# Network Traffic Camera

## Configuration Manual

# Initiatives on the Use of Video Products

## Thank you for choosing Hikvision products.

Technology affects every aspect of our life. As a high-tech company, we are increasingly aware of the role technology plays in improving business efficiency and quality of life, but at the same time, the potential harm of its improper usage. For example, video products are capable of recording real, complete and clear images. This provides a high value in retrospect and preserving real-time facts. However, it may also result in the infringement of a third party's legitimate rights and interests if improper distribution, use and/or processing of video data takes place. With the philosophy of "Technology for the Good", Hikvision requests that every end user of video technology and video products shall comply with all the applicable laws and regulations, as well as ethical customs, aiming to jointly create a better community.

## Please read the following initiatives carefully:

- Everyone has a reasonable expectation of privacy, and the installation of video products should not be in conflict with this reasonable expectation. Therefore, a warning notice shall be given in a reasonable and effective manner and clarify the monitoring range, when installing video products in public areas. For non-public areas, a third party's rights and interests shall be evaluated when installing video products, including but not limited to, installing video products only after obtaining the consent of the stakeholders, and not installing highly-invisible video products.
- The purpose of video products is to record real activities within a specific time and space and under specific conditions. Therefore, every user shall first reasonably define his/her own rights in such specific scope, in order to avoid infringing on a third party's portraits, privacy or other legitimate rights.
- During the use of video products, video image data derived from real scenes will continue to be generated, including a large amount of biological data (such as facial images), and the data could be further applied or reprocessed. Video products themselves could not distinguish good from bad regarding how to use the data based solely on the images captured by the video products. The result of data usage depends on the method and purpose of use of the data controllers. Therefore, data controllers shall not only comply with all the applicable laws and regulations and other normative requirements, but also respect international norms, social morality, good morals, common practices and other non-mandatory requirements, and respect individual privacy, portrait and other rights and interests.
- The rights, values and other demands of various stakeholders should always be considered when processing video data that is continuously generated by video products. In this regard, product security and data security are extremely crucial. Therefore, every end user and data controller, shall undertake all reasonable and necessary measures to ensure data security and avoid data leakage, improper disclosure and improper use, including but not limited to, setting up access

control, selecting a suitable network environment (the Internet or Intranet) where video products are connected, establishing and constantly optimizing network security.

- Video products have made great contributions to the improvement of social security around the world, and we believe that these products will also play an active role in more aspects of social life. Any abuse of video products in violation of human rights or leading to criminal activities are contrary to the original intent of technological innovation and product development. Therefore, each user shall establish an evaluation and tracking mechanism of their product application to ensure that every product is used in a proper and reasonable manner and with good faith.

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Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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# Symbol Conventions

The symbols that may be found in this document are defined as follows.

| Symbol | Description |
|---|---|
| **Danger** | Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury. |
| **Caution** | Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results. |
| **Note** | Provides additional information to emphasize or supplement important points of the main text. |

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# Chapter 1 Application Mode Configuration

**Note**

- The supported application modes vary with different models. The actual device prevails.
- If the application mode supports area drawing, you can check **Display All Areas** to display all the lines and areas, convenient to view the effect of all the lines and areas. If you uncheck it, only the current selected lane will be displayed, convenient to draw the current lane.

**Caution**

You can click **Default** to restore all the set parameters to the default settings. Please operate with care.

## 1.1 Set Checkpoint Capture

### 1.1.1 Set Checkpoint Single I/O

Set checkpoint single I/O if capture is triggered by external I/O signal (digital signal). In this mode, the information including the vehicle passing time, vehicle overview, license plate number, license plate color, vehicle color (only supported for the Middle East version), the facial features of the driver and the front passenger, etc. will be recorded.

**Before You Start**

Connect F+ of the I/O signal to the T interface of the device, and F- to the GND of the device.

**Steps**

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **Checkpoint Single I/O**.

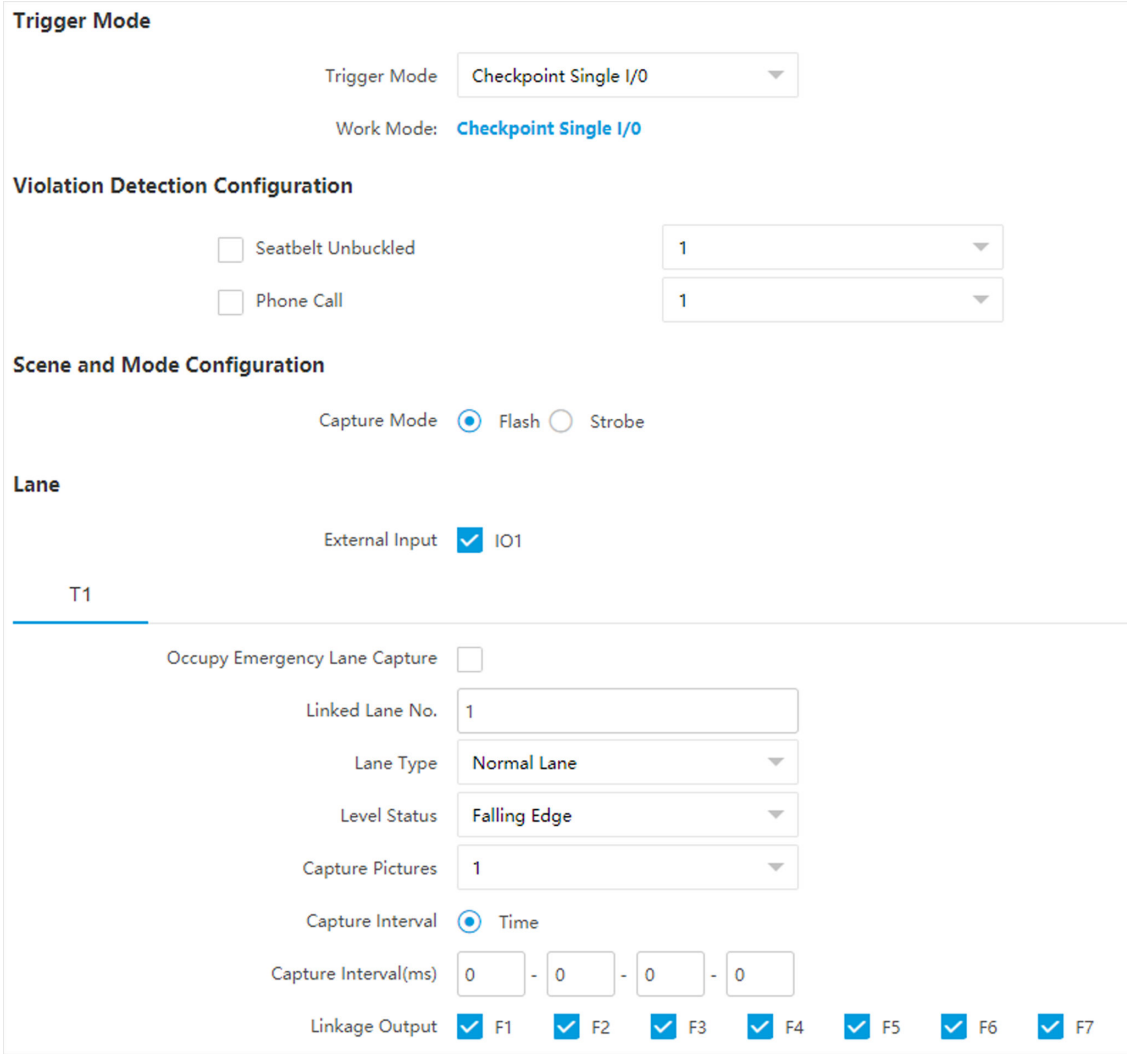


**Figure 1-1 Set Checkpoint Single I/O**

3. **Optional:** Select the violation type(s) to be detected, and set the corresponding parameters. Refer to ***Set Violation and Incident Detection*** for details.
4. Set scene and mode parameters. Refer to ***Set Scene Mode*** for details.
5. Check the corresponding **External Input** according to the connected I/O signal.

**Note**

Each input corresponds to one lane.

6. **Optional:** Check **Occupy Emergency Lane Capture** if you want to detect the violation of occupying emergency lane.
7. Set the lane parameters. Refer to ***Set Linked Lane Parameters*** for details.
8. Set the parameters below.

   **Level Status**

Capture is triggered according to the level signal status. If you select **Falling Edge**, the device will trigger capture at the moment that the high level falls to low level. If you select **Rising Edge**, the device will trigger capture at the moment that the low level rises to high level.

**Capture Interval**

Select **Time**, and set **Interval** (the time between the adjacent captures).

**Capture Pictures**

The number of captured picture(s).

9. **Optional:** Link supplement light(s) to the specific lane(s). Refer to ***Set Supplement Light Linkage*** for details.
10. **Optional:** Check the other external input channel(s) to copy the same settings.
11. Draw lane lines.
    1) Click **Draw Lane Line**.

    **Note**

    The system will capture a picture and use it as the background. You can also check **Video Background** to use the live view as the background.

    2) Select the default lane line and right border line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
    3) Click **OK**.

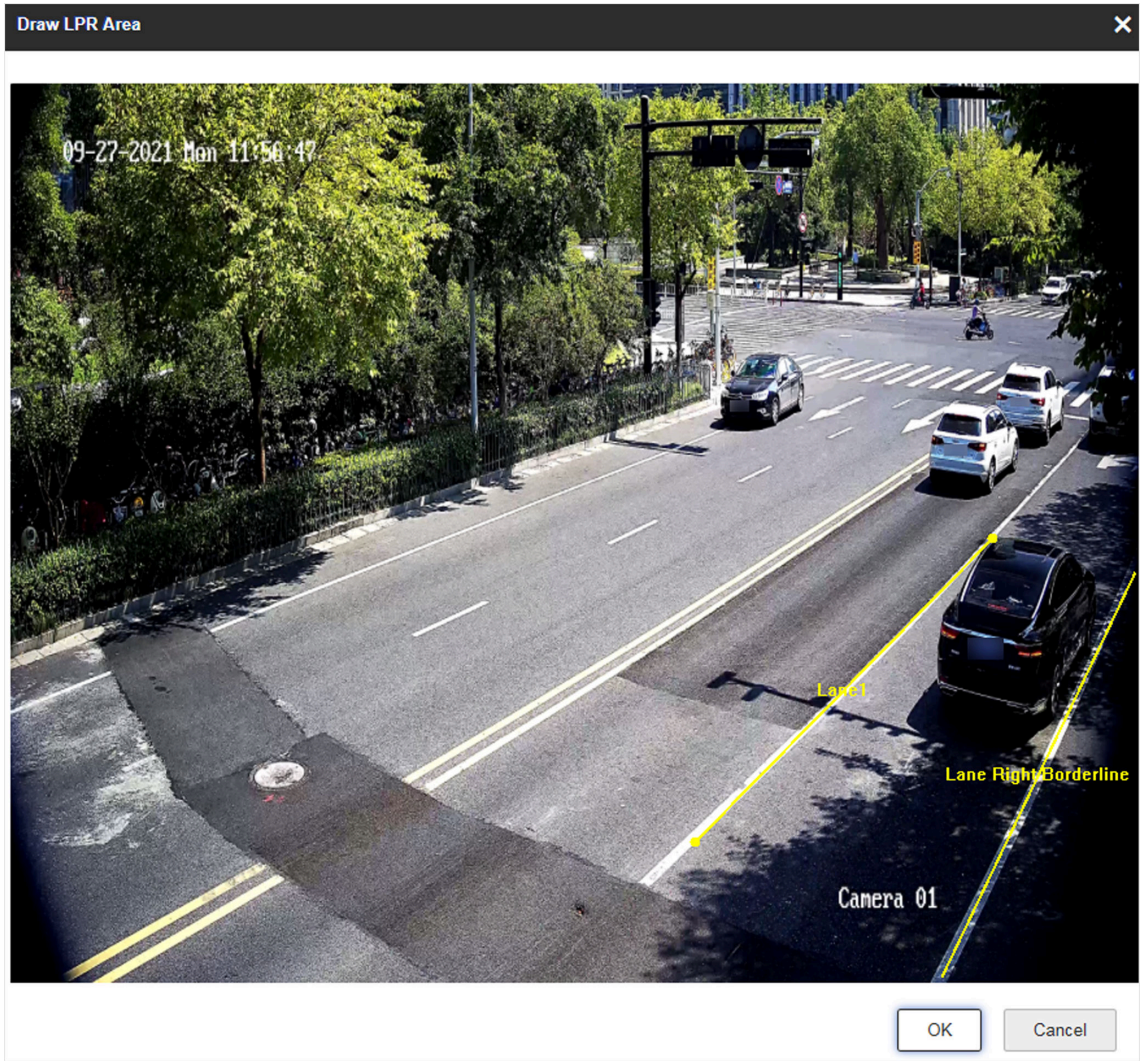


**Figure 1-2 Draw Lane Line**

**12.** Click **Save**.

### 1.1.2 Set RS-485 Radar

Set RS-485 radar if RS-485 signal (speed detection or capture via radar) is connected, and capture is triggered by radar. In this mode, the information including the vehicle speed, vehicle passing time, vehicle overview, license plate number, license plate color, vehicle color, the facial features of the driver and the front passenger, etc. will be recorded.

**Before You Start**

- Install the radar.
- Connect the D+ and D- of the radar RS-485 interface to the D+ and D- of the device RS-485 interface.

**Steps**

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **RS-485 Radar**.

**Trigger Mode**

Trigger Mode: RS-485 Radar

Work Mode:

**Violation Detection Configuration**

☐ Seatbelt Unbuckled 1

☐ Phone Call 1

**Scene and Mode Configuration**

Capture Mode: ◉ Flash ○ Strobe

**Lane**

Total Lanes: 2

Lane1 Lane2

Linked Lane No.(Also for Overlay): 1

Lane Direction: Unknown

Lane Type: Normal Lane

Lane Property: Other

Capture: ☐ Occupy Emergency Lan... ☐ Enable Low Speed Capt... ☐ Speeding Capture

Capture Pictures: 1

Capture Interval: ◉ Time ○ Distance

Capture Interval(ms): 0 - 0 - 0 - 0

Speed(km/h)

| Vehicle Type | Ultra-Low | Min. Speed | Speed Sign | Speed Limit | Ultra-High |
|---|---|---|---|---|---|
| Small Car | 0 | 30 | 70 | 80 | 180 |
| Big Car | 0 | 20 | 70 | 80 | 180 |

Capture Speed(km/h): 0

Linkage Output: ☑ F1 ☑ F2 ☑ F3 ☑ F4 ☑ F5 ☑ F6 ☑ F7

Radar Type: Multi-Lane Radar

Linkage RS-485 No.: RS-485 Port 1

Linearity Correction: 1.0

Constant Correction: 0

Copy to: ☑ Lane1 ☐ Lane2

**Figure 1-3 Set RS-485 Radar**

3. **Optional:** Select the violation type(s) to be detected, and set the corresponding parameters. Refer to ***Set Violation and Incident Detection*** for details.
4. Set scene and mode parameters. Refer to ***Set Scene Mode*** for details.
5. Set the lane parameters. Refer to ***Set Linked Lane Parameters*** for details.
6. Set continuous capture parameters. Refer to ***Set Continuous Capture Parameters*** for details.
7. Set speed limit parameters. Refer to ***Set Lane Speed Limit Parameters*** for details.
8. Link supplement light(s) to the specific lane(s). Refer to ***Set Supplement Light Linkage*** for details.
9. Set radar parameters. Refer to ***Set Radar Parameters*** for details.
10. **Optional:** Check the other lane(s) to copy the same settings.
11. Draw lane lines.
    1) Click **Draw Lane Line**.

    **Note**

    The system will capture a picture and use it as the background. You can also check **Video Background** to use the live view as the background.

    2) Select the default lane lines and right border line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
    3) Click **OK**.

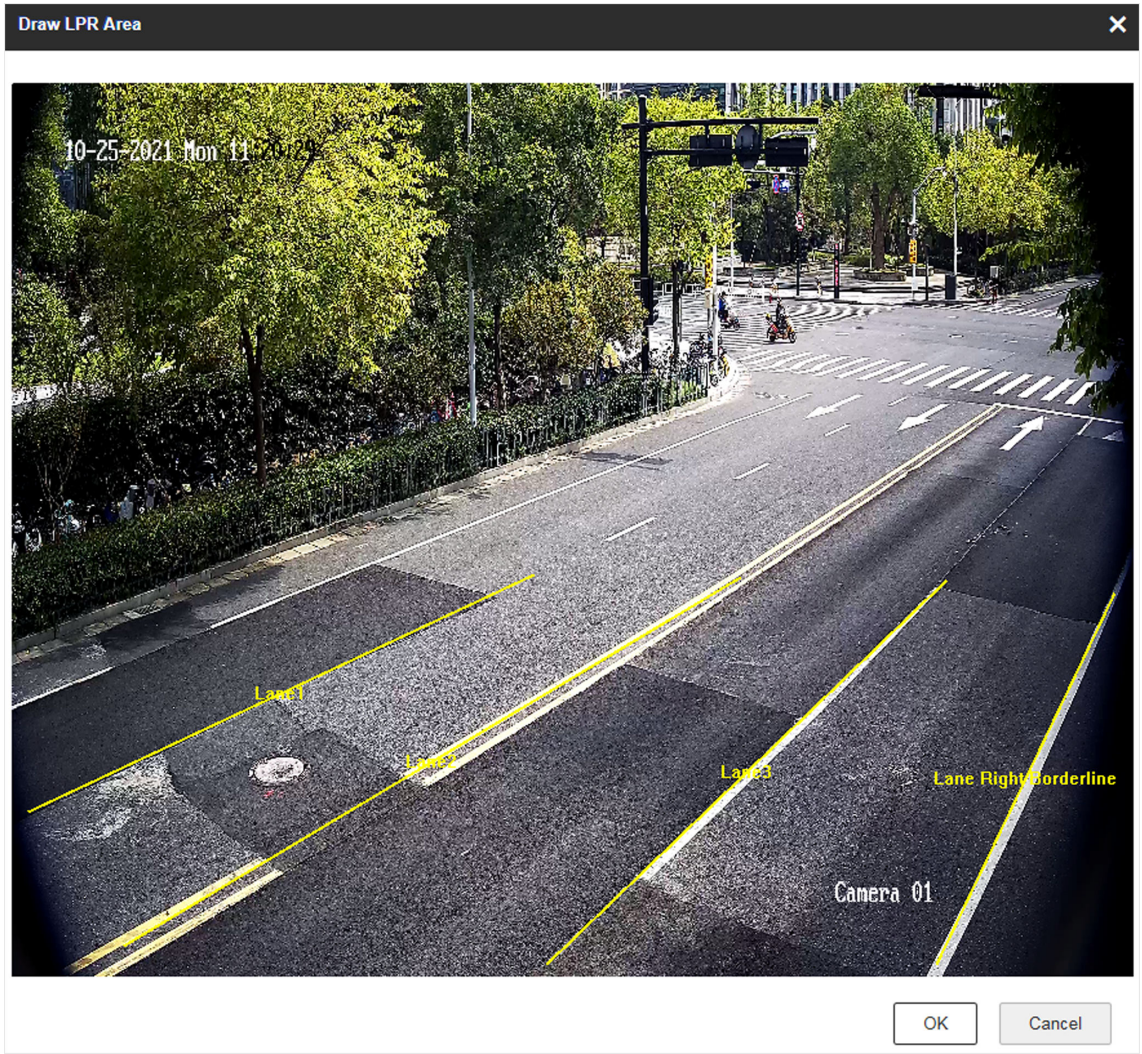


**Figure 1-4 Draw Lane Line**

**12.** Click **Save**.

### 1.1.3 Set Mixed-Traffic Lane

Set mix-traffic lane if capture is triggered by virtual coils (video or radar detection). In this mode, the information including the vehicle speed, vehicle passing time, vehicle overview, license plate number, license plate color, vehicle color, the facial features of the driver and the front passenger, etc. will be recorded.

**Before You Start**

- Install the radar if speed detection is needed.
- Connect the D+ and D- of the radar RS-485 interface to the D+ and D- of the device RS-485 interface.

**Steps**

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **Mixed-Traffic Lane**.

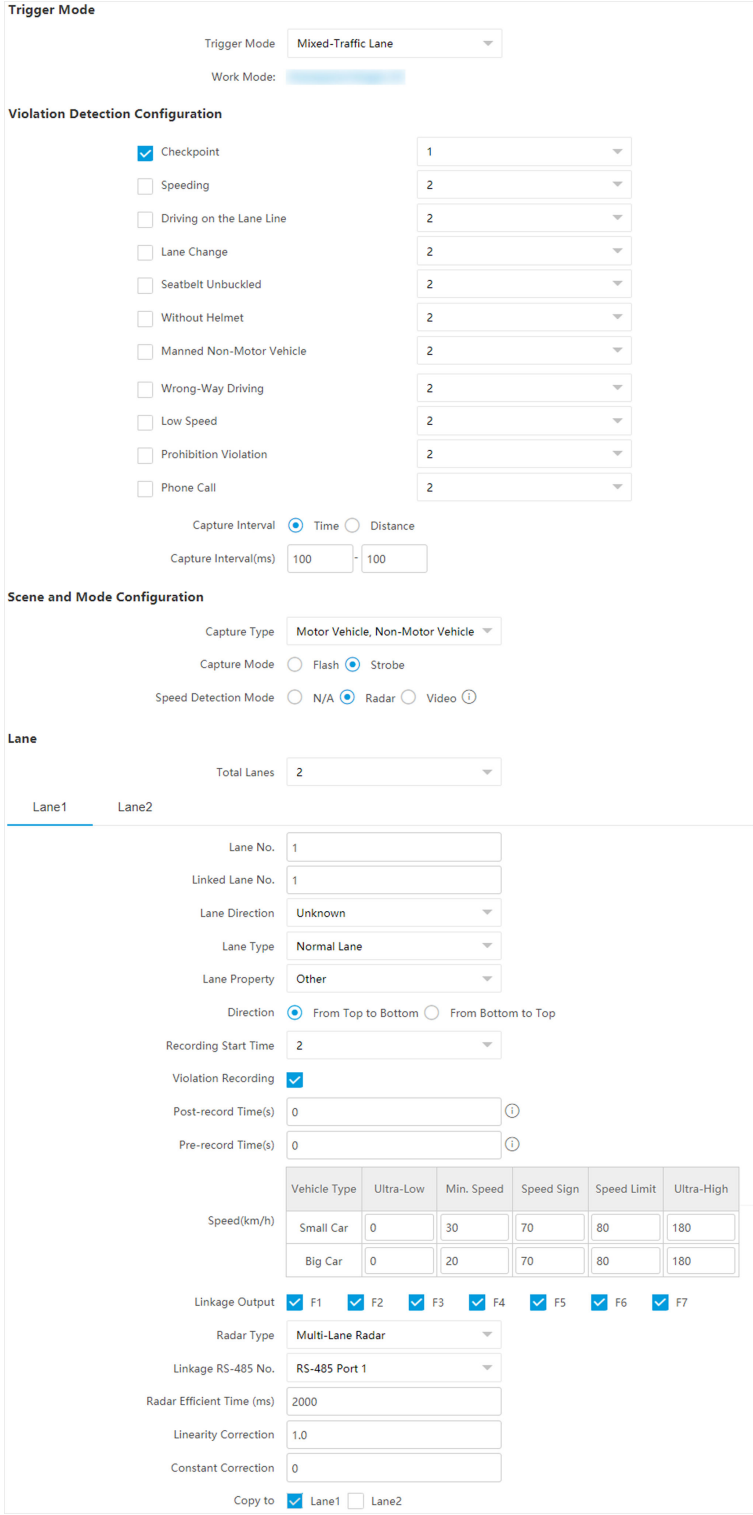


**Figure 1-5 Set Mixed-Traffic Lane**

3. **Optional:** Select the violation type(s) to be detected, and set the corresponding parameters. Refer to ***Set Violation and Incident Detection*** for details.
4. Set continuous capture parameters. Refer to ***Set Continuous Capture Parameters*** for details.
5. Set scene and mode parameters. Refer to ***Set Scene Mode*** for details.
6. Set the lane parameters. Refer to ***Set Linked Lane Parameters*** for details.
7. **Optional:** Set violation recording parameters. Refer to ***Set Violation Recording Parameters*** for details.
8. Set speed limit parameters. Refer to ***Set Lane Speed Limit Parameters*** for details.
9. Link supplement light(s) to the specific lane(s). Refer to ***Set Supplement Light Linkage*** for details.
10. Set radar parameters. Refer to ***Set Radar Parameters*** for details.
11. **Optional:** Check the other lane(s) to copy the same settings.
12. Draw lane lines.
    1) Click **Draw Lane Line**.
    2) Set the property of the lane lines.
    3) Select the default lane lines, right border line, and trigger line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
    4) Click **OK**.

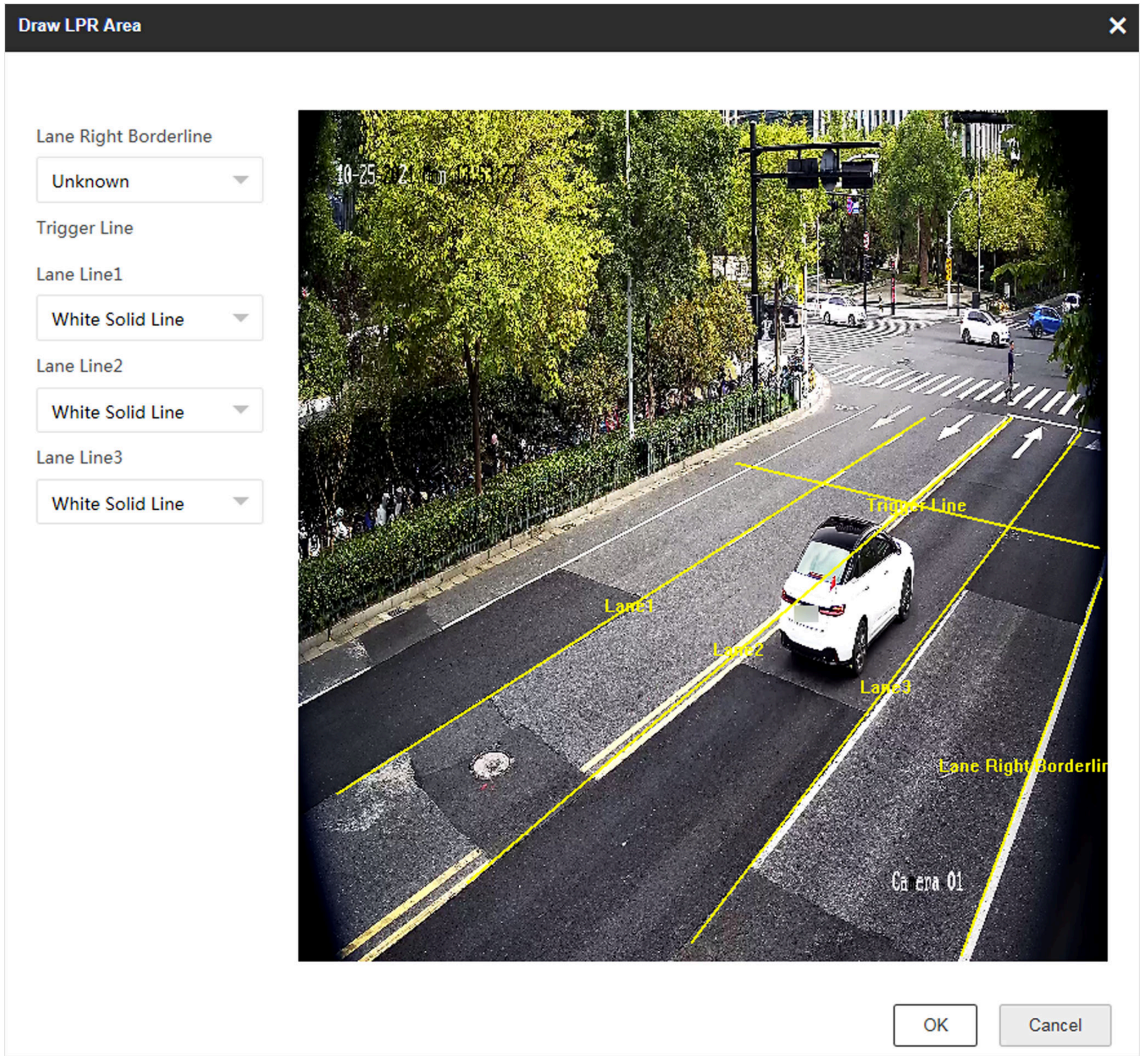


**Figure 1-6 Draw Lane Line**

**13.** Click **Save**.

## 1.2 Set Intersection Violation System Capture

Set video analysis intersection violation system if capture is triggered by virtual coils. In this mode, the information including the violation information, vehicle passing time, vehicle overview, license plate number, license plate color, vehicle color, etc. will be recorded.

**Steps**

**1.** Go to **Configuration → Capture → Application Mode** .

**2.** Select **Trigger Mode** as **Video Analysis E-Police**.

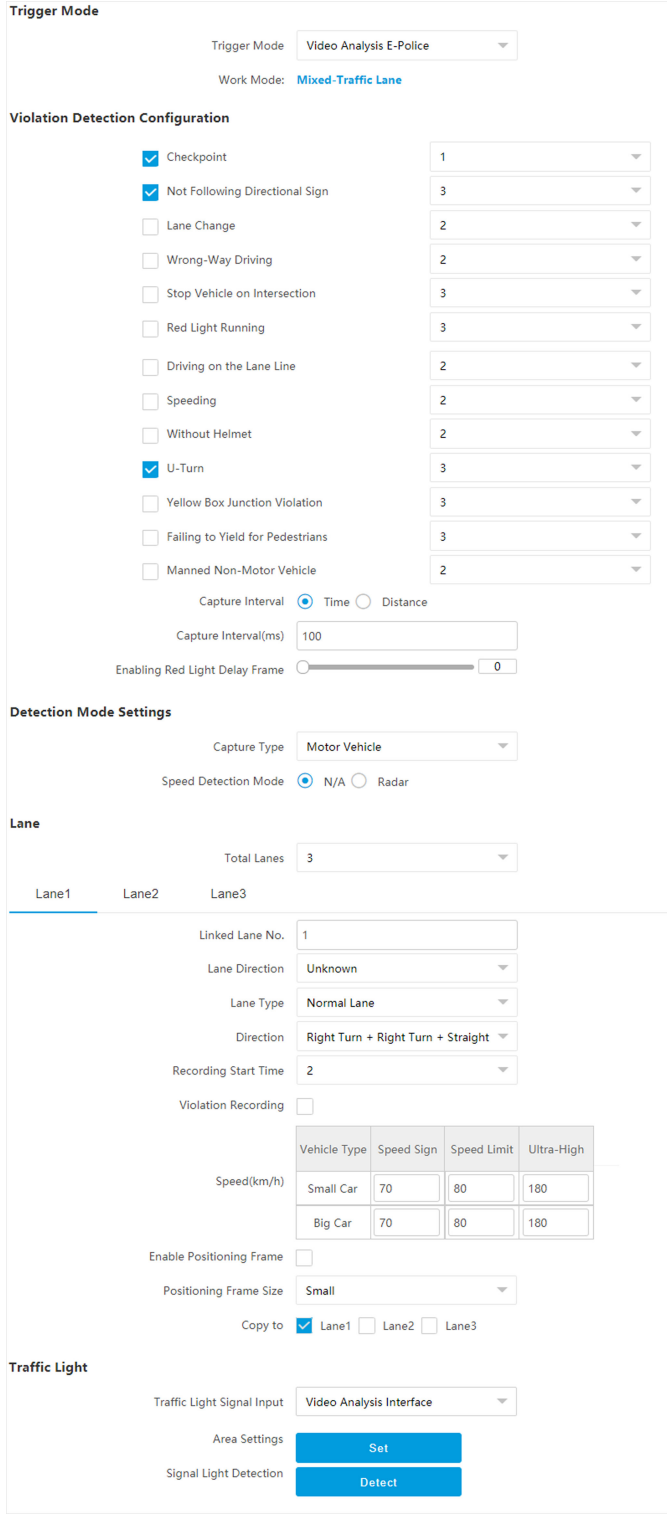


**Figure 1-7 Set Intersection Violation System Capture**

3. **Optional:** Select the violation type(s) to be detected, and set the corresponding parameters. Refer to ***Set Violation and Incident Detection*** for details.
4. Set continuous capture parameters. Refer to ***Set Continuous Capture Parameters*** for details.
5. Set **Capture Type** and **Speed Detection Mode**. Refer to ***Set Scene Mode*** for details.
6. Set the lane parameters. Refer to ***Set Linked Lane Parameters*** for details.
7. Set violation recording parameters. Refer to ***Set Violation Recording Parameters*** for details.
8. Set speed limit parameters. Refer to ***Set Lane Speed Limit Parameters*** for details.
9. Check **Enable Positioning Frame**, and set **Positioning Frame Size**.

   The positioning frames of vehicle bodies and license plates will be overlaid on the captured pictures.
10. **Optional:** Check the other lane(s) to copy the same settings.
11. Set traffic light detection. Refer to ***Set Traffic Light Detection Parameters*** for details.
12. Draw the lane lines and other lines.
    1) Click **Draw Lane Line**.

    **Note**

    The system will capture a picture and use it as the background. You can also check **Video Background** to use the live view as the background.

    2) Set the property of the lane lines.
    3) Select **Stop Line**, **Borderline of Turning Left**, **Borderline of Turning Right**, or **Trigger Line of Going Straight** according to the actual scene.
    4) Select the default lane lines and other lines, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
    5) Click **OK**.

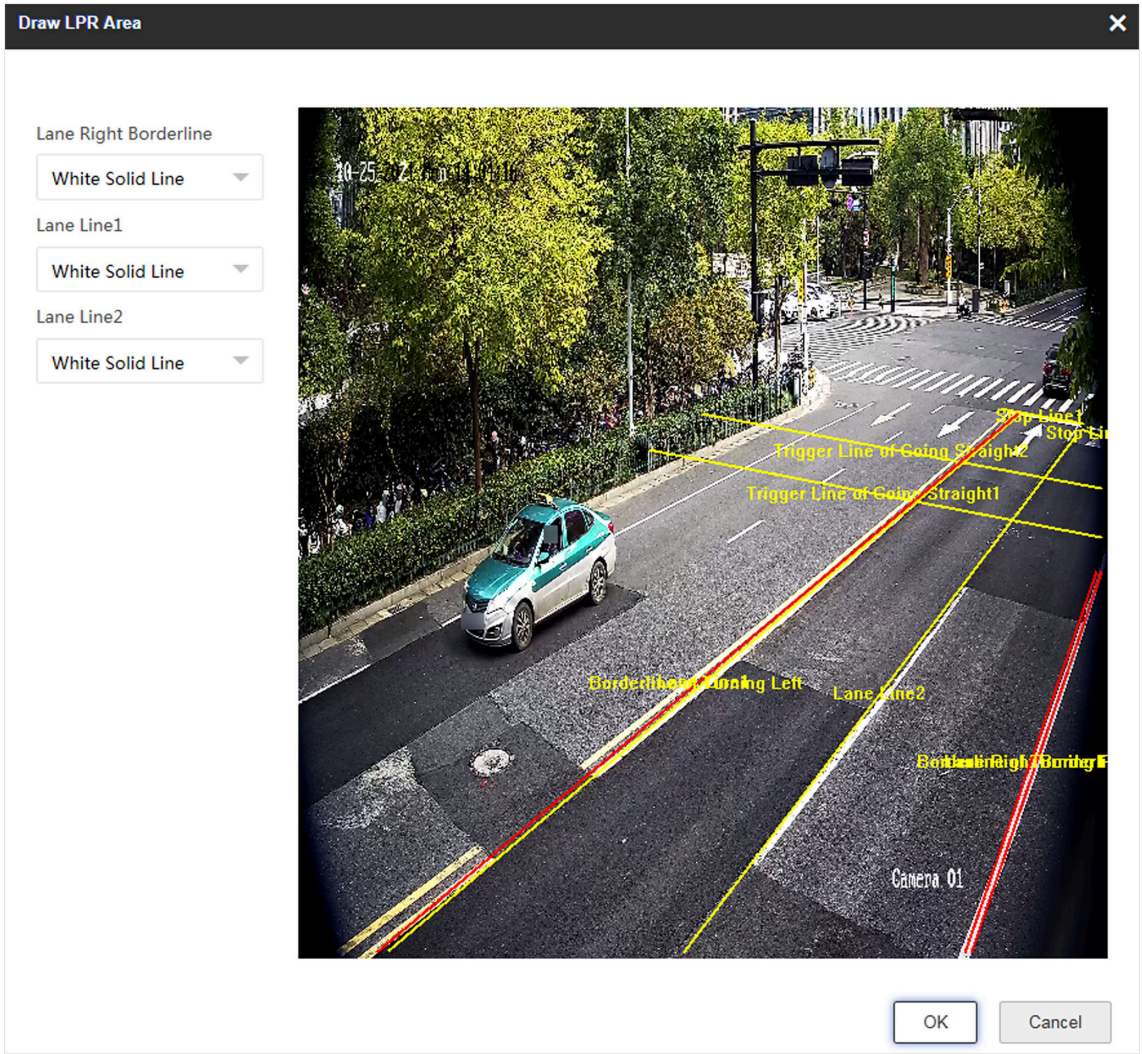


**Figure 1-8 Draw Lane Line**

**13.** Click **Save**.

## 1.3 Set Smart Monitoring Capture

The smart monitoring mode supports capturing motor vehicles, non-motor vehicles, and pedestrians via video triggering.

**Steps**

**1.** Go to **Configuration → Capture → Application Mode** .

**2.** Select **Trigger Mode** as **Smart Mode**.

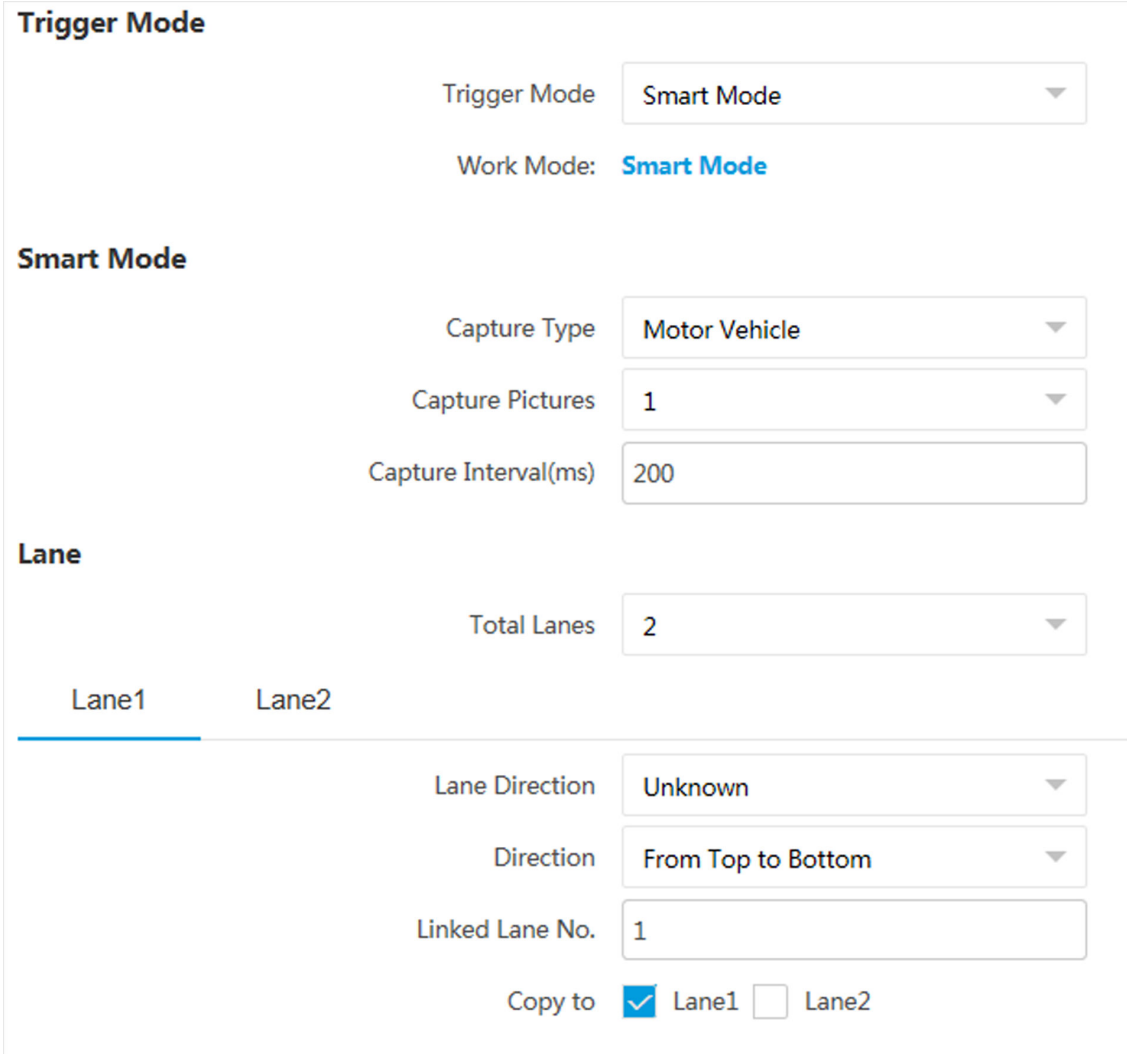


**Figure 1-9 Set Smart Monitoring Capture**

**3.** Set smart mode parameters.

**Capture Type**

**Motor Vehicle, Non-Motor Vehicle, and Pedestrian**

The motor vehicles, non-motor vehicles, and pedestrians in the scene will be recognized and captured.

**Motor Vehicle**

Only the motor vehicles in the scene will be recognized and captured.

**Capture Pictures**

The number of captured picture(s).

**Capture Interval**

The time between the adjacent captures.

4. Set continuous capture parameters. Refer to ***Set Continuous Capture Parameters*** for details.
5. Set the lane parameters. Refer to ***Set Linked Lane Parameters*** for details.
6. **Optional:** Check the other lane(s) to copy the same settings.
7. Draw lane lines.
   1) Click **Draw Lane Line**.

   **Note**

   The system will capture a picture and use it as the background. You can also check **Video Background** to use the live view as the background.

   2) Select the default lane lines, trigger line, and right border line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
   3) **Optional:** Click **Redraw Lane Line** to redraw the lines.
   4) Click **OK**.

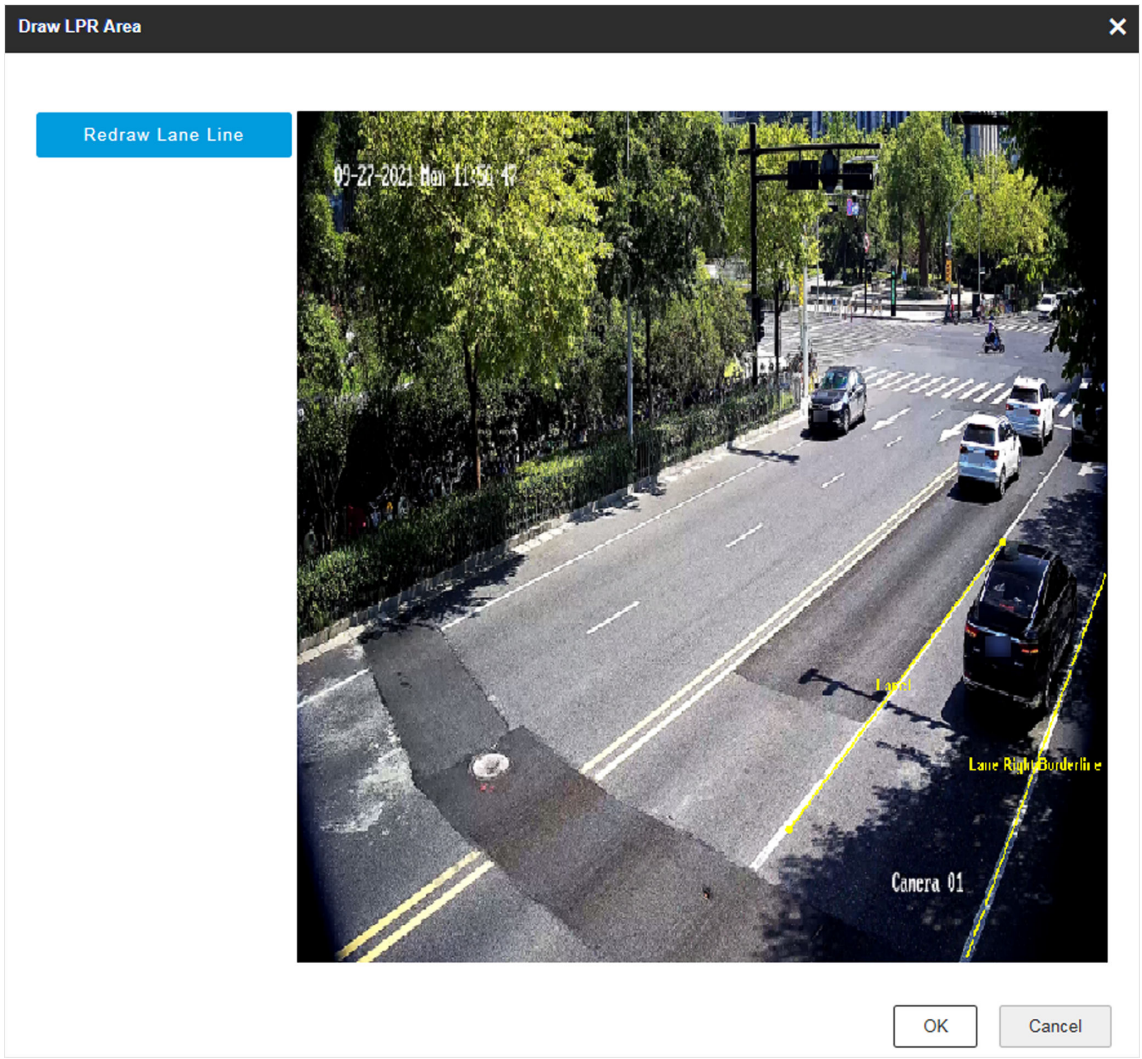


**Figure 1-10 Draw Lane Line**

8. Click **Save**.

## 1.4 Set License Plate Recognition System Capture

If you want to trigger capture of the passing vehicles and recognize the license plate numbers, set license plate recognition system capture.

**Steps**

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **License Plate Recognition System**.

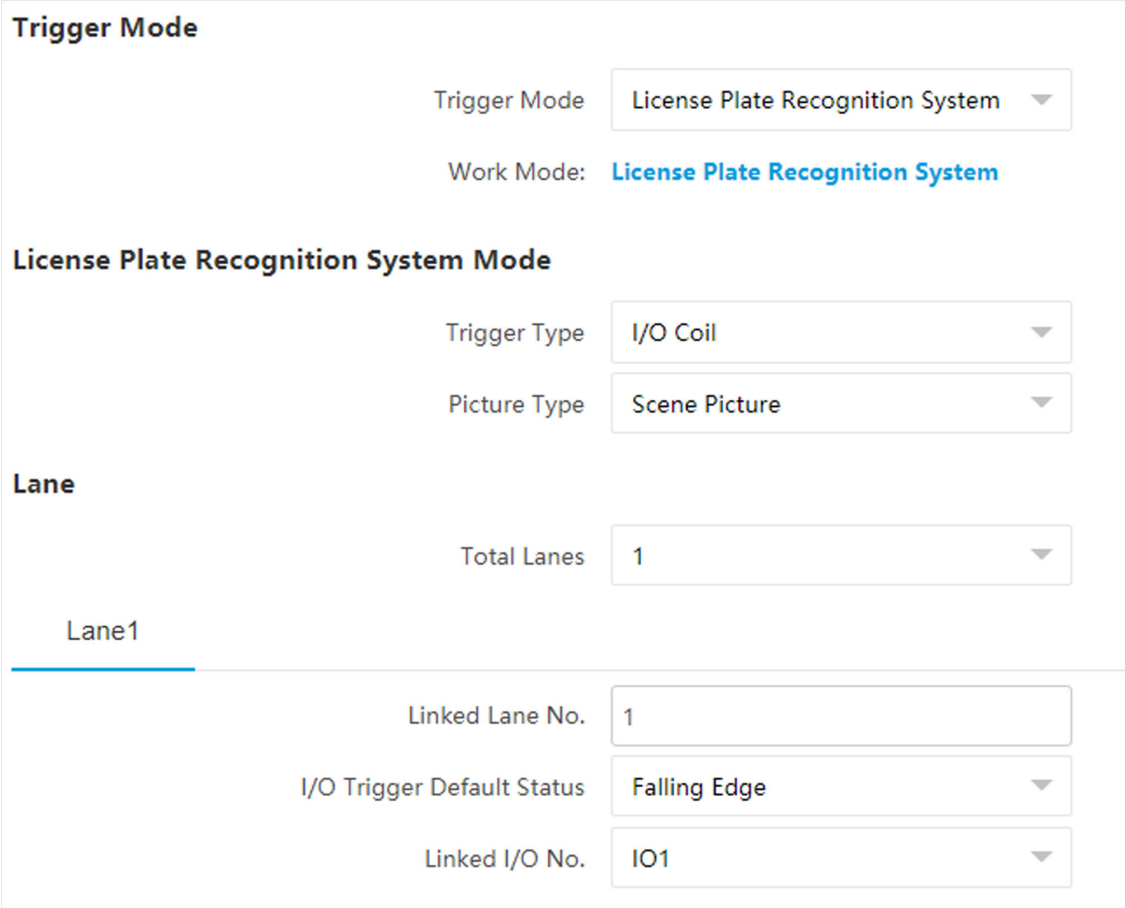


**Figure 1-11 Set License Plate Recognition System**

3. Select **Trigger Type**.

   **Video Detection**

   The passing vehicles will be recognized via videos. The capture mode is recommended as **Strobe Light Mode**.

   **I/O Coil**

Select it when the device has been connected to I/O signal.

**Note**

The trigger types vary with different models. The actual device prevails.

4. Select **Picture Type**.

**Scene Picture**

Only one passing vehicle picture will be output.

**Scene Picture + Close-up Picture**

One passing vehicle picture and one close-up picture will be output.

5. Set the lane parameters. Refer to ***Set Linked Lane Parameters*** for details.
6. Set other parameters according to the selected trigger type.

**I/O Trigger Default Status**

Capture is triggered according to the level signal status. If you select **Falling Edge**, the device will trigger capture at the moment that the high level falls to low level. If you select **Rising Edge**, the device will trigger capture at the moment that the low level rises to high level.

**Linked I/O No.**

When the coil detects that there is a vehicle passing, a rising or falling edge signal is sent to the linked I/O of the device to trigger capture.

7. Draw lane lines.
   1) Click **Draw Lane Line**.

   **Note**

   The system will capture a picture and use it as the background. You can also check **Video Background** to use the live view as the background.

   2) Select the default lane line and right border line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
   3) Click **OK**.

**Note**

It is recommended to draw the trigger line at the position which is 1/3 to 1/4 of the lane line. The license plate pixel should be between 120 to 180 at the capture position.

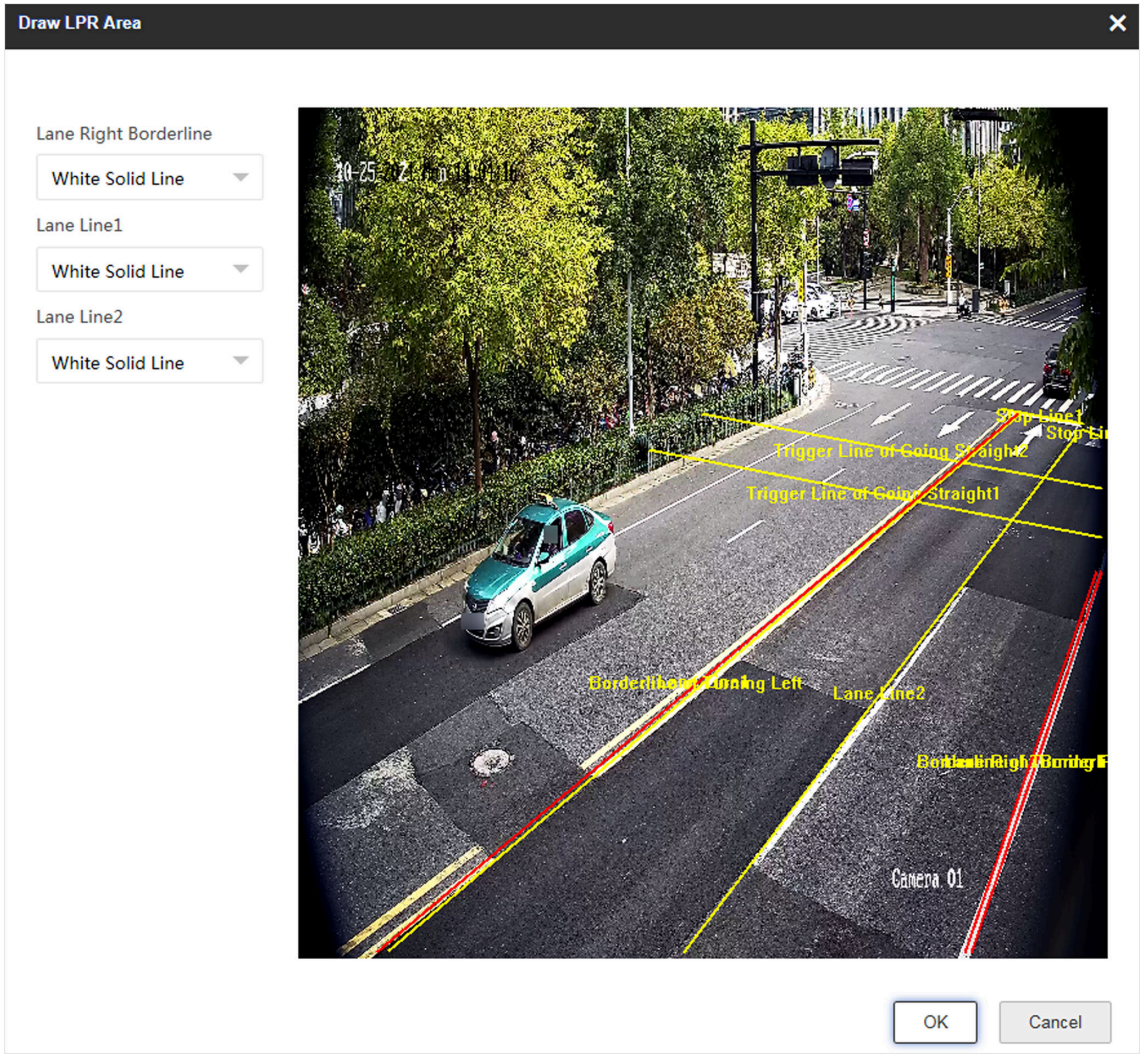


**Figure 1-12 Draw Lane Line**

**8.** Click **Save**.

## 1.5 Set Application Mode Detailed Parameters

### 1.5.1 Set Violation and Incident Detection

The device supports different violation types detection. You can select the violation type(s) to be detected under different application modes, and set the corresponding parameters.

**Steps**

**Note**

- Not all the application modes support violation detection.
- The violation and incident detection types vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Application Mode**.
3. Select the violation type(s) to be detected according to the actual needs.

**Table 1-1 Violation Detection Types Description**

| Violation Detection Type | Description |
|---|---|
| Seatbelt Unbuckled | The driver of a motor vehicle does not buckle the seatbelt during driving. Check it and select the number of captured picture(s). |
| Phone Call | The driver of a motor vehicle uses the mobile phone to make or receive calls during driving. Check it and select the number of captured picture(s). |
| Checkpoint | Check it and select the number of captured picture(s). |
| Speeding | The motor vehicle is driven in the speed larger than the max. speed limit of the lane. Check it and select the number of captured picture(s). |
| Driving on the Lane Line | The motor vehicle is driven out of the lane and over the solid lane line. Check it, select the number of captured picture(s), and set the sensitivity. |
| Lane Change | Most part of the vehicle body crosses over the lane line and enters into another lane. Check it and select the number of captured picture(s). |
| Manned Non-Motor Vehicle | The non-motor vehicle carries a person illegally. Check it and select the number of captured picture(s). |
| Wrong-Way Driving | The vehicle is driven in the direction opposite to the guidance direction of the lane. Check it and select the number of captured picture(s). |
| Low Speed | The motor vehicle is driven in the speed lower than the min. speed limit of the lane. Check it and select the number of captured picture(s). |
| Prohibition Violation | Left-turn violation, right-turn violation, emergency lane occupation, large-sized vehicle passing violation, bus lane occupation, etc. Check it and select the number of captured picture(s). |

| Violation Detection Type | Description |
|---|---|
| | **Note**<br>If **Prohibition Violation** is enabled, and **Lane Type** is set as **Highway Emergency Lane**, the violation of occupying emergency lane will be captured. |
| Not Following Directional Sign | The moving direction of the motor vehicle is not consistent with the guidance direction at the intersection. Check it and select the number of captured picture(s). |
| Stop Vehicle on Intersection | It refers to the violation behavior that when the vehicle is waiting for the red light at intersection, it crosses over the stop line and stops at the intersection. Check it and set the dwell time and sensitivity.<br>• **Dwell Time**: If the vehicle stops at the intersection for more than the dwell time, capture will be triggered.<br>• **Stopping Sensitivity**: It is used to judge if the vehicle is in the stopping status. If the displacement of the vehicle is smaller than the set sensitivity, then the vehicle is regarded as stopping at the intersection. |
| Red Light Running | Check it, select the number of captured picture(s), and set the parameters below.<br>• **Prior Capture Event**: If you select **Red Light Running**, the violation will be captured in priority when other violations are also detected.<br>• **Analysis Rule**: You can enable video analysis by direction or lane, and draw the corresponding trigger line.<br>  ◦ **By Direction**: Red light running is judged by the corresponding traffic light status gotten according to the driven direction of the target vehicle. For example, when the vehicle is driven straight when passing through the intersection, if the straight traffic light is always red during the process of passing through the intersection, then the vehicle is judged as running the red light.<br>  ◦ **By Lane**: Red light running is judged by the corresponding traffic light status gotten according to the lane direction on which the target vehicle is driven. For example, when the vehicle is driven on the left-turn lane at the intersection, if the left-turn traffic light is always red during the process of turning left at the intersection, then the vehicle is judged as running the red light.<br>• **Capture Position of First Picture**: The vehicle position of the firstly captured picture. |

| Violation Detection Type | Description |
|---|---|
| | • **Distance to Stop Line**: The offset pixel of the second captured picture of the vehicle running the red light to the stop line.<br>• **Offset for Third Capture**: The min. offset pixel of the third captured picture of the vehicle running the red light to the second captured picture. It is recommended to remain the default value.<br>• **Enabling Red Light Delay Frame**: Due to the gotten traffic light status is not consistent with the actual status, the vehicles running when the light is yellow may be captured as running the red light. Set the delay frame, then the captured pictures of running the red light during the set frame will be regarded as invalid. |
| U-Turn | The motor vehicle makes a U-turn at the intersection where U-turn or left turn is forbidden. |
| Yellow Box Junction Violation | The motor vehicle stops at the positions where parking is forbidden.<br>Check it and set the parameters. When the vehicle parks at the lane, and the parking duration exceeds the set **Dwell Time**, capture will be triggered. When the congestion caused by the illegal parking exceeds the set **Congestion Threshold**, the lane is regarded as congested. |
| Failing to Yield for Pedestrians | The motor vehicle does not yield for the pedestrians or let them go first. Check it to enable the violation capture of not yielding to pedestrian. Click **Draw Lane Line** to adjust the upper and lower border of triggering lines of not yielding to pedestrian. Set the corresponding parameters.<br>• **No Displacement Capture of Pedestrian**: If you check it, when the pedestrian is standing still and the vehicle is passing by, it is regarded as not yielding to pedestrian, and capture will be triggered. If you do not check it, only when the pedestrian is moving and the vehicle is passing by, it is regarded as not yielding to pedestrian, and capture will be triggered.<br>• **Not Yielding to Non-Motor Vehicle Capture**: Check it to enable the violation capture of not yielding to non-motor vehicles.<br>• **Camera Location**: If the camera is installed at the intersection, the device can judge the intersection condition according to the traffic light connected via the RS-485 serial port.<br>• **Sensitivity**: The higher the sensitivity is, the more easily the violation will be captured.<br>• **Number of Pedestrian Not Yielded to**: When the number of pedestrians not yielded to reaches the set value, capture will be triggered. |

| Violation Detection Type | Description |
|---|---|
| | • **Capture Position Control Ratio**: When the length of the target vehicle body beyond the stop line exceeds the ratio, the vehicle is regarded as failing to yield for pedestrians, and capture will be triggered.<br>• **Pedestrian Detection Area Type**: Select the type according to the actual scene.<br>• **Pedestrian and Vehicle Distance Judgment Mode**:<br>◦ **Distance from Pedestrian to Vehicle Center**: The violation of failing to yield for pedestrians is judged according to the distance from the horizontal coordinate of the pedestrian to the horizontal coordinate of the vehicle target center.<br>◦ **Distance from Pedestrian to Lane Center**: The violation of failing to yield for pedestrians is judged according to the distance from the horizontal coordinate of the pedestrian to the horizontal coordinate of the lane line center. |
| Without Helmet | The driver of a non-motor vehicle does not wear the helmet. Check it and select the number of captured picture(s). |

### 1.5.2 Set Linked Lane Parameters

You can set the properties and parameters of the linked lanes.

**Steps**

**Note**

- Not all the application modes support linked lane parameters settings.
- The linked lane parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode**.
3. Set lane parameters.

   **Lane No.**

   The No. of the selected lane.

   **Linked Lane No.**

   The corresponding lane No. linked with the current lane. The lane No. will be overlaid on the captured picture.

   **Lane Type**

   If you select **Highway Emergency Lane** or **Truck Forbidden Lane**, set the period.

If you select **Opposite Lane**, the lane direction will be opposite from the current direction.

**Total Lanes**

The sum of the linked lane(s) under the current application mode.

**Lane Direction**

The guidance direction of the lane.

**Lane Property**

Select the lane type for speeding capture. The violation rules vary with different lane types.

**Direction (in Mixed-Traffic Lane Mode and Smart Mode)**

The driving direction of the vehicle. If you set the direction as **From Top to Bottom**, then the vehicle will be judged as wrong-way driving if it comes from bottom to top, and vice versa.

**Direction (in Video Analysis E-Police Mode)**

The vehicles on the selected direction will be detected.

### 1.5.3 Set Continuous Capture Parameters

Set continuous capture parameters to realize the continuous capture of the violation behaviors.

**Steps**

**Note**

- Not all the application modes support continuous capture parameters.
- The continuous capture parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode**.
3. Set continuous capture parameters.

**Capture Pictures**

The number of captured picture(s).

**Occupy Emergency Lane Capture**

Check it to capture emergency lane occupation violation. One more picture will be captured beyond the set number of captured picture(s).

**Enable Low Speed Capture**

Check it to capture the violation of driving in the speed lower than **Min. Speed**.

**Speeding Capture**

Check it to capture the speeding violation. One more picture will be captured beyond the set number of captured picture(s).

**Capture Interval**

Set **Interval (dm)** (the distance between the adjacent captures) if you select **Distance**, and set **Capture Interval (ms)** (the time between the adjacent captures) if you select **Time**.

4. Click **Save**.

### 1.5.4 Set Scene Mode

Set the capture type, capture mode, and speed detection mode for the application mode.

**Steps**

**Note**

- Not all the application modes support scene mode settings.
- The scene mode parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode**.
3. Set **Capture Type**.

   **Motor Vehicle, Non-Motor Vehicle, and Pedestrian**

   The motor vehicles, non-motor vehicles, and pedestrians in the scene will be recognized and captured.

   **Motor Vehicle**

   Only the motor vehicles in the scene will be recognized and captured.

   **Non-Motor Vehicle**

   Only the non-motor vehicles in the scene will be recognized and captured.
4. Set **Capture Mode**.

   **Flash**

   It adopts the separate exposure, and is applicable to the condition of viewing face pictures clearly at night.

   **Note**

   In flash mode, if you enable driving on the lane and lane change detection, the flash light will not on, but captures will be triggered normally.

   **Strobe**

   It adopts the frame extracting, and the captured pictures share the same exposure parameters with the video image. It is applicable to the condition of capturing license plates only.
5. Set **Speed Detection Mode**.

   **Radar**

   Speed detection via radar.

   **Video**

   Speed detection via video. Click **Calibration** to calibrate speed via video. Refer to ***Calibrate Speed via Video*** for details.

6. Click **Save**.

### 1.5.5 Calibrate Speed via Video

In mixed-traffic lane mode, if you select speed detection mode as video, you need to calibrate speed via video.

**Before You Start**

In mixed-traffic lane mode, select **Speed Detection Mode** as **Video**.

**Steps**

1. Click **Calibration**.

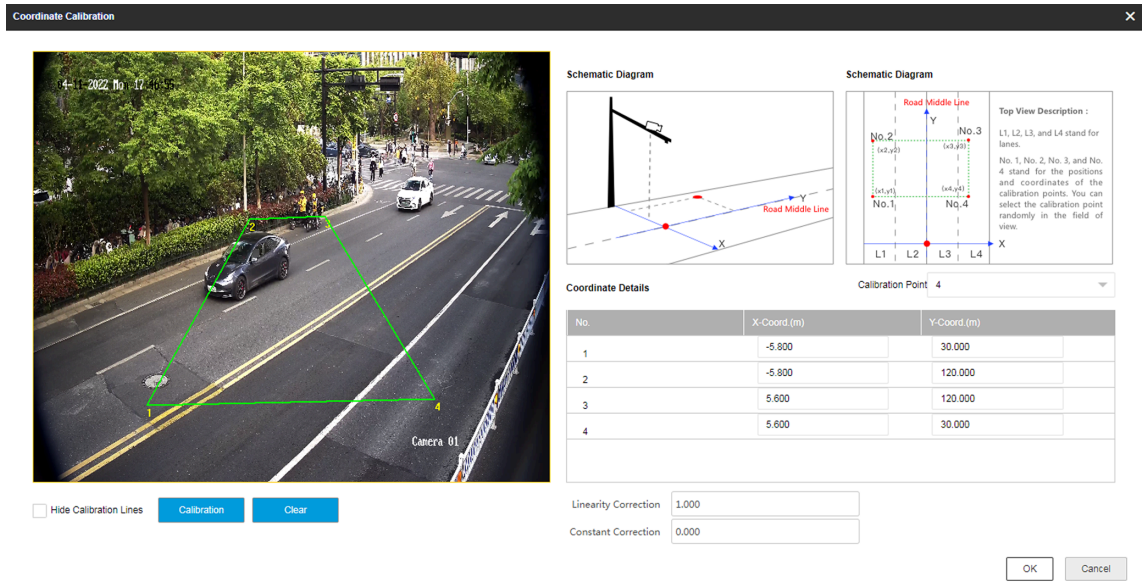


**Figure 1-13 Calibrate Speed via Video**

2. Draw the calibration area.
   1) Select **Calibration Point**.
   2) Click **Calibration**.
   3) Click the left button of the mouse to locate the vertexes of the calibration area on the live view image, and click the right button of the mouse to finish the drawing.

   **Note**

   The number of vertexes should be consistent with the selected number of **Calibration Point**.

   4) Drag the vertexes of the calibration area to align it to the lanes.

**Note**

- If the lanes cannot be aligned, ensure the calibration area can contain the detection area.
- You can refer to the schematic diagram and top view description to draw the calibration area.

5) **Optional:** Click **Clear** to clear the drawn calibration area.

3. Measure the world coordinates of the vertexes, and enter the values in the corresponding coordinate text fields.

**Note**

The origin (0, 0) of the world coordinates locates in the middle of the whole lanes detected by the radar. You can refer to the top view of the diagram for the positions.

4. Enter **Linearity Correction** and **Constant Correction**.

**Linearity Correction**

Enter the value to adjust the speed detection result via video according to the actual speed.

**Constant Correction**

The constant correction is to improve the accuracy of the detection speed. It is the extra added/minus speed value.

**Note**

The final speed is calculated according to the video output speed, the linearity correction, and constant correction together. E.g., the detected speed is 80 km/h, and you set the linearity correction as 1.2, and the constant correction as 5, then the final speed is 80 km/h × 1.2 + 5 = 101 km/h. And if you do not want to make any change to the detected speed, you can set the linearity correction as 1, and the constant correction as 0.

5. **Optional:** Check **Hide Calibration Lines** to hide the lines on the live view image.
6. Click **OK**.

### 1.5.6 Set Radar Parameters

Set radar parameters for speed detection via radar.

**Steps**

**Note**

- Not all the application modes support radar parameters.
- The radar parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode**.
3. Set the parameters.

**Radar Type**

Select the connected radar type.

**Linkage RS-485 No.**

Select the connected RS-485 port No. of the radar.

**Radar Efficient Time**

If the duration from the time that the radar sends the detected vehicle speed to the device to the time that the device captures the vehicle locates in the efficient time, then the radar detected speed is valid. If not, it is invalid.

**Linearity Correction**

Adjust the radar output result according to the actual speed.

**Constant Correction**

The constant correction is to improve the accuracy of the detection speed. It is the extra added/minus speed value.

**Note**

The final speed is calculated according to the radar output speed, the linearity correction, and constant correction together. E.g., the detected speed is 80 km/h, and you set the linearity correction as 1.2, and the constant correction as 5, then the final speed is 80 km/h × 1.2 + 5 = 101 km/h. And if you do not want to make any change to the detected speed, you can set the linearity correction as 1, and the constant correction as 0.

4. Click **Save**.

### 1.5.7 Set Violation Recording Parameters

You can enable violation recording and set the parameters.

**Steps**

**Note**

- Not all the application modes support violation recording.
- The violation recording parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode**.
3. Enable **Violation Recording**.
4. Set the violation recording parameters.

**Recording Start Time**

Select the number of captured picture(s). Record will start after the set number of picture(s) captured.

**Pre-record Time**

The time before the violation recording starts.

**Post-record Time**

The time after the violation recording ends.

5. Click **Save**.

### 1.5.8 Set Supplement Light Linkage

You can link supplement light(s) to the specific lane(s).

**Before You Start**

Connect the supplement light(s) to the corresponding interface(s) of the device.

**Steps**

**Note**

- Not all the application modes support supplement light linkage.
- The supplement light linkage parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode**.
3. Check the corresponding supplement light triggering output interface(s).
4. Select **Flashlight Mode**.

   **Simultaneous**

   The supplement lights of all the lanes will be triggered simultaneously when there is vehicle passing.

   **Sequential**

   Only the supplement light of the specific lane will be triggered when there is vehicle passing.

   **Note**

   If LED supplement light is adopted, the recognition rate of the vehicle body color cannot be guaranteed at night.

5. Click **Save**.

### 1.5.9 Set Lane Speed Limit Parameters

Set the speed limit parameters for different types of vehicles.

**Steps**

**Note**

- Not all the application modes support lane speed limit parameters.
- The lane speed limit parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Application Mode** .

2. Select **Trigger Mode**.
3. Set the lane speed limit parameters for small-sized and large-sized vehicles.

**Abnormal Low Speed**

When the detected speed of the vehicle is lower than the value, the detection is regarded as abnormal, and a normal speed will be provided randomly.

**Min. Speed**

The actual allowed min. speed for the vehicles. When the vehicle speed is lower than the value, low speed capture will be triggered.

**Note**

The min. speed of large-sized vehicles should be smaller than that of the small-sized vehicles.

**Speed Limit Sign**

The speed limit on the sign for the vehicles. The value will be overlaid on the captured pictures.

**Speed Limit**

The actual speed limit for the vehicles. When the vehicle speed exceeds the value, speeding capture will be triggered.

**Note**

The speed limit of large-sized vehicles should be smaller than that of the small-sized vehicles.

**Abnormal Speed Threshold**

When the detected speed of the vehicle exceeds the value, the detection is regarded as abnormal, and a normal speed will be provided randomly.

**Capture Speed**

When the speed of the vehicle on the lane (except the emergency lane) is lower than the set value, no capture will be triggered.

4. Click **Save**.

### 1.5.10 Set Traffic Light Detection Parameters

Traffic light detection is supported for video analysis intersection violation system.

**Steps**

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **Video Analysis E-Police**.
3. Select **Traffic Light Signal Input** and set the corresponding parameters.

| | |
|---|---|
| **RS-485** | Set **Linked Red Light Channel** and **Yellow Light Related Channel No.** according to the actual wiring. |

**Video Analysis Interface**

Click **Set** to set the video analysis area.

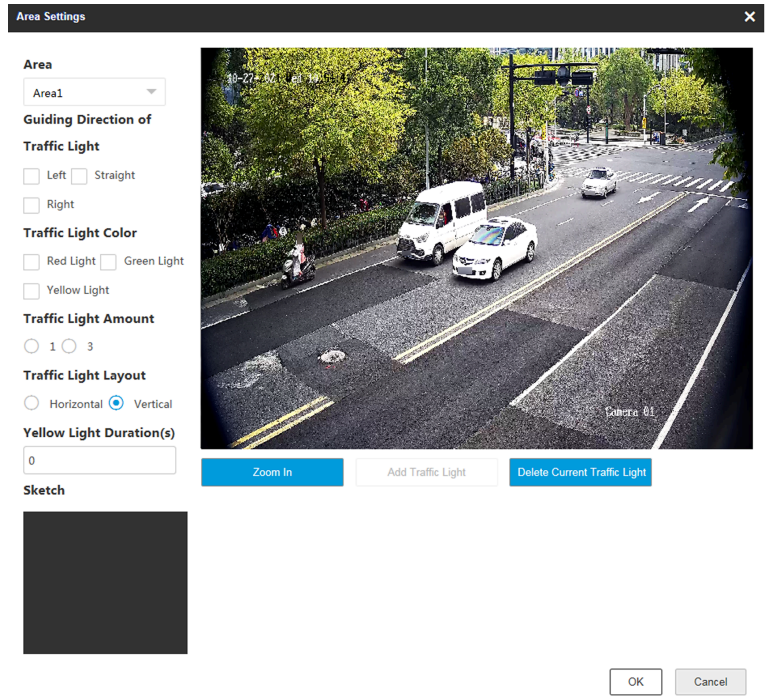


**Figure 1-14 Set Video Analysis Area**

a. Select the area.
b. Set the parameters.
   - **Guiding Direction of Traffic Light**: The direction guided by the traffic light.
   - **Traffic Light Color**: The color of the traffic light.
   - **Traffic Light Amount**: The number of the traffic light(s).
   - **Traffic Light Layout**: The arrangement of the traffic light(s).
c. Click **Zoom In** to zoom in the live view image.
d. Click **Add Traffic Light** to add the traffic light.
e. Drag the four points of the region to adjust the size or drag the whole region to adjust its position according to the actual scene.
f. Click **Delete Current Traffic Light** to delete the area.
g. Click **OK**.

You can click **Detect** to test the traffic light.

**Network Mode**

Set **Linked Red Light Channel** and **Yellow Light Related Channel No.** according to the actual wiring.

**Note**

You can go to **Live View → Traffic Light Status** to view the traffic light status.

4. Click **Save**.

## 1.6 Set Capture Schedule

You can set the schedule for the violation behavior capture or checkpoint capture if needed.

**Steps**

**Note**

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Capture Schedule** .
2. **Optional:** Check **Violation Priority**.

   You can set the priority level of each violation type.

   **Note**

   - The function is only valid when **Trigger Mode** is **Mixed-Traffic Lane** or **Video Analysis E-Police**.
   - **0** represents no priority requirement.

3. Click ✎ to set the capture schedule according to the actual needs.

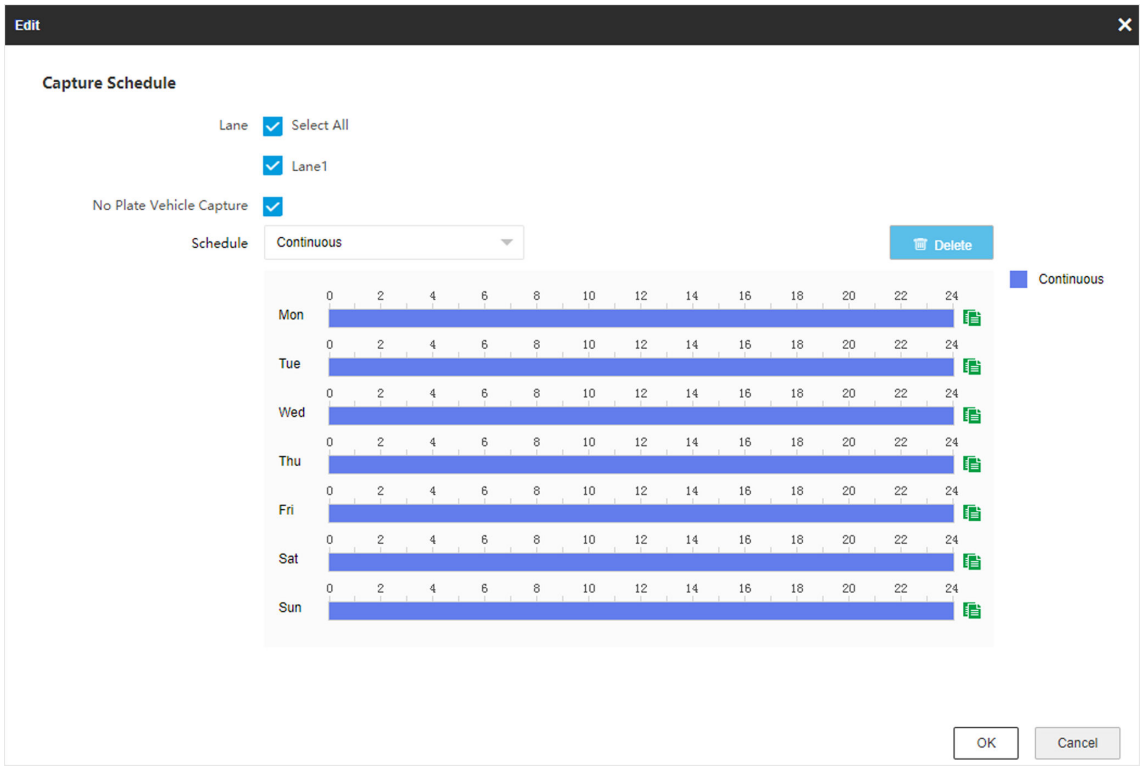


**Figure 1-15 Set Capture Schedule**

4. Select **Lane**.
5. **Optional:** Check **No Plate Vehicle Capture** according to the actual needs.
6. Adjust the time period.

- Click on the selected time period, and enter the desired value. Click **Save**.
- Click on the selected time period. Drag the both ends to adjust the time period.

7. **Optional:** Click to copy the same settings to other days.
8. Click **OK**.
9. **Optional:** Check **Upload to Mailbox** to email the capture schedule to the user.
10. Click **Save**.

## 1.7 Set Capture Parameters

### 1.7.1 Set Captured Image Parameters

Set the parameters of captured images to raise the image quality.

**Steps**

**Note**

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Images → Image Parameters** .

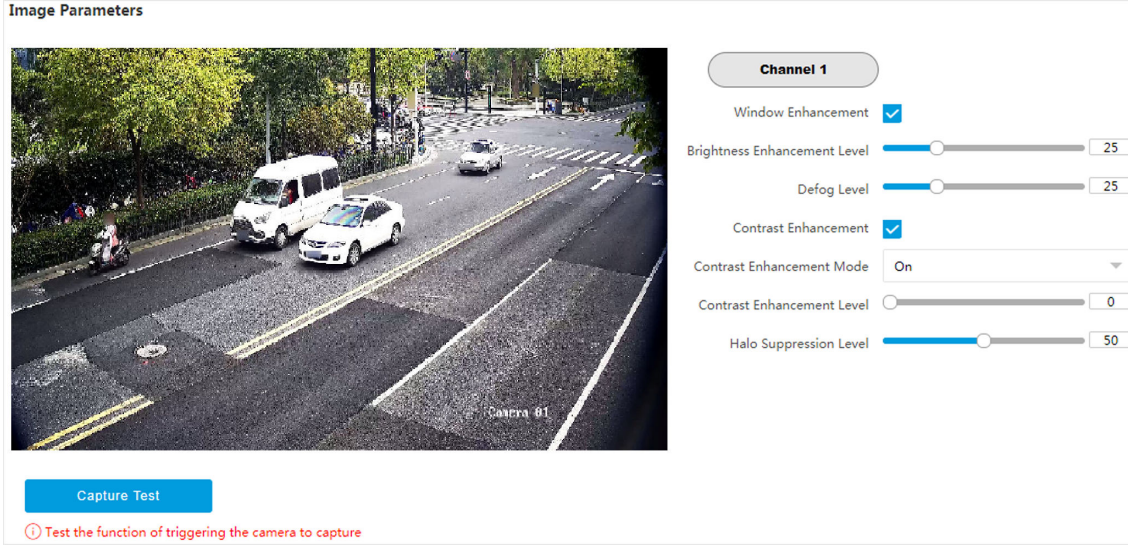


**Figure 1-16 Set Captured Image Parameters**

2. Set the captured image parameters.

**Brightness**

It refers to the max. brightness of the image.

**Contrast**

It refers to the contrast of the image. Set it to adjust the levels and permeability of the image.

**Shutter**

If the shutter speed is quick, the details of the moving objects can be displayed better. If the shutter speed is slow, the outline of the moving objects will be fuzzy and trailing will appear.

**Gain**

It refers to the upper limit value of limiting image signal amplification. It is recommended to set a high gain if the illumination is not enough, and set a low gain if the illumination is enough.

**Daytime Brightness Enhancement**

It refers to the brightness of the image in the daytime. Higher value stands for brighter image.

**Window Enhancement**

In front light or back light scene, the flash light may not pass through the vehicle window, or the image effect of the window is bad caused by the light. In this condition, you can check **Window Enhancement**. The higher the **Brightness Enhancement Level** is, the brighter the window image is. The higher the **Defog Level** is, the better the permeability of the window image is.

**White Balance Level**

It is the white rendition function of the device used to adjust the color temperature according to the environment.

**Contrast Enhancement**

Check **Contrast Enhancement** to capture clearer images. Select **Contrast Enhancement Mode**, and set corresponding parameters.

| Contrast Enhancement Mode | Description |
|---|---|
| On | The contrast enhancement mode is always enabled. |
| Time | The contrast enhancement mode is enabled during the set start time and end time. In other time, it is disabled. |
| Brightness | The contrast enhancement mode is enabled according to the brightness of the surroundings. In this case, you can set **Brightness Level**. |

**Contrast Enhancement Level**

The higher the level is, the more the contrast is enhanced.

**Halo Suppression Level**

Halo suppression is to suppress the halo of the vehicle headlights. The higher the level is, the more the halo is suppressed.

### 1.7.2 Set License Plate Recognition Parameters

When there are vehicles of different types passing from different directions, set the license plate recognition parameters.

**Before You Start**

For some models, you need to select **Trigger Mode** as **License Plate Recognition System**.

**Steps**

**Note**

The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → License Parameters** .

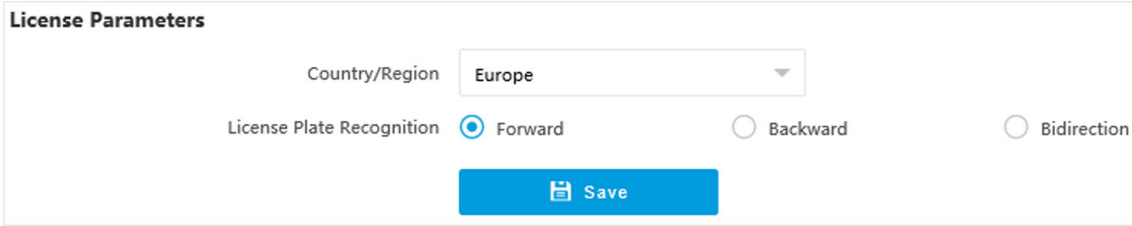


**Figure 1-17 Set License Plate Recognition Parameters**

2. Set **Country/Region** according to the actual needs.
3. Select **License Plate Recognition**.
   - Select **Forward** when license plates of vehicles from the approaching direction need to be recognized.
   - Select **Backward** when license plates of vehicles from the leaving direction need to be recognized.
   - Select **Bidirection** when license plates of vehicles from both the approaching direction and the leaving direction need to be recognized.
4. Click **Save**.

**Result**

In the mixed-traffic lane and video analysis E-police modes, the vehicle direction is recognized by the algorithm, and corresponding information will be overlaid on the captured pictures. In other modes, the corresponding information will be overlaid on the captured pictures according to the selected license plate recognition direction.

### 1.7.3 Set Supplement Light Parameters

Supplement light can enhance the image stabilization and adjust the brightness and color temperature.

**Steps**

**Note**

- For video intersection violation system mode, only strobe light can be connected, and the I/O effective status should be set as pulse.
- The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Supplement Light Parameters** .

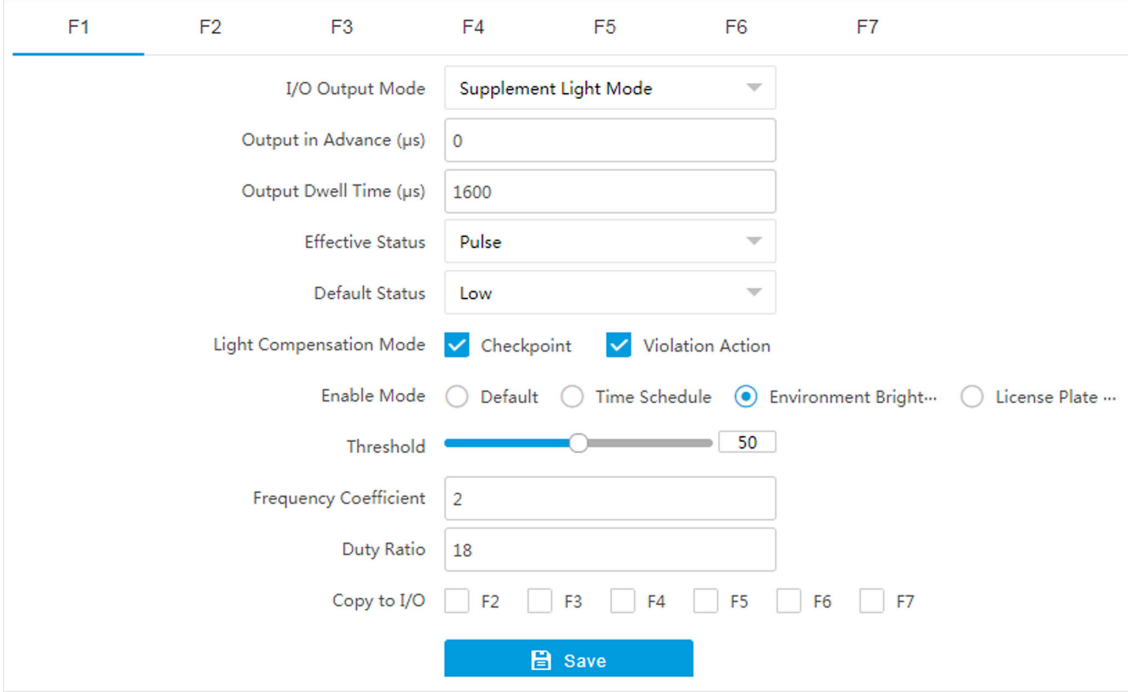


**Figure 1-18 Set Supplement Light Parameters**

2. Select the I/O and set the supplement light parameters.

**I/O Output Mode**

**Supplement Light Mode**

The flash light will be triggered by the signals and output high intensity illumination instantaneously. The light can pass through the windshield and help to capture the details.

**Constant Light Mode**

The constant light supplements light for the scene.

**Output in Advance**

It is the preact time [0 to 1000 μs] of the flash light, to ensure that the flash light is on when capture is triggered.

**Output Dwell Time**

It is the dwell time [0 to 10000 μs] after the flash light responds. The actual flash light supplement time is the result of the dwell time minus advanced time.

**Effective Status**

Select the effective status of the supplement light according to the actual condition.

**High/Low**

When high/low level signal is output to the supplement light, the light will flash.

The effective status should stay different with the default status for I/O to take effect. And the default status changes according to the selection of the effective status. If you set the effective status as high level, the default level goes to low level.

**Pulse**

When pulse signal is output to the supplement light, the light will flash.

If you set the effective status as pulse, you can select the default status as high level or low level, and set **Frequency Coefficient** which is the frequency multiplication of 25 of output pulse by flash light, to keep the flash light as constant. You can set it as default value.

**Light Compensation Mode**

Select **Checkpoint** to enable checkpoint capture light supplement. Select **Violation Action** to enable violation capture light supplement.

**Duty Ratio**

It is the time occupation of the high level in a certain period. The higher the duty ratio, the brighter the solid light. High duty ratio will cut life span of the solid light.

3. Set the supplement light control mode.
   - Select **Default** to disable the supplement light.
   - Select **Time Schedule** when you want the supplement light to be enabled during a fixed time period. Set the start time and end time.
   - Select **Environment Brightness** when you want the supplement light to be controlled by detecting the surroundings brightness automatically. Set the brightness threshold. The higher the threshold is, the harder the supplement light can be enabled.
   - Select **License Plate Brightness** when you want the supplement light to be enabled according to the license plate brightness automatically. It is valid only when you select **Effective Status** as **Pulse**.

   **Note**

   The four modes conflict with each other. You can only enable one mode.
4. **Optional:** Select other I/O(s) to copy the same settings.
5. Click **Save**.

### 1.7.4 Set Picture Composition

You can enable the picture composition to composite several pictures into one to make it convenient to view the violation captured pictures.

**Steps**

**Note**

Functions and parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Picture Encoding and Composition → Image Composition/Violation Picture Composition** .

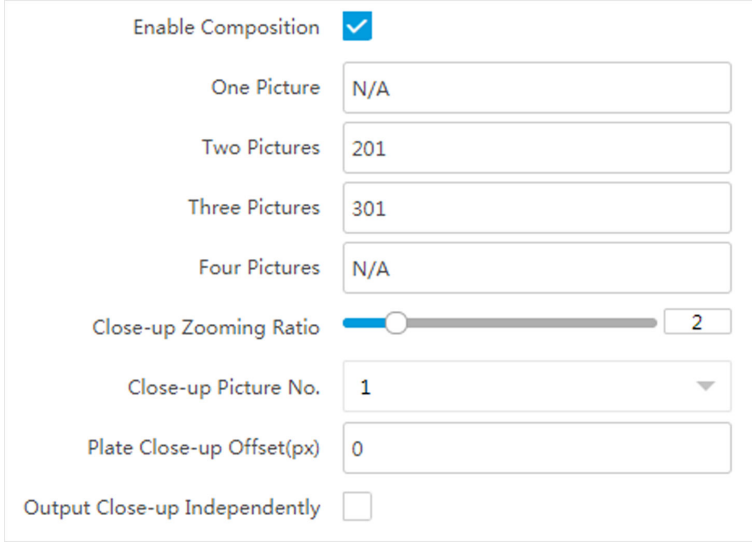


**Figure 1-19 Set Picture Composition**

2. Check **Enable Composition**.
3. Set composition types for different picture quantities.
4. Set other composition parameters.

   **Close-up Zooming Ratio**

   The higher the value is, the larger the close-up is.

   **Close-up Picture No.**

   It is the picture where the close-up comes from.

   **Plate Close-up Offset**

   The default value is 0, which is recommended to be adopted. The device can capture close-up pictures according to the set offset when no license plate is recognized.
5. **Optional:** Check **Output Close-up Independently** to output close-up pictures independently when the picture composition is not enabled.

**Note**

Enabling composition and outputting close-up independently functions conflict with each other. You can only enable one.

6. Click **Save**.

### 1.7.5 Set Information Overlay

#### Set Single Picture Overlay

If you want to overlay information on the captured single pictures, set capture overlay.

**Steps**

**Note**

The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Text Overlay** .
2. Select single picture channel.
3. Check **Capture Picture Overlay**.

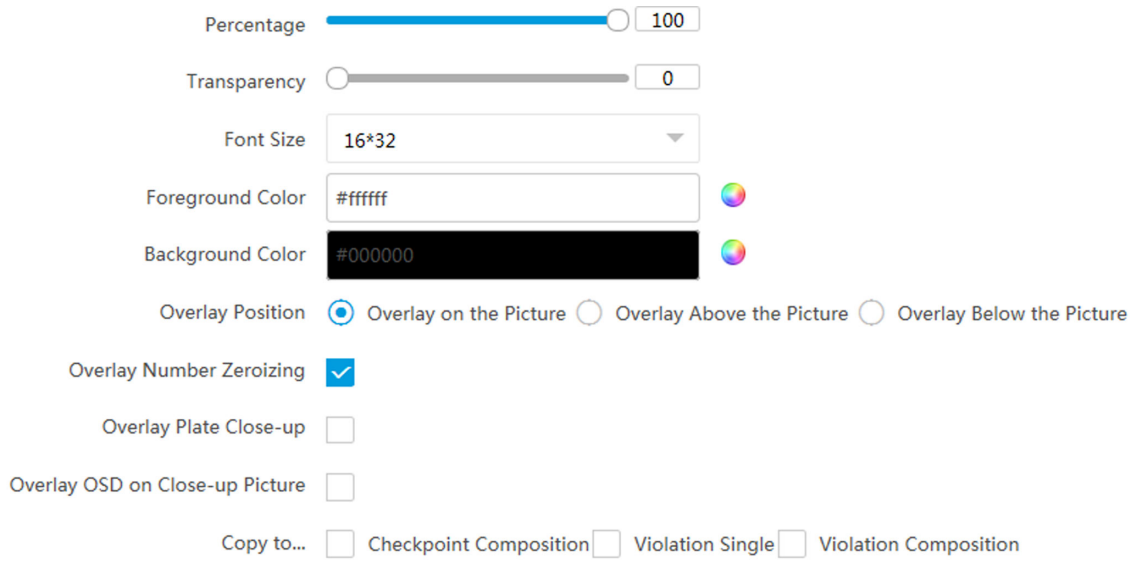


**Figure 1-20 Set Single Picture Overlay**

4. Set the percentage, front size, color, overlay position, etc.

**Percentage**

It is the percentage that the overlaid information occupies on the picture. For example, if you set the percentage to 50, the overlaid information in a row will occupy up to half of the image width, and the excess content will be overlaid from a new line.

**Transparency**

It is the condition of viewing the live view image through the overlaid information.

**Overlay Number Zeroizing**

When the overlaid number digits are smaller than the fixed digits, 0 will be overlaid before the overlaid number. E.g., the fixed digits for lane No. is 2. If the lane No. is 1, 01 will be overlaid on the picture.

**Overlay Plate Close-up**

Check it to overlay license plate close-up pictures on the captured pictures.

**Overlay OSD on Close-up Picture**

Check it to overlay the OSD information on the close-up pictures.

5. **Optional:** Check the other channel(s) to copy the same settings.
6. Select the overlay information from the list.

**Note**

The overlay information varies with different models. The actual device prevails.

7. Set the overlay information.

| | |
|---|---|
| **Set Type** | You can edit the type. |
| **Set Overlay Information** | For some information types, you can edit the detailed information. |
| **Set Overlay Position** | If you check it, the current information will be displayed from a new line. |
| **Set Space** | Edit the number of space between the current information and the next one from 0 to 255. 0 means there is no space. |
| **Set Line Break Characters** | Edit the number of characters from 0 to 100 between the current information line and the previous information line. 0 means no line break. |
| **Adjust overlay sequence** | Click ^ / v to adjust the display sequence of the overlay information. |

8. Click **Save**.

## Set Composite Picture Overlay

If you want to overlay information on the composite pictures, set composite picture overlay.

**Steps**

**Note**

The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Text Overlay** .
2. Select composite picture channel.
3. Check **Capture Picture Overlay**.

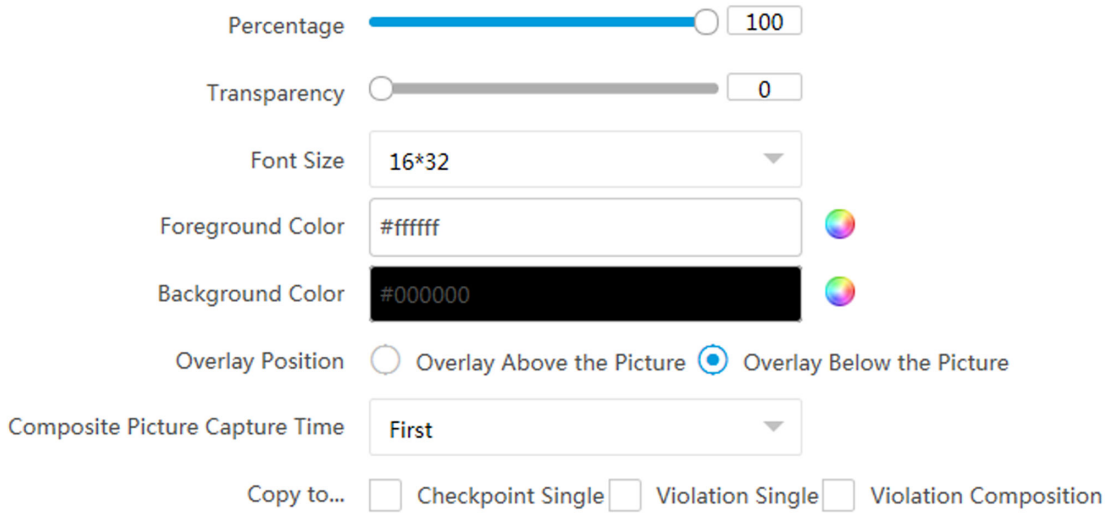


**Figure 1-21 Set Composite Picture Overlay**

4. Set the font size, color, overlay position, etc.

   **Percentage**

   It is the percentage that the overlaid information occupies on the picture. For example, if you set the percentage to 50, the overlaid information in a row will occupy up to half of the image width, and the excess content will be overlaid from a new line.

   **Transparency**

   It is the condition of viewing the live view image through the overlaid information.

   **Composite Picture Capture Time**

   The capture time of the selected picture sequence will be overlaid on the composite picture.
5. **Optional:** Check the other channel(s) to copy the same settings.
6. Select the overlay information from the list.

**Note**

The overlay information varies with different models. The actual device prevails.

7. Set the overlay information.

| | |
|---|---|
| **Set Type** | You can edit the type. |
| **Set Overlay Information** | For some information types, you can edit the detailed information. |
| **Set Overlay Position** | If you check it, the current information will be displayed from a new line. |

| | |
|---|---|
| **Set Space** | Edit the number of space between the current information and the next one from 0 to 255. 0 means there is no space. |
| **Set Line Break Characters** | Edit the number of characters from 0 to 100 between the current information line and the previous information line. 0 means no line break. |
| **Adjust overlay sequence** | Click ^ / v to adjust the display sequence of the overlay information. |

8. Click **Save**.

## Set Face Picture Matting

You can enable driver's, passenger's, or non-motor vehicle user's face picture matting on the capture violation pictures and set corresponding parameters.

**Steps**

**Note**

Some models do not support face picture matting. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Vehicle Feature → Face Picture Matting** .
2. Check **Enable Face Picture Matting**.

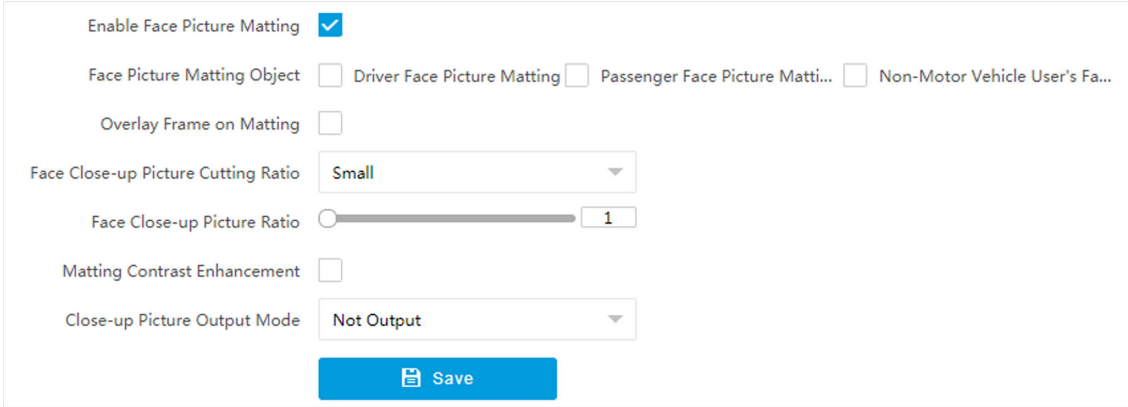


**Figure 1-22 Set Face Picture Matting**

3. Set corresponding parameters.

**Face Picture Matting Object**

**Driver Face Picture Matting**

Check it when you need to detect the driver's face picture. You can also check **Face Picture Matting of Violation Picture** to detect the driver's face in the violation picture.

**Passenger Face Picture Matting**

Check it when you need to detect the passenger's face picture.

- Check **Face Picture Matting of Violation Picture** to detect the passenger's face in the violation picture.
- Check **Check out Front Passenger Forcedly** to mat the front passenger's picture no matter there is someone in the seat or not.

**Non-Motor Vehicle User's Face Picture Matting**

Check it when you need to detect the non-motor vehicle user's face picture.

**Overlay Frame on Matting**

Check it to overlay frame on the matted picture.

**Face Close-up Picture Cutting Ratio**

Select the cutting ratio of the face close-up picture to be small, middle, or large.

**Face Close-up Picture Ratio**

Adjust the zooming ratio of the face close-up picture.

**Matting Contrast Enhancement**

Check it to enable the function and set the level. The higher the level is, the stronger the contrast between the matting and the overlaid picture will be.

**Close-up Picture Output Mode**

**Overlay on Picture**

The driver's face close-up picture will be overlaid on the upper right corner of the picture, and the passenger's face close-up picture will be overlaid on the upper left corner of the picture.

**Upload Arm**

The face close-up pictures will be uploaded to the arming host or listening host.

**Overlay and Upload Arm**

The face close-up pictures will both be overlaid on the pictures and uploaded to the arming host or listening host.

4. Click **Save**.

**Result**

If level 1 arming is set for the camera, the face close-up pictures will be uploaded to the level 1 arming device. If only level 2 arming is set for the camera, the face close-up pictures will both be stored in the local storage and uploaded to the level 2 arming device.

## 1.7.6 Set Body Picture Matting

Set body picture matting first if you need to upload body and vehicle pictures to the platform.

**Steps**

**Note**

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Vehicle Feature → Body Picture Matting** .
2. Check **Enable Body Picture Matting**.

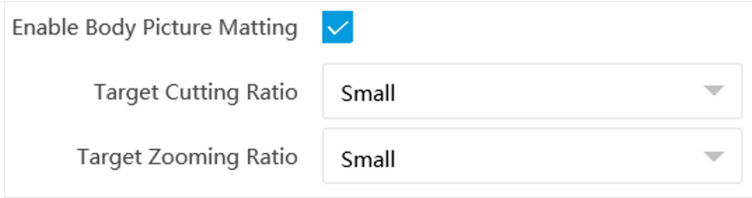


**Figure 1-23 Set Body Picture Matting**

3. Set body picture matting parameters according to the actual needs.
4. Click **Save**.

**Result**

If the device is level 1 armed, the matting pictures will be uploaded to this device directly. If the device is level 2 armed, the matting pictures will be saved to the SD/TF card and uploaded to a level 2 armed device.

## 1.7.7 Set Traffic Light

### Set Traffic Light Enhancement

Adjust the traffic light enhancement parameters to restore true colors of the traffic lights.

**Steps**

**Note**

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Video → Traffic Light Enhancement** .
2. Check **Traffic Light Enhancement**.

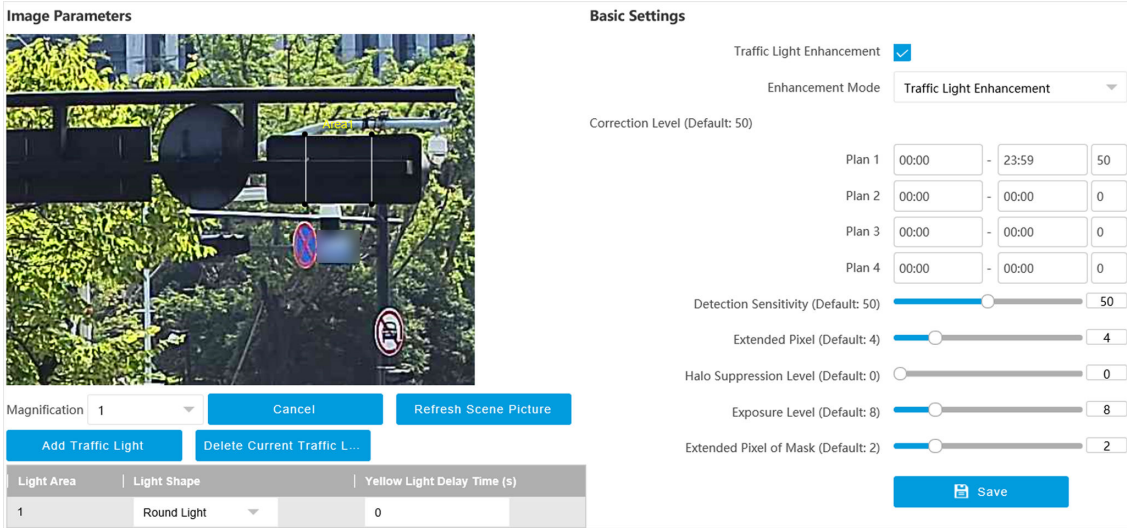


**Figure 1-24 Set Traffic Light Enhancement**

3. Select **Enhancement Mode**.

**Note**

Select **Smart Traffic Light Enhancement** if the device supports this mode.

4. Draw traffic light areas.
   1) Select **Magnification**.
   2) Click **Zoom In**.
   3) Click **Add Traffic Light**.
   4) Adjust the drawn areas according to the actual scene.

**Note**

You need to cover the whole scene where the traffic lights locate if you select **Smart Traffic Light Enhancement**. Draw areas according to each traffic light location if you select **Traffic Light Enhancement**.

**Figure 1-25 Sample**

5) **Optional:** Select **Light Shape**.
6) **Optional:** Set **Yellow Light Delay Time**.

5. Set traffic light enhancement parameters according to the actual needs.

**Note**

Keep default settings if the device supports smart traffic light enhancement mode.

**Correction Level**

You can set different correction levels for different periods. The higher the value is, the brighter the traffic image color will be.

**Detection Sensitivity**

It is recommended to adjust by 5 once. This function is valid during daytime. The higher the value is, the less enhancement exception is.

**Extended Pixel**

It is recommended to adjust by 5 once. The higher the value is, the clearer the enhanced area is.

**Halo Suppression Level**

It is recommended to adjust by 10 once. This function is valid during night. The higher the value is, the lighter the halo is.

**Exposure Level**

The higher the exposure level is, the brighter the image is.

**Extended Pixel of Mask**

It is recommended to adjust by 1 once. The higher the value is, the less possibility to get exceptional image edges of the traffic lights. However, the traffic lights will be easily enhanced.

6. Click **Save**.

## Set Traffic Light Synchronization

If you want to synchronize the shutter with the traffic light, enable the traffic light synchronization.

**Steps**

**Note**

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Video → Camera Parameter → Power Synchronization** .
2. Check **Power Synchronization**.

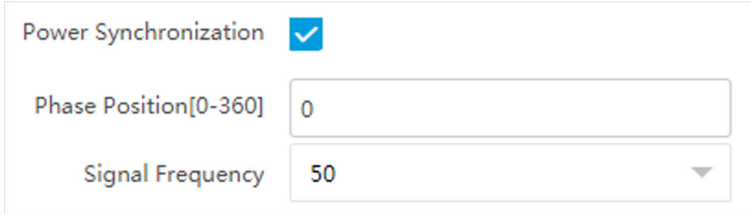


**Figure 1-26 Set Traffic Light Synchronization**

3. Set **Phase Position** and **Signal Frequency** according to the actual needs.
4. Click **Save**.

## 1.7.8 Set Vehicle Feature Parameters

Set vehicle feature parameters if you need to detect the vehicle features of the passing vehicle.

**Steps**

**Note**

The parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Vehicle Feature → Vehicle Feature** .

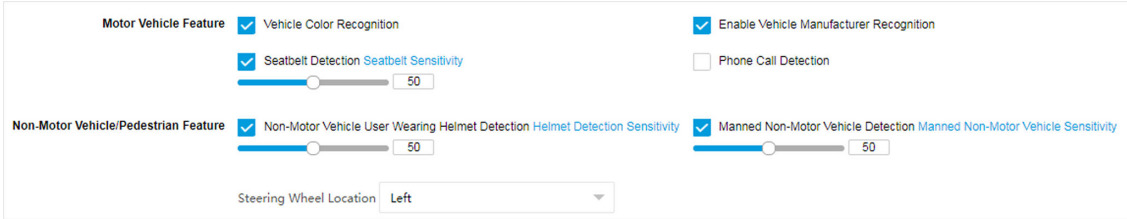


**Figure 1-27 Set Vehicle Feature Parameters**

2. Check the vehicle features that needed to be detected, and set the corresponding parameters.

   **Non-Motor Vehicle User Wearing Helmet Detection**

   Set **Helmet Detection Sensitivity**. It will capture when the amount of people who are not wearing helmets reaches the set value. If there are 2 or above people in the vehicle, it will not capture when the amount of people who are not wearing helmets is less than the set value. If there is only one person in the vehicle and he/she is not wearing a helmet, it will capture.
3. Select **Steering Wheel Location** according to the actual condition.
4. Click **Save**.

### 1.7.9 Set Image Encoding Parameters

If the captured pictures are not clear, set the resolution of the captured pictures and the picture size.

**Steps**

1. Go to **Configuration → Capture → Capture Parameters → Picture Encoding and Composition → Image Encoding** .

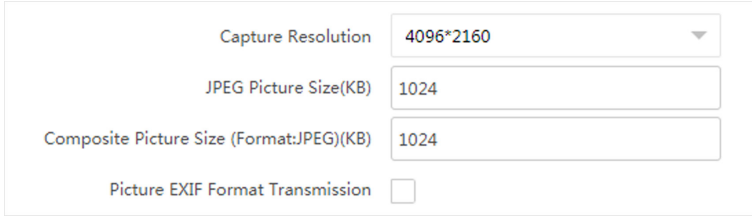


**Figure 1-28 Set Image Encoding Parameters**

2. Select **Capture Resolution**.
3. Enter the picture size.

   **JPEG Picture Size**

   The size of the compressed captured picture. The actual size is related to the scene complexity.

   **Composite Picture Size**

   The size of the compressed composite picture. The actual size is related to the scene complexity.

   **Note**

   Only the device supporting picture composition supports composite picture size settings. The actual device prevails.

   **Picture EXIF Format Transmission**

   The captured pictures will be transmitted in the EXIF format.
4. Click **Save**.

## 1.8 Set Barrier Gate Linkage

If a barrier gate has been connected to the device, you can link barrier gate to realize the control and management of the vehicles at the entrance or exit.

**Note**

Only the device supporting license plate recognition system supports barrier gate linkage. The actual device prevails.

### 1.8.1 Set Allowlist and Blocklist

Set allowlist and blocklist if you want to control the passing vehicles at the entrance or exit via the barrier gate.

**Before You Start**

- Connect the barrier gate to the relay output interface of the device.
- Install the storage card, and ensure the storage status is normal.

**Steps**

1. Go to **Configuration → Capture → Entrance and Exit → Allowlist and Blocklist** .
2. Add an allowlist or blocklist.
   1) Click **Add**.
   2) Set **License Plate Number** and **Card No.**, and select the list type.
   3) **Optional:** If you want to control allowlist vehicles during fixed time period, enable **Time Settings**, and set the effective start time and end time.
   4) Click **OK**.

   **Note**

   Wait for 15 minutes to let the added allowlist or blocklist write into the storage. Do not reboot the device during the process.

   The information of the added vehicles in the allowlist or blocklist will be listed below.

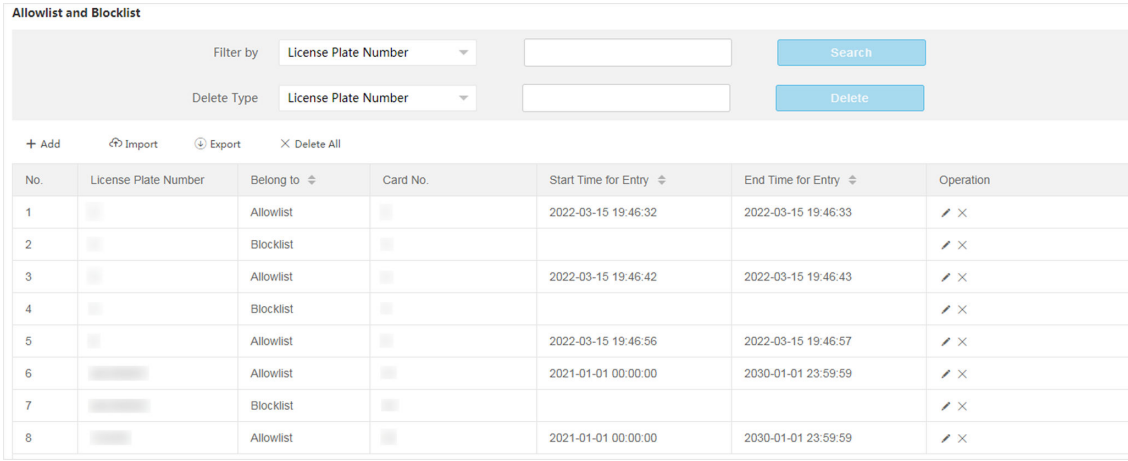


**Figure 1-29 Set Allowlist and Blocklist**

3. You can search, modify, delete, import, or export the allowlist and blocklist.

   **Search** Select the search type, or enter the keywords. Click **Search**. The searched vehicle information will be listed below.

   **Modify** Select an item from the list, and click . Modify the information, and click **OK**.

**Delete**
- Select the delete type, or enter the keywords. Click **Delete** to delete the lists of the same type.
- Select an item from the list, and click × to delete the item.
- Click **Delete All** to delete all the lists.

**Import**
a. Click **Import**.
b. Click **Download Template**, and save the template.
c. Open the template, edit the information, and save it.
d. Click **Import** again.
e. Click **Browse** to select the edited template.
f. Click **Import** to import the information to the device.

**Export** Click **Export** and select the saving path to export the allowlist or blocklist to the computer.

## 1.8.2 Control Barrier Gate

Link the barrier gate to realize the control and management of the vehicles at the entrance or exit.

**Steps**

1. Go to **Configuration → Capture → Entrance and Exit → Barrier Gate** .

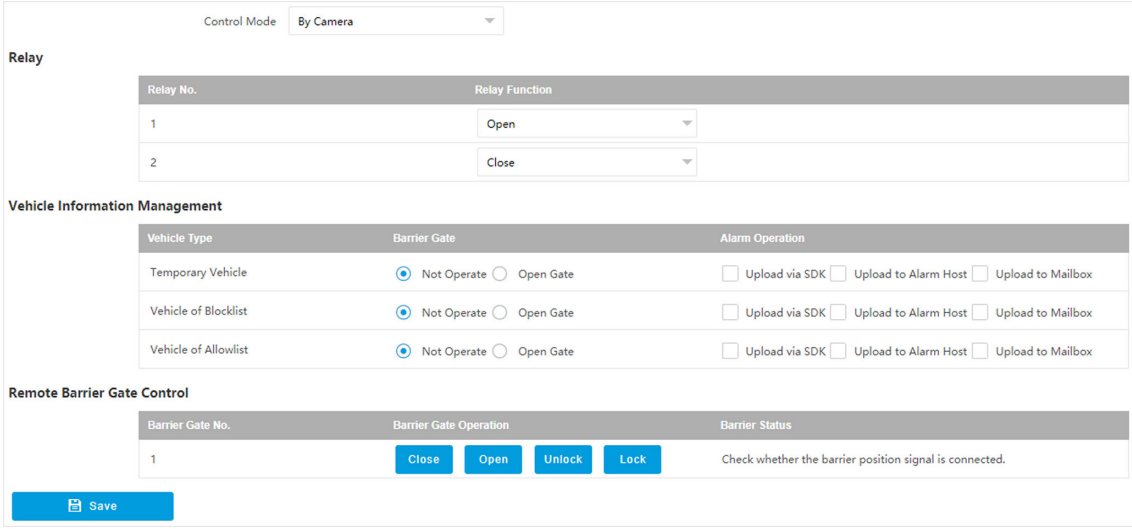


**Figure 1-30 Control Barrier Gate**

2. Select **Control Mode**.

   **By Camera**

   The barrier gate is controlled via the license plates recognized by the capture camera.

3. Set the relay function.

**Note**

The supported number of relays varies with different models. Relay 1 corresponds to the 1A and 1B of the terminal. Relay 2 corresponds to the 2A and 2B of the terminal.

4. Set the barrier gate operation and alarm operation for the temporary vehicles, vehicles in the blocklist, and vehicles in the allowlist.
   - Check **Upload via SDK** to arm and upload the vehicle information to the arming terminal via SDK.
   - If the device has been connected to the alarm device, check **Upload to Alarm Host**. When the barrier gate is open, the alarm device will be triggered to alarm.
   - Check **Upload to Mailbox** to email the vehicle information to the user.
5. **Optional:** You can click **Close**, **Open**, **Unlock**, or **Lock** to control the barrier gate remotely.

**Note**

The functions of remote control of barrier gate vary with different models. The actual device prevails.

6. Click **Save**.

### 1.8.3 Set Wiegand Parameters

The barrier gate can be connected to the device via Wiegand interface.

**Steps**

1. Go to **Configuration → Capture → Entrance and Exit → Wiegand Parameters** .
2. Check **Enable**.

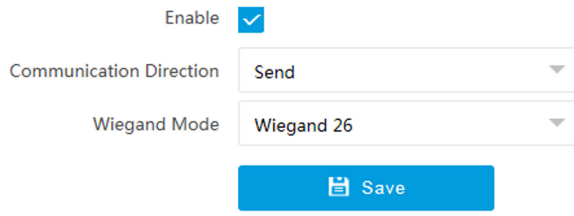


**Figure 1-31 Set Wiegand Parameters**

3. Select **Communication Direction**.

   **Send**

   The barrier gate can be connected to the device via Wiegand 26 or Wiegand 34 mode.
4. Select **Wiegand Mode**.
5. Click **Save**.

# Chapter 2 Radar Detection

Radar is used to detect the target and link the capture. Set radar detection parameters before capturing vehicle pictures.

**Note**

The function varies with different models. The actual device prevails.

## 2.1 Set Detection Parameters

Set radar detection parameters before capturing vehicle pictures.

**Before You Start**

Select the application mode as **RS-485 Radar**, and select **Radar Type** as **Multi-Lane Radar**.

**Steps**

1. Click **Radar**.
2. View the radar information.

   **Software Version**

   The software version of the radar.

   **Radar Status**

   The current radar status. The radar can be normally used in normal status. If the radar is in upgrading status, do not reboot the device. Refresh the interface every one minute, and the status can be restored to normal.
3. Check **Debug Mode** to set the parameters.

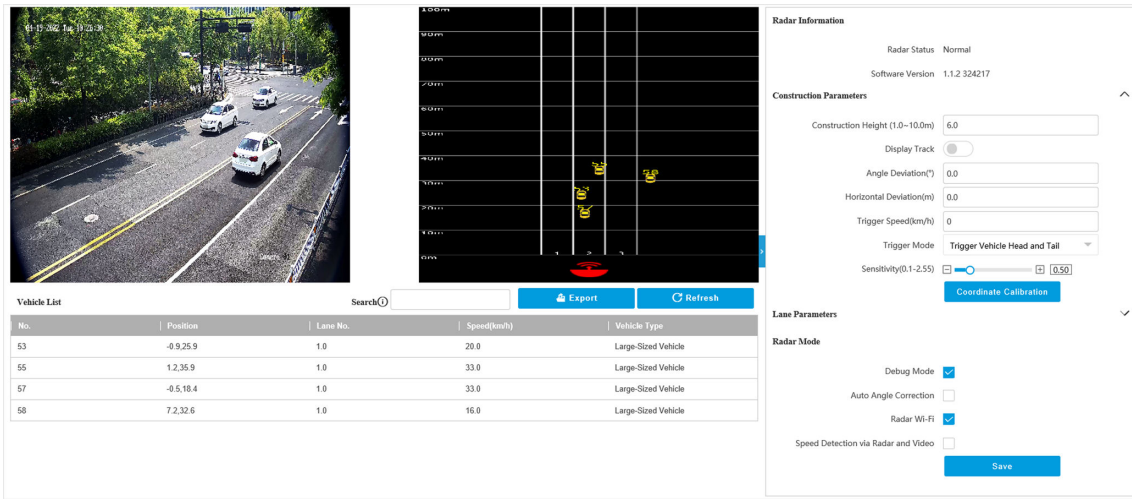


**Figure 2-1 Set Radar Parameters**

1) Set construction parameters.

**Construction Height**

Set the construction height of the radar according to construction at the actual scene.

**Display Track**

Enable the function, and the target track will be displayed on the interface according to the detected coordinates.

**Angle Deviation**

Set the angle compensation according to the target moving track detected by the radar.

**Horizontal Deviation**

Set the deviation between the radar construction position and the horizontal central position. The center of all the lanes is 0. Horizontal left deviation is a minus value, and horizontal right deviation is a positive value. If the radar is constructed on the left lane, the horizontal deviation should be a minus value. If the radar is constructed on the right lane, the horizontal deviation should be a positive value.

**Trigger Speed**

If the vehicle speed exceeds the set value, capture will be triggered.

**Trigger Mode**

**Trigger Vehicle Head**

Capture is triggered by the vehicle head. The vehicles from the approaching direction will be detected.

**Trigger Vehicle Tail**

Capture is triggered by the vehicle tail. The vehicles from the leaving direction will be detected.

**Trigger Vehicle Head and Tail**

Capture can be triggered by the vehicle head or tail. The vehicles from both the approaching and leaving directions will be detected.

2) Set lane parameters.

**Lane X Width**

Enter the lane width according to the actual condition.

**Lane X Trigger Location**

The speed information of the detected targets on each lane will be uploaded by the radar once they are at the set location.

**Note**

- The number of lanes is consistent with the total lanes in the application mode settings.
- After setting the construction and lane parameters, observe the real-time vehicle condition in the middle window of the interface. The target track should be straight. The initial position of the target should be larger than the trigger distance, or the vehicle targets may be missed. For example, if the trigger distance is 28 m from the approaching direction, the

initial position of the target should be approximately 35 m. The target track should correspond to the actual lane, or the lane No. cannot be corresponded to when the data is uploaded. Adjust **Angle Deviation** and **Horizontal Deviation** to guarantee the vehicle target is on the corresponding lane.

3) **Optional:** You can also set the following parameters.

**Auto Angle Correction**

Enable the function, and the radar will adjust the angle deviation automatically according to the target track.

**Radar Wi-Fi**

Check it to enable the radar Wi-Fi.

**Speed Detection via Radar and Video**

Check it to detect speed via both radar and video.

4) Click **Save**.

**4.** Uncheck **Debug Mode** to detect the vehicle speed.

You can view the captured vehicle information such as the license plate color, license plate number, speed, and illegal type in real time.

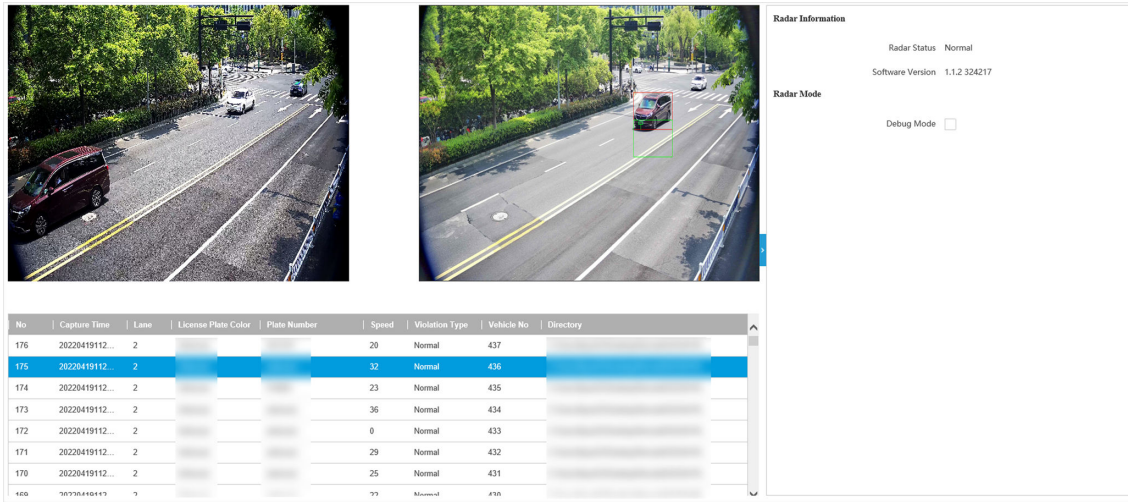


**Figure 2-2 Vehicle Detection**

## 2.2 Set Radar Calibration

Calibrate radar after the radar detection parameters are set to display the targets detected by the radar on the video.

**Before You Start**

Enable **Rules Information** in **Configuration → Local** .

**Steps**

1. Click **Radar**.
2. Click **Coordinate Calibration**.
3. Set the radar calibration.
   - Set manual calibration. Refer to ***Manual Calibration*** for details.
   - Set auto calibration. Refer to ***Auto Calibration*** for details.

**Note**

The supported calibration modes vary with different models. The actual device prevails.

## 2.2.1 Manual Calibration

**Steps**

1. Click **Coordinate Calibration**.
2. Select **Calibration Mode** as **Manual Calibration**.

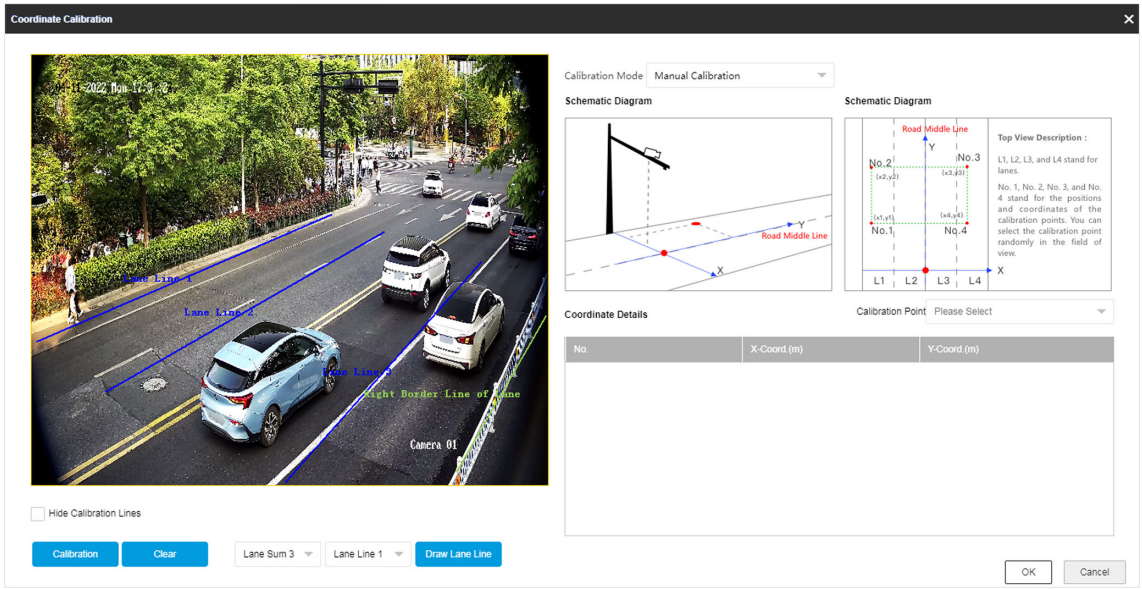


**Figure 2-3 Manual Calibration**

3. Draw the lane lines.
   1) Select the lane sum.
   2) Select the lane line No.
   3) Click **Draw Lane Line**.

      The selected lane line will be displayed on the live view picture.
   4) Drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
   5) Repeat the steps above to draw more lane lines.
4. Draw the calibration area.
   1) Select **Calibration Point**.

2) Click **Calibration**.
3) Click the left button of the mouse to locate the vertexes of the calibration area on the live view image, and click the right button of the mouse to finish the drawing.

**Note**

The number of vertexes should be consistent with the selected number of **Calibration Point**.

4) Drag the vertexes of the calibration area to align it to the lanes.

**Note**

- If the lanes cannot be aligned, ensure the calibration area can contain the detection area.
- You can refer to the schematic diagram and top view description to draw the calibration area.

5) **Optional:** Click **Clear** to clear the drawn calibration area.

5. Measure the world coordinates of the vertexes, and enter the values in the corresponding coordinate text fields.

**Note**

The origin (0, 0) of the world coordinates locates in the middle of the whole lanes detected by the radar. You can refer to the top view of the diagram for the positions.

6. Adjust the radar in two ways if the coordinates fed back from the radar cannot be matched with the measured coordinates when the vehicle passes the calibration position.
   - Adjust the radar until it can feed back the correct position.
   - Adjust the X-coordinates of the calibration points to make them adapt to the coordinates fed back from the radar. The method is to enter the X-coordinates fed back from the radar into the corresponding text fields when the vehicle passes the far left or far right. Adjust finely if there is small deviation to guarantee the radar frames and the video frames can be matched in the field of view.
7. **Optional:** Check **Hide Calibration Lines** to hide the lines on the live view image.
8. Click **OK**.

### 2.2.2 Auto Calibration

**Steps**

1. Click **Coordinate Calibration**.
2. Select **Calibration Mode** as **Auto Calibration**.

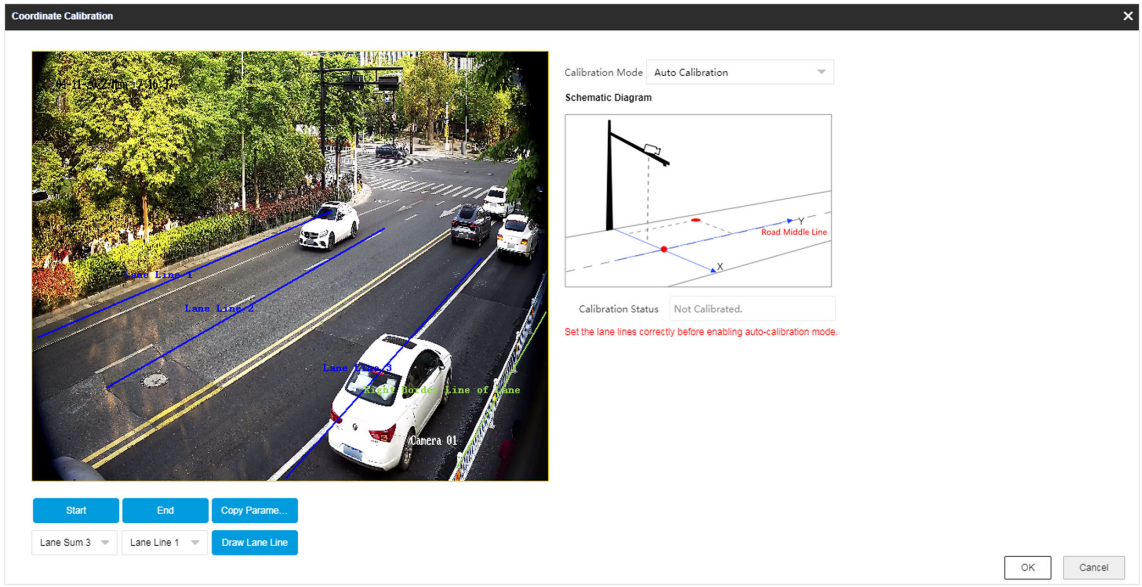


**Figure 2-4 Auto Calibration**

3. Draw the lane lines.
   1) Select the lane sum.
   2) Select the lane line No.
   3) Click **Draw Lane Line**.

      The selected lane line will be displayed on the live view picture.
   4) Drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
   5) Repeat the steps above to draw more lane lines.
4. Click **Start**.

   The auto calibration starts, and you can view the calibration status and progress. 100% means the auto calibration is finished.
5. **Optional:** Click **End** if the calibration effect has met the requirement during the process.
6. **Optional:** Click **Copy Parameters to Coordinate Mode** to copy the auto calibrated coordinates to the coordinate mode.
7. Click **OK**.

## 2.3 Search Detected Vehicles

You can search the radar detected vehicles and export the information.

**Steps**

1. Click **Radar**.
2. View the vehicle information in the vehicle list.
3. Enter the vehicle No. in the text field, and press **Enter** to search the vehicle information.
4. **Optional:** Export the vehicle information.

- Search the vehicle first, and click **Export** to export the searched vehicle information to the computer.
- Click **Export** directly to export the information of all the detected vehicles to the computer.

# Chapter 3 View Real-Time Picture

You can view the real-time captured pictures and license plate information.

**Steps**

1. Go to **Live View → Real-Time Capture** .
2. Click **Arming**.
3. Select an item from the list, and you can view the capture scene picture and recognized license plate information.

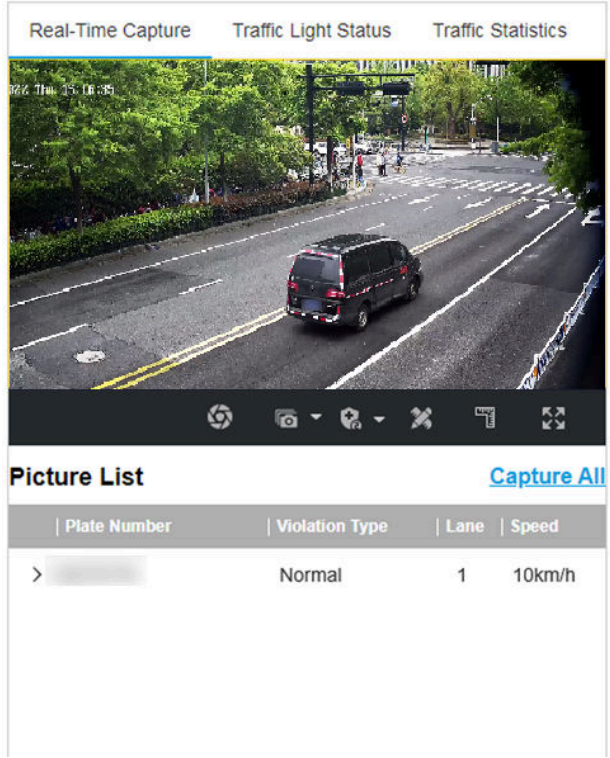


**Figure 3-1 Real-Time Picture**

4. **Optional:** You can also do the following operations.

| | |
|---|---|
| / / | • **Level 1 Arming** can only connect one client or web. The uploaded pictures will not be stored in the storage card. The pictures in the storage card will be uploaded to the level 1 arming.<br>• **Level 2 Arming** can connect three clients or webs. The pictures will be uploaded to the client/web, and stored in the storage card.<br>• **Disarming** is to cancel the alarm status or real-time picture. |
| | Click it to measure the license plate pixel. Click it again to disable the measurement. |

| | |
|---|---|
| | Click it to enable the ruler to measure the license plate. |
| | Click it to enable manual capture. |
| | Click it to set continuous capture parameters and the device will capture pictures according to the set interval.<br>• **Capture Times**: Up to five pictures can be captured per continuous capture.<br>• **Interval**: Up to four intervals can be set, and the default interval is 100 ms. |
| | Display the images in full screen mode. |
| **Capture All** | Open the saving path of captured pictures. |

# Chapter 4 Search Picture

You can search the captured pictures stored in the storage card and export the pictures you need.

**Before You Start**

Install the storage card, and ensure the storage status is normal.

**Steps**

1. Click **Picture**.
2. Set search conditions.

   **Note**

   Search conditions vary with different models. The actual device prevails.
3. Click **Search**.

   The searched pictures information will be displayed in the picture list.

   **Note**

   If you have set level 1 arming for the device, the captured pictures will not be saved in the storage card. Go to the saving path of scene pictures to view them. You can go to **Configuration → Local** to check the saving path.
4. **Optional:** Check picture(s) and click **Download** to save them to local.

   The downloaded picture(s) will be marked as "Downloaded". You can go to **Configuration → Local** to check the saving path.

# Chapter 5 View Traffic Statistics

## 5.1 View Real-Time Traffic Statistics

You can view the real-time traffic statistics if the device supports this function.

**Steps**

1. Go to **Configuration → Capture → Advanced → Traffic Parameters → Traffic Parameters** .
2. Check **Enable**.
3. Set **Interval**.
4. Go to **Live View → Traffic Statistics** to view real-time data.

## 5.2 View Traffic Flow Statistics

The device supports counting and uploading traffic follow data.

**Steps**

1. Go to **Configuration → Capture → Advanced → Traffic Parameters → TPS Parameters** .
2. Check **Enable**.
3. Set **Interval**.
4. Click **Save**.

# Chapter 6 View Traffic Light Status

For the device supporting traffic light detection, you can go to **Live View → Traffic Light Status** to check real-time traffic light status after the traffic light detection mode is set.

See Far, Go Further