VIVOTEK ANPR software

User Manual V1.0



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History:

Date	Version	Author	Details	Remarks
2020/07/15	V1.0	Aaron	Shorter version based on user manual v1.7	Based on v3.0.2.0



1. Overview

VIVOTEK Stop-and-go LPR camera is a standalone LPR camera system, which has built-in license plate recognition system and white list, black list and wish list for license plate verification. It also offers various APIs for integration with 3rd party systems such as parking management system, toll collection system, weighbridge system...etc. The ideals applications are parking access control and stop-and-go toll system.

2. Installation Requirements

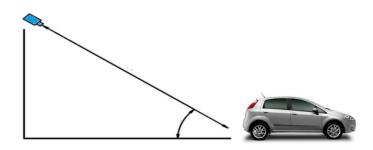
2.1 License Plate Character size

Characters in license plates must have an average height between 20 to 80 pixels, being 25 pixels a good reference value. Less resolution may lead to character confusion in some countries. In addition, camera sensitivity affects too. For countries in which there are different character sizes on their license plates, this fact must be kept in mind, so the small characters are included in the detection range.



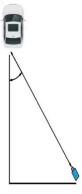
2.2 Camera Positioning

The recommended vertical angles are approximately 20°. The maximum recommended value is 35°.



The recommended horizontal angles are approximately 20°. The maximum recommended value is 35°.





The angle between the plates and the X axis of the scene must be less than 25°.

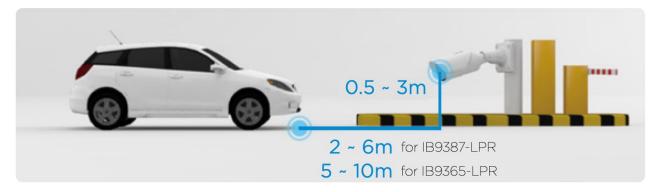


Recommended Camera Settings:

The default camera image settings on Stop and Go LPR camera are ideal for most parking access control applications, stop-and-go toll collection systems and the other use scenarios where the car is stopped or almost stopped. However, users can modify camera settings to reach the optional LPR performance according to the camera deployment in that environment. Please be noted that license plate must be seen in camera image. If no, this LPR camera won't be able to read the license plate number. Also, higher camera resolution doesn't mean higher LPR accuracy. 720P or VGA is good for these stop-and-go scenarios.

Common Scenario:

Common scenario: 1 lane Sensor size: 1280x960 Height of camera on pole: 0.5 – 3 meters



3. LPR Configuration

3.1. Starting Service ANPR



To start a service, go to <u>Configuration</u>, <u>Applications</u>, click on <u>Package Management</u>, select the <u>ANPR</u> and then click on "<u>Start</u>".

VIVOTEK	Home Client setti	ngs Configuration Language
	Applications > Package management	
System	Status License	
Media	- Upload package	
Network	■ Save to SD card Select file 選擇檔案 未選擇任何檔案 Uploar	d
Security		
РТΖ	Resource status	
Event	 CPU Status: Storage status: 	
Applications	SD card status: Ready	
Motion detection	Memory status:	
Smart VCA		
DI and DO	Package list	
Tampering detection	Package name Vendor Version	
Audio detection	Trend Micro IoT Security VIVOTEK 1.2b.a1.4	.1 Installed N/A 🖼 🞇
Shock detection	ANPR <u>VIVOTEK</u> 2.1.5	OFF N/A 🍽 😹
Package management	Start Stop Schedule	
Recording		
Local storage		
Version: 0113d_81		

The status of this ANPR service must be ON as the picture below.

Applications	SD car	d status: Ready						
Motion detection	Memor	y status:						
Smart VCA								
DI and DO	— Packag	je list						
Tampering detection		Package name	Vendor	Version	Status	License	1	
Audio detection	O <u>Trer</u>	nd Micro IoT Security	VIVOTEK	1.2b.a1.4.1	Installed	N/A		8
Shock detection	0	ANPR	<u>VIVOTEK</u>	2.1.5	ON	N/A		8
Package management	Cha	et Oten	Schedule					
ecording	Sta	rt Stop	Schedule					
ocal storage								

3.2. VIVOTEK ANPR Management Browser

Open a web browser and connect to this IP camera through its IP address. Go to "<u>Applications</u>", click on "<u>Package management</u>" and double click on "<u>ANPR</u>" service.

				IP	Surveill	ance
Applications	SD card status: Ready					
Motion detection	Memory status:					
DI and DO						
Tampering detection	— Package list —					
Audio detection	Module name	Vendor	Version	Status	License	D
Shock detection	• ANPR	VIVOTEK	1.01	ON	N/A	SD 🐰
Package management	Start http://192.1	68.1.56/VPARD/www	w/index.html	[

After this, you will access to VIVOTEK ANPR Browser.

				E	nglish 🔹
	TEK	Live Review Lists Li	PR configuration General of	onfiguration	Audit Logs
		and of	Atribute	Value	Last Change
	1 10 1 5		Results:	481317	11:53:46.991 09/07/2019
			Actions:	295536	11:53:57.369 09/07/2019
	A		Exports:	1	00:00:00.000 01/01/2018
			Imports:	1	00:00:00.000 01/01/2018
	- *		Triggers received:	0	00:00:00.000 01/01/2018
		VIV	Frames processed:	6952085	13:07:58.017 09/07/2019
	from the	Turnet manager Services	FPS:	5	11:46:53.076 09/07/2019
			SD space free (%):	35	13:07:38.032 09/07/2019
	1 Contraction of the		Camera space free (%):	40	13:07:38.045 09/07/2019
VIVOTER		602·HTD	Last Size (pixels):	48	11:53:57.189 09/07/2019
	- Alexandre		Last OCR time (millis):	480	11:53:57.185 09/07/2019
Show ROI	Show lanes	Calibration pattern	Function mode:	MOTION	13:07:58.024 09/07/2019
602HTD (Taiwan) 99.73% 50.00px 2019-07-09 11:47:12.356	602HTD (Taiwan) 99.90% 49.80px 2019-07-09 11:47:13.199	602HT (Taiwan) 86.00% 49.50px 2019-07-09 11:53:35:324	602HTD (Taiwan) 99.90% 49.00px 2019-07-09 11:53:36.13	8 20	602HTD (Taiwan) 99.90% 48.88px 019-07-09 11:53:37.196
602HTD	602HTD				
WHITELIST	WHITELIST		WHITELIST		WHITELIST
		Copyright © 2019			

3.3. First access (selection country)

When users access to this ANPR application for the first time, selecting <u>region</u> and <u>country</u> is necessary. First select the <u>Region</u>:

Region/country	selection	
Region:	Şelect	~
Country: Europe South America & Central		
	North America & Central	
	Asia	
	Africa	
602H1 (Taiwan)	Oceania	



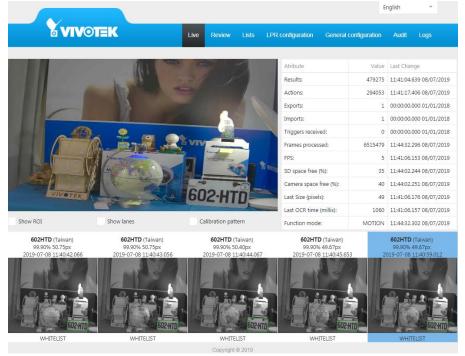
Now select the <u>Countries</u> in the region. Multiple selections in Country are allowed such as a) Singapore and Malaysia, b) Texas, Oklahoma, Louisiana and other neighboring states.

Region/country se	ection	
Region:	North America & Central	
Country:	Texas 🗙 Oklahoma 🗶 Louisiana 🗶	
	Save and close	

4. Web Portal

4.1. User Interface

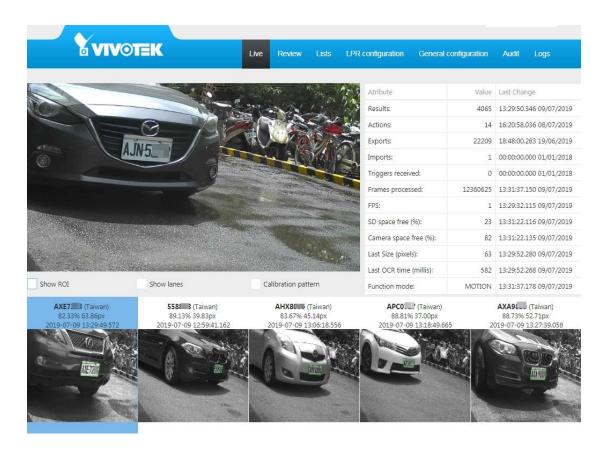
The following image is the user interface of VIVOTEK ANPR System. There are "Live", "Review", "Lists", "LPR configuration", "General configuration", "Audit" and "Logs" on top tab.





4.2. Live Tab

The "Live" tab shows three parts, including 1) the live video stream of this camera, 2) LPR results and current status, 3) LPR images.



Monitor Panel: It shows the current live video streaming.

Below live video streaming window, there are 3 options to show different information on video.

Show ROI: After checking "Show ROI", you will see a red square that indicates the ROI (Region of interest) defined in the LPR configuration. This ROI is the only region of the image where the LPR engine finds and reads the license plates.

The default setting doesn't have a ROI region.

		IP Surveillance		
p.192, Lien-Cheng Rd., Chung-Ho, Taipei County	y, Taiwan T: +886 2 82455282	2 F: +886 2 8245553 2	E: sale	s@vivotek.com
11-11		Atribute	Value	Last Change
		Results:	4068	13:41:50.569 09/07/2019
		Actions:	14	16:20:58.036 08/07/2019
	The space	Exports:	22209	18:48:00.283 19/06/2019
		Imports:	1	00:00:00.000 01/01/2018
	1000 C	Triggers received:	0	00:00:00.000 01/01/2018
		Frames processed:	12361477	13:41:47.182 09/07/2019
		FPS:	3	13:41:47.311 09/07/2019
		SD space free (%):	23	13:41:22.280 09/07/2019
		Camera space free (%):	82	13:41:22.287 09/07/2019
		Last Size (pixels):	40	13:35:42.217 09/07/2019
		Last OCR time (millis):	1528	13:35:42.180 09/07/2019
Show ROI Show lanes	Calibration pattern	Function mode:	MOTION	13:41:47.469 09/07/2019

Show lanes: After checking "show lanes", you will see a blue line that defines the lanes you have configured in the LPR configuration. The plates in the left side of the screen are plates captured in lane 1, the plates in the right side of the screen in lane 2.

Value Last Change

4075 14:18:50.563 09/07/2019

14 16:20:58.036 08/07/2019

1 00:00:00.000 01/01/2018

0 00:00:00.000 01/01/2018

5 14:29:22.283 09/07/2019

23 14:28:22.068 09/07/2019 82 14:28:22.076 09/07/2019

47 14:18:52.592 09/07/2019

562 14:18:52.580 09/07/2019

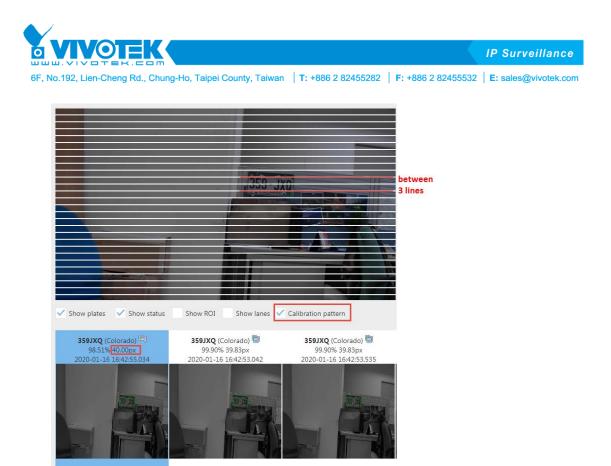
22209 18:48:00.283 19/06/2019

The default setting doesn't have any lanes configured.



Calibration pattern: After checking "calibration pattern", you will see white lines indicating the minimum
character size. The vertical space between three lines is 25~40 pixels, and the height of plate number must be
higher than this space.

	- We		Atribute	Value	Last Change
	-		Results:	4068	13:41:50.569 09/07/2019
			Actions:	14	16:20:58.036 08/07/2019
			Exports:	22209	18:48:00.283 19/06/2019
			Imports:	1	00:00:00.000 01/01/2018
	-	P 2 3 7 0	Triggers received:	0	00:00:00.000 01/01/2018
			Frames processed:	12361502	13:42:12.030 09/07/2019
	And in case of the local division of the loc	Accessible and a second se	FPS:	1	13:41:52.096 09/07/2019
			SD space free (%):	23	13:41:22.280 09/07/2019
			Camera space free (%):	82	13:41:22.287 09/07/2019
	August and a second		Last Size (pixels):	44	13:41:52.154 09/07/2019
			Last OCR time (millis):	667	13:41:52.111 09/07/2019
Show ROI	Show lanes	Calibration pattern	Function mode:	MOTION	13:42:12.299 09/07/2019



LPR Image Panel: It shows the latest results, including the LPR image, number plate, confidence level, country/ state information, pixel size of character or number height, date and time of this LPR reading, list information such as white list or blacklist.



Info Panel: Information on the system status. The columns with the last change are with the last updated value. **Results**: Number of license plates recognized.

Actions: Number of actions executed.

Exports: Number of automatic exports executed.

Imports: Number of automatic imports executed.

Trigger received: Number of triggers received.



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Frames processed: Number of total frames processed.

FPS: Frames per second processed in the register.

SD space free (%): Percent of free space in the SD card.

Camera free space (%): Percentage of free space in the camera.

Last Size (pixels): Pixel size in the last result license plate captured.

Last OCR time (milliseconds): Engine time spent on the last result plate processed.

Mode: It shows the current LPR processing mode.

- TRIGGER: The LPR processing mode is based on Trigger. LPR engine will detect and read number plate only when receiving a trigger signal from 3rd party system such as inductive loop system, or any digital input devices.
- **2) MOTION:** The LPR processing mode is based on Motion Detection. LPR engine will detect and read number plate only when a motion is being detected.
- **3) FREEFLOW:** The LPR processing mode is based on Free flow, which means LPR engine always detects number plate and read its number plate.
- 4) NO LICENSE: No LPR license in current system.
- 5) **STOPPED**: LPR service is stopped.

4.3. Review Tab

The review tab allows us to search, filter and consult the results.

							English	Ŧ
C.	VIVOTEK	Live	Review	Lists	LPR configuration	General configuration	on Audit	Logs
						_		
From date	10/07/2019 00:00:00		Plate					
To date	10/07/2019 23:59:59		List		All	Ψ		
Search								

From Date: Select the starting date from which you want to initiate the search

To Date: Select the end date of your search span.

Plate: Users can either search the complete license plate number or just a partial number plate

List: Users can filter the LPR readings by lists such as white list, black list or any other pre-defined lists, and it will show all plates that belong to this list.

For example, if you wish to search for a specific plate by date, from 12/07/2019 00:00:00 to 12/07/2019 23:59:59.

							E	nglish +
	VIVOTE	К	L	ive F	Review List	s LPR configuration	General configuration	Audit Logs
From dat	te 12/07/2019 00:	00:00			Plate			
To date	12/07/2019 23:	59:59			List	All		
ID 249	Time 06:37:44.247 12/07/2	Plate BBS7101	Lane	Conf. 89.40	Country Taiwan	List	Image	Image Download ima
							Q Sea	rch
249	06:37:44.247 12/07/2	BBS711_		89.40	Taiwan			Download ima
250	06:44:29.159 12/07/2	9268		92.75	Taiwan		926	Download ima
251	06:51:10.248 12/07/2	262		82.53	Taiwan		262	Download ima
252	07:17:01.330 12/07/2	0665.45		93.38	Taiwan		066	Download ima
253	07:21:01.487 12/07/2	725		94.30	Taiwan		725	Download ima
254	07:39:10.966 12/07/2	AKT7		99.58	Taiwan		AKT-7	Download ima
255	07:41:08.864 12/07/2	5588K8		90.20	Taiwan	VIVOTEK VIP	5588-K	Download ina
256	07:45:31.415 12/07/2	332		95.36	Taiwan		3325 -	Download ima
257	07:47:10.301 12/07/2	AJP9		97.84	Taiwan		AJP-9	Download ima
	07:50:21.502 12/07/2	AKW3		92.71	Taiwan		AKW-3_	Download ima

The green box corresponds to the amount of results you want to view per page.

The blue box indicates the numbers of pages available that contain the results.

The red box shows the license plate number images. If you move the mouse cursor over any image, you will obtain the LPR image with a larger image. Click on "<u>Download image</u>" to download this LPR image.

• Search by a partial license plate number

		1								English	*
	Ø	VIVOTE	K		Live	Review	Lists	LPR configuration	General configuration	Audit	Logs
rom date	e	10/07/2019 00:00	:00			Plate		55			
o date			:59			List		All			
Search	1								•		
	_										
									🖻 Q se	arch	
ID	Time		Plate	Lane	Conf.	Country	List		Image	arch Imag	ge
ID 4113		0.701 10/07/2019	Plate	Lane	Conf. 96.58	Country Taiwan	List			Imag	-
	07:38:1	0.701 10/07/2019 5.133 10/07/2019		Lane					Image	Imag Dow	ge mload image mload image
4113	07:38:1 08:07:3		558	Lane	96.58	Taiwan			Image	Imag Dow	/nload image /nload image
4113 4122	07:38:1 08:07:3 09:02:3	5.133 10/07/2019	558 3 BB 255	Lane	96.58 83.04	Taiwan Taiwan			Image 558 BBH _25	Imag Dow 51 Dow Dow	/nload image
4113 4122 4140	07:38:1 08:07:3 09:02:3 09:41:1	5.133 10/07/2019 7.851 10/07/2019	558	Lane	96.58 83.04 89.93	Taiwan Taiwan Taiwan			Image [558 [86] 25. [3855.	Imag Dow 51 Dow 200 200 200	/nload image /nload image /nload image

5 10 20 50 100

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• Search by list.

											English	Ŧ	
	Ø	VIVOTE	K		Live	Review	Lists	LPR configuration	General c	onfiguration	Audit	Logs	
From date		10/07/2019 00:00	:00			Plate							
To date		10/07/2019 23:59	:59	Ö		List		WHITELIST		*			
Search													
									Đ	Q Se	arch		
ID	Time		Plate	Lane	Conf.	Country	List		Ima	ge	Imag	je	
481318	13:28:40	167 10/07/2019	602HTD		98.26	Taiwan	WHI	TELIST	6	02·HŤ	Dow	nload imag	je

• Use the "Search filter" to find a value inside the table:

									Englis	n *	
	VIVOTE	K		Live	Review	Lists	LPR configuration	General configu	ration A	udit Logs	
From date	10/07/2019 00:00	:00			Plate						
To date	10/07/2019 23:59	:59			List		All	v			
Search											
	-										
									Q 591 🕳		6
ID	Time	Plate	Lane	Conf.	Country	List		Image		Image	
4109	06:54:52.500 10/07/2019	57 591		81.32	Taiwan			1_ 15-	7591	Download ima	ige
4137	08:59:17.601 10/07/2019	88YD		83.37	Taiwan			1 '8	8 YD	Download ima	ige
4162	09:59:13.632 10/07/2019)67W3		87.41	Taiwan			1_16	7·1/3	Download ima	ige
4207	14:53:09.591 10/07/2019	PA0677		82.26	Taiwan			PA	0677_	Download ima	ige
5 10	20 50 100										

Notice:

Considering the search time, the limit number per search is 1000, if you cannot find the number plate what you want, you need to narrow down your search criterion.

• Export the search results into a Excel file

		VOTE			Live	Review I	Lists	LPR configuration	General config	guration	Audit	Logs
om date	e 10,	/07/2019 00:00	:00			Plate						
date	10	/07/2019 23:59	:59			List		All				
Search												
	_											
	-								D.	Q 591		
ID	Time		Plate	Lane	Conf.	Country	List		Image	Q 591	Image	
ID 4109	Time 06:54:52.500	10/07/2019	Plate	Lane	Conf. 81.32	Country Taiwan	List		Image	Q 591		oad imag
				Lane			List		Image		Downl	
4109	06:54:52.500	10/07/2019	\$7 <mark>591</mark>	Lane	81.32	Taiwan	List		Image	5-7591	Downl	oad imag

·			
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	C D		0

	A	В	C	D	E	F	G
1	ID	Time	Plate	Lane	Conf.	Country	List
2	4109	06:54:52.52 10/07/2019			81.32	Taiwan	
3	4137	08:59:17.17 10/07/2019			83.37	Taiwan	
4	4162	09:59:13.13 10/07/2019			87.41	Taiwan	
5	4207	14:53:09.09 10/07/2019			82.26	Taiwan	

4.4. List Tab

In this tab users can create lists for license plate verification. This list is a group of license plates that can be the event source, and VIVOTEK ANPR enables users to trigger different actions based on this list, e.g. when any license plate number in black list is detected, it triggers the siren to warn the security guard by sending a signal to the digital output device on this camera.

There are 4 lists by default, including all plates, not in list, blacklist and whitelist. Users can edit, delete or add more lists.

	E										
	VIVOTEK	Live	Review	Lists	LPR configuration	General configuration	Audit	Logs			
V L	▼ List types										
						+ 🗈 Q Sea	arch				
ID	Name										
-2	all plates							Edit Delete			
-1	not in list							Edit Delete			
1	BLACKLIST							Edit Delete			
2	WHITELIST							Edit Delete			
3	VIVOTEK VIP							Edit Delete			

In the lists tab, the following options: are available,

List: Will show all the lists created

Action: Will show all the actions created by list.

Export: Allow users to export a single list or if all plates are selected it will create a unique file with all the licenses plates that belong to that list.

Import: Allow users to import a single list or if all plates are selected it will create a unique file with all the licenses plates that belong to that list.

Let's create a new list and name it "VIVOTEK VIP"

Click on the "+" button, fill in the list name and click on "Save".

		+	Q Search	
ID	Name			
				Save Cancel
-2	all plates			Edit Delete
-1	not in list			Edit Delete
1	BLACKLIST			Edit Delete
2	WHITELIST			Edit Delete



Users can have an action for this list, which means when a license plate is recognized and matched the list, the stop-and-go LPR camera triggers an event response.

Click on "VIVOTEK VIP" list to see the options.

							English	¥
	VIVOTEK	Live	Review	Lists	LPR configuration	General configuration	Audit	Logs
T L	ist types							
						+ 🖻 Q Se	arch	
ID	Name							
-2	all plates							Edit Delete
-1	not in list							Edit Delete
1	BLACKLIST							Edit Delete
2	WHITELIST							Edit Delete
3	VIVOTEK VIP							Edit Delete
E L	ist of the license plates: VIVOTEK VIP (0)							
Þ A	action for the list: VIVOTEK VIP (0)							
Þ	Exports for the list: VIVOTEK VIP (0)							
	mports for the list: VIVOTEK VIP (0)							
			Copyright	© 2019				

List of the license plates: EMPLOYEES

Click on the "+" button, fill in the data to add a new license plate. Click on "Save" to save this license plate information.

 List of the license plates: VIVOTEK VIP (1) 											
				+ 🖻	Q Search						
Plate	Description	Insert Date	Start validity date	End validity date							
						Save Cancel					
5588K8	VIP	11/07/2019 13:51:26	11/07/2019 13:50:00	31/12/2020 13:51:00		Edit Delete					

To edit or delete a license plate in that list, just click on the plate and then click on "Edit" or "Delete".

List of the I	license plates: VIV	UTER VIP (2)			
				+ 🗈 Q Sear	ch
Plate	Description	Insert Date	Start validity date	End validity date	
AAQ1796	VIP	11/07/2019 13:54:03	11/07/2019 13:54:00	31/12/2020 13:54:00	Edit Delete
5588K8	VIP	11/07/2019 13:51:26	11/07/2019 13:50:00	31/12/2020 13:51:00	Edit D. Ke

Action for the list: Here are the actions users can select for each list.

- <u>Socket Client</u>: Enable a socket connection to send messages in "<u>XML</u>", "<u>XML with LPR image</u>", "<u>JSON</u>" or "<u>JSON with LPR image</u>".
- <u>Socket Server</u>: Open a port in the camera to listen to hosts to send messages in "<u>XML</u>", "<u>XML with</u> <u>LPR image</u>", "<u>JSON</u>" or "<u>JSON with LPR image</u>".
- **Onvif Event**: Enable the Onvif event to send the license plate information using this protocol.
- <u>IO</u>: Enable inbound and outbound digital signals in the camera.
- **<u>FTP</u>**: store the results in a FTP server.



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- **<u>HTTP</u>**: send a request using this protocol to a server.
- MILESTONE: send an analytic event to Milestone VMS.
- **<u>VAST2</u>**: Enable the connection to send lpr results and images to VAST2 VMS.
- **Trigger server**: Enable a port that sends the read response when a trigger message arrives.
- <u>Wiegand VIVOTEK</u>: send a signal to VIVOTEK Wiegand convertor.
- **FTP JPG MTT**: the functionality it's the same one realized with FTP, with a few differences because with this one you can create a structure of subfolders, contains information like camera, year, month and day.
- **<u>EMAIL</u>**: send an email.

A list can perform several actions, depending on the scenario and demands.

Selecting "Action for the list: VIVOTEK VIP", click on "+" and then select an event response.

	/							1	English	•
o	VIVO	TEK		Live	Review	Lists	LPR configuration	General configuration	Audit	Logs
▼ List ty	pes									
							+	Q Search		
ID Nam	ne									
-2 all p	lates								Edi	it <u>Delete</u>
-1 not	in list								Edi	it <u>Delete</u>
1 BLA	CKLIST								Edi	it <u>Delete</u>
2 WHI	ITELIST								Edi	it <u>Delete</u>
3 VIV	OTEK VIP			Socket client					Edi	it <u>Delete</u>
 List of 	f the license	e plates: VIV	OTEK VIP (2)	Socket server Onvif event IO			+	Q Search		
Plate		Description	Insert Date	FTP			End validity dat	te		
ZXC5678			08/04/2020 20:32:44	НТТР			01/01/3000 00	00:00	Edi	it <u>Delete</u>
ABC1234			08/04/2020 20:32:34	MILESTONE			01/01/3000 00	00:00	Edi	it <u>Delete</u>
				WIEGAND						
				VAST2						
 Action 	n for the list	: VIVOTEK \	/IP (1)	Trigger server						
			ĸ	Wiegand Vivote	k			+ Q Search		
D	Descript	ion		EMAIL			Active			
2	LIST AC	ΓΙΟΝ		VAST2		-	bled		- Sav	e <u>Cance</u>

 Configuring the action *Socket Client* if you want to send the results to another device, using the VIVOTEK VIP list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = Socket Client"

ID	Dest	ription						Δ-4	ion typ	2						Active							
2		O XML M	s.c.					-	ket clie							Enable							
2	SEINI	J AIVIL IVI.	50					300	.ket cile	ant J						Chable	eu.						
Actic	on prop	erties																					
Aotic	in prop	/01100																					
	Scheo	luler																					
_																							
4	астій	ATION	SCF	IEDU	LER																		
	0:0	0 1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	011:00	12:00	13:00	014:00	15:00	016:0	017:	00 18:	:00 1	9:00	20:00	21:00
s	un																						
M	lon																						
Т	ue																						
V	/ed																						
	'nu																						
	=ri																						
5	Sat																						
	🗸 Sav	e schedu	ler 🤙	-	-						_												
			_								1	1											
	tion Info									?	~												
	tion into									-													
Ac										127	.0.0.1												
Ac	st:																						

Set the scheduler as needed and click on "SAVE SCHEDULER".

-

Action Info: Click on	for more information.	
	Help	×
	Enable a socket connection to send messages as XML or JSON	
	The parameters are the following	
	Host: The IP for the device that will listen to	
	 Port: The port that will listen to 	
	 Format: The message type (XML/JSON) and if need to send the image too 	
Select which message format	you will use to send the information.	
5		
Click on for more info	rmation.	

Help

×

The posible formats are following

- XML:XML message without image Download Sample
- XML_IMG:XML message with image Download Sample
- JSON: JSON message without image Download Sample
- JSON_IMG: JSON message with image Download Sample



2. Setting up "Socket Server" as an event response, this LPR camera will receive messages from other devices.

ID	Descrip	tion						Act	ion type	2						Active								
4	Receive	XML n	nsg					Soc	ket sen	/er						Enable	đ						E	<u>dit Delete</u>
Action	proper chedul																							
AC	TIVA					5.00	6.00	7.00	0.00	0.00	10.00	11.00	12.00	12.00	14:00	15.00	16.00	17.00	10.00	10.00	20.00	21.00	22.00	22100
Sur		1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
Mor	1																							
Tue																								
Weo																								
Fri																								
Sat																								
Actio	Save s	chedul	er		-					?	1													
Port:										8050)												_	
Form	at:									• >	(ML	XN	1L_IMG		JSON	•	ISON_II	MG					2	?

Set the scheduler as needed and click on "SAVE SCHEDULER".

Action Info: Click on

for more information.

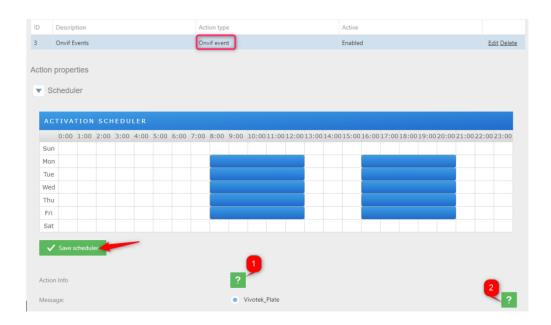
Help × Open a port in the camera to listen to hosts to send messages as XML or JSON The parameters are the following • Port: The port that will listen • Format: The message type (XML/JSON) and if need to send the image too Click on Help

The posible formats are following

- XML:XML message without image Download Sample
- XML_IMG:XML message with image Download Sample
- JSON: JSON message without image Download Sample
- JSON_IMG: JSON message with image Download Sample

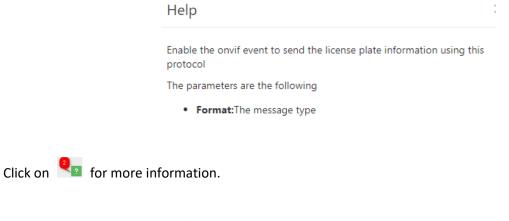


3. Configuring "**Onvif Event**" as an event response, this LPR camera will send the license plate using this protocol.



Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on for more information.



Help

The posible formats are following

• Vivotek_plate:Onvif vivotek message Download Sample



4. Configuring "*IO*" as an event response, the LPR camera will trigger the digital output device that is attached to this camera. This device can be a gate, a siren or other devices, e.g. when a license plate in "VIVOTEK VIP" list is detected, this LPR camera can open the gate barrier automatically.

ID Description Action type Active 10 3 Open Gate Enabled Edit Delete Action properties Scheduler 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:0011:0012:0013:0014:0015:0016:0017:0018:0019:0020:0021:0022:0023 Sun Mon Tue Wed Thu Fri Sat Action Info IO type: VIVOTEK 0 Activation time(sec) Î 1

Click on "Action for the list" and add a new action pressing "+" and then select in "Action type = IO"

Set the scheduler as needed and click on "SAVE SCHEDULER".

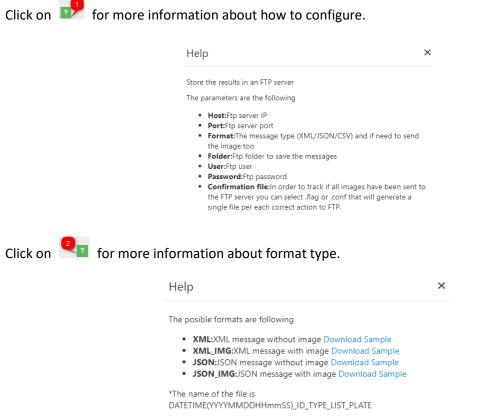
Click on **?** for more information.

Help	×
Enable output digital signals in the camera The parameters are the following	
 IO type:The type of output Output:The port that will be activated Activation time(sec):Time to keep the signal 	

5. Configuring the action *FTP* to send an XML, JSON or image to an FTP server. Using the "VIVOTEK VIP" list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = FTP"

OTEK																				1	P S	Sur	vei	llaı	nce
n-Cheng Rd., Ch	m hung	g-Ho), Ta	ipei	Cou	nty,	Taiw	/an	T:	+88	86 2	8245	528	2	F: -	+886	6 2 8	245	5532	2 1	E: s	ales	@vi	/ote	k.cor
ID	D	escript	tion						Acti	on typ	e						Active								
4	s	end im	age to	FTP					FTP	1							Enable	d							Edit De
	Sch			0.01																					
			_		EDU		5.00	6.00	7.00	0.00	0.00	10.00		10.00	12.00	14.00	15.00	16.0							
	Sun	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:0	017:0	018:0	019:0	0020:0	0 21:0	0022:	0023:0
	Mon																								
	Tue																								
1	Wed																								
	Thu																							_	
	Fri Sat																								
	~	Save so	chedule	er 🔶																					
												1													
A	Action I	nfo									?	7													
н	Host:										192.	168.10.2	50												
	Port:										21														
	-OIL										-				*					-					2
F	Format:											(ML	XN	IL_IMG		JSON		JSON_	IMG	•	AGE				<
F	older:										LPR	Images													
U	Jser:										root														
Pa	asswor	rd:									N3u	r4L3Dg3	8												
0	Confirm	nation f	file:								•	NONE		LAG		ONF									

Set the scheduler as needed and click on "SAVE SCHEDULER".



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6. Configuring "HTTP" as an event response, this LPR camera will send analytic events to a VMS. Using the "VIVOTEK VIP" list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = HTTP"

ID	Descrip	tion						Act	ion typ	e						Active								
4	Analytic	: Events						нт	TP							Enable	d						E	dit <u>Delete</u>
	chedul	er		5.0.1																				
AC	D:00					5:00	6:00	7:00	8.00	9.00	10.00	11:00	012:00	13:00	14.0	115-00	16:00	17-0	0.18.0	0 19-0	10.20-0	021.0	0.22.00	023:00
Sur		1.00	2.00	5.00	4.00	5.00	0.00	7.00	0.00	5.00	10.00	/11.00	J 12.00	15.00	14.00	/15.00	/10.00	111.0	0 10.0	015.0	10 20.0	021.0	022.00	525.00
Mor	1																							
Tue	6																							
Wee	t									_			_		_									
Thu															_									
Fri															_								_	
Sat																								
Actio	Save s	chedule	-							?	9													
Host:										172.	10.10.2	00												
Port:										909)			÷										
Form	at:									0	GET	• PC	OST											2 ?
Uri:										http	://172.7	10.10.20	00:9090											

Set the scheduler as needed and click on "SAVE SCHEDULER".

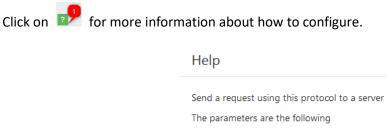
Click on 🥩 for more info	rmation about how to configure.
	Help
	Send a request using this protocol to a server
	The parameters are the following
	Host:Http server IP
	 Port:Http server port
	 Format: Petition format to send
	 URL:URL to send the petition
2	
Click on 1 for more inf	ormation about format type.

×		
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	Help	×
	The posible formats are following	
	GET:Send a get petition POST:Send a post petition	

7. Configuring "MILESTONE" as an event response, this LPR camera will send analytic events to the Milestone VMS. Using the "VIVOTEK VIP" list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = MILESTONE"

ID	Description	Action type	Active	
1	action	MILESTONE	Enabled	Edit Delete
Actior	n properties			
	Scheduler			
A	CTIVATION SCHEDULER			
		7:00 8:00 9:00 10:0011:0012:0013:0014:0	0 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22	:0023:00
SU				
Т				
We	ed			
Th	iu			
F				
Sa	at			
	Save scheduler	-		
Acti	on Info	2 9		
Hos	t	27.0.0.1		
Port	5	090		•
Forr	nat:	ANALYTIC_EVENT		2?
Url:	1	ttp://127.0.0.1:9090		

Set the scheduler as needed and click on "SAVE SCHEDULER".



- Host: Milestone server IP
- Port:Milestone server port
- Format: Petition format to send
- URL:URL to send the petition
- Event Type:Analytic event type

Click on for more information about format type.



Help

The posible formats are following

• ANALITYC_EVENT:Send a Milestone analytic event message Download Sample

See chapter 4.4.1 to know more information on how to configure Milestone.

8. Configuring the action Trigger Server will use the camera to receive triggers from other devices and send a message. Using the EMPLOYEES list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = Trigger Server".

This mode is designed to work with trigger mode, the client connect to the server socket and send the message specified tin the "Trigger mode", received this message (another message is discarded) make a trigger to the camera an take a picture to process the engine. After engine processed send a message with the format specified in the "Format response"

SIMPLE: Just the plate number

XML a message in format XML

XML_IMG a message in XML format including the image in base64 format

JSON a message in format JSON

JSON_IMG a message in JSON format including the image in base64 format

ID	Description	Action type	Ac	stive	
2	1	Trigger server	Di	isabled	Edit Delete
Action prope					
ACTIVA					
Sun Mon Tue Wed Thu Fri Sat		1	0012:0013:0014:0	00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22	:0023:00
Action Info		?			
Port:		8060 Ĵ			
Format respo	nse:	SIMPLE XML XM	IL_IMG JSON	JSON_IMG	
Trigger mess	age:	\$			

Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on for more information about how to configure.



Help

×

Enable a port that sends the read response when a trigger message arrives

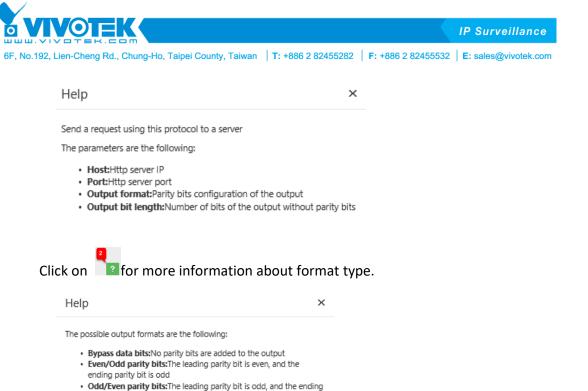
The parameters are the following:

- · Port: The port that will listen/respond to.
- Format: The message type and if need to send the image too. The posible formats are following:
 - SIMPLE: Return only the number plate
 - XML: XML message without image Download Sample
 - XML_IMG: XML message with image Download Sample
 - JSON: JSON message without image Download Sample
 - JSON_IMG: JSON message with image Download Sample
- Trigger message: Activation message for trigger
- Simple response init: Message concatenated before plate (only for simple format)
- Simple response init: Message concatenated after plate (only for simple format)
- Configuring the action WIEGAND VIVOTEK to send analytic events to a Wiegand middleware board. Using the EMPLOYEES list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = WIEGAND".

ID	Description	Action type	Active	
2	WG	Wiegand Vivotek	Enabled	Edit Delete
Action propert				
ACTIVAT	ION SCHEDULER			
0:00 :	1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:0	0 9:00 10:00 11:00 12:00 13:00	14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00 22	::00 23:00
Mon				
Tue				
Wed				
Thu				
Fri				
Sat				
✓ Save scl Action Info	neduler			
Host:	192.168.1.12	7		
Port:	1601	*		2
Output format:	Bypass d	ata bits Even/Odd parity bits	Odd/Even parity bits	?
Output bit leng	th: • 24 bits	32 bits		

Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on for more information about how to configure.



parity bit is even

The output bit length without parity bits can be 24 or 32 bits

10. Configuring the action FTP JPG MTT using the EMPLOYEES list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = FTP JPG MTT".

ID Description	Action type	Active	
11 1	FTP JPG MTT	Enabled	Edit Delete
Action properties			
 Scheduler 			
- Oulddiol			
ACTIVATION SCHEDULER			
0:00 1:00 2:00 3:00 4:00 5:	00 6:00 7:00 8:00 9:00 10:0011:0012:0	0 13:00 14:00 15:00 16:00 17:00 18:00 19:0	0020:0021:0022:0023:00
Sun			
Tue			
Wed			
Thu			
Fri			
Sat			
✓ Save scheduler	1		
Action Info	?		
Host:	127.0.0.1		
Port:	21		2
Format:	JPG		?
Folder:			
Usen			
Password:			

Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on

for more information about how to configure.

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92, Lien-Cheng Rd., Chung-Ho, Taipei County, Taiwan T: +88	386 2 82455282 F: +886 2 82455532 E: sales@vivotek.co
Help	×
Store the JPG image of the result in a FTP server by camera ID, month and day	D, year,
The parameters are the following	
Port:Ftp server port Format:The image format (JPG) Folder:Ftp folder where to save the image files User:Ftp user Password:Ftp password Click on for more information about	it format type.
lelp	×
he only supported format is JPG	
he image files will be stored in the following folders structure: ameralD/year/month/day	
he image file name will follow the layout: YYYYMMDD- hmmss cameralD plate.jpg	

11. Configuring the action EMAIL to send messages, using the EMPLOYEES list, click on "Action for the list" and add a new action pressing "+" and then select in "Action type = EMAIL".

ID	Description	Action type	Active	
14	1	EMAIL	Enabled	Edit Delete
Action properti	ion			
Action properti	105			
 Schedule 	ſ			
ACTIVAT	ION SCHEDULER			
	1:00 2:00 3:00 4:00 5:00 6:0	0 7:00 8:00 9:00 10:0011:0012:001	3:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00	22:00 23:00
Sun				
Tue				
Wed				
Thu				
Fri Sat				
Sat				
✓ Save sch	neduler			
Action Info		?		
Server:				
Port:		587		_
1 Ord		307		2
Server type and	l format:	 SMTP/SSL SMTP 		?
From:				
User:				
User.				
Password:				
To:				
C. Alark		alabe (P) Ti anani and		
Subject:		plate {PLT} received		
Message:		Plate: {PLT}{ENDLN}Time: {DTE}{ENDLN}Global	Confidence: {CNF}{ENDLN}List: {IDNAME}{ENDLN}Lane: {IDLAM	I}{EN

Set the scheduler as needed and click on "SAVE SCHEDULER".

Click on for more information about how to configure.

52, Lien-Oneny Ru.,	Chung-Ho, Taipei County, Taiwan	1. ₹000 Z 0Z400Z8Z	F. ™000 Z 0Z40003Z	
Help		×		
Send an email				
The parameters are	the following:			
 From: From e User:Email us Password:Em To:To email a Subject:Emai Message:Emai Message:Arthe possible {DTE}:Date, (C 	ort ind format: Type of email server imail adress er iail password dress I subject			
Click on	for more informatio	on about format	type.	
Help		×		

SMTP/SSL: SMTP server over SSL

SMTP: SMTP Server

In case, you don't want to continue using an action in a list you can modify able to disable or delete the action.

To disable click on the list, select the action and then click on edit option.

In Active change to Disabled and then click on Save.

• A	ction for the list: EMPLOYEES (0)				
				+ Q Search	
ID	Description	Action type	Active		
	open gate	10 ~	Select		Save Cancel
			Disabled		
► E	xports for the list: EMPLOYEES (0)		Enabled		

After this change, you will have the action disabled in case you need to use it later.

			+ Q Search	
ID	Description	Action type	Active	
3	open gate	10	Disabled	Edit Delete

To delete an action, click on the action and click on the DELETE button and then YES.

				IP	Surveillance	
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 Action 	for the list: EMPLOYEES (1)					
Action	IOI LIGIISI. EMIFLOTEES (1)					
AGION	of the list. EMIFLOTEES (1)			+	Q. Search	
ID	Description	Action type	Active	+	Q. Search	

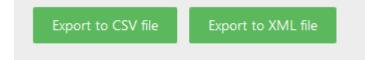
Are you sure to delete the action from list?

Yes	No

Exports for the list: Here are all the automatic exports we can configure for each list.

- Local matches: Exports the matches of the list locally
- FTP matches: Exports the matches of the to an FTP server
- Local list: Exports the list locally
- FTP list: Export the list to an FTP server

Users can also download the selected list by choosing "Export to XML file" or "Export to CSV file".



A list can perform several exports, depending on the scenarios and needs.

Having the Employees list selected, click on "Exports for the list" and then click on the + button and define the type and interval. The interval can be set as:

- *Minute:* Will execute the task every minute.
- *Hour:* Will execute the task every hour.
- *Day:* Will execute the task once a day at 23:59:59.
- *Week:* Will execute the task once a week, every Monday at 00:00:00.
- *Month:* Will execute the task once a month, the first day of the month at 23:59:59.

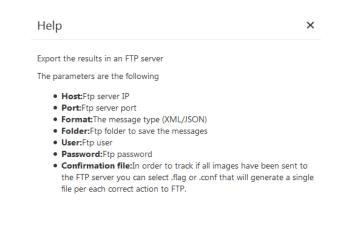
	Exports for the list: EMPLOYEES (0)							
Exp	ort to CSV file Export to XML file		Minute]				
		-	Hour					
			Day	Interva	1+	imo		
			Week	interva		Search		
ID	Description 4	Export type	Month			Active		
	local result	FTP matches ~	Select		*	Enabled	-	Save Cancel

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 Configuring the export *FTP matches* to export the results to an ftp result, using "VIVOTEK VIP" list, click on "Export for the list" and add a new export by clicking on "+" and then select in "Export type = FTP matches".

ID	Description 4	Export type	Interval	Active	
1	local result	FTP matches	Hour	Enabled	Edit Delete
Expo	r properties	?			
Host:		127.0.0.1			
Port:		21			_
Form	at:	• XML • XML_IMG	JSON JSON_IMG CSV		2?
Folde	er name:				
User:					
Passv	vord:				
Confi	irmation file:	NONE .FLAG	.CONF		

Click on for more information about how to configure.





Help

×

The posible formats are following

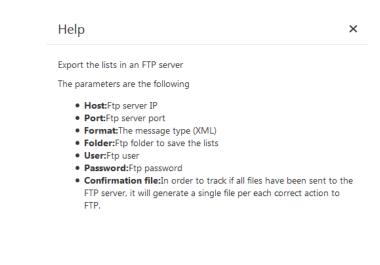
- XML:XML results without image Download Sample
- XML_IMG:XML results with image Download Sample
- JSON: JSON results without image Download Sample
- JSON_IMG: JSON results with image Download Sample
- CSV:CSV results Download Sample

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 Configuring the export *FTP lists* to export the list locally, using the "VIVOTEK VIP" list, click on "Export for the list" and add a new export pressing "+" and then select in "Export type = FTP list".

ID	Description 4	Export type	Interval	Active	
1	local result	FTP list	Hour	Enabled	Edit Delete
	t properties vrt Info	?			
Host		127.0.0.1			
Port		21			_
Form	nat:	• XML CSV			2?
Fold	er name:				
User	:				
Pass	word:				
Conf	firmation file:	.FLAG			

Click on for more information about how to configure.



Click on for more information about format type.

Help

The posible formats are following

- XML:XML list Download Sample
- CSV:CSV list Download Sample

×

✓	
	IP Surveillance
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If users don't want to continue to use export in a list, users can disable or delete the action. To delete, click on the list. Select the export and then click on the delete option.

				+ Q Search	
ID	Description	Export type	Interval	Active	
2	11111	FTP list	Minute	Enabled	Edit Delete

To disable, click on the list. Select the action, and then click on "Edit".

The Active status will be changed to "Disabled". Click on "Save" to save this new configuration.

				+ Q Search
ID	Description	Export type	Interval	Active
2	11111	FTP list 👻	Minute -	Disabled - Save Cancel

After this change, the action is temporarily disabled in case users need to use it later.

The "Enable if change" status, only do the export if the export type is "Local list" or "FTP list" and export the list only if there is any change.

					+ Q Search		
ID	Description	Export type	Interval	/	Active		
2	11111	FTP list 👻	Minute	-	Enabled if change	•	Save Cancel

To delete an action, click on the action and click on the "delete" button and then "YES".

				+ Q Search	
ID	Description	Export type	Interval	Active	_
2	11111	FTP list	Minute	Enabled	Edit Delete

Import for the list: Here are all the automatic imports users can configure on each list.

- FTP list: Import the list to an FTP server
- SINCRO camera: Import the list from another camera

You can also import the list by manually uploading an xml list file.

Select import XML/CSV file or Drop import XML/CSV file here Delete the list elements at import



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The format of the XML is as follows:

<?xml version = "1.0" encoding = "utf-8" ?>

<prouplist>

<nllists>

<nllist id="3" sendserver="0" dateserver="" reserve="" description="EMPLOYEES" color=""/>

</nllists>

<nlelemlists>

<nlelemlist id="1" sendserver="0" dateserver="" reserve="" numberplate="AAA123" listid="3" timestamp="" description="EMP 1" startvaliditydate="2000-01-01T00:00:00.000" endvaliditydate="3000-01-01T00:00:00.000"/>

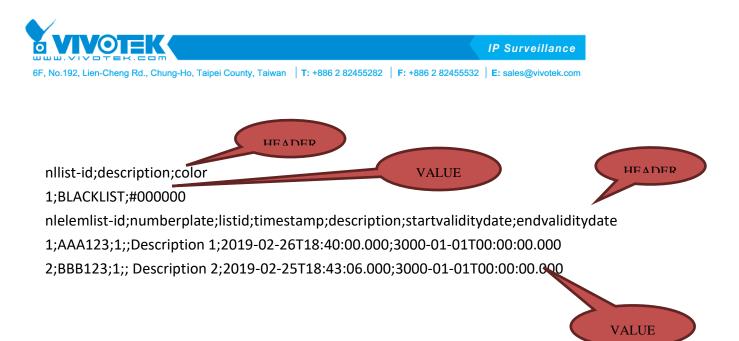
<nlelemlist id="2" sendserver="0" dateserver="" reserve="" numberplate="BBB321" listid="3" timestamp=""

description="EMP 2" startvaliditydate="2000-01-01T00:00:00.000" endvaliditydate="3000-01-01T00:00:00.000"/> </nlelemlists>

</grouplist>

- Grouplist: the main element of the xml
- Nllists: The group of type of lists
- Nlist: The list type element, on:
 - Id= Id of the list
 - Sendserver = Always 0
 - Dateserver= Always ""
 - Reserve = Always ""
 - Description= The name of the list
 - Color = Always ""
- Nlelemlists: the group of the elements of the list
- Nlelemlist: the element in list, on:
 - Id= Id of the element
 - Sendserver = Always 0
 - Dateserver= Always ""
 - Reserve = Always ""
 - Numberplate= Plate number of the element
 - Listid= Id of the list
 - Timestamp= Always ""
 - o Description= Description of the plate number
 - Startvaliditydate= Start date of validity period
 - Endvaliditydate= End date of validity period

The format of CSV is the following:



The first block of HEADER-VALUE is the type of list which values are:

- nllist-id: Id of the list
- description: Description of the list
- color: Color of the list (NOT IN USE)

The second block of HEADER-VALUE are the elements of list which values are:

- nlelemlist-id: Id of the list element
- numberplate: Plate number
- listid: Id of list type
- timestamp: Always ""
- description: Description of the number plate.
- Startvaliditydate: Start validity date of the number plate.
- Endvaliditydate End validity date of the number plate.

A list can perform several imports, depending on the scenario and needs.

Having the Employees list selected, click on "Imports for the list" and then click on the + button and define the type and interval. The interval can be set as:

- *Minute:* Will execute the task every minute.
- *Hour:* Will execute the task every hour.
- Day: Will execute the task once a day at 23:59:59.
- *Week:* Will execute the task once a week, every Monday at 00:00:00.
- *Month:* Will execute the task once a month, the first day of the month at 23:59:59.

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 Configuring the import *FTP list* to import the list from an ftp result, using the EMPLOYEES list, click on "Import for the list" and add a new import pressing "+" and then select in "Import type = FTP list".

ID	Description	Import type	Interval	Active	
1	import	FTP list	Day	Enabled	Edit Delete
	t properties ort Info	2			
Hos	t	127.0.0.1			
Port		21			_
Forr	nat:	XML XML_NOTDEL	ETE CSV CSV_NOTDELETE		2?
Fold	ler name:				
Use	c.				
Pass	word:				
Con	firmation file:	• .FLAG			

Click on for more information about how to configure.

Help ×
Import the lists from an FTP server
The parameters are the following
Host:Ftp server IP
 Port: Ftp server port
 Format: The message type (XML)
 Folder: Ftp folder to save the lists
User:Ftp user
Password: Ftp password
 Confirmation file: In order to track if list have been recieve from the FTP server.



Help

×

The posible formats are following

- XML:XML list Download Sample
 XML_NOTDELETE:XML list (Not delete the old elements)Download
 Sample
- CSV:XML list Download Sample
- CSV_NOTDELETE:XML list (Not delete the old elements)Download
 Sample

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Configuring the import *SINCRO camera* to import the list from another camera, using the EMPLOYEES list, click on "Import for the list" and add a new import pressing "+" and then select in "Import type = SINCRO Camera".

				+ C Search	
ID	Description	Import type	Interval	Active	
5	23232	SINCRO camera	Minute	Enabled	Edit Delete
	properties rt Info	2			
Host:		192.168.1.78			
User:		root			
Passv	vord:				

Click on for more information about how to configure.

Help	×
Import the lists from a Camera The parameters are the following	
 Host:Camera master IP User:Camera master user Password:Camera master password 	



4.4.1 Configure Milestone

After the Milestone action is configured, users will need to set up Milestone VMS server to process this action. Please follow the next steps,

- 1- Enable analytic events.
 - a. Click on "Tool" -> "Options" and select the "Analytics Event" tab. At this tab users will activate the Analytics events.

Options					
Mail Server	AVI Generation	Network	Audio Messages	Access Control Settings	Analytics Events
Analytics ev Enabled Port: 9090					

- 2- Create the analytic event.
 - a. Click on "Rules and Events" -> "Analytics Events". And then right-click to create a new analytic event.
 The name must be the same as that defined at Event type of action.

Analytics Events 🚽 🖣	Properties
Analytics Events	Name: LPR Camera Event

- 3- Create an alarm definition.
 - a. Right click on alarm definition and we create a new alarm definition on:
 - i. Enable: This alarm is enabled at system
 - ii. Name: The alarm name
 - iii. Triggering event: selecting Analytic Events is required
 - iv. Triggering event source: Selecting the source before creating an analytic event
 - v. Source: Selecting the camera at milestone system is required

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Alarm Definitions		
🖃 🤳 Alarm Definitions	Alarm definition	
Alarm Definition	Enable:	\checkmark
	Name:	LPR ALARM
	Instructions:	
	Trigger	
	Triggering event:	Analytics Events

4.5. LPR Configuration Tab

In this tab, users will set the proper configuration for the LPR camera depending on the scenario where will be located (indoor, outdoor) and the necessity (parking, control of access points, security, tolls, road offenses, etc.).

"Restart service" is required every time when users modify a setting in LPR Configuration Tab.



First step is selecting a region and a country. For example, let's configure VIVOTEK ANPR to read plates from Malaysia and Singapore.

In Region, select Asia.

Region:	Europe & Morocco	-
Countries:	Europe & Morocco	
	South America & Central	
	North America & Central	
	Asia	
	Africa	

In countries, search and select one or multiple countries.

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Countries:	Select	
	Russia	
	Turkey	
	Vietnam	
	Indonesia	
	Philippines	
	Malaysia	
	Singapore	
	Israel	
	Lebanon	
	Hong Kong	
	Macau	
	India	
	Taiwan	
	Bahrain	
	Abu Dhabi	

After selecting the countries, restart service by clicking the button. Now you are ready to read license plates for these two countries.

		Restart service
Region:	Asia	*
Countries:	Singapore 🗶 Malaysia 🗶	

Function Mode: This LPR camera supports 3 LPR processing modes.

- **Trigger:** The camera will read license plate number only when a trigger is activated such as an induction loop, laser... etc.
- Free Flow: The camera is continuously processing all the frames/images. It is not recommended unless there is a constant flow of vehicles.
- Motion Detection (Set by default): The camera will read license plate number only when the frame difference is over the motion threshold.

<u>Resolution</u>: The camera resolution by default for license plate recognition is 1280 x 960, you also can choose 1920 x 1440 to increase more pixel density of the license plate numbers, for example with 2 Lanes LPR readings.

Users can configure the camera resolution according to their installation, e.g. you might need to increase the camera resolution when the capture distance is far. Please be noted that the higher resolution doesn't mean higher LPR accuracy.



The camera resolution here is only for LPR processing, and it has nothing to do with the camera parameters in video recording. In other words, this VIVOTEK's stop-and-go LPR camera is not only a standalone LPR camera; it is also a video surveillance camera. The maximum camera resolution and frame rate per second for video surveillance purpose are 2560x1920 (5MP) at 30fps or 1920x1080 at 60fps.

						E	inglish	Ŧ
VIVOTEK		Live	Review	Lists	LPR configuration	General configuration	Audit	Logs
							Restart	service
Region:	Asia							Ψ.
Countries:	Malaysia 🗶 Sing	gapore 🗙						
Function mode:	TRIGGER	FREEFLOW	• мот	TIONDETE	CTION			?
Resolution:	• 1280x720	1920x1080)					

Show ROI: Users can draw a region of interest on the camera image. The LPR engine will only process and read the license plate in this region. Please be noted that license plate must be seen completely in this ROI.



Click on "Show ROI", the wizard will guide you on how to draw it.

Draw 2 points into the road following the steps:

- 1. Draw top left point.
- 2. Draw bottom right point.

To reset ROI, click on "RESET ROI" button.

Click on the "<u>Restart Service</u>" Restart service

button for the configuration to take effect.



<image>

Show Lanes: Users can configure 2 lanes by drawing a line. The maximum number is 2.

Click on "Show Lanes", the wizard will guide you on how to draw it.

Draw 2 points into the road following the steps:

- 1. Draw top point.
- 2. Draw bottom point.

To reset ROI, click on "Delete Lanes" button.

Click on the "Restart Service"

button to take effect.



VIVOTEK ANPR will read the license plate and indicate on which lane the license plate was detected.



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Expert Options: Here is the recommended configuration for best performance if Motion Detection (default configuration) is selected.

Minimum character height: Minimum character size. Very useful for cases where users want to ensure a minimum character size. 25 being the recommendation

Maximum character height: Maximum character size. Very useful for cases where users want to ensure a maximum character size.

Minimum Confidence (%): Minimum reliability in the reading of a license plate to consider it valid. Reliability is a parameter returned by the engine for recognizing license plates (value of 1-100, where 100 is the most reliable). 80 being the recommendation

[TIPS]: if the confidence of LPR reading is lower than the confidence level, the LPR result won't show up and the engine will keep read the number plate and the result will be shown up when it reach the confidence level. If you found the LPR reading is slow for some specific plates, you can go to **log tab** to see if it filtered by the confidence level.

- 1. Go to Logs \rightarrow check log type: Service \rightarrow searches the number plates to see the reading process.
- 2. And you can see the reading process even the confidence lower than the level.

			3	AXE2281	0/0	~ ~	×	English	-
	EK	Live	Review	Lists	LPR configuration	Genera	l configuration	Audit	Logs
								Restart	service
Show log type:	Manager Service	Engine							
Autorefresh:	Enabled								
13/01/2020 08:13:04.915 [INE 13/01/2020 08:13:05.540 [INE 13/01/2020 08:13:05.926 [INE 13/01/2020 08:13:07.463 [INE 13/01/2020 08:13:07.940 [INE	O) MEMORY OK init 45560 max 68340 curr O) FILTER CONFIDENCE: Text=AXE2281, Dat O) FILTER CONFIDENCE: Text=AXE2281, Dat	e=2020-01-13T08:13:04. e=2020-01-13T08:13:05. e=2020-01-13T08:13:05. e=2020-01-13T08:13:07. e=2020-01-13T08:13:07.	.559.Conf=76. 052.Conf=75. 568.Conf=75. 056.Conf=73. 554.Conf=74.	63.Height= 14.Height= 83.Height=	27.86,Coord=677#373#813# 29.43,Coord=767#431#912# 34.29,Coord=1012#556#117	415, Country 478, Country 7#616, Count	<pre>/=313, Angle=2.15, /=313, Angle=2.86, rry=313, Angle=5.6</pre>	Info=1,Time= Info=1,Time= 53,Info=1,Tim	=464 =334 me=382

FPS: Maximum frames per second to process. 5 being the recommendation

Connection Type: You need to select the option, how user will get the image to process

VIVOTEK: Camera streaming.

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Expert Options		
Info:	?	
Minimum character height:	25	
Maximun character height:	80	
Minimun confidence (%):	80	
Fps:	5	
Connection type:	VIVOTEK	

Trigger Mode: VIVOTEK ANPR is normally in an idle state. When a trigger command is received, it performs a variable number of captures, depending on configuration, and returns a result. Results from different triggering events are independent of one another. That is, if the same vehicle is still present on a second trigger command, the same license plate will be returned a second time. On every trigger, it performs captures until the number exceeds NCaptures, or the time exceeds Timeout.

Function mode:	TRIGGER FREEFLOW MOTIONDETECTION	
Resolution:	640x480 800x600 • 1280x720 1600x904 1920x1080	
Show Roi		
Show Lanes		
Expert options		
Trigger options		
Trigger captures:	1	÷
Trigger timeout:	0	÷
Trigger IO device:	VIVOTEK	
Trigger IO port:	✓ 0 📃 1	

Trigger Captures: How many images do users want to process from reading license plates to stop. Trigger Timeout: How many seconds do users want to process from reading license plates to stop. Trigger IO Device: If selected, the Digital Input ports will activate.

Trigger IO Port: Choose which digital input port you will use.

Click on the "<u>Restart Service</u>" Restart service button for the configuration to take effect.

FreeFlow/Motion options: VIVOTEK ANPR continuously runs OCR on the receiving frames. Whenever a new vehicle enters the scene, a new result is sent through the notification socket.

Live Review Lists LPR configuration General configuration A			IP Surveille	ance
Live Review List LPR configuration Central configuration A	Cheng Rd., Chung	g-Ho, Taipei Coun	nty, Taiwan T: +886 2 82455282 F: +886 2 82455532 E: sales@vivo	ek.co
Region: North America & Central Countries: California # Function mode: TRIGGER • FREEFLOW • MOTIONDETECTION Resolution: • 1280x720 • 1920x1080 Show ROI Show lanes Expert Options Trigger options Info: 2 Free Flow/Motion filter mode: NONE • CAPTURES • TIME Free Flow/Motion filter raptures: S Free Flow/Motion filter rune (millis): O Minimum characters difference:				Englist
Region: North America & Central Countries: California Function mode: TRIGGER Punction mode: TRIGGER Resolution: 1280x720 Show ROI Show Rol Show lanes Expert Options Trigger options FreeFlow/Motion filter mode: NONE Captrures Show/Motion filter mode: NONE Captrures Free Flow/Motion filter time (millis): O Minimum characters difference:	X vr	VOTEK	Live Review Lists LPR configuration General configuratio	n A
Countries: California in Function mode: TRIGGER REEFLOW MOTIONDETECTION Resolution: 1280x720 1920x1080 Show ROI Show lanes Show lanes Show lanes Expert Options Trigger options Trigger options NONE CAPTURES TIME Free Flow/Motion filter mode: NONE CAPTURES TIME Free flow/Motion filter captures: 5 Free Flow/Motion filter time (millis): 0 Minimum characters difference: 1				R
Function mode: TRIGGER FREEFLOW MOTIONDETECTION Resolution: 1280x720 1920x1080 Show ROI Show lanes Expert Options Trigger options Trigger options FreeFlow/Motion options Info: ? Free flow/Motion filter mode: NONE CAPTURES TME Free flow/Motion filter captures: 5 Free Flow/Motion filter time (millis): 0 Minimum characters difference:	Region:		North America & Central	
Resolution: 1280x720 Show ROI Show lanes Show lanes Expert Options Trigger options Trigger options Info: ? Pree Flow/Motion filter mode: NONE General Computers Free Flow/Motion filter time (millis): Infinium characters difference: 1	Countries:		California 😹	
Show ROI Show lanes Expert Options Trigger options Trigger options Tree Flow/Motion options	Function mode:		TRIGGER FREEFLOW MOTIONDETECTION	
Show lanes Expert Options Trigger options Trieger options Tree Flow/Motion options ree flow/Motion filter mode: Ree Flow/Motion filter captures: Free Flow/Motion filter captures: Free Flow/Motion filter time (millis): O Info:	Resolution:		 1280x720 1920x1080 	
Expert Options Trigger options FreeFlow/Motion options rece flow/Motion filter mode:	Show ROI			
Trigger options FreeFlow/Motion options Info: ? Free flow/Motion filter mode: NONE • CAPTURES • TIME Free Flow/Motion filter captures: 5 Free Flow/Motion filter time (millis): 0 Minimum characters difference: 1	Show lane	S		
Free Flow/Motion options Info: ? Free flow/Motion filter mode: NONE • CAPTURES • TIME Free Flow/Motion filter captures: 5 Free Flow/Motion filter time (millis): 0 Minimum characters difference: 1	Expert Opt	ions		
Info: ? Free flow/Motion filter mode: NONE CAPTURES TIME Free Flow/Motion filter captures: 5 Free Flow/Motion filter time (millis): 0 Minimum characters difference: 1	Trigger opt	ions		
Free flow//Motion filter mode: NONE CAPTURES TIME Free Flow//Motion filter captures: 5 Free Flow//Motion filter time (millis): 0 Minimum characters difference: 1	▼ FreeFlow/t	Notion options		
Free Flow/Motion filter captures: 5 Free Flow/Motion filter time (millis): 0 Minimum characters difference: 1	Info:		?	
Free Flow/Motion filter time (millis): 0 Minimum characters difference: 1	Free flow/Motion	filter mode:	NONE CAPTURES TIME	
Minimum characters difference: 1	Free Flow/Motion	n filter captures:	5	
	Free Flow/Motion	n filter time (millis):	0	
Motion threshold: 15	Minimum charac	ters difference:	1	
	Motion threshold		15	

In the blue square, users can define repetition filters.

<u>Free flow/Motion filter captures</u>: For a result to be considered valid, the last license plate read must not be among the last N recognized as valid. This filter is useful for traffic jams, where the cameras may be reading N license plates continually in a closed cycle.

<u>Free flow/Motion filter (millis)</u>: Minimum time elapsed from the detection of the same license plate to it being accepted again in the system.

For example, if users have the camera in a parking garage and there is a traffic jam, users don't want to read the same license plate continuously, in that case, the best filter is for captures, please do the following. Select "Free Flow mode" -> click on "Free Flow options" -> click on "Free Flow filter mode" and select the filter "captures"

FreeFlow/Motion options		
Info:	?	
Free flow/Motion filter mode:	NONE CAPTURES TIME	
Free Flow/Motion filter captures:	5	÷
Free Flow/Motion filter time (millis):	0	* *
Minimum characters difference:	1	÷
Motion threshold:	15	*
Motion queue:	10	÷



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the button.

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With this configuration, once a license plate is read, it will not be read again until another 5 different license plates have been read.

<u>Minimum characters difference</u>: this faulty tolerance allows you to improve the vehicle passing flow especially for the parking usage. Some parking system will allow vehicle pass in first even with some LPR error readings, then user can choose the right one when they doing the payment.

<u>Motion threshold</u>: The motion threshold is the threshold to consider an image different from other image, for the motion mode. Value ranges from 0 to 100.

<u>Motion queue</u>: The motion queue is the number of images in an internal queue. Be careful because more images increase the LPR process memory. For the parking application, in order to open the barrier immediately after the LPR readings, the recommendation value is 1. (General reacting time from readings to action should be less than 3~5 sec.)

After all the changes are made, remember always to restart service. Click on the	Restart service	button.

If users need to restart all configurations for this section, click on

4.6. General Configuration Tab

In this tab, configure general parameters:

						English	Ŧ	
VIVOTEK	Live	Review	Lists	LPR configuration	General configuration	Audit	Logs	
						Restart	service	
Expert options								
Log options								
Purge options								
Maintenance Options								
Customized Options								
	Con	yright © 2020			Restart d	əfault config	uration	
	Cop	yngni w 2020						

Expert Options:

View type: user can choose the viewing type either LIST or SQUARE shown as below:

LIST: SQUARE:



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Save the image: will store the complete image in a folder.

Save the plate image: will only store the license plate image in a folder.

Image quality: will store the image with the compression configuration.

Store image on: will store data on an SD.

Trigger Socket Port: will enter the port we want to use for sending XML/JSON messages.

 Expert Options 	
Info:	?
View type:	LIST SQUARE
Save the image:	
Save the plate image:	
Image quality:	40 🗘
Store image on:	• SD
Trigger Socket port:	8040
Action time:	INMEDIATE PERSISTENT

Log Options:

Log Level: User can determine the log level to register what is going on with VIVOTEK ANPR. By default, is set to 3. Level 4 and 5 are for experts and debugging team.

Activate log engine: Select only if debugging mode is necessary, only for expert technicians.

Log Level CGI (manager): User can determine the log level to register what is going on with the CGI. By default, is set to 3. Level 4 and 5 are for experts and debugging team.





Purge Options: Users can determine how many days or free spaces of data users need to keep.

Purge options		
Purge Interval:	HOUR DAY WEEK MONTH	?
Type of purge:	DISABLED • DAYS FREESPACE	?
Days to preserve in storage:	3	
Minimum percentage of free space on SD:	20	
Minimum percentage of free space on CAMERA:	20	

Purge Interval: Schedule when do users want to execute the purge.

Hour: Will execute the task every hour.

Day: Will execute the task once a day at 23:59:59.

Week: Will execute the task once a week, every Monday at 00:00:00.

Month: Will execute the task once a month, the first day of the month at 23:59:59.

Type of purge in database: Set how and what do users want to purge.

Disabled: Won't execute any purge.

Days: Will purge by days, keeping data for the last days.

Freespace: Will purge depending on the free space in the SD or in the camera.

Once users have defined when and what to purge, users need to set the variables to execute the task.

Purge by days:

• Days to preserve in storage: Will keep LPR dates and files of the last (XX) days and purge the rest. <u>Purge by Free Space:</u>

- Minimum percentage of free space on SD:
 Will delete from the oldest images and files stored when the free space on the SD card is lower than configured.
- Minimum percentage of free space on CAMERA:



Will delete from the oldest LPR results of database when the free space of the camera flash is lower than configured.

Maintenance Options:

In this section you can upload files for camera configuration, licensing, update VIVOTEK ANPR version, change the logo and upload images for the path option displayed in the Camera Configuration tab. Also you can revert the configuration file to last files and reset the database.

						English	Ψ
VIVOTEK							
	Live	Review	Lists	LPR configuration	General configuration	Audit	Logs
						Restart	service
Expert options							
Log options							
Purge options							
 Maintenance Options 							
Upload file							
Revert last files							
Show info							
Reset the database							
Customized Options							
					Restart	lefault config	juration
	Cop	yright © 2020					

Upload File: Users can upload a file.

Revert last files: If after applying changes with the uploaded files, it doesn't work correctly you can revert changes.

Show Info: Show you information about the version and camera MAC address.

Information	×
Version 3.1.7.3	
Mac address 00:02:D1:87:7D:28	



Reset the database: you can reset the database, and it would require password which is your full Mac address including colon symbols. Once you reset the database you need to go to camera configuration page on Applications -> Package management to stop and start the ANPR service.

ptio	Reset the database
	This process will clear all ANPR results including number plate readings, actions, exports, imports from the camera, do you want to continue?
ena	Password:
le	Yes No
st files	

Customized Options:

In this section you export or import your ANPR configuration, also you can have customized columns (Name and Value) in export file.

						English 👻
VIVOTEK	Live Review	Lists	LPR configuration	Genera	l configuration	Audit Logs
						Restart service
Expert options						
► Log options						
Purge options						
Maintenance Options						
 Customized Options 						
Export to CSV file						
Select import CSV file or Drop import CSV file here						
				+	Q Search	
ID Name	† Value				- Contentia	
2 VIVOTEK Building No.	192					Edit Delete
					Restart d	efault configuration
	Copyright @ 2019					

The export XML file example:

<infoplate>

<VIVOTEK Building No.>192</VIVOTEK Building No.>

</infoplate>



In case users want to revert, all changes done, and want to get back to the default configuration, click on Restart default configuration button.

4.7. Audit Tab

In the Audit tab, users can search by date interval and different event types such as import, export or action.

											English	-
	6	VIVOTEI	K		Live	Review	Lists	LPR configuration	General co	nfiguration	Audit	Logs
From c To dat Sea	e:	12/07/2019 00:0				Туре:		import export import action	-			
									Q Sea			
ID	Time		Status	Туре	Lis	t	Des	cription		Num.	File	
No data												

You can search in the stored actions by dates and by type of action.

Export: Will show users automatic exports done

Import: Will show users automatic imports done.

Action: Will show users automatic actions triggered on the lists.

The result of the search can be exported and downloaded.

Exports example:

	Ó	/IV OTE	K		Live	Review	Lists	LPR configuration	on General	configurat	ion Audit	Logs
rom date	2:	28/02/2019 00:0	0:00			Type:		export		*		
o date:		28/02/2019 23:5	9:59									
Carach												
Search												
Search												
Search											×	
Search	Time		Status	Туре		List	Descrip	ption	ß	i Q	Search	
ID	Time	010 28/02/2019	Status DONE	Type Local list		List all plates		otion [223232] time [from:				
ID	Time 12:27:00.	010 28/02/2019 172 28/02/2019					Export		200001011000	. 10	Search	
ID 4 5	Time 12:27:00. 12:28:00.		DONE	Local list		all plates	Export Export	[223232] time [from:	20000101T000 20000101T000	. 10	Search Get file	

 IP Surveillance

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Imports example:

	Ó	VIVOTE	K		Live	Review	Lists	LPR configuration	Gener	al config	uration	Audit	Logs
From date		28/02/2019 14:00	.00			Type:		import					
From date		20/02/2019 14:00	.00			type.		import					
To date:		28/02/2019 23:59	:59	Ċ.									
Search													
												X	
ID	Time		Status	Туре		List	Descri	otion	x	Q	Search	.	
3	14:00:00	.218 28/02/2019	DONE			all plates	Import	[23232] time [from:200			12 G	et file	
4	14:01:00	0.228 28/02/2019	DONE			all plates	Import	[23232] time [from:200			7 G	iet file	
						Copyright ©	2019						

Actions example:

	VIVOTE	N		Live Re	eview Lists	LPR configurati	ion General configuratior	n Audit
From date	: 28/02/2019 00:00):00		Тур	be:	action	-	
To date:	28/02/2019 23:59	9:59						
Search								
	-							
						R Q	Search	X
ID	Time	Status	Туре	Res.	1	ist Description		File
1284	12:26:53.370 28/02/2019	DONE	FTP	1289	all pla		1] plate [0715GY	Get file
1285	12:26:53.492 28/02/2019	DONE	FTP	1290	all pla	tes Action [12122	1] plate [0715GY	Get file
1286	12:26:53.615 28/02/2019	DONE	FTP	1291	all pla	tes Action [12122	1] plate [0715GY	Get file
1287	12:26:53.733 28/02/2019	DONE	FTP	1292	all pla	tes Action [12122	1] plate [0715GY	Get file
1288	12:26:53.852 28/02/2019	DONE	FTP	1293	all pla	tes Action [12122	1] plate [0715GY	Get file
1289	12:26:53.975 28/02/2019	DONE	FTP	1294	all pla	tes Action [12122	1] plate [0715GY	Get file
1290	12:26:54.097 28/02/2019	DONE	FTP	1295	all pla	tes Action [12122	1] plate [0715GY	Get file
1291	12:26:54.217 28/02/2019	DONE	FTP	1296	all pla	tes Action [12122	1] plate [0715GY	Get file
1292	12:26:54.334 28/02/2019	DONE	FTP	1297	all pla	tes Action [12122	1] plate [0715GY	Get file
	12:26:54.450 28/02/2019	DONE	FTP	1298	- 11 1	tes Action [12122	11 plata (071ECV	Get file



4.8. Logs Tab

In this TAB the user can see /download different logs. The configurations of "Logs" are available in "General configuration" -> "Log options".

These logs can be useful to diagnose and solve application problems.

VIVOTEK	Live Review	Lists Camera configuration	General configuration	Audit Logs
				Restart service
Show log type:	 Manager 	Service Engine		
Autorefresh:	Enabled			
22/02/2019 16:37:42.854 [INFO] param 1 [computerid][1] 22/02/2019 16:37:42.854 [INFO] param 2 [oper][getconfig] 22/02/2019 16:37:46.734 [INFO] CRI finished 22/02/2019 16:37:46.734 [INFO] NEURAL LABS CGI (www.neurallabs.net) 22/02/2019 16:37:46.734 [INFO] NEURAL LABS CGI (www.neurallabs.net) 22/02/2019 16:37:46.735 [INFO] param 1 [comp0][timesamp] 22/02/2019 16:37:46.735 [INFO] param 2 [comp0][between] 22/02/2019 16:37:46.735 [INFO] param 3 [computerid][1] 22/02/2019 16:37:46.737 [INFO] param 4 [maxvalues][1000] 22/02/2019 16:37:46.737 [INFO] param 5 [oper][select] 22/02/2019 16:37:46.739 [INFO] param 7 [value0][2019-02-22T00:00:00.02 22/02/2019 16:37:46.339 [INFO] param 7 [value0][2019-02-22T00:00:00.02 22/02/2019 16:37:49.303 [INFO] NEURAL LABS CGI (www.neurallabs.net) 22/02/2019 16:37:49.303 [INFO] NEURAL LABS CGI (www.neurallabs.net) 22/02/2019 16:37:49.303 [INFO] NEURAL LABS CGI (www.neurallabs.net) 22/02/2019 16:37:49.303 [INFO] param 0 [IEQUEST_METHOD]]]	00;2019-02-22723:59:59.999]			

The type of the log that the user wants to see must be selected by either manager, Service or Engine.

Checking auto update the application will refresh the selected log type.

Sending logs to technical support may be needed. To do that, click on page.	Download logs	at the bottom of the
Selected logs will be downloaded in a compressed txt format. 22/02/2019 16:37:49:357 [INFO] NEURAL LABS CGI (www.neurallabs.net) VERSION(1.02) Log(3)		Pownload logs
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