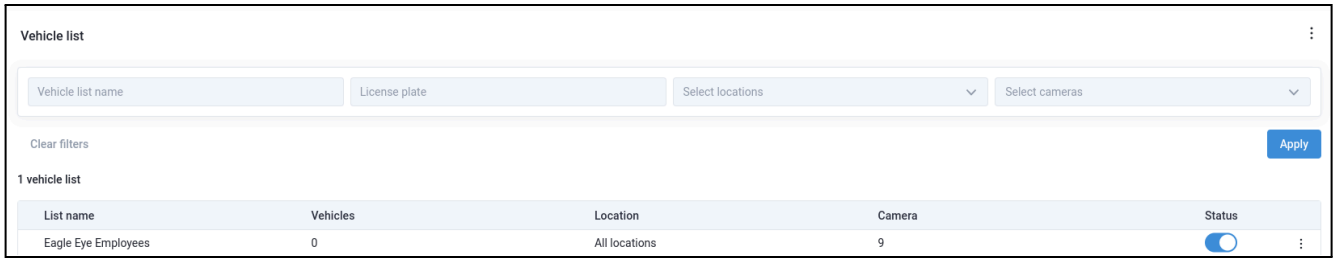


Figure 35: Adding vehicles to an existing Vehicle List

Add vehicles:

- **Add Vehicle:** Use this option to add individual vehicle details. This is ideal for adding a small number of vehicles to the list.
- **Upload List via CSV:** Use this option to add a large number of vehicles at once, suitable for bulk uploads.

Add a vehicle individually:

- If the vehicle list is empty, click **Add Vehicle**. This sends you to the appropriate dialogue. See Figure 36.

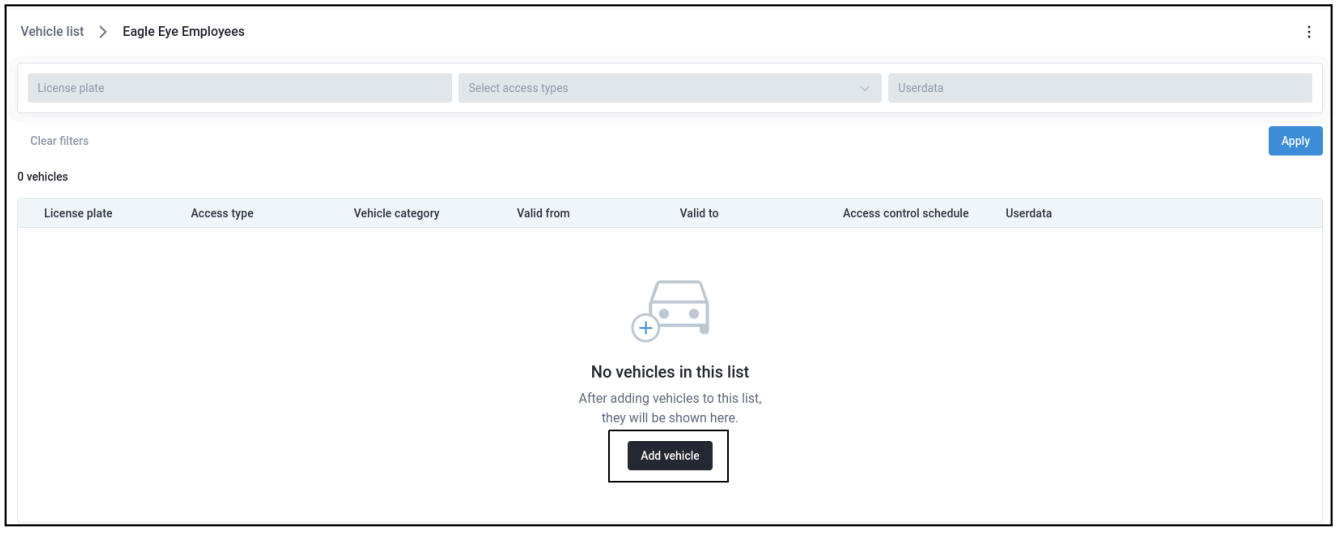


Figure 36: Adding individual vehicles to an empty Vehicle List

- If there are already vehicles in the list and you wish to add more, click the **Menu** (three vertical dots) located in the top right corner of the Vehicle List page and select **Add Vehicle**. See Figure 37.

Figure 37: Adding vehicles to a populated Vehicle List

- Fill in the required details and click **Add Vehicle**.
- Details for each field on the **Add Vehicle** page are shown in Figure 38.

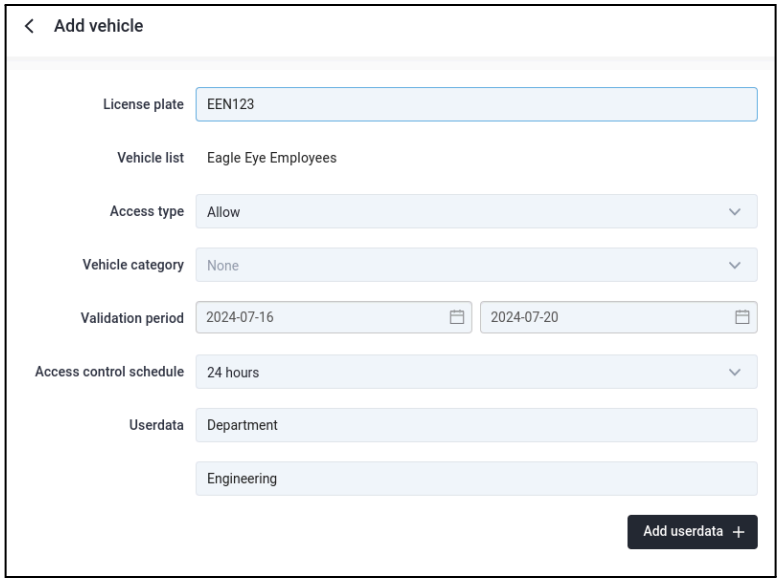


Figure 38: Viewing Vehicle details

To Add Vehicles Using a CSV File:
We have a template that needs to be filled out with vehicle details to add vehicles using a CSV file.

Download the template:

1. Go to the Menu (three vertical dots) in the top right corner of the Vehicle List page and click **Upload list via CSV**.
2. Click the **Download template** button to download the template. See Figure 39 for an example and Table 6 for the Vehicle List parameters and definitions.

Parameter	Definition
License Plate	The vehicle's license plate
Access Type	**Allow:** To allow the vehicle access **Deny:** To deny the vehicle access
Vehicle Category	**Hotlist:** To define whether a vehicle is special and needs an alert against the hotlist rule **Exempted:** The vehicle marked as exempt would be exempted from the alert. This applies rules where the target type is selected in the Vehicle List. **Null:** If the security status is null
Valid From/ Valid To	To define if the vehicle access has an expiration date. Only applicable for Eagle Eye LPR (Local ID).
Access Schedule Category	To define the days and time that the vehicle is allowed entry. Only applicable for Eagle Eye LPR (Local ID).
User data	User data is important for identifying a vehicle. User data tagged to a vehicle is stored with the license plate and enables vehicle search based on user data on VSP Search. **A few examples of user data:** • Company/EagleEyeNetworks • Resident/Unit 1101 • Visitor/UPS truck

Table 6: Vehicle List parameters and definitions

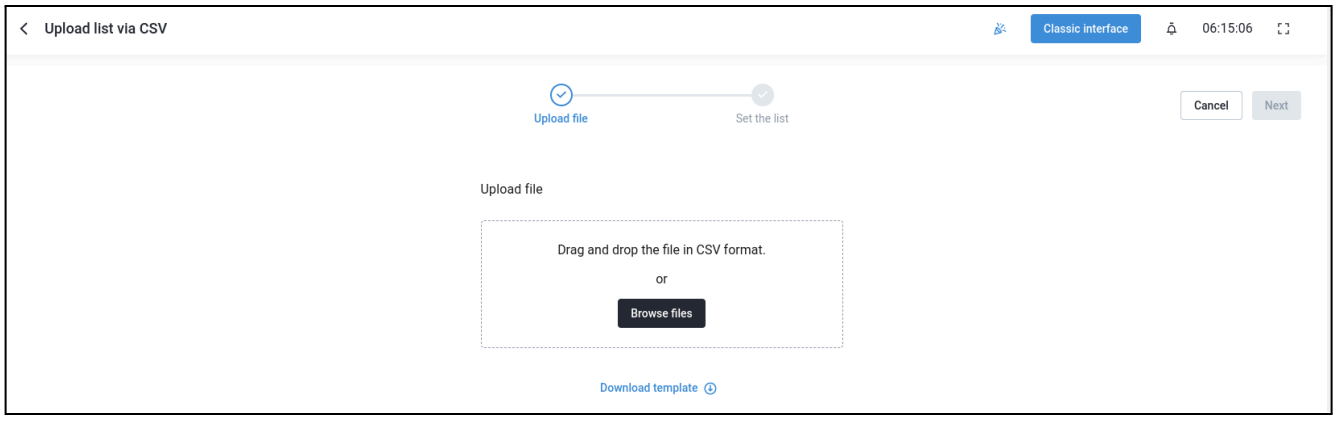


Figure 39: Downloading the Vehicle List template

3. Open the downloaded CSV file on your system, add the vehicle details, and save the file. See Figure 40.

Note: Fields marked with "*" (Plate and Access type) are mandatory. Ensure the data in the CSV matches the format mentioned in each column.

* Plate	Valid from (yyyy-mm-dd)	Valid to (yyyy-mm-dd)	* Access type (Allow or Deny)	Vehicle category (Hotlist or Exempted)	Monday (hh:mm/hh:mm)	Tuesday (hh:mm/hh:mm)	Wednesday (hh:mm/hh:mm)	Thursday (hh:mm/hh:mm)	Friday (hh:mm/hh:mm)	Saturday (hh:mm/hh:mm)	Sunday (hh:mm/hh:mm)	User data
EAGLE123	2024-07-12	2024-07-18	Allow	Exempted								Department/Support
EEN159			Deny									Department/Engineering
ABC135			Allow	Exempted								Department/Marketing
XYZ246	2024-07-11	2024-07-15	Allow	Exempted								Department/Support

Figure 40: Saving the CSV file

To upload the CSV file:

1. Click **Browse Files** or drag and drop the file into the box.
2. Once the CSV is uploaded, click **Next**. See Figure 41.

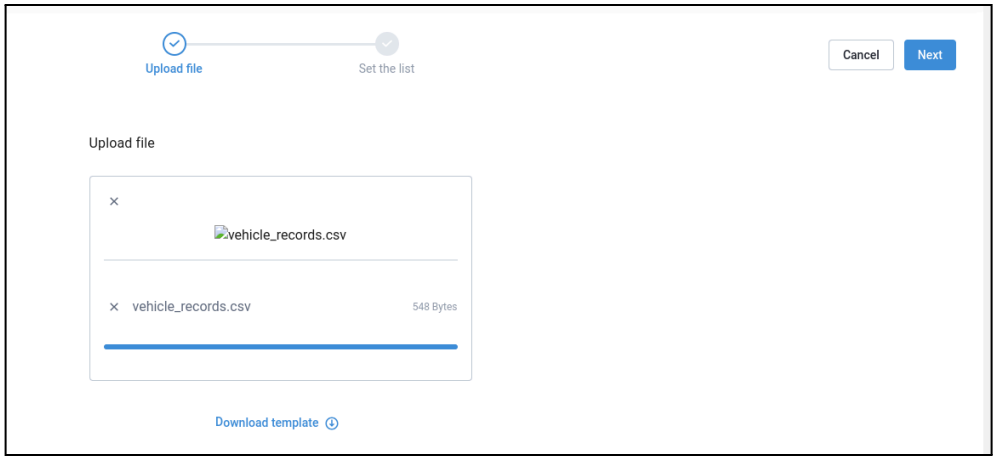


Figure 41: Uploading the CSV file

The CSV file will be validated, showing a table with all the data from the CSV file.

a. You will be notified of any entries that do not match the required format.

b. Plates that already exist in the vehicle list will also be indicated.

3. Review the data and click **Done** to insert the vehicles from the CSV file into the Vehicle List.
   c. If changes are needed, click **Cancel**, make the necessary changes, and re-upload the CSV file.

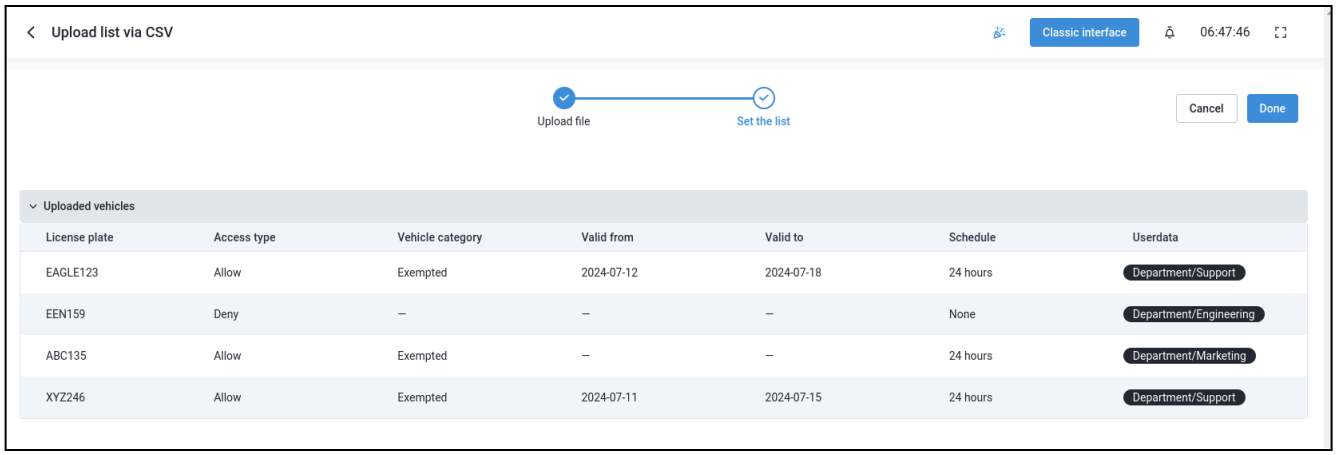


Figure 42: Uploading the data from the CSV file to the Vehicle List

4. Once the data is successfully uploaded, you should see all the new entries in the vehicle list. See Figure 43.

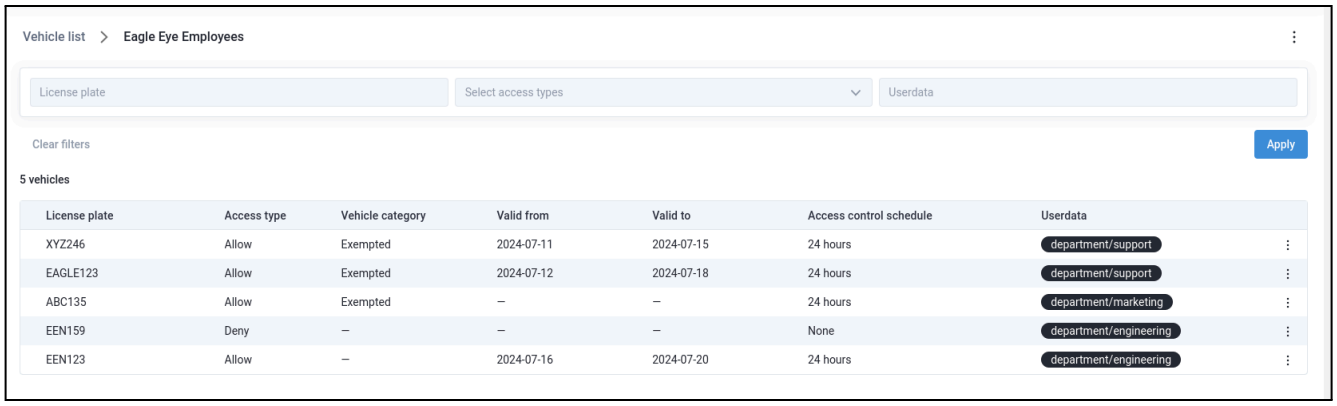


Figure 43: Viewing new entries in the Vehicle List

If vehicles fail to upload to the vehicle list:

If the plates already exist or there are errors in the input, the upload process will fail for those vehicles. The results will be shown as below:

- **Failed Vehicles (Red Box):** These plates were ignored because they already exist in the vehicle list.
- **Uploaded Vehicles (Green Box):** These plates were successfully added to the vehicle list. See Figure 44.

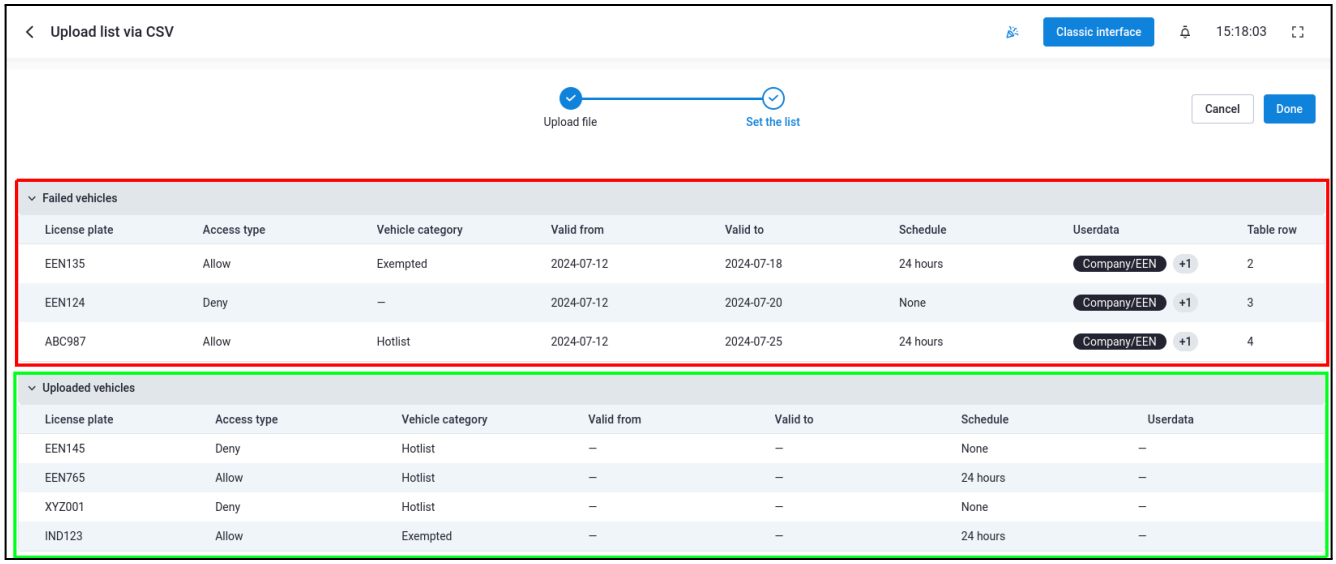


Figure 44: Viewing Vehicles that fail to upload to the Vehicle List