Mobile LPR Camera System Installation Guide

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For inquiries, see https://www.motorolasolutions.com/en_us/support.html **> License Plate Recognition (Vigilant)** or contact our 24 hours support staff at:

- Tel: 925-398-2079
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Read Me First

Notations Used in This Manual

Throughout the text in this publication, you notice the use of **Warning**, **Caution**, and **Notice**. These notations are used to emphasize that safety hazards exist, and the care that must be taken or observed.

WARNING: An operational procedure, practice, or condition, and so on, which may result in injury or death if not carefully observed.

CAUTION: An operational procedure, practice, or condition, and so on, which may result in damage to the equipment if not carefully observed.

NOTE: An operational procedure, practice, or condition, and so on, which is essential to emphasize.

Special Notations

The following special notations are used throughout the text to highlight certain information or items:

Table 1: Special Notations

Example	Description
Menu key or **Camera** button	Bold words indicate a name of a key, button, or soft menu item.
The display shows `Settings Applied`.	Typewriter words indicate the MMI strings or messages displayed.
<required ID>	The courier, bold, italic, and angle brackets indicate user input.
Setup→Settings→All Settings	Bold words with the arrow in between indicate the navigation structure in the menu items.

Related Publication

The following list contains part numbers and titles of related publications. To find and download the publications, visit https://learning.motorolasolutions.com.

Part Number	Title
MN008501A01	*Vigilant PlateSearch User Guide*
MN007806A01	*Vigilant ClientPortal User Guide*

Part Number	Title
MN007809A01	*Target Alert Service User Guide*

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Chapter 1

Hardware Overview

This section lists all of the equipment needed to configure a Mobile LPR system with a VLP Processor, VLS Mobile Tablet, or M500 In-car Video System.

1.1 Types of Camera

Table 2: Mobile LPR Cameras

Camera	Photo
ReaperHD	
L5M	

1.2

VLP Processor

These are the hardware components necessary for installing a Mobile LPR system with a VLP Processor:

NOTE: This configuration also requires a connected Windows PC to run the CarDetector Mobile software.

Table 3: List of VLP Processor Equipment

Equipment	Photo
Camera and Magnet Mount Assembly	
Camera and Fixed Mount Assembly	
VLP Processor	

Equipment	Photo
Camera Cable	
VLP Processor Wiring Harness	
GPS Cable	

Figure 1: VLP Processor Wiring Harness

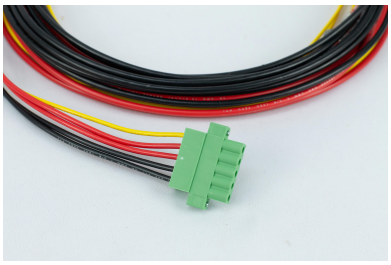


Table 4: VLP Processor Wiring Harness Cable Color

Color	Description
Black	Ground
Red	+12 V
Yellow	Ignition

IMPORTANT: Do not connect cameras when wet. Ensure that cable end and camera power port are dry to avoid damaging equipment.

1.3
VLS Mobile Tablet

These are the hardware components necessary for installing a Mobile LPR system with a VLS Mobile Tablet:

Table 5: List of VLS Tablet Equipment

Equipment	Photo
Camera and Magnet Mount Assembly	

Equipment	Photo
Camera PoE Injector	
Camera Cable	

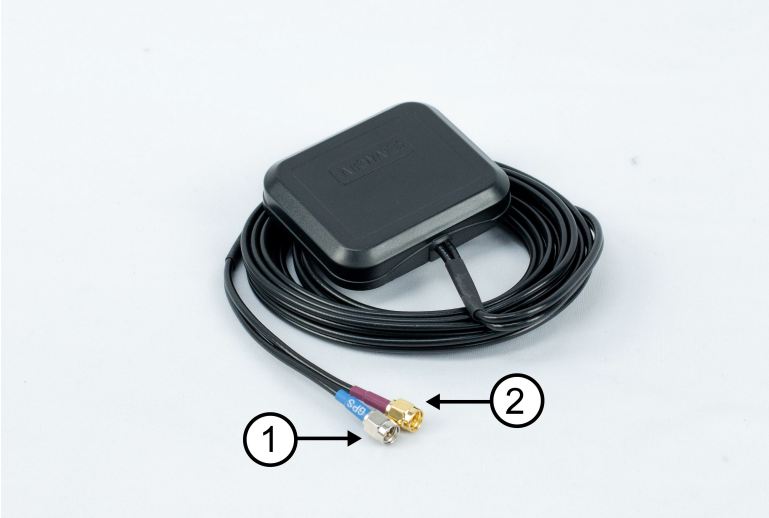
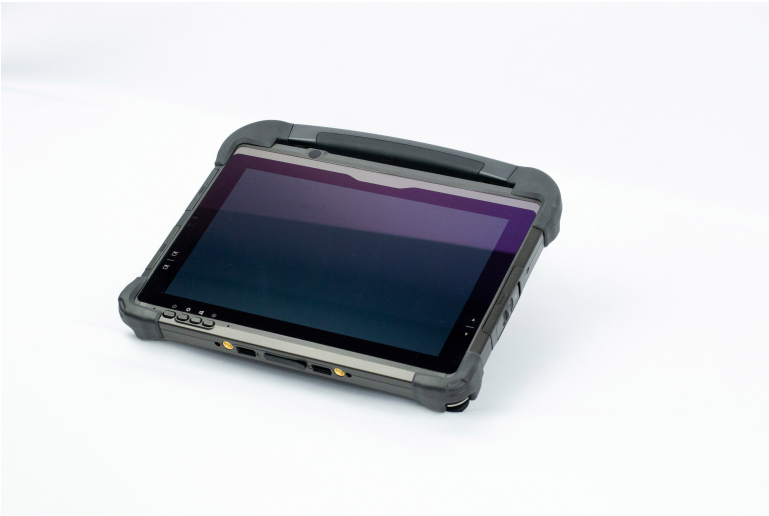
Equipment	Photo
GPS Cable and Puck	
Tablet	

Table 6: GPS Puck Connectors

Number	Description
1	GPS connector
2	4G connector

Equipment	Photo
Ram Mount Base Plate	
Ram Mount Pole Assembly	

Equipment	Photo
Tablet Docking Station	
Tablet KeyBoard/Mouse Kit	
Tablet Power Solution	

IMPORTANT: Do not connect cameras when wet. Ensure that cable end and camera power port are dry to avoid damaging equipment.

1.4 Other Cameras

Table 7: Other Cameras

Equipment	Photo
M500	

1.5 Camera Mounting

Figure 2: Possible Camera Mounting Locations

Following are the best practices for mounting the camera.

- One lane per camera.
- Camera aiming calibration is done with the IR camera, not color camera.

- Cameras should be positioned before you use the LPR scanning.
- Cameras are selected based on the use case scenarios.
- Use CarDetector “Camera Aiming Tool” for aiming assistance.

Chapter 2

System Assembly

This section helps you to install and assemble a Mobile LPR camera system.

2.1 Assembling Mobile LPR with VLP Processor

Procedure:

1 To provide power, connect the wiring harness to the VLP Processor.

Figure 3: Wiring Harness to VLP Box

2 Connect both ends of the Ethernet cable to the VLP Processor and a Windows PC respectively.

Figure 4: Ethernet Cable to VLP Box

3 Connect the camera cables to the PoE ports of the VLP Processor.

Figure 5: Camera Cable to VLP Processor

4 Connect the GPS cable to the GPS port of the VLP Processor.

NOTE: Ensure that the GPS puck is placed in a location with an unobstructed view of the sky, for example, at the dash of vehicle or exterior of vehicle.

Figure 6: GPS Cable to VLP Processor

Figure 7: GPS Puck

Table 8: GPS Puck

Number	Description
1	GPS Puck

5 For trunk installation, locate a suitable area for the VLP Processor so that the air can flow around outside of the enclosure.

6 Mount the VLP Processor using screws seated through the notches of the feet of the VLP Processor on both sides.

NOTE: Ensure that the VLP Processor is fully secured to avoid unnecessary vibration while vehicle is traveling.

2.2 Assembling VLS Mobile Tablet

Procedure:

1 Plug the wiring harness into the PoE Injector.

2 Connect both ends of the Ethernet cable to the PoE Injector and the VLS Tablet Docking Station respectively.

Figure 8: Ethernet Cable to PoE Injector

3 Connect the camera cables to the PoE Injector.

Figure 9: Camera Cable to PoE Injector

4 Connect both of the GPS and 4G puck connectors to the Antenna GPS and LTE connectors of the VLS Mobile Tablet respectively.

NOTE: The Antenna GPS and LTE connectors are located at the bottom of the VLS Mobile Tablet Docking Station.

Figure 10: GPS Connector to VLS Tablet Docking Station

Figure 11: 4G Connector to VLS Tablet Docking Station

5 For vehicle installation, locate a suitable location for the PoE Injector such that the air can freely flow around outside of the enclosure.

6 Mount the PoE Injector using screws seated through the notches of the feet on both sides.

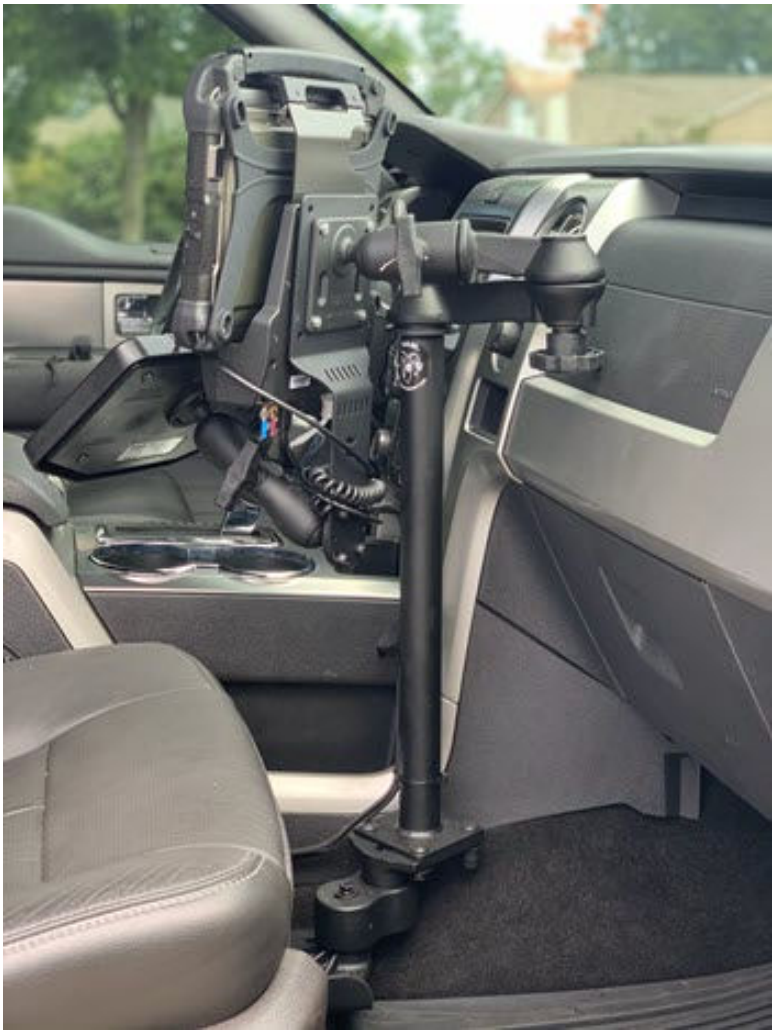
NOTE: Ensure that the PoE Injector is fully secured to avoid unnecessary vibration while vehicle is traveling.

7 Install the Ram Mount base plate.

Figure 12: Ram Mount Base Plate

8 Install the Ram Mount Pole Assembly and VLS Mobile Tablet Cradle to the base plate.

Figure 13: Ram Mount Assembly



Chapter 3

PC Configuration

This section helps you to perform the CarDetector Mobile software installation and Windows configuration on a Windows PC or VLS Mobile Tablet for a Mobile LPR camera system.

3.1 Configuring Windows Network Settings

Change the IP address of the Windows PC or the VLS Mobile Tablet to be on the correct subnet.

Procedure:

1. Open the **Control Panel** and click **Network and Internet→ Network and Sharing Center→Change Adapter Settings**.
2. Find the adapter that represents the Ethernet port on your PC receiving input from the VLP or Camera PoE Injector.
3. Right click on it, go to **Properties** and double-click **Internet Protocol Version 4 (TCP/IPv4)**.
4. In the **General** tab of **Internet Protocol Version 4 (TCP/IPv4)**, select **Use the following IP address**, and enter one of the following IP Addresses:
   - VLP Processor Configuration: IP Address `192.168.5.55`, Subnet Mask `255.255.255.0`
   - VLS Tablet Configuration: IP Address `192.168.3.1`, Subnet Mask `255.255.255.0`
5. Click **OK** on both windows to set the IP address.

3.2 Installing CarDetector Mobile

Procedure:

1. Download the appropriate software version of CarDetector Mobile for the hardware being used:
   - CDMP (HD) Build for VLP or M500: https://get.vaasfiles.com/CDMSHD
   - CDMP (RHD as IP) Build for VLS Mobile Tablet: https://get.vaasfiles.com/CDMSIP
2. Unzip the files to a folder.
3. Double-click **setup.exe**.
4. Click **Next**.
5. Select check box next to **I accept the terms of the license agreement** and click **Next**.
6. Enter a user name and company name, and click **Next**.
7. Follow the on-screen installation instructions and click **Next→Install→Finish** to complete the software installation.

3.3

Configuring Vigilant PlateSearch Server Ports (Optional)

This section outlines the necessary ports and protocols to be authorized on the network for communication between Vigilant PlateSearch and the Vigilant CarDetector Mobile (CDM) application.

Communication between the VLS Mobile Tablet or In-Car Laptop and Reaper/Vigilant PlateSearch is done through TCP protocol.

The following ports must be open on the VLS Mobile Tablet/In-Car Laptop to communicate with the Reaper DSP Unit.

- TCP Port 2000
- TCP Port 5000
- TCP Port 3000
- TCP Port 22
- TCP Port 22

The Reaper DSP Unit communicates with the Vigilant PlateSearch server (Wireless Card Recommended) through the following TCP ports:

- TCP Port 80
- TCP Port 443

Chapter 4

CarDetector Mobile Configuration

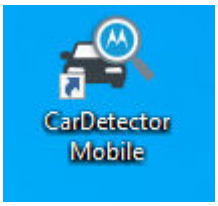
This section helps you to use and configure the CarDetector Mobile Application with a Mobile LPR camera system.

4.1 Launching the Application for the First Time

Procedure:

1 To launch the software, click the **Vigilant Mobile LPR** desktop icon.

Figure 14: Vigilant Mobile LPR

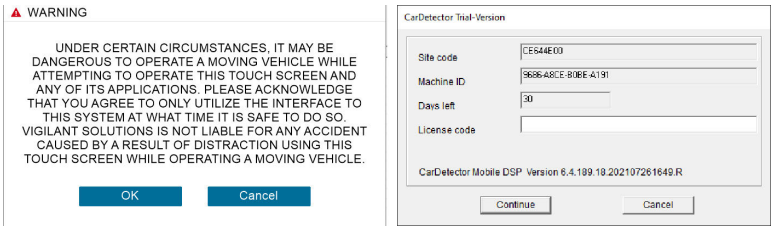


2 Click **OK** on the Warning pop up window.

3 Enter a CarDetector Mobile license key into the **License code** field and click **Unlock**.

NOTE: License keys only need to be entered once for every key period..

Figure 15: CarDetector Mobile Setup



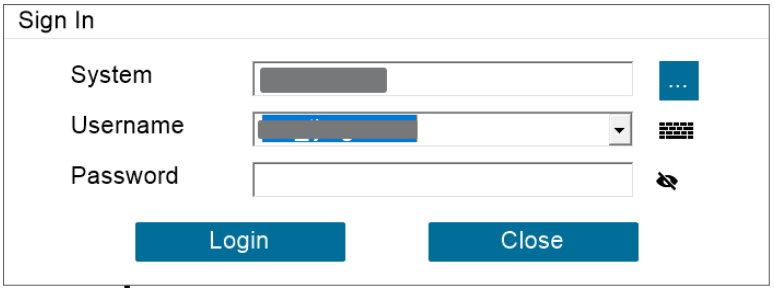
4 If a connection file downloaded from Vigilant PlateSearch or Client Portal is available, click **Browse** to select it now.

NOTE: A connection file can be added later from the Sign In window by clicking the button with three horizontal dots.

5 To log in to CarDetector Mobile, enter your PlateSearch user credentials.

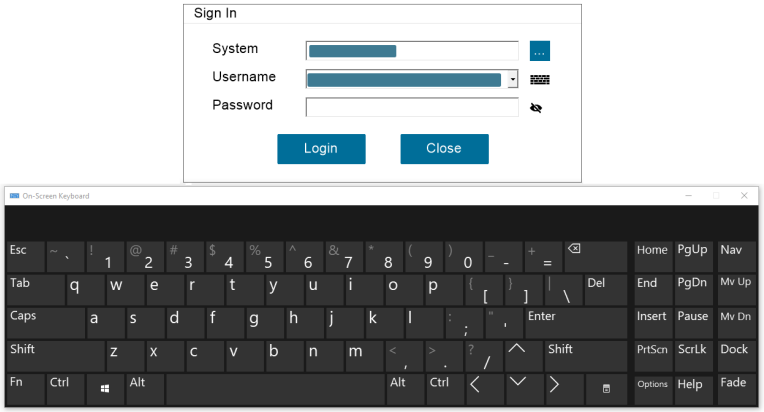
NOTE: If no PlateSearch user credentials are available, use the default username and password: `CDMAdmin` and `12345`

Figure 16: Connect to Database Server



6 An on-screen keyboard available on various menus that can be used to type information in to text fields if a hardware keyboard is not available. Click the small keyboard icon to access the on-screen keyboard.

Figure 17: Built-In Virtual Keyboard



4.2

Main Window Overview

The main menu of CarDetector Mobile has a static control panel on the left-hand side and four responsive information windows that populate new data with each scan.

Figure 18: Main Menu Overview

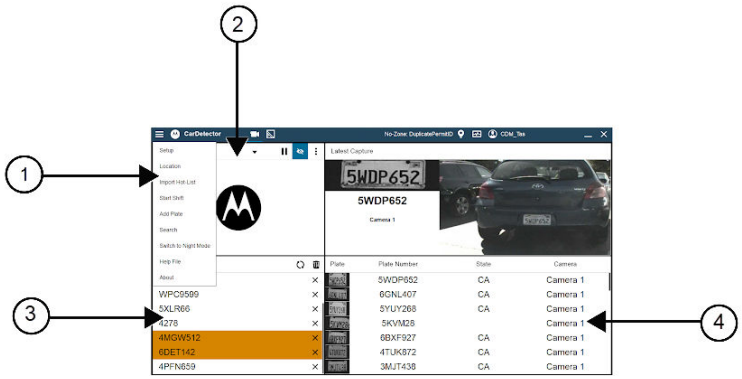


Table 9: Main Menu Overview Description

Number	Description
1	Control Menu
2	Active camera feed
3	Hit list
4	Detection list

4.3
Control Menu Overview

The control menu offers users one-click access to customizable features and useful enforcement tools.

Figure 19: Control Buttons Overview

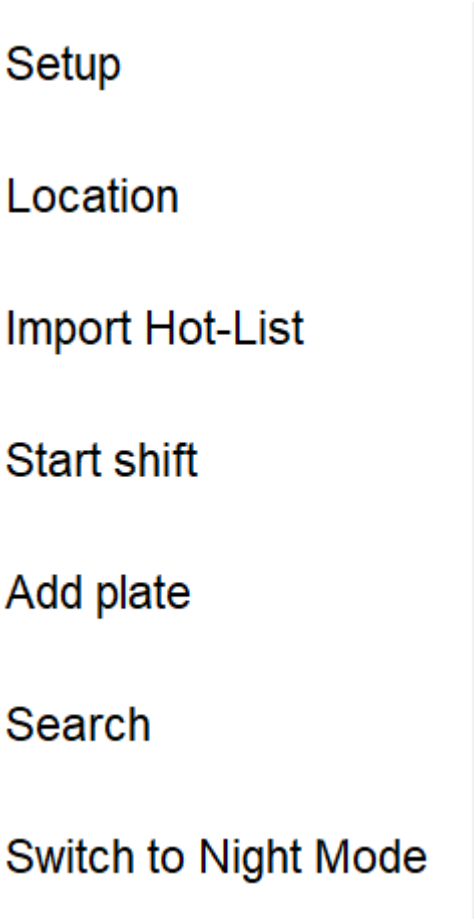


Table 10: Control Buttons Description

Name	Description
Setup	Launches the main setup parameters and options for CarDetector Mobile
Location	Allows the operator to set up and configure locations for Parking white-listing and hit features
Import Hot List	Allows the operator to add hot list files to the hot list database
Start Shift	Bookmarks a period for reporting and exporting data records
Add Plate	Allows the operator to add single plates to the hot list database
Search	Search utility to access all LPR data in the local CDMS database

Name	Description
Switch to Day/Night Mode	Switch between Day Mode theme and Night Mode theme

4.3.1
Setup

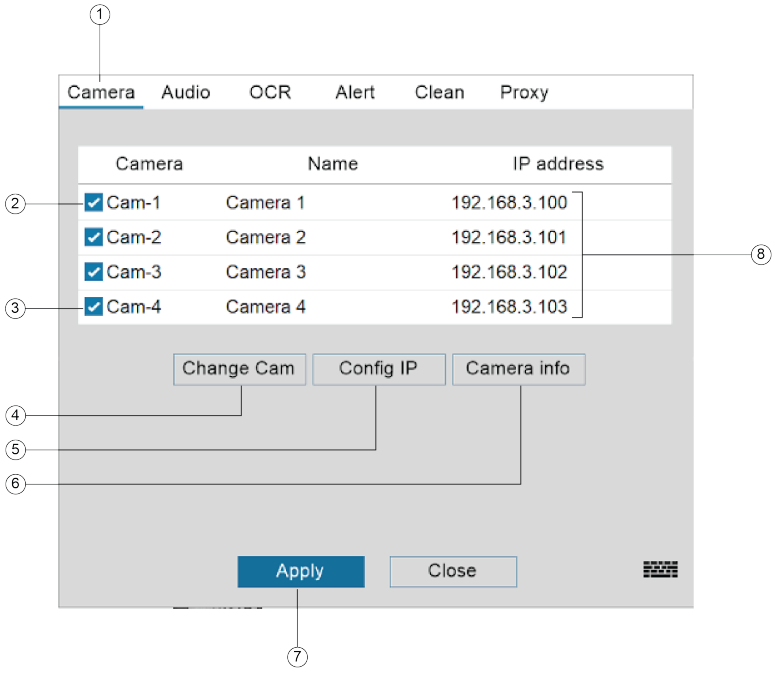
The Setup window is used to configure Cameras, OCR Profile, Alerts, and other system settings.

4.3.1.1
Configuring Camera/DSP Settings

Procedure:

1 To set up camera connections, click **Setup** in the Control Menu.

Figure 20: Configuring Cameras with VLS Mobile Tablet



Number	Description
1	Camera Tab
2	Activate Camera
3	Camera List
4	Change Camera Name
5	Change Camera IP Address
6	View Camera Information
7	Save Settings
8	Validate DPS Connection

2 In the Camera tab, select the cameras you would like to activate.

3 Enter the IP Address of the M500 or VLP in the drop-down menu.

4 Click **Test Connection** to validate the connection.

A green light will indicate a successful connection.

5 Click **Apply** to save your preferences.

Figure 21: Configuring Cameras with M500 or VLP

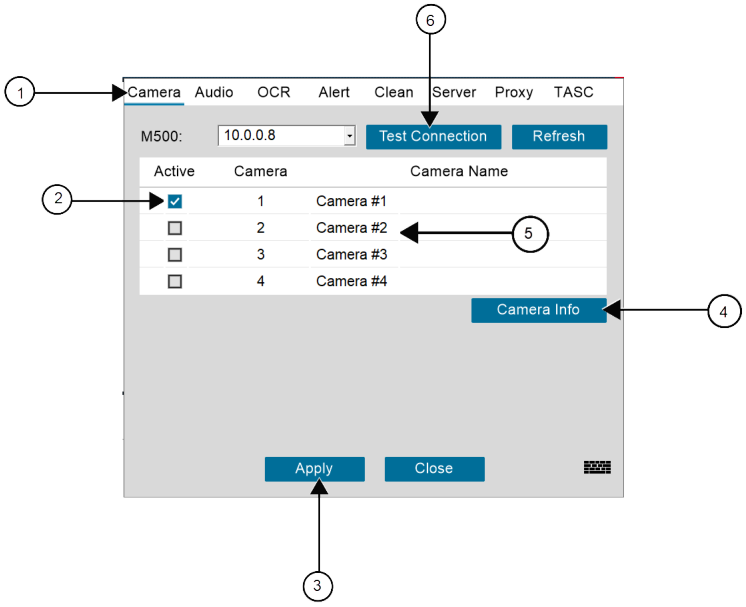


Table 11: Configuring Cameras with M500 or VLP Description

Number	Description
1	Camera Tab
2	Activate Camera
3	Save Settings
4	View Camera Info
5	Camera List
6	Validate DSP Connection

4.3.1.2
Configuring Audio Settings

Procedure:

Configure the sound files to be played for different enabled alert types.

Figure 22: Configuring Audio Settings

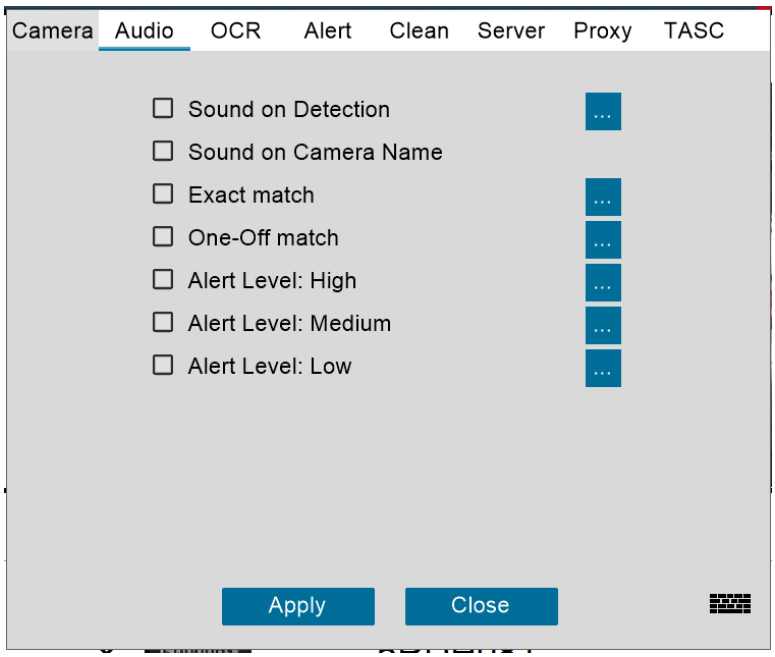


Table 12: Configuring Audio Settings Description

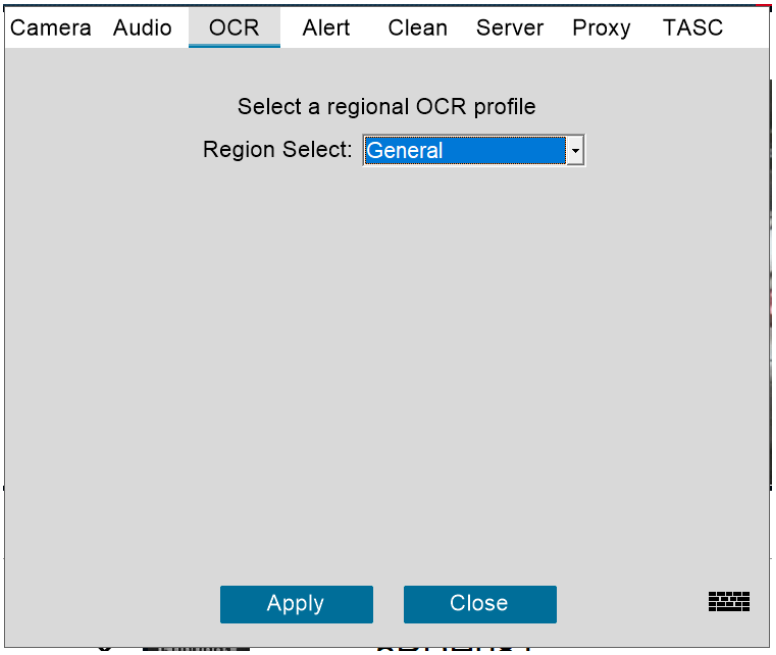
Audio Settings	Description
Sound on Detection	Plays the selected sound file when CarDetector Mobile Detects a license plate.
Sound on Camera Name	Plays the selected sound file when the Camera Name of a detected Hot List record matches the Camera Name of detecting camera.
Exact Match	Plays the selected sound file when a detected license plate exactly matches a Hot List record.
One-Off Match	Plays the selected sound file when a detected license plate differs from a Hot List record by at most one character.
Alert Level: High/Medium/Low	Plays the selected sound file based on the Hot List hit record's Alert Level.

4.3.1.3
Configuring OCR Settings

Procedure:

Select the appropriate regional OCR profile for the state or region in which the CarDetector Mobile system resides.

Figure 23: Configuring OCR Settings



4.3.1.4
Configuring Alert Settings

Procedure:

Set alert parameters and notification type for the CarDetector Mobile application.

Figure 24: Alert Settings Menu (Setup Alert)

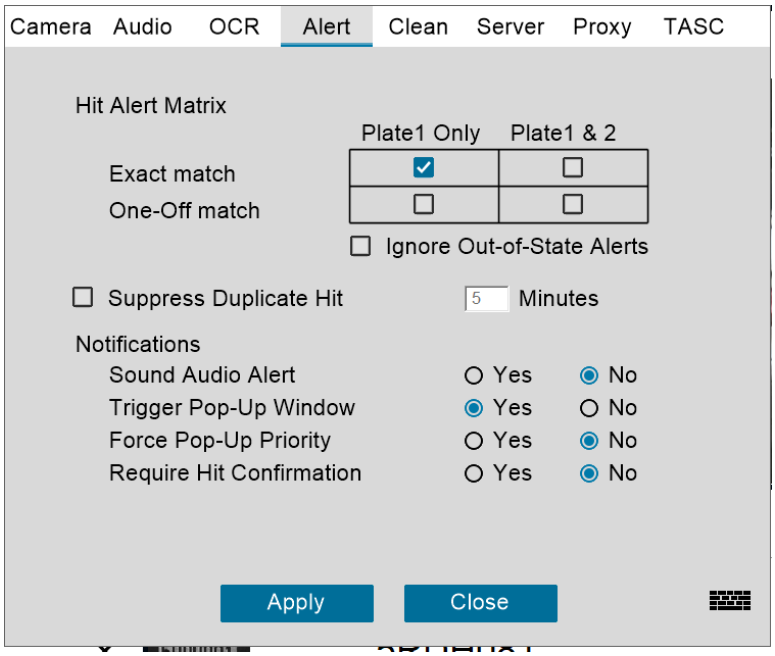


Table 13: Alert Settings Menu Description

Alert Settings Menu	Description
Hit Alert Matrix	Define the method of matching of detected plates to hot lists
Notifications	Set system notification options: Enable or disable Audio Alerts and Pop-Up Windows, force Pop-Ups to always display on top, and Require user acknowledgement of Hits.

Plate 1 vs Plate 2

Plate 1 is the first interpretation the engine read the plate to be and Plate 2 is the second interpretation of the same plate. They are not separate detections.

Exact match + Plate 1 only

Make an alarm sound when any detected plate number on Plate 1 column exactly matches all characters of a plate number in the hot list.

Exact match + Plate 1 & Plate 2

Make an alarm sound when any detected plate number on Plate 1 column and Plate 2 column exactly matches all characters of a plate number in the hot list.

One-off match + Plate 1 only

Make an alarm sound when any detected plate number on Plate 1 column, which has only one-character difference from one of those of any plate number in the hot list (including the case of a plate with less or more than one character).

One-off match + Plate 1 & Plate 2

Make an alarm sound when any detected plate number on Plate 1 column and Plate 2 column, which has only one-character difference from one of those of any plate number in the hot list (including the case of a plate with less or more than one character).

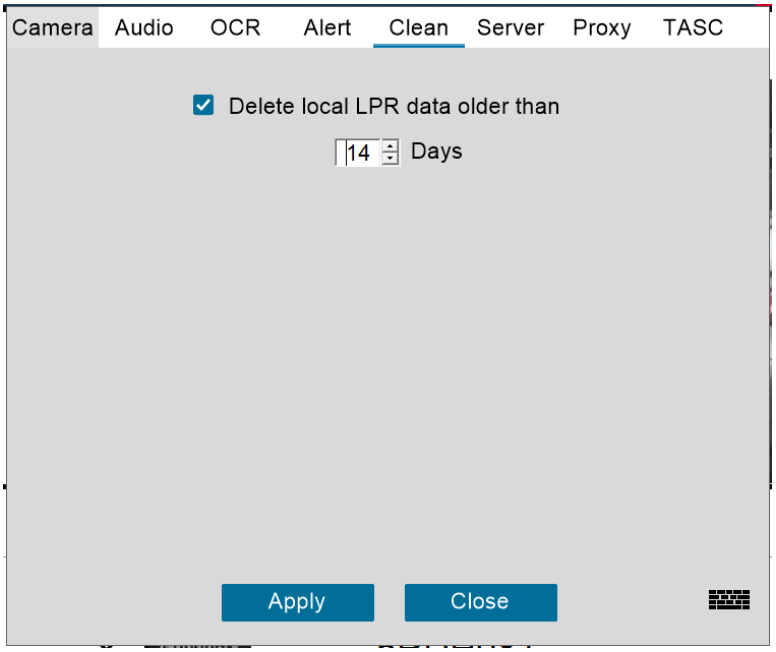
4.3.1.5

Configuring Clean Settings

Procedure:

1. Configure your database cleanup within the Mobile LPR application.
2. Indicate the cleanup cycle and click **Apply** to save your preferences.

Figure 25: Clean Settings Menu



Delete local LPR data older than [X] days

Check to enable Archive Maintenance. Specify the maximum number of days for the archive to hold. All data older than 'X' days will be deleted.

NOTE: Detection records remain in Vigilant PlateSearch after local data is deleted.

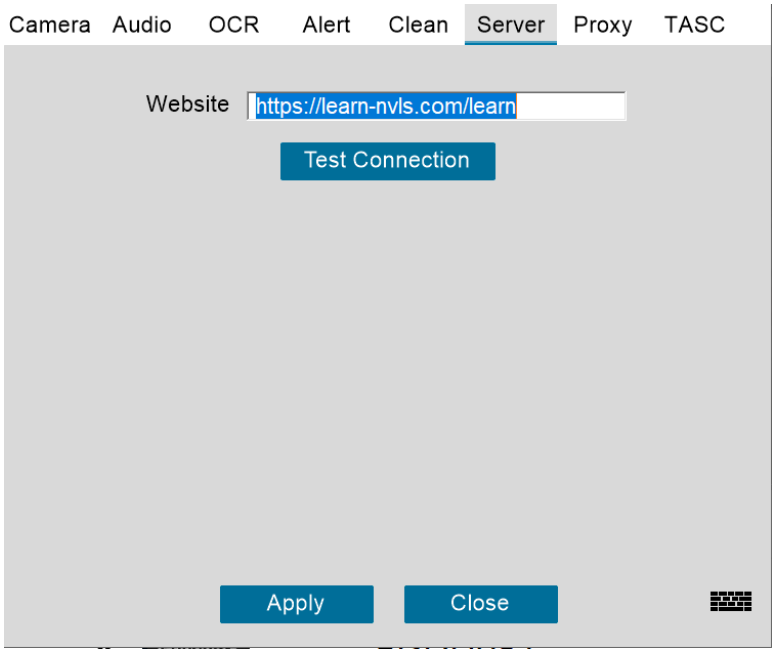
4.3.1.6

Configuring PlateSearch Server Settings

Procedure:

1. In the Website field, enter the URL of the PlateSearch server that CarDetector Mobile will communicate with and send detections to.
2. To verify that the connection to the server has been made., click **Test Connection**.

Figure 26: LEARN Settings Menu



Establishes data transfer from and to LEARN server.

4.3.1.7

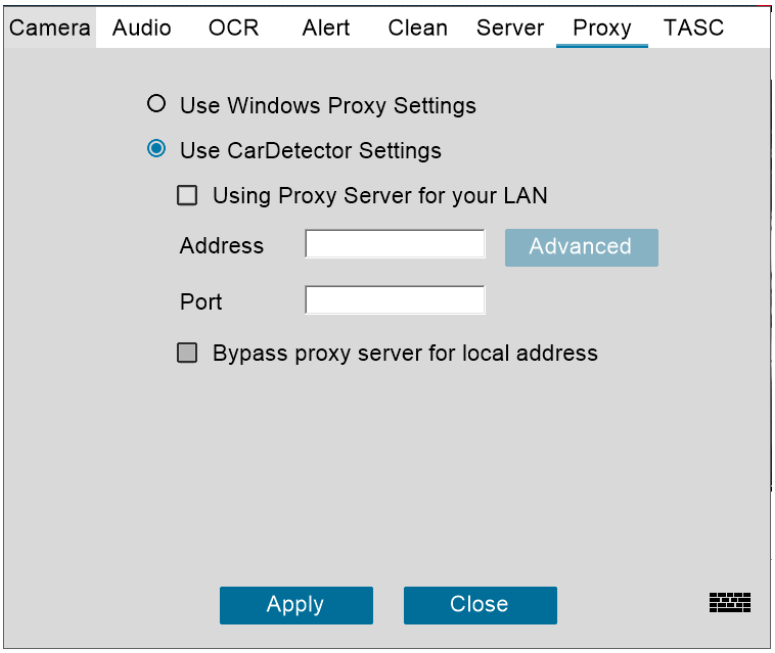
Configuring Proxy Settings

Proxy settings are only needed if the internet connection requires it.

Procedure:

1. Perform one of the following actions:
   - To use a proxy server previously set in Windows, select **Use Windows Proxy Settings**.
   - To manually set a proxy server, select **Use CarDetector Settings**.
2. To set the address and port of the proxy server, click **Using Proxy Server for your LAN**.

Figure 27: Proxy Settings Menu



NOTE: Contact your local IT Department if you are having problems connecting to the internet.

4.3.2
Locations

Viewing and editing locations requires that Parking permissions to be enabled for the PlateSearch user currently logged into the CarDetector Mobile application.

4.3.2.1
Viewing Locations

This feature allows CarDetector Mobile operators to select and view defined locations that the system is currently operating in for Parking enforcement features.

Procedure:

1. Click the **Locations** button.
2. Select one of the following tabs:
   - Geo-Zone
   - Manual Zone
   - Linked Zone

   NOTE: No-Zone locations will automatically sort based on your GPS and the address that you set up when creating this location.
3. Clicking on the location will show a thumbnail image of the geo-location for this location.

Figure 28: Manual Zone Location

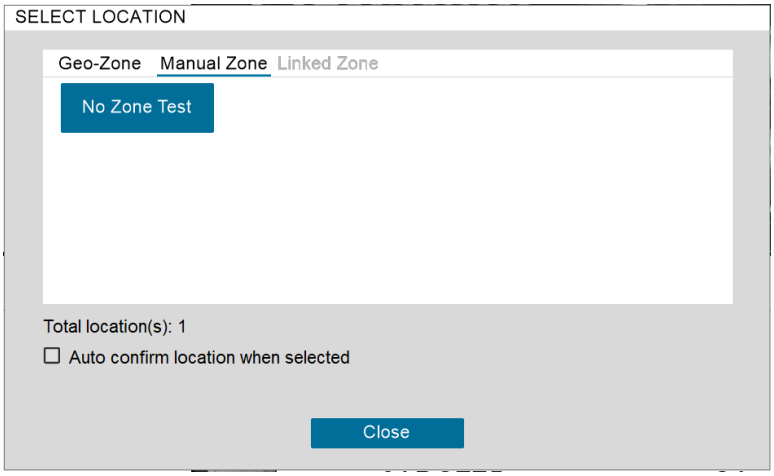


Figure 29: Geo-Zone Location

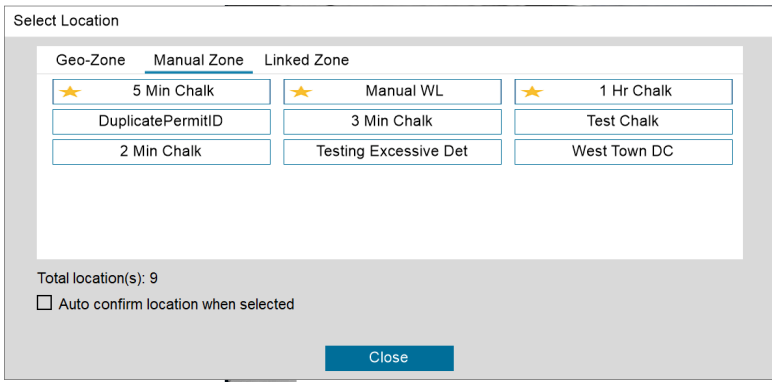
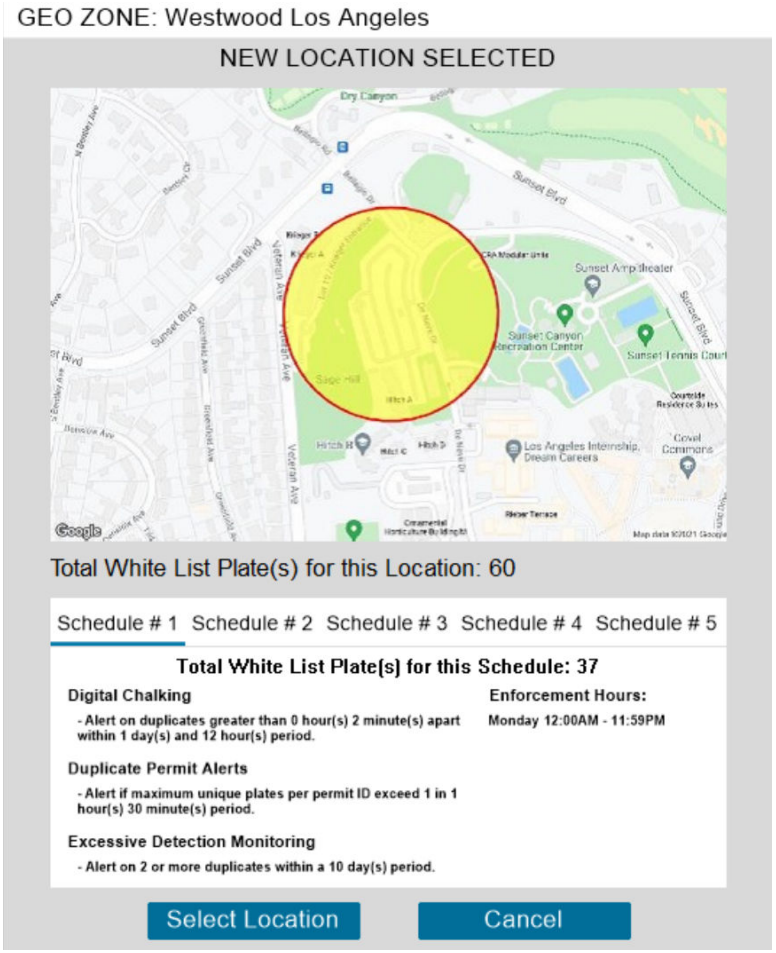


Figure 30: New Location Selected

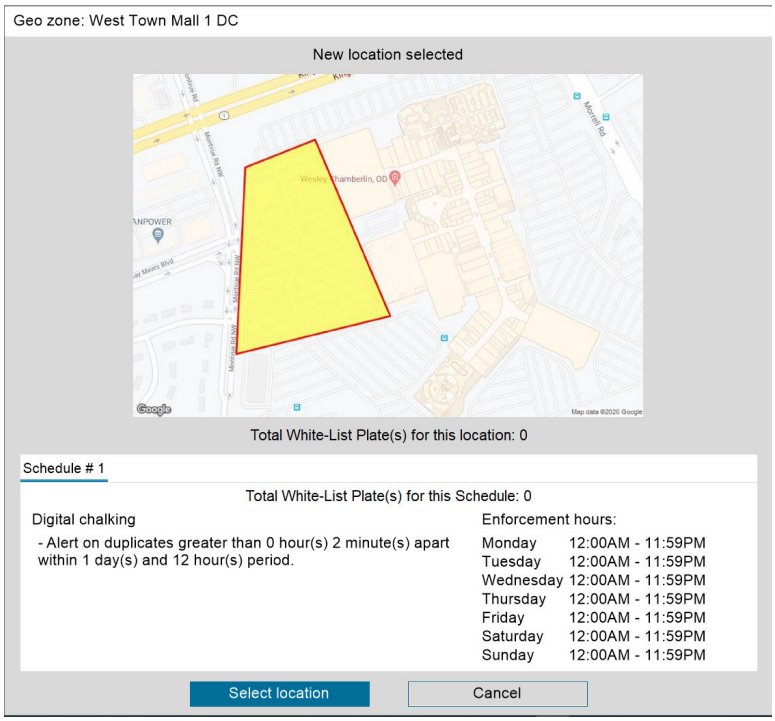


4.3.2.2
Viewing New Locations

Procedure:

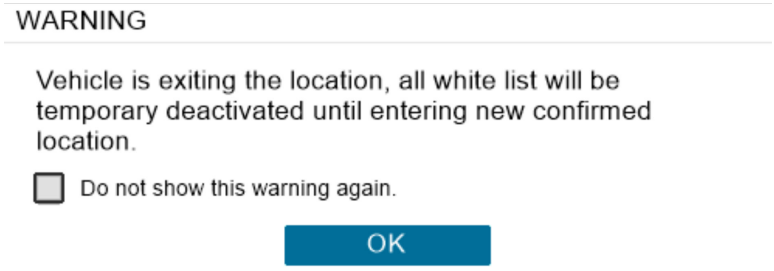
1 When CarDetector Mobile detects that your GPS has entered a location from your location list, an alert will pop up.

Figure 31: New Location Alert



NOTE: A warning message pops up when system exits a location.

Figure 32: Location Exit Warning Message (exiting location warning)

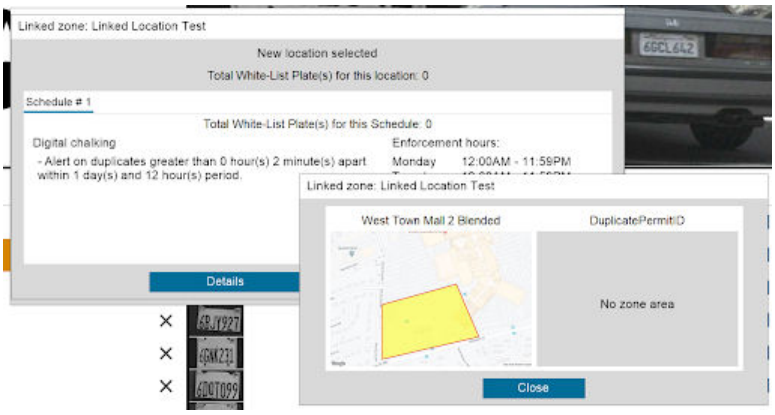


4.3.2.3
Linked Zone

The Linked Zone tab allows you to link multiple existing locations to share common digital chalking rules without losing the individual existing rules of the location.

Each location can maintain separate lists of permitted vehicles (whitelist) while sharing a digital chalking rule.

Figure 33: Linked Locations



NOTE: For example, three locations have separate lists of permitted vehicles (whitelists) but all three locations follow the same digital chalking rule that allows a maximum of 2 hours of parking. Each location can be created with its own whitelist, and then be configured to share the two-hour limit rule.

4.3.2.3.1
Viewing Linked Zone

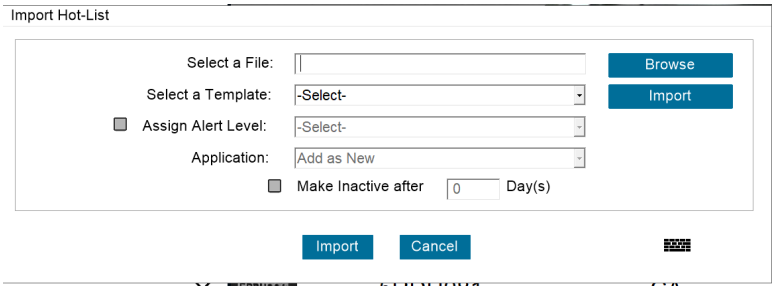
Procedure:

1. To view linked locations, click the **Linked Zone** tab .
2. To view the detailed linked locations for this zone, click **Details**.

4.3.3
Import Hot List

The Import Hot List Window allows local Hot Lists to be manually loaded into CarDetector Mobile..

Figure 34: Import Hot List Window



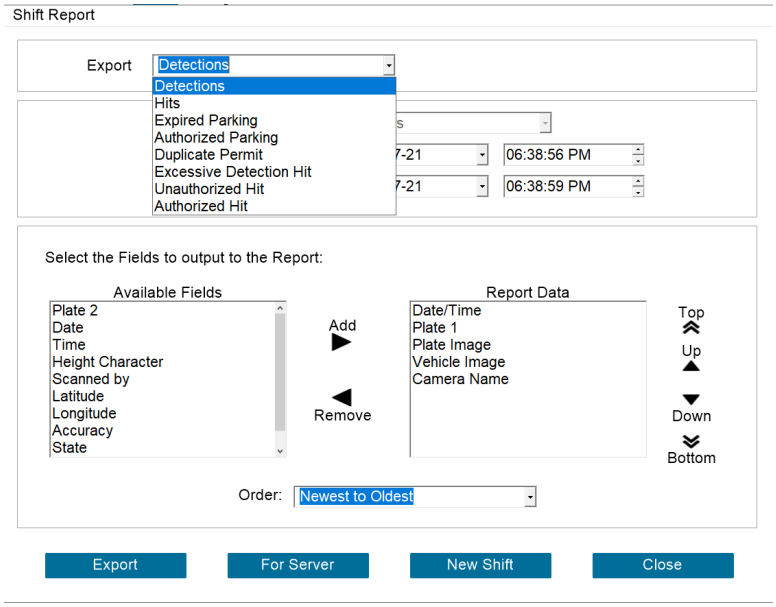
The Import Hot-List Window is where you would upload your BHL file from LEARN if you are doing a Make Base Hot List to load your hot list. Please contact your Agency Manager for more information on Make Base Hot Lists.

4.3.4
Start or End Shift

Use the End Shift report window to bookmark a detection period to create reports or export data for review.

NOTE: License plate data collection is independent of the Start/End shift function.

Figure 35: Start Shift Window



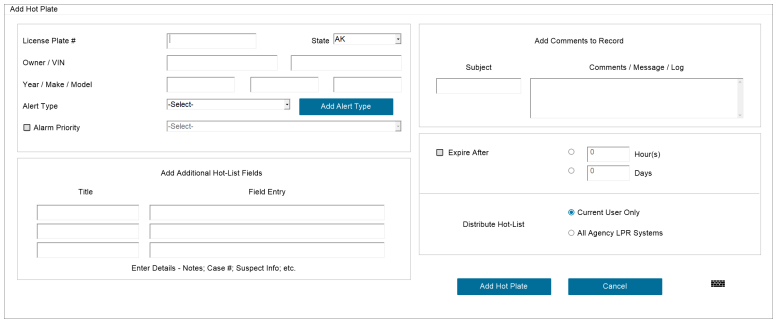
The **Export** button provides the ability to export detections and hits for uploading to Vigilant PlateSearch. This is useful when a system is unable to have continuous connection to Vigilant PlateSearch.

4.3.5
Add Hot Plate

Use the Add Hot Plate window to manually add a single license plate to the local hot list.

NOTE: Right-click on a license plate in the main CarDetector Mobile window and select Add to Hot-List to add a plate directly from the detection list.

Figure 36: Add Plate Window



4.3.6
Search

The Search feature can be used to perform local license plate searches among local detections, hot lists, hits, and other sources for this CarDetector Mobile system.

Figure 37: Search Window

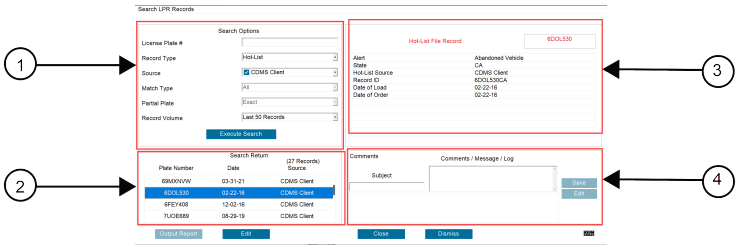


Table 14: Search Record Window Description

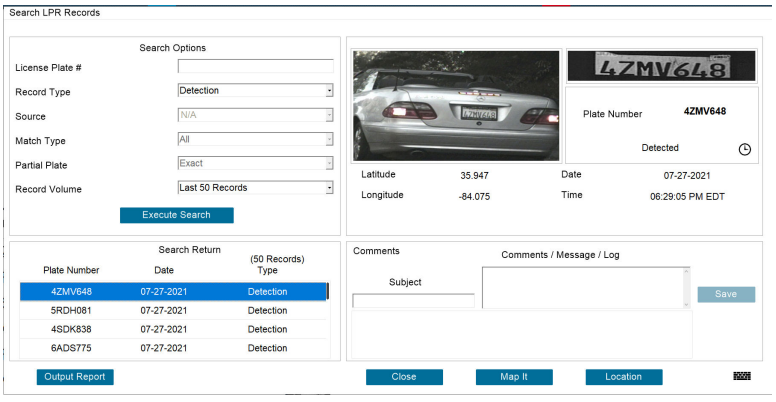
Number	Description
1	Select search options
2	Search Results
3	Hot List record detail
4	Add and view hot list record comments

4.3.6.1
Searching for Detections

Procedure:

1. Use the **Record Type** drop-down menu to select **Detection** and click **Execute Search**.
2. From the search results, select any record to view its details.
3. Click **Location** to view the nearest address and Location information for the detection record.

Figure 38: Detections Window

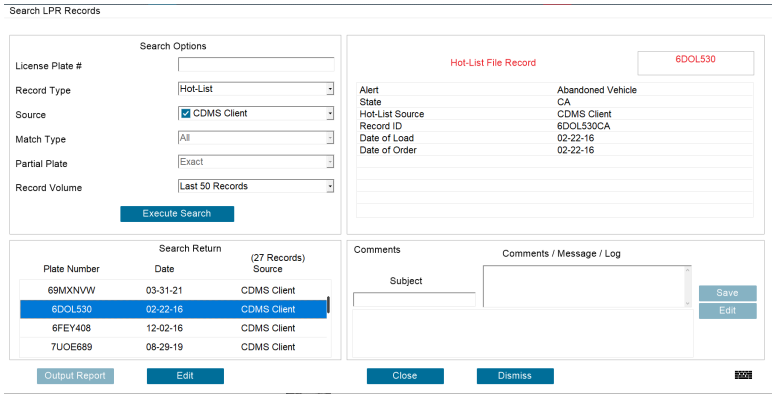


4.3.6.2
Searching for Hot List Records

Procedure:

Use the **Record Type** drop-down menu to to select **Hot-List** and click **Execute Search**.

Figure 39: Hot List Record Window

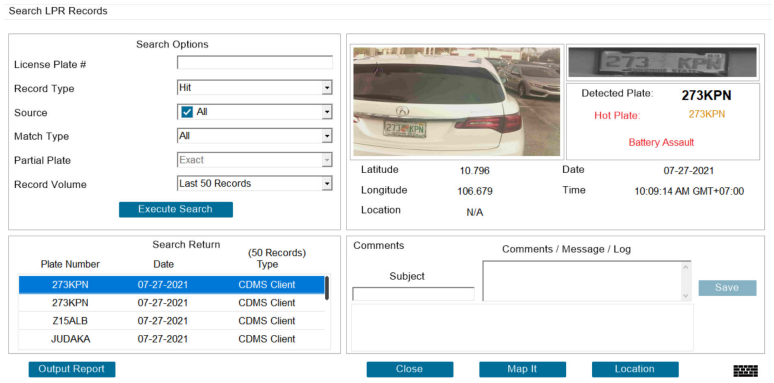


4.3.6.3
Searching for Hits Window

Procedure:

Use the **Record Type** drop-down menu to select **Hit** and click **Execute Search**.

Figure 40: Hits Window

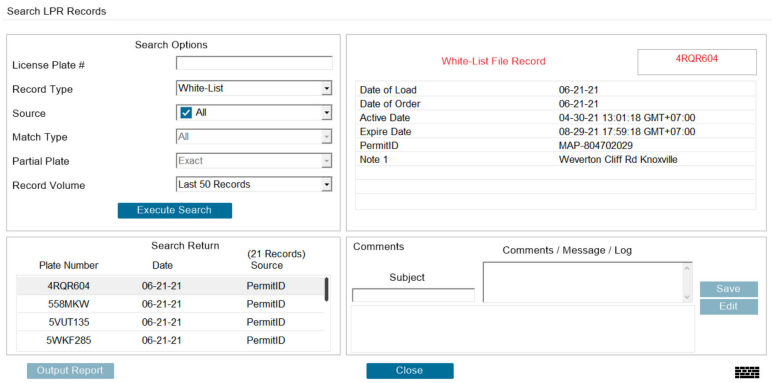


4.3.6.4
Searching for White List Records

Procedure:

1 Select the **Record Type** to **White list** and click **Execute Search**.

Figure 41: White List Record



NOTE: You will only be able to search the white list associated with the location you are currently in.

4.3.6.5

Searching for Digital Chalking (Parking) Records

Procedure:

Select a Parking **Record Type** to view Parking related detections.

Figure 42: Expired Parking

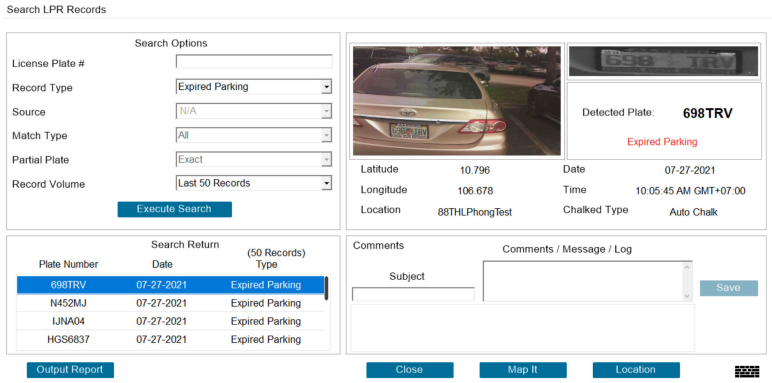


Figure 43: Unauthorized Hits

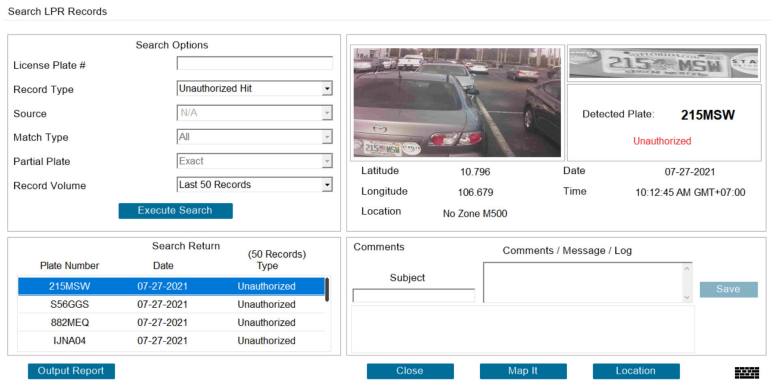


Figure 44: Excessive Detection

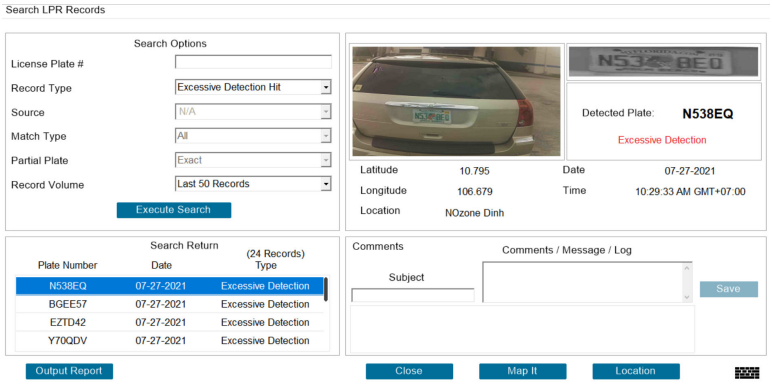


Figure 45: Duplicate Permit

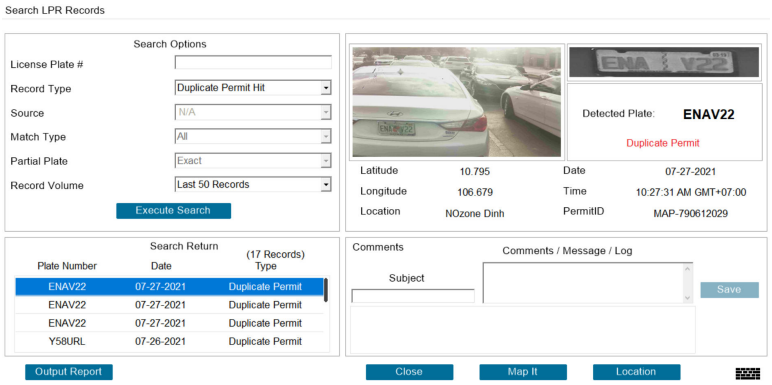


Table 15: Search Records Type

Search Records	Description
Authorized Hit	This vehicle is authorized to be in the Parking Location at the time of detection
Unauthorized Hit	This vehicle is not authorized to be in the Parking Location at the time of detection
Chalked Plate	This vehicle is marked to be watched for movement within the Parking Location
Expired Parking	This vehicle's allotted parking permit time has elapsed and it is a candidate for citation
Excessive Detection Hit	This vehicle has been scanned in this location more times than has been allotted in the specified timeframe
Duplicate Permit Hit	More vehicles using the same permit ID have been scanned in this Location than allowed

4.3.7

Adjusting Day or Night Mode

Procedure:

To toggle between Day Mode and Night Mode, click **Switch to Night Mode** or **Switch to Day Mode** in the Control Menu.

Figure 46: Day Mode

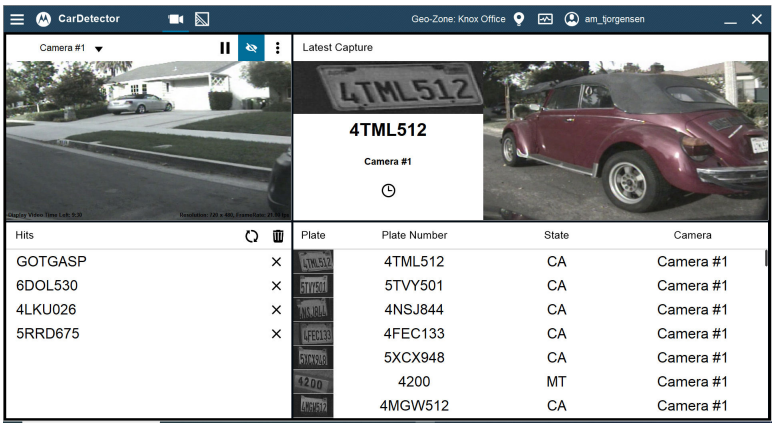
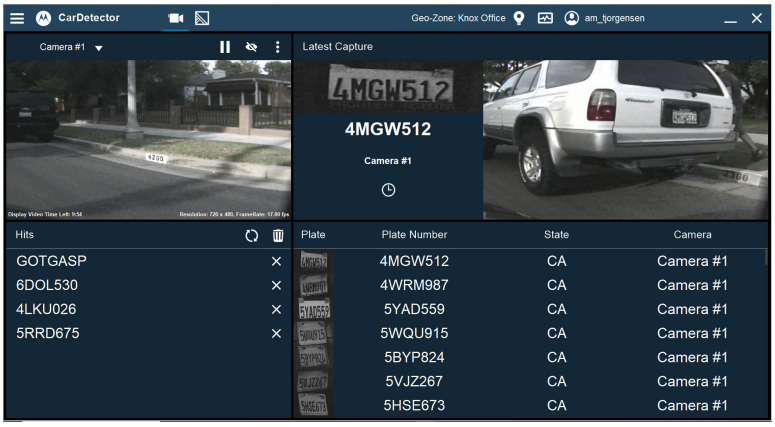


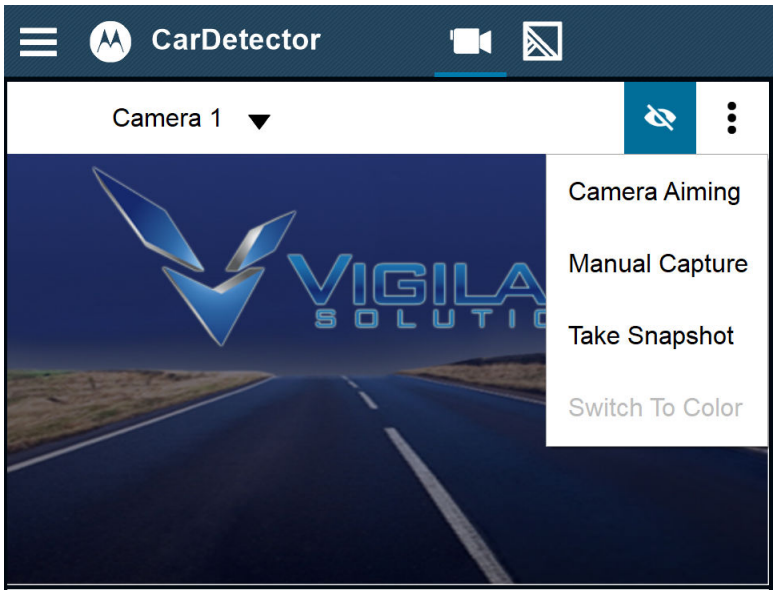
Figure 47: Night Mode



4.3.8
Camera Navigation

The Camera Navigation menu shows options for using and configuring the camera feeds of the system.

Figure 48: Camera Navigation Window



WARNING: Live video rendering should only be used while aiming cameras. This helps to preserve computer resources.

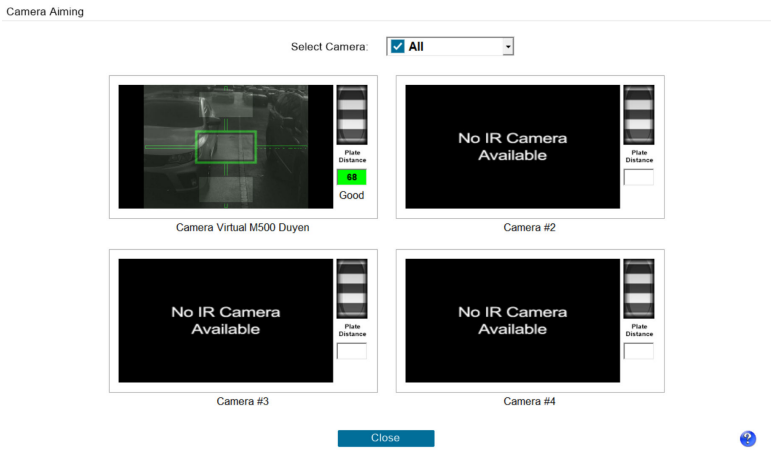
4.3.8.1
Using the Camera Aiming Tool

All cameras will render simultaneously and allow the user to correctly aim each camera.

Procedure:

1. From the **Camera Navigation Menu** click the **Camera Aiming** list item.
2. Select the camera to aim from the **Select Camera** drop-down menu.

   Figure 49: Camera Aiming Tool

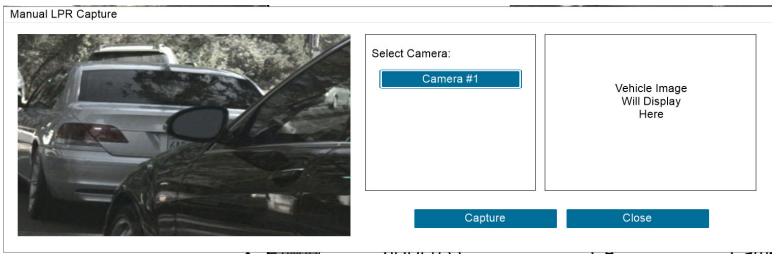


4.3.8.2
Using Manual Capture Tool

Procedure:

1 From the **Camera Navigation Menu** , click the **Manual Capture** list item.

Figure 50: Manual Capture Tool



2 Select a camera.

3 When the desired license plate or vehicle is in the frame, click the **Capture** button.

4.3.8.3
Using Snap Shot Tool

Procedure:

From the **Camera Navigation Menu**, click the **Snap Shot** list item.

Take a snap shot of live IR or color video.

Figure 51: Snap Shot Tool

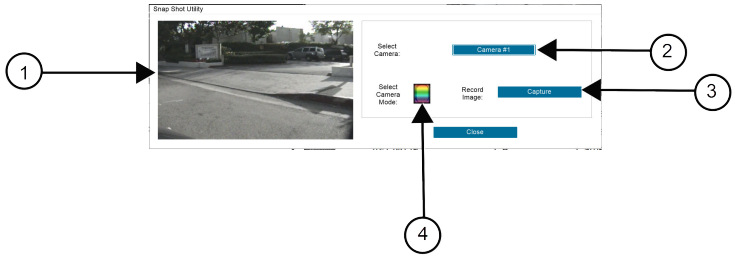


Table 16: Snap Shot Window Description

Number	Description
1	Target image
2	Select camera
3	Select view
4	Capture

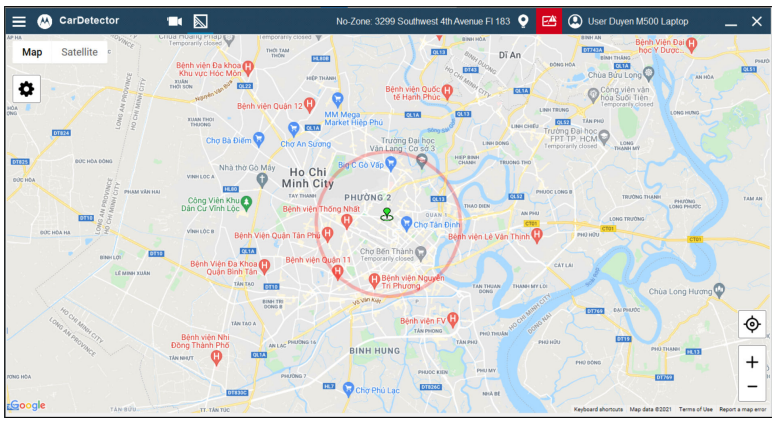
4.3.8.4
Using Mobile Hit Hunter

Procedure:

1 From the **Camera Navigation Menu**, click the **Mobile Hit Hunter** icon.

2 Click on the **Tick Mark** on the map to get info on the hit.

Figure 52: Mobile Hit Hunter Window

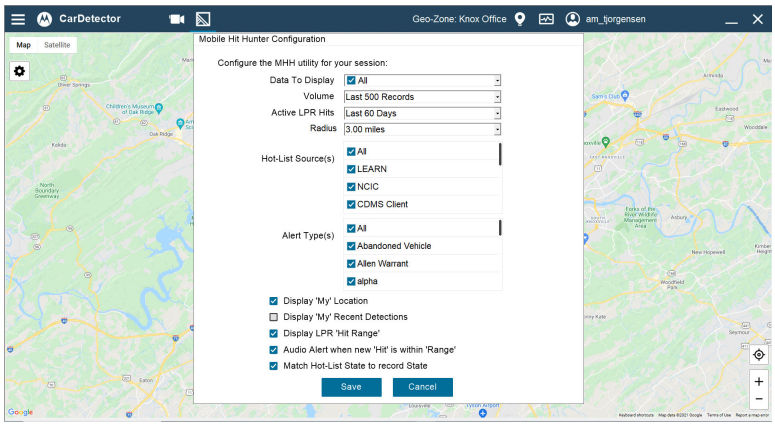


The color of the Tick Marks on the map denote the position of different vehicles:

- Green: the position of the user
- Blue: the position of detected license plates
- Red: the position of the hit license plate

3 To configure what information is displayed on the Mobile Hit Hunter map, click the **Configure** button.

Figure 53: Mobile Hit Hunter Configuration Window



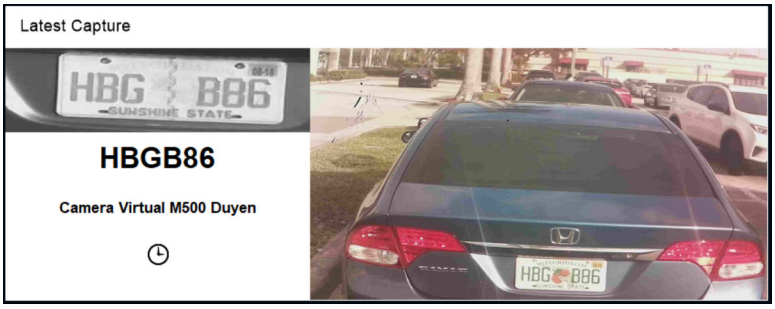
4.3.9
Detection View

The Detection View pane on the main CarDetector Mobile screen allows you to view various information about detections the system has made.

4.3.9.1
LIVE View

LIVE viewing provides an IR image of the license plate and also the color overview of the vehicle. Verification can be made when the plate number matches the OCR results.

Figure 54: Detection View



4.3.9.2

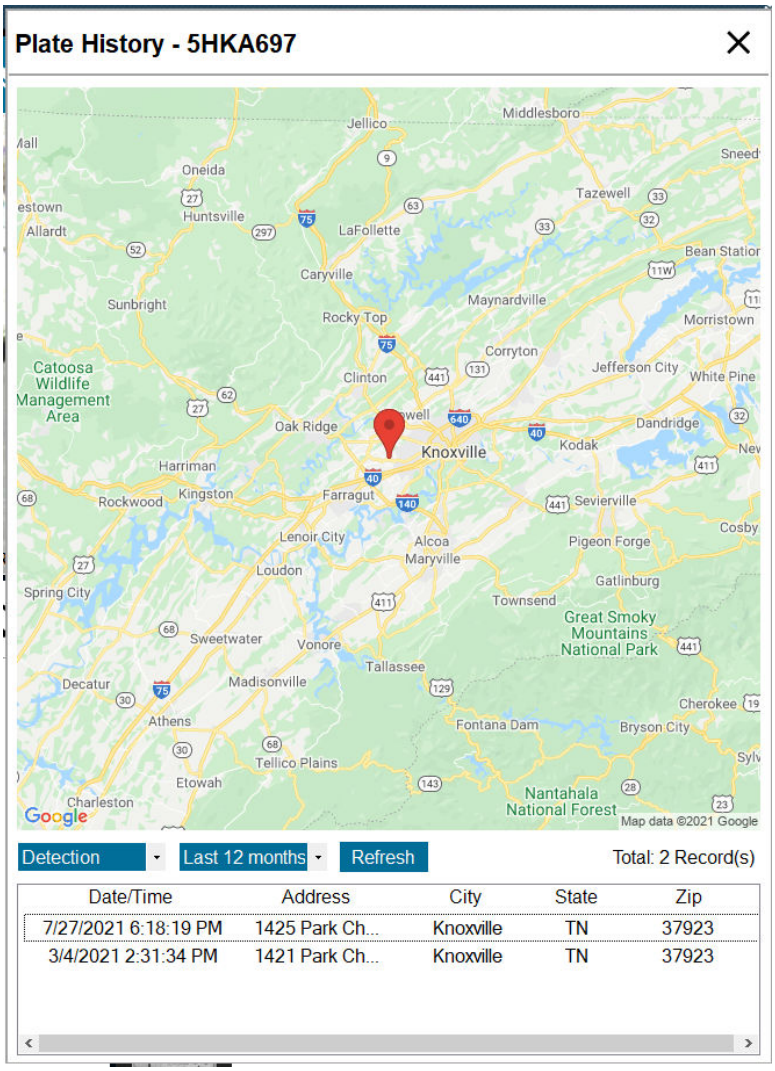
Plate History View

Plate History view allows you to perform the following actions:

- Choose hits or detections.
- Shows history of the plate.
- Search by a specified time frame.
- Show the date, time, address, city, state, and zip of locations (if available).

NOTE: The pin marks on map show a quick-view of detections.

Figure 55: Plate History View



4.3.9.3

Detection List View

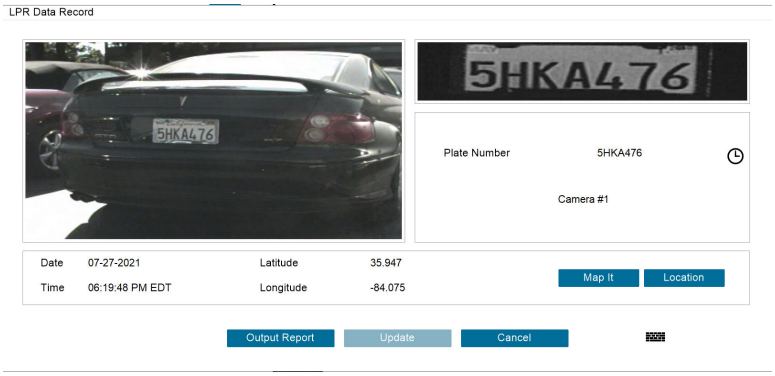
On the main screen of CarDetector Mobile, the Detection List includes vehicle images, OCR results, GPS data, Date/Time stamp, and camera data.

Figure 56: LPR Record Data Window

Plate	Plate Number	State	Camera
	4TML512	CA	Camera #1
	5TVY501	CA	Camera #1
	4NSJ844	CA	Camera #1
	4FEC133	CA	Camera #1
	5XCX948	CA	Camera #1
	4200	MT	Camera #1
	4MGW512	CA	Camera #1

Double-click on any record to see all relevant information.

Figure 57: Detection Relevant Information



Manually chalk a plate or add plate to hot list by right-clicking on a detection.

Figure 58: Detection Window - Manual Add

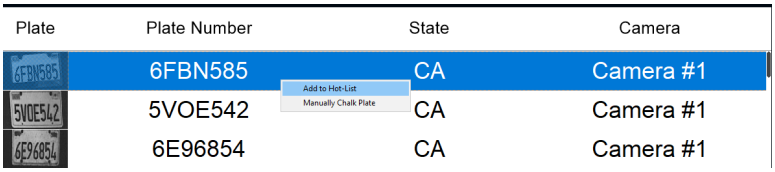
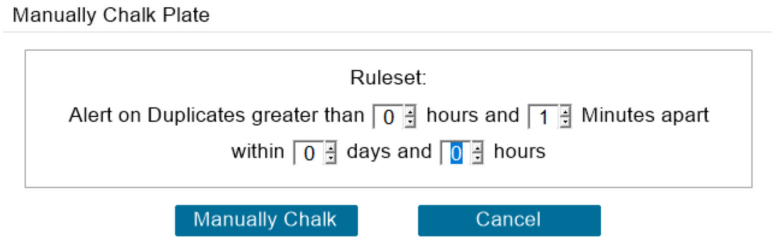


Figure 59: Detection Window - Manually Chalk Plate



4.3.9.4
Viewing Hit List

This section shows the different information and options in the Hit List table on the main screen of the CarDetector Mobile application.

Figure 60: Hit List Window

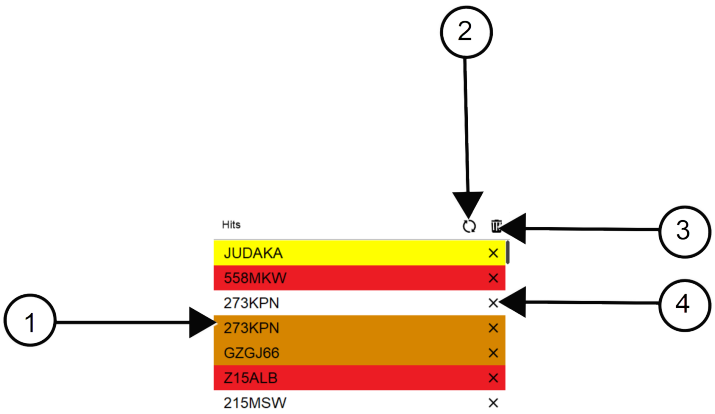


Table 17: Hit List Window Description

Number	Description
1	License plate hit list
2	Refresh the hit list
3	Remove all plates from the hit list
4	Click to remove this hit from the list

NOTE: Alarmed plates are also stored in Vigilant PlateSearch.

4.3.10 LIVE View Alert Pop-Ups

4.3.10.1 Hot List Hit Alerts

This feature allows you to:

- View the type of Match IR image.
- View the Hot list plate and state.
- View the camera that scanned the plate.

Figure 61: HIT View LIVE Window

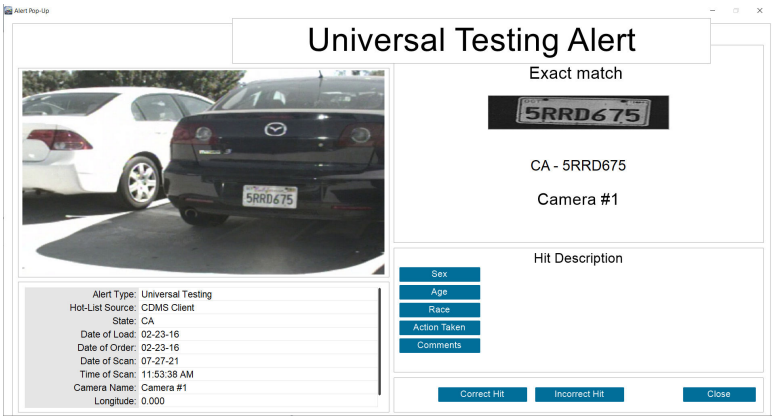


Table 18: Alarm Priority Colors

Colors	Description
Red	High
Orange	Medium
Yellow	Low
White	None

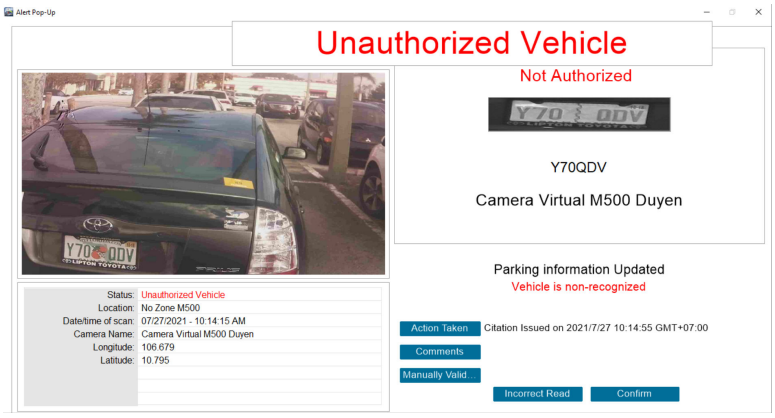
4.3.10.2

Unauthorized Vehicle Hit Alerts

This feature allows you to:

- View the details of the unauthorized vehicle
- View the IR image.
- View how the OCR read the plate.
- View the camera that scanned the plate.

Figure 62: Unauthorized Vehicle Hit View Window

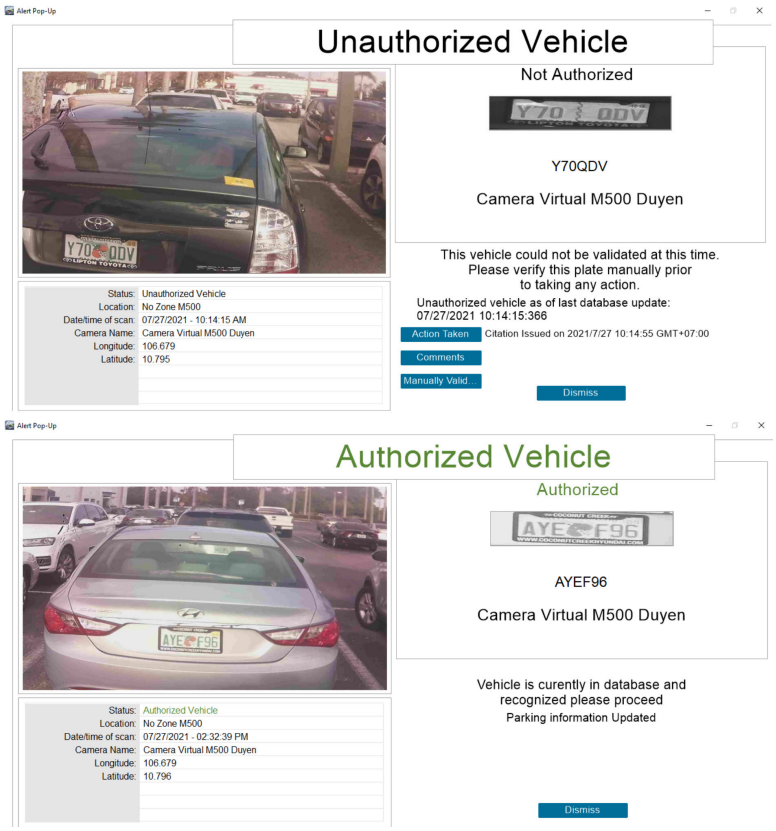


4.3.10.3
LIVE View for Additional White List Hit Views

Alert (Unauthorized Vehicle)
Unable to validate due to no connection to Vigilant PlateSearch.

Alert (Authorized Vehicle)
Plate recognized as valid.

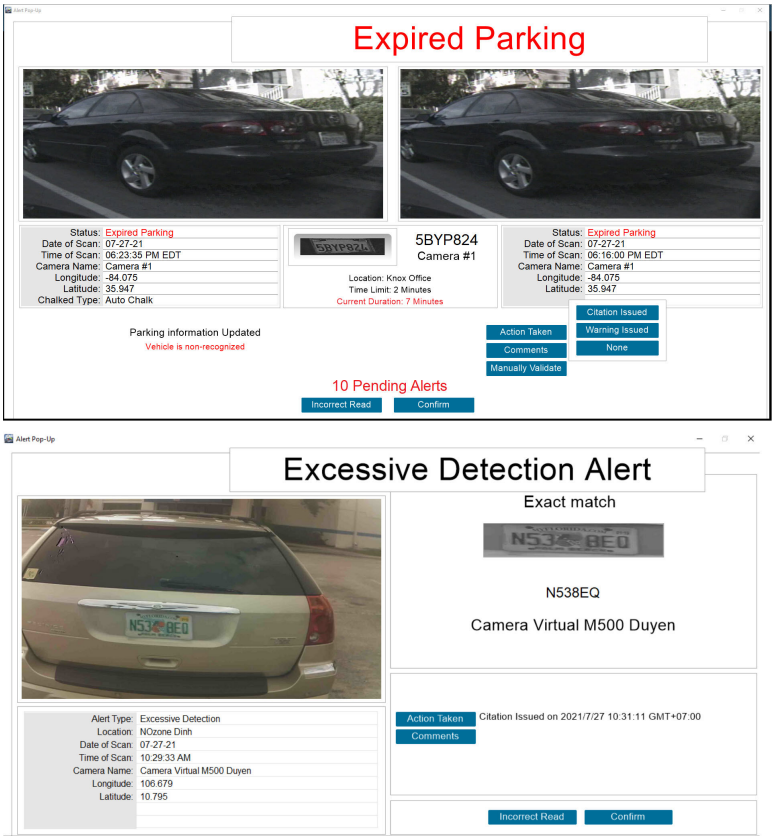
Figure 63: White List Hit View Window



4.3.10.4
LIVE View for Digital Chalking Hit Views

This section explains the different data for a Digital Chalking hit within the CarDetector Mobile application.

Figure 64: Digital Chalking Hit View Window

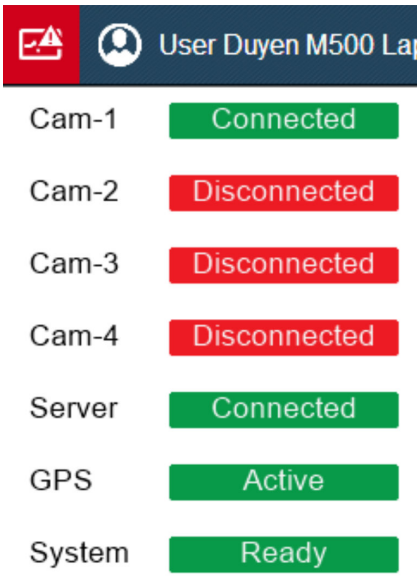


4.4

Status Lights Overview

This section describes the states of camera, Vigilant PlateSearch connection, GPS, and system status lights.

Figure 65: Status Lights



Status Descriptions:

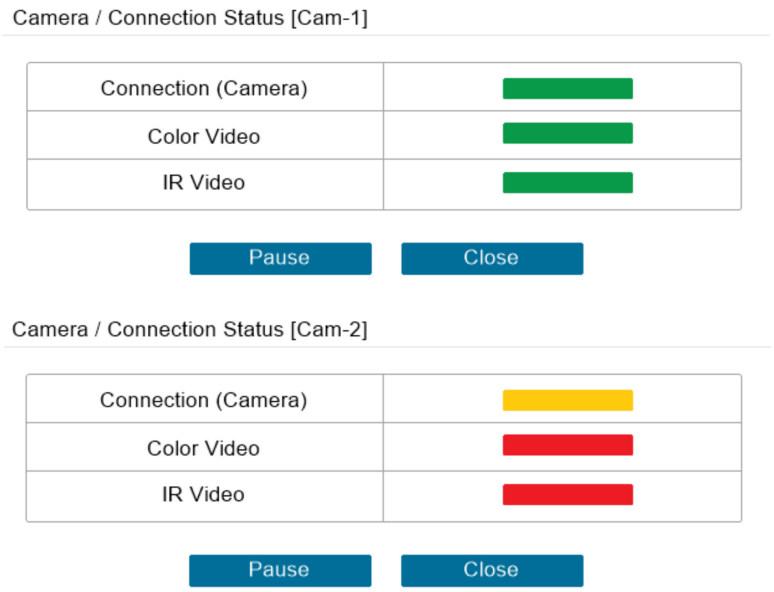
Green
Status OK

Red
Error Condition Exists

4.4.1
Camera Status Lights

This section explains the different data under the Camera Status Lights within the CarDetector Mobile application.

Figure 66: Camera/Connection Status Window



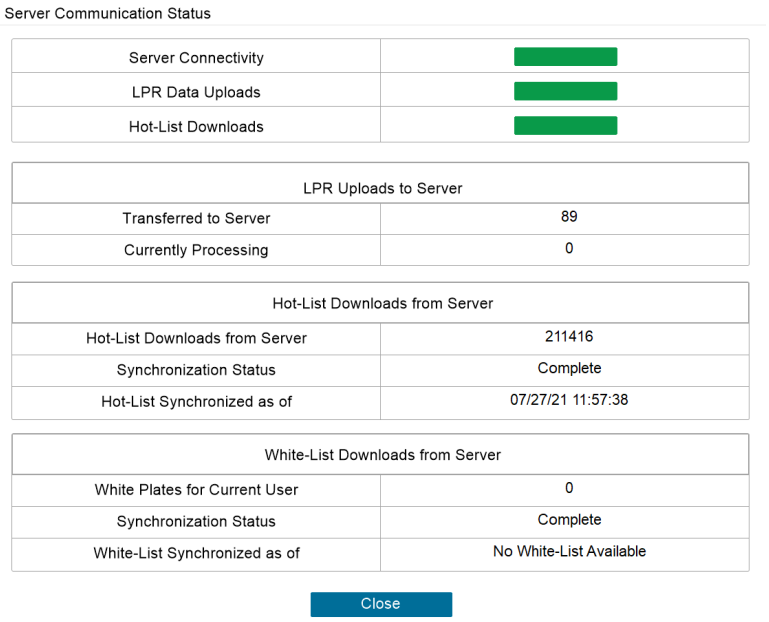
4.4.2
Vigilant Server Status Lights

Green Indicator Lights
Good Server Connection.

Red Indicator Lights
No Connection.

- No detections sent to Vigilant Server.
- No hot list sent from Vigilant Server to vehicles.

Figure 67: Communication Status Window

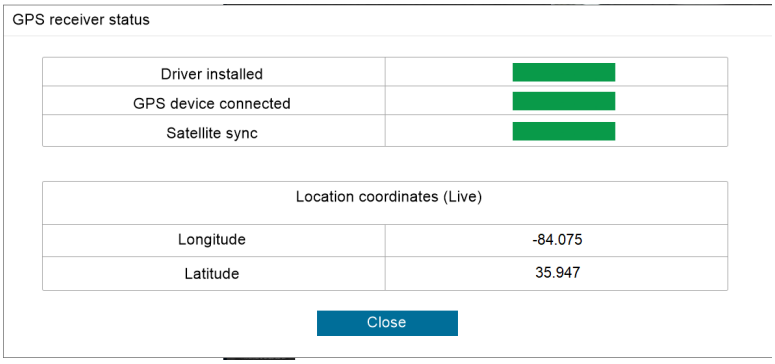


NOTE: You are only able to see white list Plate Count while you are in a valid location.

4.4.3
GPS Status Lights

This section explains the different data under the GPS status light within the CarDetector Mobile application.

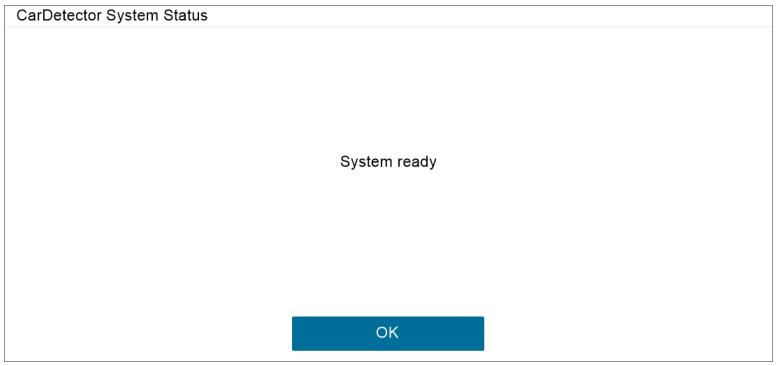
Figure 68: GPS Receiver Status Window



4.4.4
System Status Lights

System Startup Process functions to check system hardware and software components. If system light is red, LPR system cannot function. When the system is ready and the system light is green, the system status page will display `System ready`.

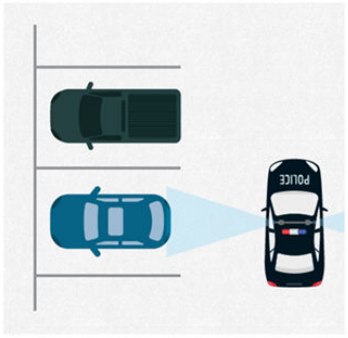
Figure 69: CarDetector Status Window



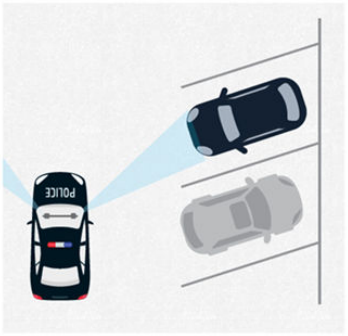
Chapter 5

Mobile Camera Aiming Quick Reference

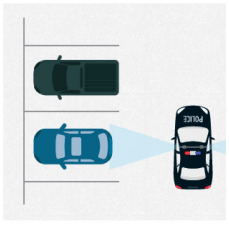
Mobile Camera	Suitable Usage
ReaperHD/L5M 6 mm	Short Parking
ReaperHD/L5M 8 mm	Long Parking
ReaperHD/L5M 12 mm	Short Traffic
ReaperHD/L5M 16 mm	Traffic



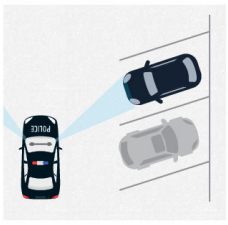
Perpendicular Parked



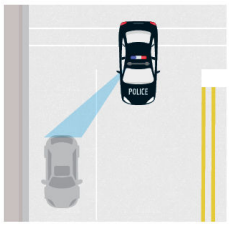
Angle Parked



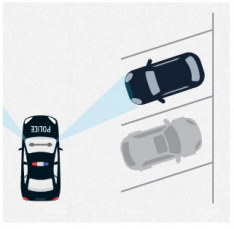
Perpendicular Parked



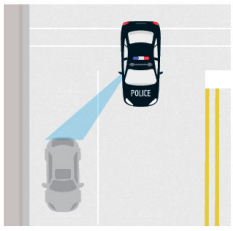
Angle Parked



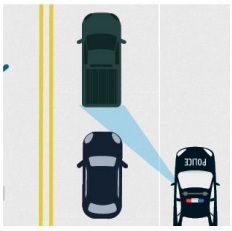
Parallel Parked



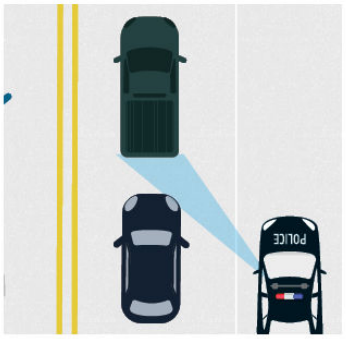
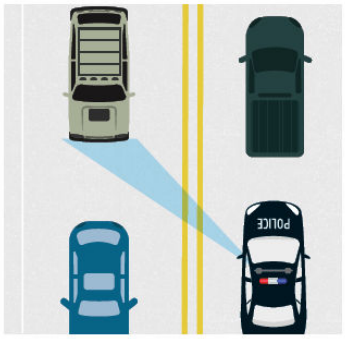
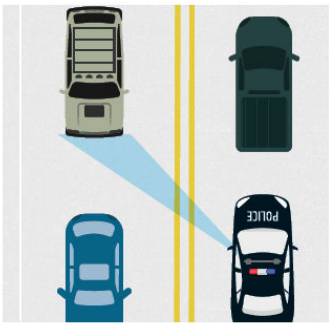
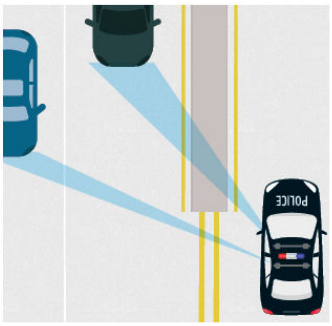
Angle Parked



Parallel Parked



In Traffic Adjacent Lane

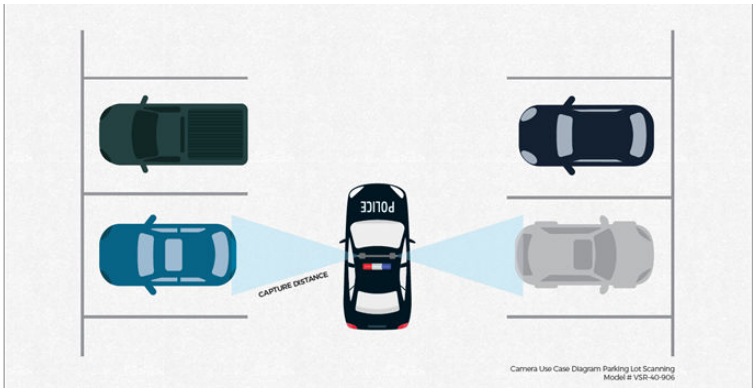
Mobile Camera	Suitable Usage
	 In Traffic Adjacent Lane  In Traffic Adjacent Lane Reversed
ReaperHD/L5M 25 mm	Long Traffic  In Traffic Adjacent Lane Reversed  In Traffic Far Lane

5.1

Square Parked Car Scanning

This configuration is suitable for a short parking whether a perpendicular or angle parked cars. It is used for square parked cars such as in parking lots, shopping malls, and retail outlets.

Figure 70: Perpendicular Parked Cars Capture Distance



Camera model: L5M 6 mm (VSR-60-906)

- Capture distance range: 4–20 ft.
- Optimal capture distance: 9 ft (character height (45–50 px.)

Camera model: RHD 6 mm (VSR-40-906)

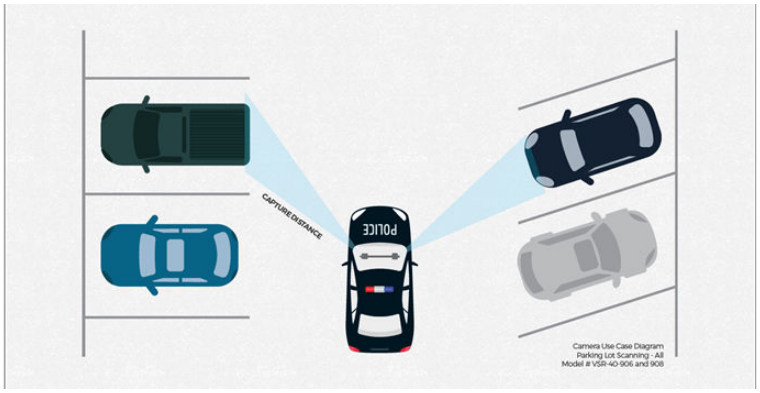
- Capture distance range: 6–24 ft.
- Optimal capture distance: 12 ft (character height 45–50 px.)

NOTE: Capture distances based on plate characters 69 mm tall.

5.2
Angle Parked Car Scanning

This configuration is suitable for a long parking whether a perpendicular, angle or parallel parked cars. It is used for angled or square parked cars such as in parking lots, shopping malls, and retail outlets.

Figure 71: Angle Parked Cars Capture Distance



Camera model: L5M 6 mm (VSR-60-906) and L5M 8 mm (VSR-60-908)

- Capture distance range: 4–20 ft and 6–27 ft.
- Optimal capture distance: 9 ft and 14 ft (character height 45–50 px.)

Camera model: RHD 6 mm (VSR-40-906) and RHD 8 mm (VSR-40-908)

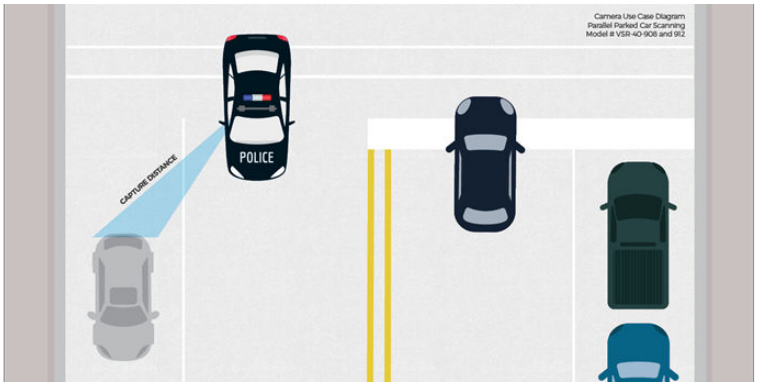
- Capture distance range: 6–24 ft and 8–36 ft.
- Optimal capture distance: 12 ft and 16 ft (character height 45–50 px.)

NOTE: Capture distances based on plate characters 69 mm tall.

5.3
Curb Parked Car Scanning

This configuration is suitable for a short in traffic adjacent lane. It is also suitable for angle and parallel parked cards. It is used for parallel parked cars such as on roadsides and main street shopping areas.

Figure 72: Curb Parked Cars Capture Distance



Camera model: L5M 8 mm (VSR-60-908) and L5M 12 mm (VSR-60-912)

- Capture distance range: 6–27 ft and 10–35 ft.
- Optimal capture distance: 14 ft. and 22 ft. (character height 45–50 px.

Camera model: RHD 8 mm (VSR-40-908) and RHD 12 mm (VSR-40-912)

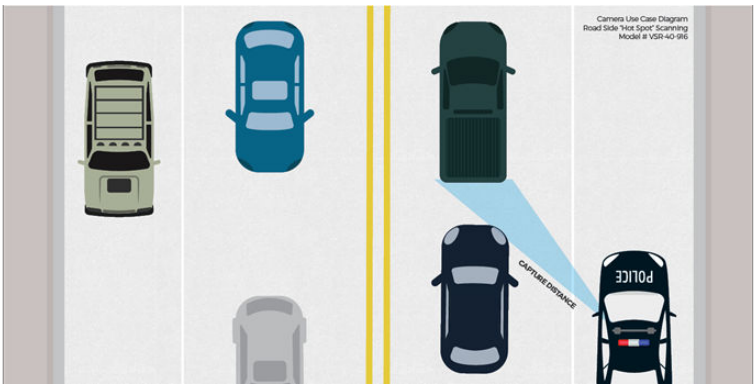
- Capture distance range: 8–36 ft. and 13–48 ft.
- Optimal capture distance: 16 ft. and 24 ft. (character height 45–50 px.)

NOTE: Capture distances based on plate characters 69 mm tall.

5.4
Curb Scanning–Radar Style

This configuration is suitable for a short in traffic adjacent lane or adjacent lane reversed. It is used for roadside scanning of moving traffic on rural or urban roads.

Figure 73: In Traffic Adjacent Lane Capture Distance



Camera model: L5M 16 mm (VSR-60-916)

- Capture distance range: 22–55 ft.
- Optimal capture distance: 40 ft (character height 45–50 px.)

Camera model: RHD 16 mm (VSR-40-916)

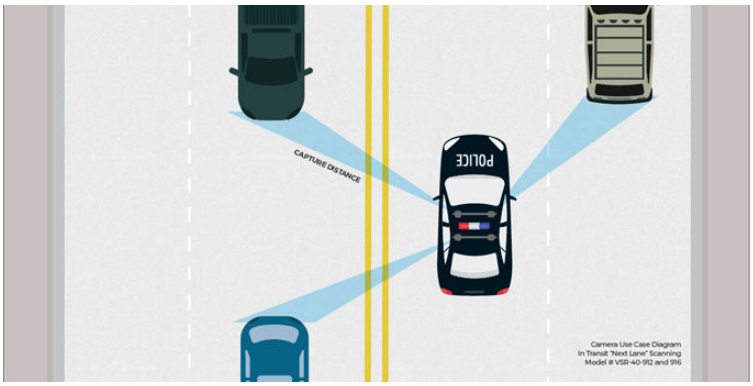
- Capture distance range: 20–55 ft.
- Optimal capture distance: 34 ft (character height 45–50 px.)

NOTE: Capture distances based on plate characters 69 mm tall.

5.5 Monitoring Undivided Highways

This configuration is suitable for a short in traffic adjacent lane or adjacent lane reversed. It is used for roadside scanning of moving traffic on rural or urban roads.

Figure 74: In Traffic Adjacent Lane and Lane Reversed Capture Distance



Camera model: L5M 12 mm (VSR-60-912) and L5M 16 mm (VSR-60-916)

- Capture distance range: 10–35 ft. and 22–55 ft.
- Optimal capture distance: 22 ft and 40 ft (character height 45–50 px.)

Camera model: RHD 12 mm (VSR-40-912) and RHD 16 mm (VSR-40-916)

- Capture distance range: 13–48 ft and 20–55 ft.
- Optimal capture distance: 24 ft and 34 ft (character height 45–50 px.)

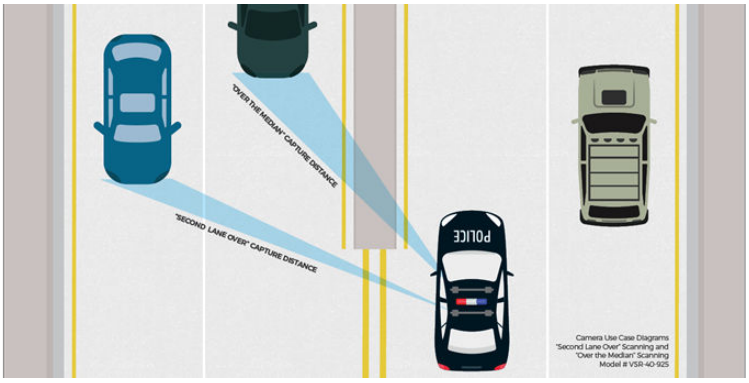
NOTE: Capture distances based on plate characters 69 mm tall.

5.6

Monitoring Divided Highways

This configuration is suitable for a long in traffic adjacent lane reversed or in traffic far lane. It is used for monitoring divided roads, highways, and multi-lane freeways over the median and for passing vehicles.

Figure 75: “Over The Median” and "Second Lane Over" Capture Distance



Camera model: L5M 25 mm (VSR-60-925)

- Capture distance range: 55–85 ft.
- Optimal capture distance: 70 ft (character height 45–50 px.)

Camera model: RHD 25 mm (VSR-40-925)

- Capture distance range: 55–80 ft.
- Optimal capture distance: 75 ft (character height 45–50 px.)

NOTE: Capture distances based on plate characters 69 mm tall.