



# **User's Manual**

2-/4-Channel Cam Viewer E-series for Automatic License Plate Recognition ► CV7-LP



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#### Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- 1. Reorient or relocate the receiving antenna.
- 2. Increase the separation between the equipment and receiver.
- 3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- 4. Consult the dealer or an experienced radio technician for help.

#### FCC Caution

To assure continued compliance, for example, use only shielded interface cables when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

#### Federal Communication Commission (FCC) Radiation Exposure Statement

This equipment complies with FCC radiation exposure set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20 cm (8 inches) during normal operation.



#### Safety

This equipment is designed with the utmost care for the safety of those who install and use it. However, special attention must be paid to the dangers of electric shock and static electricity when working with electrical equipment. All guidelines of this and of the computer manufacture must therefore be allowed at all times to ensure the safe use of the equipment.

#### **CE Mark Warning**

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

#### WEEE Regulation



To avoid the potential effects on the environment and human health as a result of the presence of hazardous substances in electrical and electronic equipment, end users of electrical and electronic equipment should understand the meaning of the crossed-out wheeled bin symbol. Do not dispose of WEEE as unsorted municipal waste; they should be collected separately.

#### Revision

User's Manual of PLANET 2/4-Channel Cam Viewer E-series for Automatic License Plate Recognition Model: CV7-LP Rev: 1.0 (July, 2015) Part No. EM-CV7-LP



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# **Chapter 1. Product Introduction**

### 1.1 Overview

PLANET CV7-LP series (CV7-LP2 / CV7-LP4) is a video analytics software designed to detect and recognize vehicle license plates. This software is able to automatically locate and read license plates appearing in a certain area, and match this data against the database. It provides efficiency in parking and traffic control, as well as law enforcement.

With the CV7-LP, you can easily cross-check if a vehicle that is passing through the parking gate or parked in the designated space matches its parking permit. Moreover, law enforcement officiers can effortlessly identify suspicious vehicles by matching the license plate with its database.

#### Video Analysis

The CV7-LP provides analysis for live and pre-recorded videos. It is able to analyze live videos from cameras and the CV7L NVR directly or recorded raw files. In addition, it can also analyze playback videos from the CV7L NVR. Owing to this, the CV7-LP software provides more flexibility and efficiency for surveillance applications.





#### **Advanced Search and Filter**

After running the ALPR algorithm, the next logical step would be to look at what license plates have been recognized. To browse the results, users can use the Search Analysis Result function of the CV7-LP. Users are also able to use the options presented in the Analysis Result Filter area to filter by time period and plate number.

Raw File	Recognition Results						
<ul> <li>ICA-E3550V.raw</li> <li>ICA-E3550V.raw</li> </ul>	Past 6 Months +	2014-12-12 154822 🗘	- 2015-06-12 1	48.22 🗘 🗧	License Pl	ate Number Search	₽ 🧕
0612	Recognition Result	License Plate Snapshot	Confidence Level	Country	Notice Type	Time	Channel
1458	PMSBKMY	N. BASSERSON	84	68	None	1/29/2015 4:56:41 PM	C1Users/DNM/Desktop/JCA-E3550V.raw
New Analysis_1	KRODUCE	COLUMN 1	89.9	68	None	1/29/2015 4:56:54 PM	C1Users/JNMt/Desktop/JCA-E3550V.zev
New Analysis	EX07Y2E	EXTERNOL	92.1		None	1/29/2015 4/57/03 PM	Cit/sers/ENM/Desktop/JCA-E3550/.rev
Malta.raw	P107PDV	A COMPANY	76.8		None	1/29/2015 4:57:11 PM	Cilusen/DNM/Desktop/JCA-E3550V.raw
UK-RealVideo.raw	TLUBW	Page 1	75.8	68	None	1/29/2015 4:57:20 PM	C1Users/DNM/Desktop/JCA-E3550V.rev
	CLAFX	ROCTALD	69.4		None	1/29/2015 457/23 PM	C1Users/ENM/Desktop/JCA-E3550V.rev
	OSEBUXV	Last rung	90.4	88	None	1/29/2015 4:57:34 PM	C1Usen/ENM/Desktop/JCA-E350V.raw
	VC14FXB	ACCOUNT.	79.8	68	None	1/29/2015 4:57:45 PM	C1Users/DNM/Desktop/JCA-E3550V.raw
	0537,7	COMPANY.	95.9	88	None	1/29/2015 457:57 PM	C1Users/ENM/Desktog/JCA-E3550V.rev
	W0006767	and a rest	96.6	88	None	1/29/2015 45812 PM	Ciluses/ENM/Desktop/ICA-E3550/.raw
	DASEWLY	NO. COLOR	89	68	None	1/29/2015 458:23 PM	C1User/DNM/Desktop/JCA-E3550V.rev
	PNSBOMY	Parts con 1	95.5	68	None	1/29/2015 45827 PM	C1Users/ENM/Desktop/ICA-E3550V.raw
	VOBUNNW	THE OWNER	80	88	None	1/29/2015 4:58:42 PM	Cillisen/ENM/Desktop/ICA-E350V.raw
	MASRAV	PARTY NAME	95.9	88	None	1/29/2015 4:58:53 PM	C1Usen/ENM/Desktop/JCA-E3550V.rev
	WISDOR	and the second se	80.9	68	None	1/29/2015 4/59/07 PM	C1Users/ENM/Desktop/JCA-E3150V.raw
	PFORWSO	WEIRER T	953	-	None	1/29/2015 459/26 PM	CitUsers/ENM/Desktop/JCA-E3150V.rew
1	VY50KEX	Sector Sector	92.2	68	None	1/29/2015 4:59:37 PM	Cilibert/DNM Desktop/JCA-0350V rev
u		a second second		-			

### **1.2 Features**

- Concurrent analysis of up to 2 / 4 channels
- One region of interest per channel
- Searching and filtering based on time and plate number
- Convenient plate numbering searching
- Analysis for live and pre-recorded videos

### **1.3 Product Specifications**

Product	CV7-LP2	CV7-LP4		
Video				
Max. Channels	2	4		
Compression	H.264 / MPEG-4 / M-JPEG			
Camera Resolution	Up to 10 mega-pixels			
Analyzed Stream	Live view and pre-recorded video from PLANET ICA-E I camera series and CV7L NVR			
Algorithm	License plate recognition			
Max. Number of Algorithms	1 algorithm per channel			
Recognition Rate	Recognition rate will be affected by environment factors such as camera placement, vehicle speed and parameter setting.			
Recording				
Event Recording	Record video with user defined rule from live view or recording from NVR server (Cam Viewer 7 Lite / Professional)			
Pre-event Recording	1~300 seconds			
Post-event Recording	1~300 seconds			
Search & Playback				
Recording Search	Search video recordings by time, analytic rule and channel,			



	and display the result with click-to-play snapshots	
Playback Control	Pause; Stop	
Time Filter	Yes	
Plate Numbering Searching	Yes	
Video Export	Export video clips in raw format	
System		
Language	English, Traditional Chinese	
Display Resolution	Minimum 1024 x 768	

## **1.4 System Requirements**

Hardware requirements				
CPU	Intel Core i7-920 (2.67GHz) or above			
RAM	Minimum 4GB or above is recommended			
HDD	SATA 2000GB or above is recommended			
Display card	Independent display card suggested Note: Make sure your display DPI setting is set to default at 96DP. To set DPI value, right-click on desktop, choose "settings" tab >> "advanced"			
Ethernet interface	Gigabit Ethernet 1000BASE-T is recommended			
Software requirements				
os	32/64-bit: Windows 7, Windows 8 64-bit:Windows Server 2008 R2, Windows Web Server 2008 R2, Windows Server 2012 R2			



# **Chapter 2. Camera Installation**

The precision of the CV7-LP's recognition depends on many factors, including: the image quality in the video, the pixels counts shown, user applications, camera installation, etc.

Below are a few guidelines to take into consideration when installing your camera device:

1) **Shooting Angle of the Camera:** the shooting angle of the camera to the license place should range from 10° to 45°, as shown in the illustration below:

#### 2) Frame Rate in the Video Stream:

Your camera device's frame rate should be set to 25fps or 30fps or higher.

3) Shutter Speed:

The shutter speed on your camera device should be faster than or equal to 1/100 or 1/120 seconds.

4) Shape of the License Plate:

The shape of the license plate captured in your video should be as similar to a rectangle as possible.

5) Height of Characters and Distance between Characters on License Plate: When captured by your camera device, the height of the characters should be taller

than 40 pixels, and the distance between characters should be wider than 4 pixels.

6) Image Quality:

Image quality is critical for the CV7-LP's recognition function to work properly. Please make sure the exposure, sharpness, and color presentation of the image captured by your camera device is adequate.



# **Chapter 3. Software Installation**

### 3.1 Software Installation

The program installation can be simple and intuitive by following the installation wizard's instructions. The program can be used right after the installation is completed, without the need to restart the computer.

To install the software, follow the steps below:

- 1. Find the CV7-LP compressed file that you downloaded and extract it.
- 2. Execute the install shield application 🐸 .
- 3. If prompted by the InstallShield Wizard to install Microsoft Visual C++ 2012 Redistributable Package, follow the on-screen instructions to do so, as it is crucial for the proper functioning of the program.

👷 Microsoft Visual C++ 2012 Redistributable (x86) - 11.0.60610 Set 💶 💷 🎫
Microsoft Visual C++ 2012 Redistributable (x86) - 11.0.60610
MICROSOFT SOFTWARE LICENSE TERMS
MICROSOFT VISUAL C++ 2012 RUNTIME LIBRARIES
These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them.
I agree to the license terms and conditions
Install
🔀 Microsoft Visual C++ 2012 Redistributable (x86) - 11.0.60610 Set
Microsoft Visual C++ 2012
Redistributable (x86) - 11.0.60610
Setup Successful
Close



4. Proceed by following the on-screen instructions of the InstallShield Wizard.



5. Proceed by reading and agreeing to the license agreement and click "Next".

B CV7-LP - InstallShield Wizard	x		
License Agreement Please read the following license agreement carefully.	5		
Important Notice	<b>^</b>		
Please read the terms and conditions of this license agreement			
carefully before installing the software. This end user license			
agreement (EULA) is between you (either an individual, or a single			
legal entity) and PLANET. By installing the software and clicking on			
the "agree" button, you agree to the term and conditions of this			
agreement. If you do not agree to this agreement, please do not	-		
Print Design and Desig			
I accept the terms in the license agreement      I do not accept the terms in the license agreement			
T do not accept the terms in the license agreement			
InstallShield			
< Back Next > Cance	el		



6. You can change the installation path in this step, and then click "Next".

🛃 CV7-LP -	InstallShield Wizard
Destinati Click Nex	ion Folder xt to install to this folder, or click Change to install to a different folder.
	Install CV7-LP to: C:\Program Files (x86)\CV7-LP\ Change
InstallShield -	< Back Next > Cancel

7. Double-check your installation settings, and click "Install"

CV7-LP - InstallShield Wizard
Ready to Install the Program       The wizard is ready to begin installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard. Current Settings:
Setup Type:
Typical
Destination Folder:
C:\Program Files (x86)\CV7-LP\
User Information: Name: ENM Company:
nstallShield Cancel



8. The installation process is done. Click "Finish".

谩 CV7-LP - InstallShield Wizard				
	InstallShield Wizard Completed			
2	The InstallShield Wizard has successfully installed CV7-LP. Click Finish to exit the wizard.			
A NOT NOT AND	☑ Launch the program			
	< Back Finish Cancel			

 Open the file by clicking on the CV7-LP shortcut on your desktop. If you can't find a shortcut on your desktop, create your own shortcut by finding the CV7-LP file under C:\Program Files\ CV7-LP, right click, select "Send To", and select "Desktop (create shortcut)".

Organize 👻 🖬 Open	Burn New folder			
Favorites	Name	Date modified	Туре	Size
Deskton	ADADP.dll	05/29/2015 17:44	Application extens	1,567 KB
Downloads	AFADP.dll	05/29/2015 17:44	Application extens	1,577 KB
Recent Places	Caliburn.Micro.dll	05/29/2015 17:46	Application extens	118 KB
and the contractor	SvHelper.dll	05/29/2015 17:46	Application extens	72 KB
Libraries	CV7-LP.exe	0	ication	1,642 KB
Documents	CV7-LP.exe.config	Open	FIG File	7 KB
A Music	🚳 CV7-LP_Lic.dll 💆	Run as administrator	ication extens	8 KB
Pictures	🚳 DxDraw.dll	I roubleshoot compatibility	ication extens	229 KB
Videos	EntityFramework.dll	Run with graphics processor	cation extens	5,075 KB
6	🚳 EntityFramework.Sq 🚇	Norton Internet Security	ication extens	606 KB
Computer	SFFMCodec.dll	Add to archive Add to "CV7-LP.rar"	cation extens 2,863 KB	2,863 KB
Windows7 OS (C:)			ication extens	124 KB
USB DISK (E:)	👔 help.chm	Compress and email	piled HTML	36 KB
	🚳 IVSAnalysisResult.dl	Compress to "CV7-LP.rar" and email	ication extens	115 KB
	NVSSDK-P002.dll	Pin to Taskbar	ication extens	959 KB
	IvsSdkSharp.dll	Pin to Start Menu	ication extens	119 KB
Network	🚳 KMpeg4.dll 🛛 🙌	Create SimpleTap tile	ication extens	1,825 KB
<b>T</b>	ILicenseReg.dll	Restore previous versions	ication extens	1,646 KB
	Microsoft.AspNet.Si	Condition	Director ath	
	Microsoft.Owin.Cor	Send to	Bidecooth	17: NC 11
	Microsoft.Owin.Dia	Cut	Compresse	a (zippea) foider
	Microsoft.Owin.dll	Сору	Desktop (cr	eate shortcut)
	Microsoft.Owin.Hos	Create shortcut	Documents	
	Microsoft.Owin.Hos	Delete	Fax recipier	it .
	Microsoft.Owin.Sec	Pename	Mail recipie	nt
	Newtonsoft.Json.dll	Kename	Contraction TeamViewe	r
	NI og config	Norton File Insight	DVD RW Dr	ive (D:)



### 3.2 License and Activation

In the CV7-LP, your required number of channels should be licensed and activated before connecting. License activation is the process of unlocking the channels on CV7-LP with the received License Key. After the license activation, the channels on CV7-LP will automatically become available.

During license activation, your License Key is matched against the MAC address of the Network Interface Card (NIC) on CV7-LP computer. Once this license key is used by the computer with given MAC, it cannot be activated with another MAC. This matching record will be stored on the PLANET license data server. If your computer has more than one network cards, the CV7-LP will detect them and provide you with a dropdown list to select from.

Please note:

- The license is cumulative and perpetual.
- The license is not version-specific; upgrading software version will not influence the existing license(s) you have.
- The maximum number of channels that can be managed by the CV7-LP is 4.

REALET     Networking & Commanibution	PLANET References & Communitation
Software License           Dear Customer:           Your order for           license has been received and processed on	Note for Software Activation           Thanks for purchasing extended support software of ICA-E Series Camera.           You may activate this license either online or offline.           * Online Activation: Requires internet access from software installed server.           Step 1: Go to Setup System -> License.           Step 2: Select "Online Registration". Enter your license key, member ID and password.
Here's your license information:  Product: Coverage: License Key:	Offline Activation: Does not require internet access from software installed server. Used when Server is located in network not connected to public internet (i.e. military base) Step 1: Go to CMS Server PC and log in via CMS Setup. Setup System -> License. Select "Offline Registration". Record the MAC address shown Step 2: Provide License Key and the MAC Address (Machine Key) to PLANET by email (support_Lad@planet.com.tw) to generate activation code.
Member ID: support_ica@planet.com.tw Password: planet	Step 3:         An email with activation code file (.lic) will be sent to your email.         Transfer this license file to the Server PC.         Step 4:         Go to CMS Server PC and log in via CMS Setup.         Setup System -> Offline Registration -> click "Import Activation Key" and select the license file.         Click "apply" to activate this license.
PLANET Technology Corporation TEL 686-2218-958 AAX, 685-3218-958 E-6448 seedgaterizen w Coopyre 2019 PLANET Technology Comprised. Aligne seeved	Step 5:         Done!         Thank you for your purchase.         If you have any questions, please contact support_ica@planet.com.tw for assistance.         PLANET Technology Corporation         TEL: 862-32719-9181 FAUL 683-32719-9282 E-mail sengistimation for compiled 02819 FPUADI Transing/groupmon All right served.

There are two ways to activate the licenses depending on your CV7-LP network condition: Online Activation and Offline Activation.

#### 3.2.1 Online Activation

If your CV7-LP computer has available Internet access, choose online activation.



Step 1: Start the CV7-LP by going to License tab -> Online Registration tab.

V7-LP V1.02.24		
	License Management Storage Notice List Language	
	Online Registration Offline Registr	ation
	MAC Address	88-88-E3-3A-59-FA (169.254.143.159)
	License Key	
	Account	
	Password	
		Apply

Step 2: Select the MAC Address, enter your License Key, Account and Password, and then click "Apply". The CV7-LP will connect to the license data server via Internet to register the license key, and unlock the channels.

Considential and a second seco			
Online Registration Offline Registration			
MAC Address	88-88-E3-3A-59-FA (169.254.143.159) •		
License Key	CASAA-PABAB-PTGPP-AWCQP-AADPB-APAQS		
Account	support@planet.com.tw		
	The second		
Password			
	Apply		
License			
		Total Number of Licenses :	
Lo	ense Key Number of Licenses : MAL	Address	

#### 3.2.2 Offline Activation

Offline activation does not require Internet access for the CV7-LP. It is used when the CV7-LP is located in a network not connected to public Internet (e.g., in a military base). You will need to get an activation file from another computer and transfer it to the CV7-LP computer.

Step 1: Please contact PLANET (<u>support\_ica@planet.com.tw</u>) and send the MAC address of the CV7-LP computer. We will provide you with an activation code file (AUL.lic).

Step 2: Start the CV7-LP by going to License tab -> Offline Registration tab -> click "Import" and upload the license file (AUL.lic). Click "Apply" to activate this license.

Unline Registration	D9A94F84C323E7EF1C6CE1881FC2D3EEBBC76EB0034D43A3816BD85580A82D8A56FB72 9637784D47CF908407CE74BF33703C7684739E5E8F7092CABA2A466F652CBCC0256B192 9D617F833056D69FF2CDEB23BA2093C	59D D23
Activation Key (*.lic file)		
	Import Apply	



### 3.2.3 Verify Your License

Once your license is successfully activated, the license information will be shown on the License page.

CV7-DP V102.24					
	License Management Storage	iotice List Language 📄 🌔	¢		
	Online Registration Offline Reg	pistration			
	1005 144000		43.150		
	MAC Address	88-88-53-3A-39-FA (109-234-1	43.159)	•	
	License Key				
	Account				
	Password				
		Apply			
	License				
		Lizania Kau	Number of Licenses	Mor Address	Total Number of Deenses ( 1
		Decide Ney	rearriges of sideriges (	HING HUGHESS	



Be sure to retain your license key information in a safe place because you may need to reinstall the software. After the software is uninstalled, you should contact PLANET (<u>support\_ica@planet.com.tw</u>) to clear the original registration data in our data server, and then you may activate the license again.



# Chapter 4. Software Setup

This chapter provides setup details of the Internet Camera's Web-based Interface. In order to be able to apply the CV7-LP technology to a video stream, two basic components are needed: Video Sources and Analysis Rules. This chapter will guide you through everything you need to know in order to have a video source, set up analysis rules, and apply them to your video.

### 4.1 Introduction

When you open your CV7-LP, you will see the following display:

	🕢 Language Selector	
	Layout Selection Bar	
CV7-07-v10224	Isome Measured Stores Inter Lat. 10 22	
		3 Channel
 1 Source Li	st Window 🛛 😢 Video Analysis Window	

- 1. Source List Window: All of your video sources are shown here, and can be managed from here.
- 2. Video Analysis Window:

This area can display your camera views. It can be composed of 1 or more channels.

- 3. **Channel:** Each channel displays a camera view.
- 4. Language Selector: Select the display language.
- Layout Selection Bar: By license, choose 1, 2 or 4 layout styles, or expand to full screen.

### 4.2 Add Video Source

Now you are ready to add some video sources so that they can be analyzed!

Before adding a video source, make sure you have a working NVR server or camera and



confirm its following properties: 1. IP Address, 2. HTTP Port, 3. Account Name and 4. Password.

- To add an NVR server as a video source, follow these steps:
  - 1. Right-click on the Source List Window, and select "Add New NVR".



2. After selecting "Add New NVR", a popup window will appear as shown below.

Add Video Source		
NVR/ENR Camera		
IP Address	localhost	
Http Port	80	
Account	admin	
Password	•••••	
Add		

Fill in the 4 marked fields that are required to communicate with the NVR server: IP Address, HTTP Port, Account Name, and Password.



The default account/password of CV7L is admin/123456.



No

3. After filling out all fields, click "Add".

NVR/ENR Camera	
IP Address	localhost
Http Port	80
Account	admin
Password	

4. You will see the NVR server at the Source List Window.
 CV7-LP v1.02.24

	License Management Storage Notice List Language
V <u>192.100.1.05</u>	

5. To Remove an NVR server from the Video Source List, right-click on the server's IP and select "Remove".

CV7-LP v1.02.24	
192.168.1.65 Remove Refresh	License Management Storage Notice List Language

	Once an NVR server is added to the Video Source List, all devices that are on the
	NVR server will be added to the Video Source List. Please make sure the camera
е	view you want to analyze has already been added to the NVR server.



- To add camera as a video source, follow these steps:
  - 1. Right-click on the Source List Window, and select "Add New Camera".

🖨 CV7-LP v1.	.02.24	AND DESCRIPTION OF THE OWNER.
		License Management Storage Notice List Language
	Add New NVR/ENR	
	Add New Camera	
	Add RAW File	
	Refresh	

2. After selecting "Add New Camera", a popup window will appear as shown below.

Add Video Source	×	
NVR/ENR Camera		
IP Address		
Http Port	80	
Streaming Port	6002	
Account	admin	
Password	•••••	
Add		

Fill in the 5 marked fields that are required to communicate with the camera: IP Address, HTTP Port, Streaming Port, Account Name, and Password. You can keep the default "**6002**" that has been filled in for the Streaming Port field, or select any port that is not being used.

3. After filling out all fields, click "Add".

NVR/ENR Camera		
IP Address	1	1
Http Port	80	-
Streaming Port	6002	-
Account	admin	1
Password	•••••	



4. You will see the camera at the Source List Window.

CV7-LP v1.02.24	
🔺 🌉 Camera	License Management Storage Notice List
<b>192.168.1.32</b>	

5. To "Remove" a camera from the Video Source List, right-click on the camera's IP and select "Remove".

CV7-LP v1.02.24	
4 R Camora	License Management Storage Notice List
a 19 Remove	

### 4.3 Add Channels

In order to see the camera views from the video sources you have added, you need to add them to one of the channels in the Video Analysis Window.

To add channels, follow these steps:

1. On the Source List Window, find the device for which you would like to see the camera view.

If you have devices added in your NVR server but cannot see them in your CV7-LP Source List Window, click on the collapse icon shown next to your NVR server in the Source List Window to expand the device list, or right-click on Source List Window and select "Refresh".

😂 C/	/7-LP v1.02.24	
	Camora	License Management Storage Notice List
1		
	🚡 192.168.1.32	
	Add New NVR/ENR	
	Add New Camera	
	Add RAW File	
	Refresh	
	45	

2. After finding your device, you can see the camera views from the device by dragging it to the channel area in the Video Analysis Window. If a new device is dragged to a channel with an existing camera view, the existing camera view will be replaced.



If you can't drag the camera to channel area, please click the Layout Select button and then drag the camera to channel area again.



3. To "Remove" a camera view, right-click on the channel and select "Remove". Note that the analysis will stop running if you perform this action.





 To renew the connection to a device, right-click on the channel and select "Reconnect". Note that if you have an analysis running, you must stop the analysis to perform this action.



5. If you want the program to automatically reconnect when it detects that it has been disconnected from the device, keep the box for "auto reconnect" marked.
License Management Storage Notice List Language



### 4.4 Create an Analysis Rule

Now that you are able to see your camera's video feeds, you are ready to create your analysis rules for your camera views. Note that analyses can only be performed when the device has been dragged into a channel window. One channel can only run 1 analysis at a time, and the maximum number of channels it can run depends on the license. Please note the smoothness of performance may depend on your computer's hardware capacity.



### 4.4.1 Live View Analysis

To access the function to create a new analysis rule for a live view, follow the steps below:

1. Right-click on the channel window of your video, click on "Create Analysis", and select "Live".

License Management Storage Notice List Language	23			
Connected				
		P Constant of the second secon		
	Create Analysis	Live		
	Stop Analysis	Playback 😽		
	Browse Analysis Results	File		
	Show Algorithm Regions			
	Auto-reconnect			Star Star Star
	Reconnect			
	Remove			
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2. In the new pop-up window that appears, input a name for your Analysis Rule and click "OK".

Input Analysis Name	
New Analysis	OK Cancel



3. A New Analysis Window will appear, and you are now ready to set up your Analysis Rules.



4. Adjust the CV7-LP Property Settings to get the most optimal results:

Country	Used as reference only. Allows you to choose from a predetermined list of countries to increase the accuracy of recognition results.					
Enable	Enables this algorithm.					
Maximum Car Plate Height	Set the maximum height of any license plate to be recognized. Any license plate whose height is larger than this value will be ignored. The Maximum Plate Size Reference Frame (found in the top left corner of the Live View Display) provides visual reference for the value selected. The ratio between Maximum Car Plate Height and Minimum Car Plate Height should be as close to 2 as possible.					
Maximum Car Plate Width	Set the maximum width of any license plate to be recognized. Any license plate whose width is larger than this value will be ignored. The Maximum Plate Size Reference Frame (found in the top left corner of the Live View Display) provides visual reference for the value selected. The ratio between Maximum Car Plate Width and Minimum Car Plate Width should be as close to 2 as possible.					
Minimum Car Plate Height	Set the minimum height of any license plate to be recognized. Any license plate whose height is smaller than this value will be ignored. The Minimum Plate Size Reference Frame (found in the top left corner of the Live View Display) provides visual reference for the value selected. The ratio between Maximum Car Plate Height and Minimum Car Plate Height should be as close to 2 as possible.					
Minimum Car Plate Width	Set the minimum width of any license plate to be recognized. Any license plate whose width is smaller than this value will be ignored. The Minimum Plate Size Reference Frame (found in the top left corner of the Live View					



	Display) provides visual reference for the value selected. The ratio between Maximum Car Plate Width and Minimum Car Plate Width should be as close to 2 as possible.							
Enable Black List	User can set specific license plate as black list. The CV7-LP will support this function in the future.							
Enable White List	User can set specific license plate as white list. The CV7-LP will support this function in the future.							
Enable NVR Notification	The CV7-LP will send notificat plate successfully. Here is an example about how t Enable NVR Notification	tion to NVR when it recognizes license o set the settings: Ip 192.168.1.65 Port 80 User admin Password 123456						
Enable IP Cam Notification	The CV7-LP will send notification to NVR when it recognizes license plate successfully. Note: The CV7-LP will support this function in the future.							
Post-buffer Time	Set the amount of time (in second after a license plate is recognized	onds) that video footage will be recorded						
Pre-buffer Time	Set the amount of time (in second before a license plate is recogni	Set the amount of time (in seconds) that video footage will be recorded before a license plate is recognized.						



5. To narrow down the area in which the algorithm will be actively running, move your cursor over to the area showing video stream, at which point it will appear as a drawing pen. To draw the rectangle that will mark the area for detection, click and drag your cursor to draw a red rectangle.





For a better experience, make sure that the height of your detection area is no taller than 10 times the Maximum Plate Size height, and that the width of your detection area is no wider than 10 times the Maximum Plate Size width.

6. If the area you want to mark does not fit the form of a rectangle, you may also choose to draw a polygon by selecting the icon on the upper right corner of your Live View Display area. To draw the lines for the sides of your polygon, click your cursor to mark the endpoints of each line. Double-click on the final endpoint of the final line to confirm and highlight the polygon in light blue, as shown in the illustration below. Make sure your lines connect (a minimum of 3 lines) to form a closed shape.





7. To adjust the marked area, you can drag the highlighted area to keep its original shape or right-click on the area, select "Remove", and re-draw. For polygons, you may toggle the endpoints of the lines that make up the sides of your polygon.



8. Click "Start" to start running your analysis.

ALPR Properties	
Country	? Others -
Enable	
Minimum License Plate Height	20
Minimum License Plate Width	60
Maximum License Plate Height	100
Maximum License Plate Width	200
Enable Blacklist	
Enable Whitelist	
Enable NVR Notification	
Enable Ipcam Notification	
Pre-buffer Time	5
Post-buffer Time	5
	2
Sta	art Reset



The precision of your video analysis depends on the video quality and may be affected by the characteristics of objects in the video stream. To obtain the best results, test your analysis rules and optimize your settings. For further inquiries, provide a raw file of your analysis and contact our Customer Help Desk.

9. If you are only running your Analysis Rule for a specific time period or you wish to stop running the Analysis Rule at any point, you can do so by using the "Stop Analysis" function.



To access this function, simply right-click on the channel that you wish to stop the analysis, and select "Stop Analysis".





All analyses will stop running if the CV7-LP window is closed. To continue running an analysis, the settings will have to be re-configured in a new Analysis Rule.

### 4.4.2 Display Detection Indicators

To enhance awareness when monitoring your live video feed, it may be helpful to have visual cues about the analyses that you are running. In order to achieve this, the CV7-LP provides the option to display detection indicators or show the moving objects on the screen.

To access this function, simply right-click on a channel and select "Show Algorithm Regions" to display detection indicators.



### 4.4.3 Display Latest Recognition Results

While monitoring, it may be helpful to see information about the license plates that are being recognized. In order to achieve this, the CV7-LP provides the option to display real-time information of the latest recognized license plate.



To access this function, simply double-click the channel for which you would like to see the results. An information panel will appear on the right side of your screen, showing a snapshot of the license plate, the result of the recognition, time and date captured, and the confidence level of the algorithm.



To leave this function, simply double-click on the area showing the camera view.

#### 4.4.4 Analysis Results

After running your CV7-LP algorithm, the next logical step would be to look at what license plates have been recognized. To browse the results, you can use the Search Analysis Results function of the CV7-LP.



To access this function, right-click on the area of the Video Analysis Window that is running the analysis rule for which you would like to see the results for and select "Search Analysis Results".



A new Analysis Results Window that contains the license plates recognized as a result of your algorithm will open. For each license plate recognized the recognition result, a snapshot of the license plate, the confidence level of the algorithm, the time it was recognized, as well as the channel from which it was recognized will be shown.

Analysis Nesun							second second	Canadiana
Camera	Recognition Results							
<ul><li>192.168.1.32</li></ul>	Search Range 👻	2015-01-09 18:46:28 🗘	~ 2015-07-18 18	:46:28 🗘 🕇	License Pla	te Number Search	٩	
-	Recognition Result	License Plate Snapshot	Confidence Level	Country	Notice Type	Time	Channel	
New Analysis	KROBUDE	KR03.UDE	83.7		None	01/29/2015 16:56:54	X:\UK-RealVideo.raw	
New Analysis	FX07YJF	FX07 YJE	89.2		None	01/29/2015 16:57:03	X:\UK-RealVideo.raw	
	DS03LXV	DSD3LXV	94.2	N N	None	01/29/2015 16:57:34	X:\UK-RealVideo.raw	
	Y64FXB	YCI4 FXB	79	N N	None	01/29/2015 16:57:46	X:\UK-RealVideo.raw	
	KX63TLY	KX63 TLY	95.9		None	01/29/2015 16:57:57	X:\UK-RealVideo.raw	
	WX06FKF	WXD6 FKF	96.5	200	None	01/29/2015 16:58:12	X:\UK-RealVideo.raw	
	DA56WLV	DISEVUV	89.3		None	01/29/2015 16:58:23	X:\UK-RealVideo.raw	
	PN58KMY	PN58 KHY	96.1	No.	None	01/29/2015 16:58:27	X:\UK-RealVideo.raw	
	YIJAY		76.3		None	01/29/2015 16:58:30	X:\UK-RealVideo.raw	
	MA59BAV	MA59 BAV	96.5	200	None	01/29/2015 16:58:53	X:\UK-RealVideo.raw	
	PF09WSO	PF09 WS0	95.2		None	01/29/2015 16:59:26	X:\UK-RealVideo.raw	
	YY60KBX	YY6D KBX	92.1	No.	None	01/29/2015 16:59:37	X:\UK-RealVideo.raw	
	DK63WUJ	LDK63 KUU	94.2		None	01/29/2015 16:59:44	X:\UK-RealVideo.raw	
	KD56VWY	KD56 VWY	92.5		None	01/29/2015 17:00:20	X:\UK-RealVideo.raw	
	E2YDW	PEIZ YON	74.4		None	01/29/2015 17:00:42	X:\UK-RealVideo.raw	
	FP54AXT	EP54 AXT	95.7		None	01/29/2015 17:00:47	X:\UK-RealVideo.raw	
Ť	JILTT		75.4		None	01/29/2015 17:00:49	X:\UK-RealVideo.raw	
				2000				

If you want to export the recorded file, please select license plates from the list, and click the export button . You will need to name the export folder and select the path to save files.



Recognition Results							
Search Range 👻	2015-01-09 11:12:36 🗘 💌 ~	2015-07-18 11:12:36 🗘	License #	Plate Number Search	A A		æ 📇
Recognition Result	License Plate Snapshot	Confidence Level	Country	Notice Type	Time	Channel	10
FX07YJE	FX07YJE	96.4		None	01/29/2015 16:57:04	X:\UK-RealVideo.raw	
KR03UDE	KRO3 UDE	91.5	*	None	01/29/2015 16:56:54	X:\UK-RealVideo.raw	
FX07YJE	FX07 YJE	96.4	¥	None	01/29/2015 16:57:04	X:\UK-RealVideo.raw	
KR03UDE	KRO3 UDE	91.5	) K	None	01/29/2015 16:56:54	X:\UK-RealVideo.raw	



The exported files include a video and a picture; the video is raw format, the picture is jpg format.

If the results you wish to see are from a specific time period, you can set this time period by adjusting the Time Period setting in the Analysis Result Filter area, and then click the Search button.



Moreover, if you want to search for a specific License Plate Number, you can do so by typing in the License Plate Search in the Analysis Result Filter area.

For example, to only show the results for license plate number "7683YQ" follow the steps below:

- 1. Set this time period.
- 2. Type in "7685YQ", or "685Y", or "76\*Q" in the search box. The \* symbols represents one or more unknown characters that may exist between known characters.
- 3. Click the Search button.

Recognition Results

Past Hour	2015-07-24 10:24:28 🗘	<ul> <li>✓ 2015-07-24 11:24:28</li> </ul>	License Plate Nur	nber Search	ק ו		1	<b>3 4</b>
Eth	User can view boxes for the a	the results of m nalysis rule that	ultiple analyse user wishes to	es in t o see	the sa the re	me devic sults for.	e by checki	ng the
	<b>6</b> 192.168.1.32	Search Range 👻 2015-01-09	18:46:28 🗘 🚽 🚽 2015-07-18 18	46:28 🗘 💽	License Plate	e Number Search	Q	Þ
Note	<ul> <li>New Analysis</li> <li>New Analysis</li> </ul>	Recognition Result License Plate 3	napshot Confidence Level	Country	Notice Type	Time	Channel Will K-Real/Video raw	
	New Analysis	FX07YJF	89.2		None	01/29/2015 16:57:03	X:\UK-RealVideo.raw	

#### 4.4.5 Watch Analysis Playback

Now that your CV7-LP analyses have recognized license plates, you can watch the playback of when these license plates appeared.



To watch these videos, double-click on a single Analysis Result that you would like to review. A new Player Window will open, ready to play your event. Please note that for each recognized license plate, the CV7-LP will also provide video footage of moments leading up to and after the recognition, as determined by "Pre-buffer Time" and "Post-buffer Time" properties in the New Analysis Window.



If you cannot see the control buttons located at the bottom of the Player Window, hover your cursor over the area it should be located, and it will appear.

Filo	<b>Open</b> : Allows you to open other files (in raw format).		
	Close: Closes the current file that is open.		
Setting	Timestamp: After Setting button is clicked, the Timestamp checkbox will allow you to decide whether or not to show the time and date of the video. If selected, it will appear on the upper left corner of the Player Window. SmartSearch Properties: After Setting button is clicked and XML Analysis checkbox is marked, you have the option to configure the Smartsearch Properties. If selected, you can decide whether or not to display the detection indicators for the algorithms that were used. Object Filter: After Setting button is clicked and XML Analysis checkbox is marked, you have the option to configure the Object Filter properties. If selected, you can decide whether or not to display detection indicators for the events that were captured		
	that were captured.		
Play / Pause	Allows you to control the playback of the file.		
Progress Bar	Shows the progress of the video playback. You can toggle the blue circle on the progress bar to jump to different parts of the video.		



EXT
Note

The options that will be shown when selecting Smart Search Properties and Object Filter are dynamic. This means that only algorithms that were used when creating the Analysis Rule of the video will be available.

### 4.4.6 Storage

You can configure the detailed storage setting on this page.

cense IVI	anagement Storage			
	Apply	Reset		
Folder	r Name	CV7-LP Recordings		
Record	ings Folder Location			
	Drive	Current Free Space	Capacity	Reserved Free Space (GB)
0	C:\	119.1GB	679.6GB	20
0	Q:\	5.0GB	17.6GB	

Folder Name	You can create the folder name.			
Recording	g You can salect the hard drive from the list to save the video			
<b>Folder Location</b>				
<b>Reserved Free</b>	Allows you to recerve the space of hard drive			
Space	Allows you to reserve the space of fidid drive.			

### 4.4.7 Notice List

The CV7-LP will support the Black list and White list function in the future.

New	Delete Import Export
/pe ame	O Blacklist O Whitelist
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