

# 4K UHD Network Video Recorder User Manual

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## About this document

This document includes instructions for operating the 4K UHD Network Video Recorder Series.

## Disclaimer

Please be aware that this user manual may cover a range of product specifications for various models. Characteristics and features discussed and/or illustrated in this manual may not be applicable or available to all models. We reserve the right to change product specifications, designs and equipment without notice and without incurring obligation.

## Caution

- Do not drop or strike the equipment.
- Do not install the equipment near naked flames or heat sources.
- Do not expose this unit to rain, moisture, smoke or dusty environments.
- Do not cover the opening of the unit with cloth or plastic or install this unit in a poorly-ventilated place. Allow 10cm between this unit and its surroundings.
- Do not continue to operate the unit under abnormal conditions such as detection of smoke, strange smell or no display on screen whilst power is turned on.
- Do not touch the power connection with wet hands.
- Do not damage the power cord or leave it under pressure.
- To avoid unnecessary magnetic interference, do not operate this unit near magnets, speaker system, etc.
- All connection cables must be grounded properly.

**CAUTION**  
RISK OF EXPLOSION IF BATTERY IS REPLACED WITH AN  
INCORRECT TYPE.





## Introduction

The NVR 4K UHD Series are network video recorders that offer a standalone solution for managing IP cameras and systems. The built-in high-quality decoder can deliver 4K/5MP/3MP/1080p/720p/D1/VGA/CIF IP camera streams. Each channel can be individually configured to record in SD or HD resolution to suit your needs.

The internal HDMI and VGA engine provides HDMI output with maximum resolution of 4K and VGA output with 1080p resolution. The NVR Series can be easily installed in all environments through the TCP/IP network, and the support of IP Scan utility and Web Services Dynamic Discovery (WS-Discovery) protocol allows for locating all the cameras on the network. The self-diagnostic feature can estimate remaining recording time and monitor HDD S.M.A.R.T status, network status, and other information.

Files recorded by the NVR can be exported to DVD and USB flash drive, or the files can be downloaded via Backup Manager, Remote Player, FTP client software, or Network Places. Mobile support for iOS, and Android allows for remote viewing of connected cameras at high frame rates. Browser-based live monitoring and video playback features are also supported.

The NVR also supports external METADATA device, such as POS, ATM, GPS, etc. METADATA can be embedded within videos and saved as a database where you can search for METADATA history according to content, date, and time.

## Features

- Standalone NVR
- Supports up to 4K UHD, and 1080p 120 FPS IP cameras
- Each channel up to 12Mbps incoming network throughput
- 4K HDMI and 1080P VGA output
- Compatible with iOS and Android devices
- Metadata can be embedded into videos
- Supports Setup Wizard
- HTML5 streaming supported on multiple browsers
- P2P easy remote access supported

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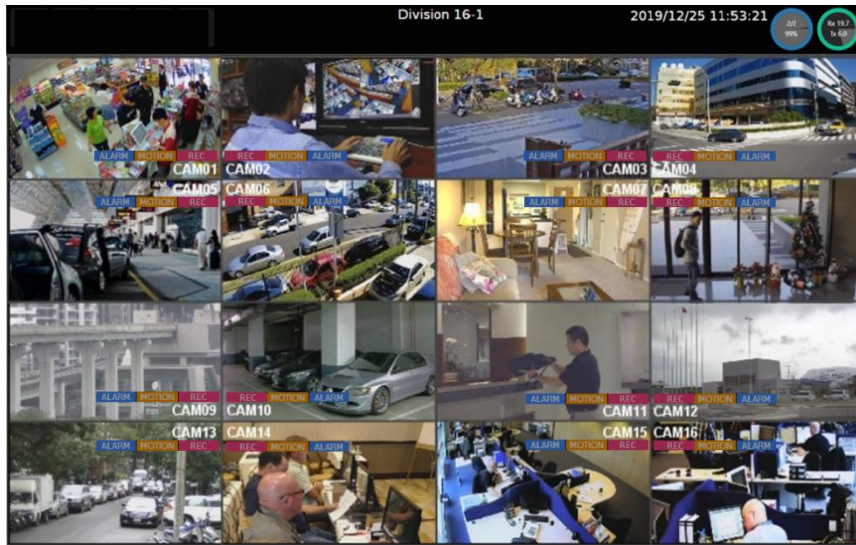
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## Chapter 1 Getting Started

You will see the following screen through HDMI or VGA connection once you power on the NVR:



The information shown on the top of the screen is described as follows:

- Division/Sequential Name: Click to select a camera division to display.
- System Date/Time
- HDD: The top shows the current number of hard drives being used for recording. And on the bottom shows the storage capacity used.
- Network Status (Mbps): The top side Rx is received throughput in Mbps and the bottom side Tx is transmission throughput in Mbps. Circle color represents:

Green: Giga  
 Orange: 100Mbps  
 Red: Error Status

**Note:** This information is available depending on models.

Move mouse cursor slightly to display the NVR controls (as shown in the image below):



Below controls can be seen at the bottom of the screen:

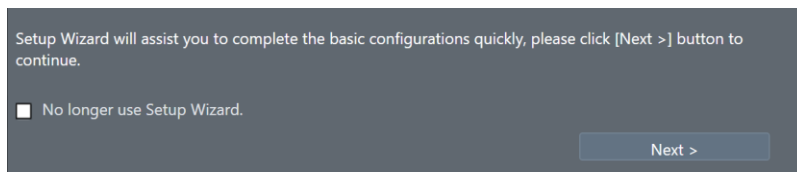
Icons	Description
	Controls for the number of split-screens.
	Click to activate the sequential mode, which will show videos channels in the order you specified.
	Indicates whether the current split-screen controls are for HDMI or VGA. <b>Note:</b> This information is available depending on models.
	Click to turn on/off the audio.
	Click to broadcast your message through a microphone.
	Click to activate a specific DO output.

Below are NVR controls that are at the upper-left corner of the screen:

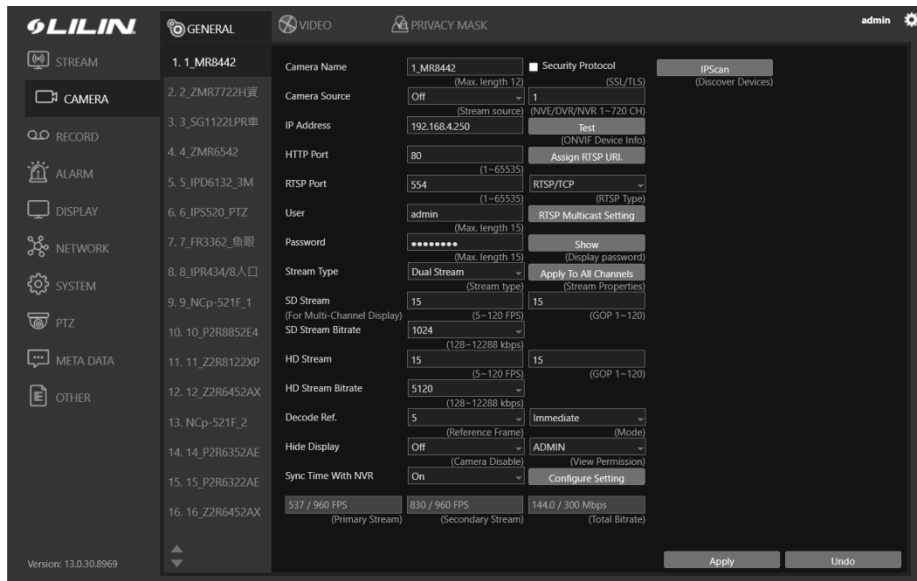
Icons	Description
	NVR Settings
	Freeze
	Alarm Event
	Playback / Backup
	Schedule/Manual: Indicates whether the current recording setting is scheduled recording or manual recording. Click to switch.
	AI Event <b>Note:</b> This information is available depending on models.

### Chapter 1-1 NVR Settings Quick Guide

If you access the **NVR SETTINGS** for the first time, you will see **Setup Wizard** on the screen as below, which provides you with quick configurations for the NVR, including language, date/time, storage, network, P2P, camera and alarm/record setting. Please follow the instructions to finish necessary setup and start recording. To prevent the wizard from appearing again, be sure to check **No longer use Setup Wizard**. Whenever you want to run **Setup Wizard** again, go to **NVR SETTINGS> SYSTEM > MAINTENANCE**, and click **Run** to start **Setup Wizard**.



If the **Setup Wizard** is close, the following setting menu will appear.



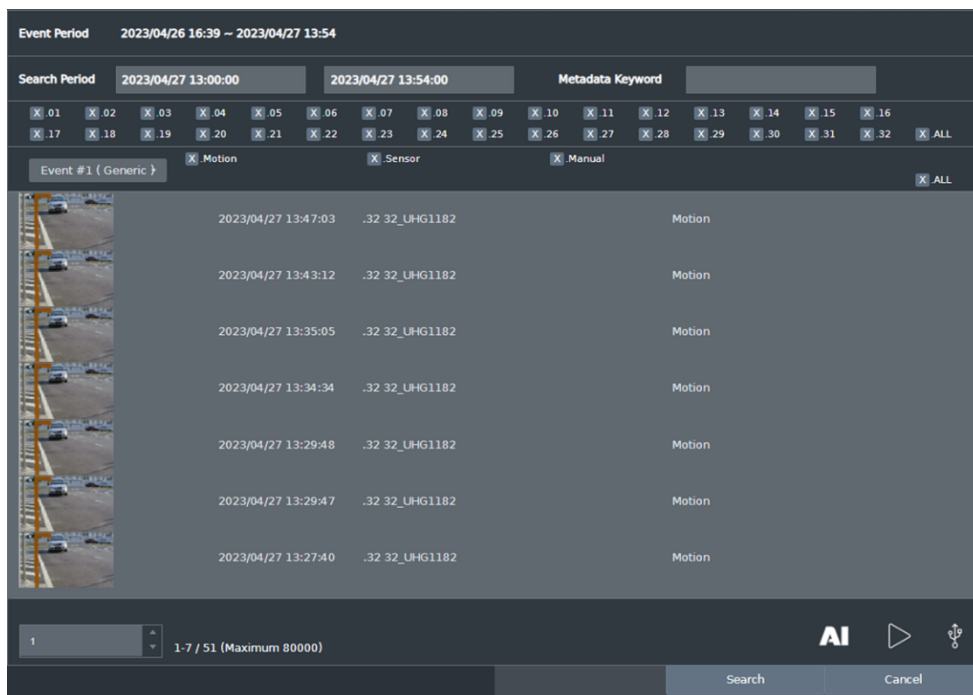
**Note:** Click the gear icon at the upper-right corner of the screen to switch user or change the NVR language.

## Chapter 1-2 Freeze

Click to freeze the real-time video and the icon will be highlighted.

## Chapter 1-3 Alarm Event

Click to enter the ALARM EVENT page. If alarm function is enabled for your camera, any alarm triggered will be recorded in the event history. And when the recording mode is switched from the **Schedule** to **Manual**, a record entry will also be saved in the event history. The list shall be according to the sequence of events triggers.



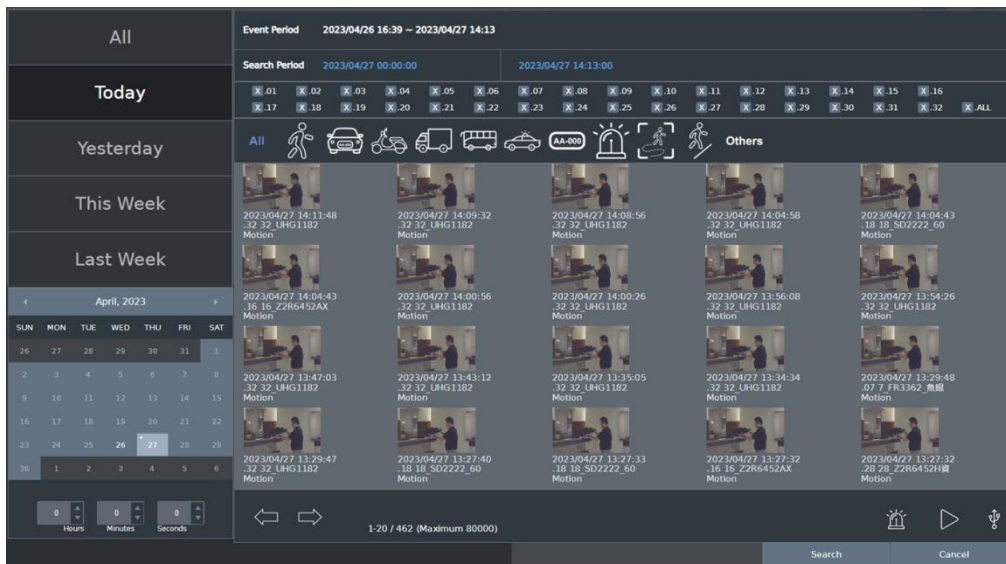
- Event Period: Recorded event duration.
- Search Period: Select event start/end time to search.
- Metadata Keyword: Search for Metadata keyword.
- Channel Number: Select channel number to search.
- Event Type Search: Select event type to search.
- Event List: Display event snapshot/preview, date/time, channel number and channel name, and event type.



Click on an event to preview the recorded video when the event was triggered.

- Pages Number: Number of pages on display.
- AI Event: Click to switch to the AI Events Page.
- Playback: Click to play selected video.
- Backup: Click to export the recorded video to USB storage.
- Search: Click to start event search.
- Cancel: Click to leave event page and go back to live view.

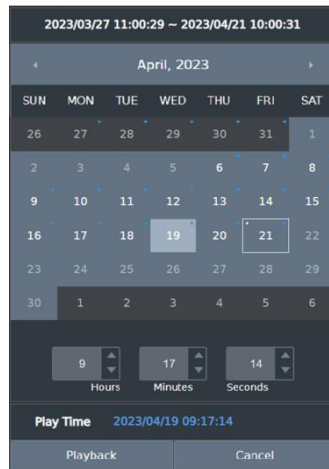
## Chapter 1-4 AI Event



- Quick Selector: All, Today, Yesterday, This Week, Last Week.
- Month Picker: Press the left/right arrow to select a month.
- Date Picker: Click to select a date.
- Time Picker: Press the up/down arrows to select hours/minutes/seconds.
- Event Period: Recorded event duration.
- Search Period: Select event start/end time to search.
- Channel Number: Select channel number to search.
- Event Type Search: Select event type to search.
- Click to switch the displayed page number.
- Alarm Event: Click to switch to the Alarm Event page.
- Playback: Click to playback the video of the selected date/time.
- Backup: Click to pop up the backup settings page.
- Search: Click to search according to the set conditions.
- Cancel: Click to go back to playback page.

## Chapter 1-5 Playback / Backup

Click calendar icon to enter the PLAYBACK page as shown below:



- Recorded Period: Recorded data duration.
- Month Picker: Select the month by clicking on the left/right arrow.
- Date Picker: Select a date by clicking on it.

No recording

The date has recorded data

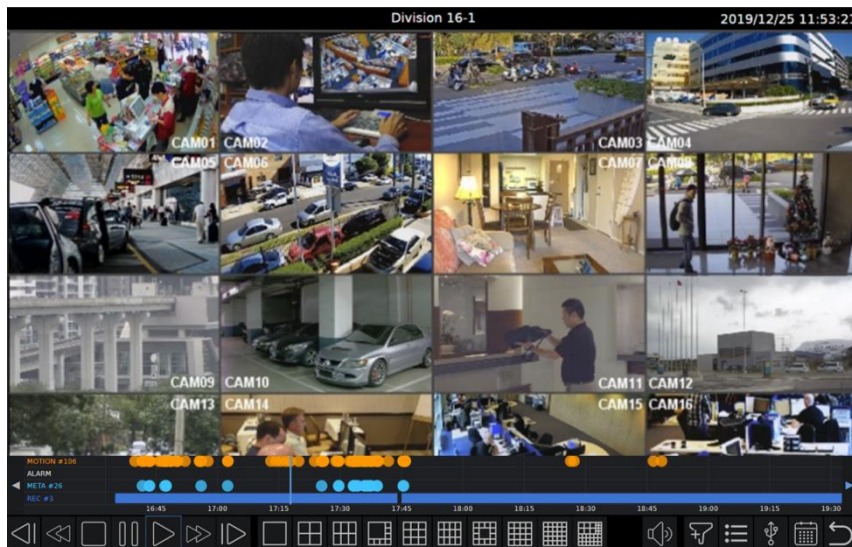
Current date

Selected data

- Time Picker: Select hours/minutes/seconds by clicking on up/down arrow.
- Play Time: selected date/time for playback.
- Playback: Click to play the selected video recording.
- Cancel: Click to go back to playback page.

### Chapter 1-5-1 Playback

Please select a date and time from the calendar and time picker respectively, to start playing desired recorded video or alarm video to enter the Playback as following screen:



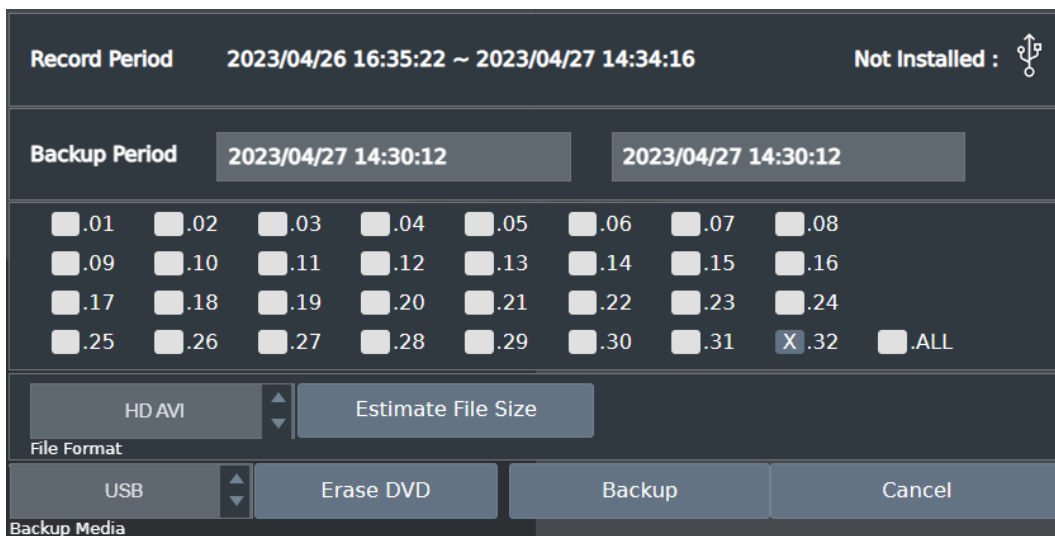
Details of the controls at the bottom of the **PLAYBACK** screen are described as follows:

Icons	Description
	Slow Rewind
	Rewind: click repeatedly to adjust the speed of respective actions (up to 64x)
	Stop
	Pause
	Play
	Fast Forward: click repeatedly to adjust the speed of respective actions (up to 64x)
	Slow Forward
	Choose the number of split-screens according to your needs
	Indicates whether the current split-screen controls are for HDMI(1) or VGA(2)
	Audio on/off
	Enable/Disable the Event Filter
	Enable/Disable the Event List
	Click to export the recorded video to a USB device.
	Calendar: Click to enter playback page
	Return: Click to return to previous page

**Note:** This information is available depending on models.

### Chapter 1-5-2 Backup

If you need to backup recorded files, click the backup icon to enter the BACKUP page as shown below and select the backup range, channel number and the file format as desired.

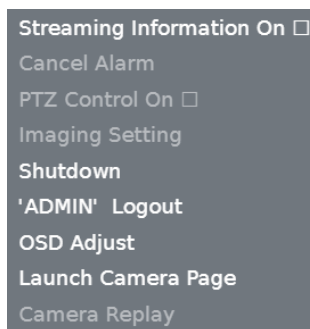


- Record Period: Recorded data duration.
- USB Status: USB flash drive status detection, click to re-detect the USB device.
- Backup Duration Picker: Select the start/end time to backup.
- Channel Number: Select channel number to backup.
- Backup File Format: Select backup file format.
- Estimate File Size: Estimate file size of selected period.
- Backup Media: Select the media to backup (USB or DVD RW).
- Erase DVD: Erase the data on the DVD disc.
- Backup: Click to start backup.
- Cancel: Click to go back to previous page.

**Note:** Not all NVR models support DVD backup, please refer to the actual specifications.

## Chapter 1-6 Context Menu

Mouse right-click on live view screen and will display below menu:

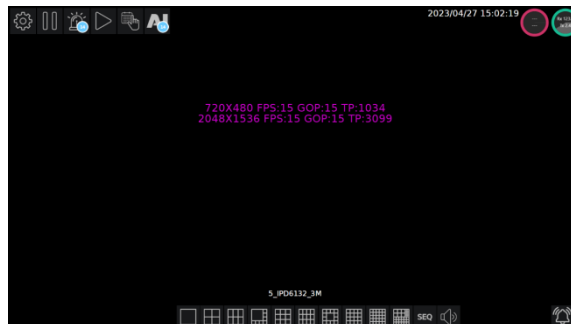


- Streaming Information On/Off: Click to turn on/off the streaming information in live view.
- Cancel Alarm: Click to turn off the channel display pop up view and resume to previous view temporarily.
- PTZ Control On: Click to display the PTZ control page in live view page, single screen.
- Imaging Setting: Click to turn on the image setting page in live view page, single screen.
- Shutdown: To close the NVR program. And the power has to be manually turned off.
- "Account" Login/Logout: Click to login/logout manually.
- OSD Adjust: Adjust the transparency of the status bar.
- Launch Camera Page: Connect to camera's web page.
- Camera Replay: Playback the recorded video of the camera's SD card.

**Note:** This information is available depending on models.

### Chapter 1-6-1 Streaming Information

When streaming information is turned on, the video encoding, resolution, frame rate (FPS), group of pictures(GOP) and throughput(TP) will be displayed.



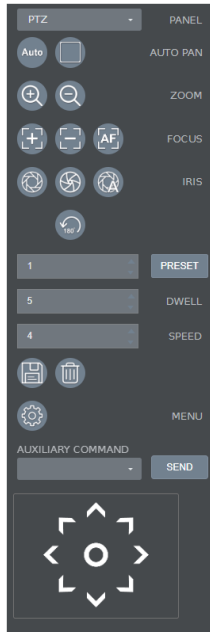
**Note:** Displayed information is according to camera setting.

### Chapter 1-6-2 Cancel Alarm

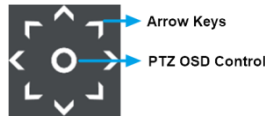
When alarm popup is enabled, specific view will pop up when alarm is triggered. Click **Cancel Alarm** to disable alarm view and resume to previous view for 5 seconds.

### Chapter 1-6-3 PTZ Control On/Off

To control PTZ camera, display the specific channel on single screen and turn on the PTZ control.

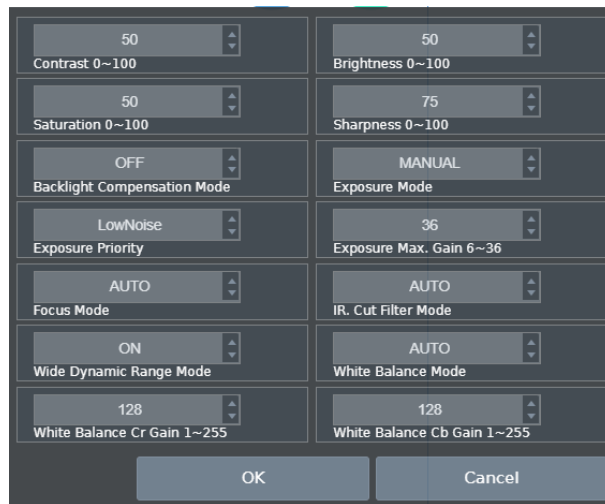


**PANEL:** PTZ/Fisheye mode switch  
**AUTO PAN:** Auto Pan Start Auto Pan Stop  
**ZOOM:** Zoom In Zoom Out  
**FOCUS:** Focus Near Focus Far Auto Focus  
**IRIS:** Iris Open Iris Close Auto Iris  
**FLIP:** 180° Instant Flip  
**Preset Position Settings:**  
**PRESET:** 1~255 preset position programmable  
**DWELL:** Dwell time at preset position during auto pan.  
**SPEED:** Moving speed from one preset position to another during autopan.  
 Save Preset Delete Preset  
**MENU:** OSD Menu  
 Execute Auxiliary Command  
**Joystick:** Click on any arrow key to move the PTZ camera and click on the icon to display PTZ OSD control.



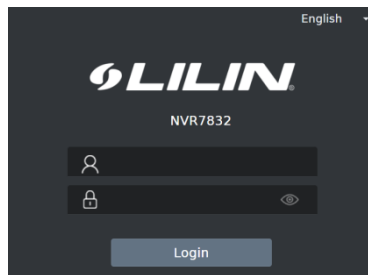
### Chapter 1-6-4 Imaging Setting

In this page, you can adjust the camera parameters including **Contrast, Brightness, Saturation, Hue,** etc., by clicking on up/down arrow and press **OK** to save changes.



## Chapter 1-6-5 Account Login/Logout

If user wants to login or logout of the system, please click on **Account Login/Logout**. When login, fill in below fields with username and password.

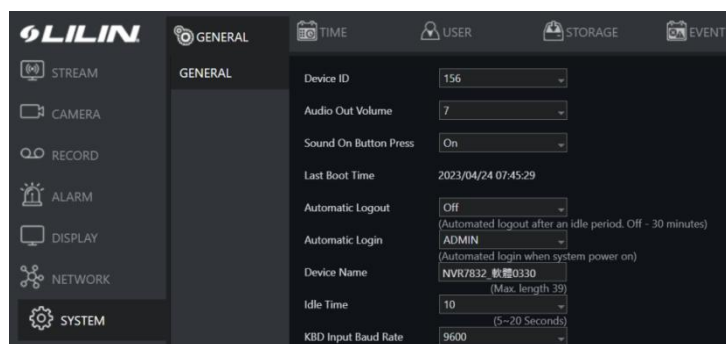


## Chapter 2 NVR Settings

### Chapter 2 System Setup

Click NVR Settings icon to enter **NVR SETTINGS**, and then click **SYSTEM** in the left menu to enter SYSTEM SETUP page. The setting options are described below:

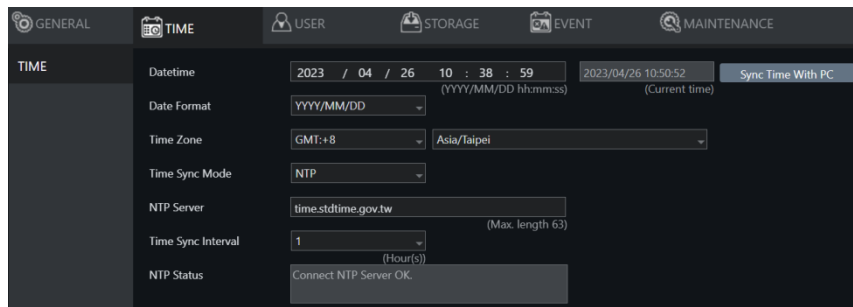
### Chapter 2-1 General



- Device ID: Assign an ID for the NVR to be controlled by the remote controller or keyboard.
- Audio Out Volume: Adjust the volume of the NVR.
- Sound On Button Press: Switch on/off the sound when pressing remote control buttons.
- Last Boot Time: Shows the last time the system is rebooted.
- Power Supply Status: Shows the status of the power supply currently in use.  
**Note:** This information is available depending on models.
- Automatic Logout: When the user logs in to the host, it will automatically log out or not log out after 1~30 minutes of inactivity.
- Automatic Login: Specify user account to log on automatically when the system power on.
- RS-232: Press **Test** to test the functionality of the RS-232 port.  
**Note:** This information is available depending on models.
- KBD Input Baud Rate: Set the keyboard input baud rate.

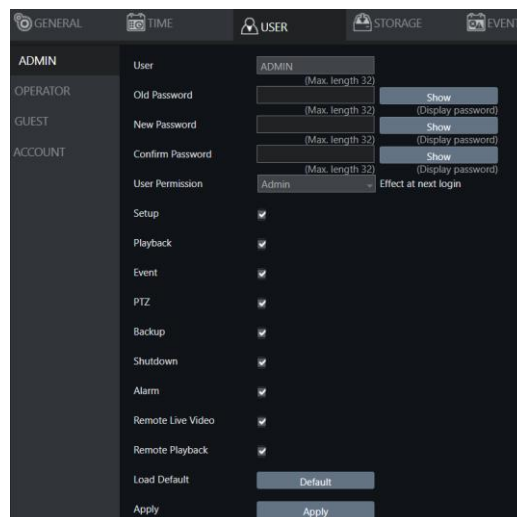
**Note:** The remote controller and keyboard are optional items.

## Chapter 2-2 Time



- Date/Time: Set the date/time of the NVR.
- Date Format: Modify the date display format.
- Time Zone: Change the time zone of the location where the NVR is installed.
- Time Sync Mode: Choose how you would like the time to be synchronized.
- NTP Server: Enter the NTP server you want to use.
- Time Sync Interval: Choose the interval for the time to be synchronized.
- NTP Status: The status of connection to selected NTP server will appear here.

## Chapter 2-3 User

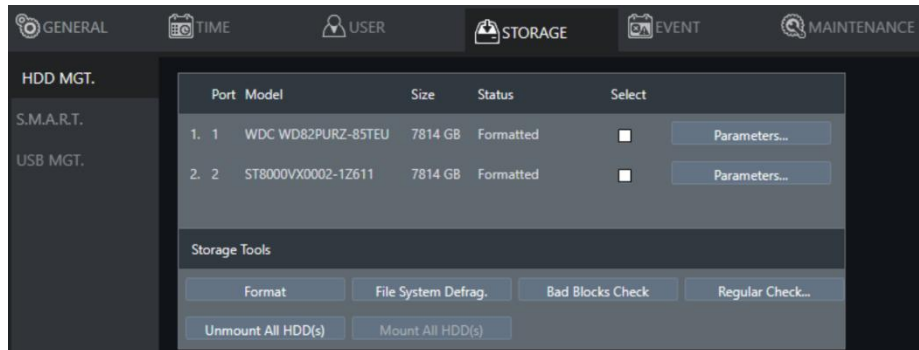


The NVR supports up to 15 sets of individual user settings (including default user administrator, operator, and guest), to which you can assign different access privileges.

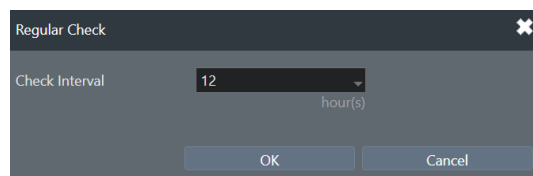
- User: Enter the name of the user (applicable only to User 01–12).
- Old Password, New Password, and Confirm Password: If you would like to change the password, enter your previous password and enter the new password and confirm the password. Press **Show** to reveal the password.
- User Permission: Set the access privileges of the user to administrator, operator, or guest.
- Load Default: Restore to the default settings.

## Chapter 2-4 Storage

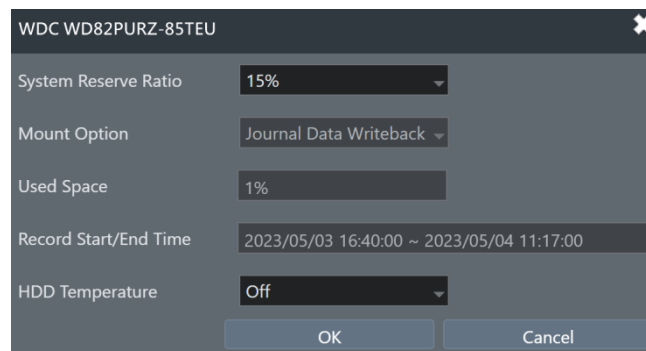
### HDD MGT. (Non-RAID NVR)



- Format: Format HDD.
- File System Defrag.: Defragment HDD to improve efficiency. It may take minutes to hours depending on the size and level of fragmentation of HDD.
- Bad Block Check: Check HDD bad block and try to fix it. It may take minutes to hours depending on HDD status.
- Regular Check: Allows you to set the interval between system checks:



- Parameters: Click each device to enter the screen below.



- System Reserve Ratio: Allows you to allocate the percentage of HDD space that will not be occupied by recorded files.
- Mount Option: Choose the writing mode for the hard drive.
- Used Space: The current HDD used space in percentage.
- Record Start/End Time: The displayed record start/end time on this HDD.
- HDD Temperature: Set the conditions for the hard drive temperature alarm.

## Chapter 2-4-1 HDD MGT. (Raid NVR)

The screenshot shows the 'HDD MGT.' section of a web interface. It features a table with columns: Port, Model, Size, Status, RAID ID, Level, Size, and Select. Below the table are 'Storage Tools' buttons: Format, File System Defrag., Bad Blocks Check, Regular Check, Unmount All HDD(s), Mount All HDD(s), Create RAID, Add HDD(s) to RAID, and Delete RAID. A 'HDD Maintenance Note' is displayed at the bottom.

Port	Model	Size	Status	RAID ID	Level	Size	Select
No.1	WDC WD8001PURP-85B6RY0	7814 GB	Formatted	RAID ID-2	RAID-1	7793 GB	<input type="checkbox"/> Parameters...
No.2	ST10000VX0004-1ZE101	9766 GB	Formatted				<input type="checkbox"/> Parameters...
No.3	WDC WD8001PURP-85B6RY0	7814 GB	Formatted	RAID ID-2	RAID-1		
No.4	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6	29237 GB	<input type="checkbox"/> Parameters...
No.5	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.6	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.7	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.8	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
e-SATA1	---	0 GB	Not Installed				
e-SATA2	---	0 GB	Not Installed				

**Storage Tools**

Format   File System Defrag.   Bad Blocks Check   Regular Check   Unmount All HDD(s)   Mount All HDD(s)

Create RAID   Add HDD(s) to RAID   Delete RAID

**HDD Maintenance Note**  
 Unmount All HDD(s):  
 Before swap hard drive, please perform "Unmount All HDD(s)" function to safely remove hard drive(s), this will stop record until perform "Mount All HDD(s)".  
 Mount All HDD(s):  
 After hard drive swapped, please perform "Mount All HDD(s)" function let system re-scan installed hard drive(s).  
 Add HDD(s) to RAID:  
 Add specific installed hard drive(s) to degraded RAID Group to recovery RAID.  
 ex: Repair a degraded RAID5, click "Unmount All HDD(s)", install a new hard drive to replace failed, click "Mount All HDD(s)", click "Add HDD(s) to RAID" to select new install hard drive to start RAID recovering.

**Note:** Please read the **HDD Maintenance Note** mentioned above for further RAID operation.

Create RAID:

Click **Create RAID** to pop-up a HDD list dialog as below, the dialog list all HDD that free to use for building a RAID group.

The 'Create RAID' dialog box shows a table of available drives with columns: Port, Model, Size, Status, and a checkbox. Below the table, there are fields for RAID ID-1, RAID Level (set to Level-5), and Estimate Size (15608 GB).

Port	Model	Size	Status	
No.1	WDC WD8001PURP-85B6R	7814 GB	Unformatted	<input checked="" type="checkbox"/>
No.2	ST10000VX0004-1ZE101	9766 GB	Unformatted	<input checked="" type="checkbox"/>
No.3	WDC WD8001PURP-85B6R	7814 GB	Unformatted	<input checked="" type="checkbox"/>
No.4	ST10000VX0004-1ZE101	9766 GB	Unformatted	<input type="checkbox"/>
No.5	ST10000VX0004-1ZE101	9766 GB	Unformatted	<input type="checkbox"/>
No.6	ST10000VX0004-1ZE101	9766 GB	Unformatted	<input type="checkbox"/>
No.7	ST10000VX0004-1ZE101	9766 GB	Unformatted	<input type="checkbox"/>
No.8	ST10000VX0004-1ZE101	9766 GB	Unformatted	<input type="checkbox"/>

RAID ID-1   RAID Level   Level-5   Estimate Size: 15608 GB

Select desired HDD, then choose available **RAID level** and click **Create RAID** to build, after building process finished, there will be a new RAID group that show in the **HDD MGT.**

Port	Model	Size	Status	RAID ID	Level	Size	Select
No.1	WDC WD8001PURP-85B6RY0	7814 GB	Formatted	RAID ID-1	RAID-6	46760 GB	<input checked="" type="checkbox"/> Parameters...
No.2	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.3	WDC WD8001PURP-85B6RY0	7814 GB	Formatted	RAID ID-1	RAID-6		
No.4	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.5	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.6	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.7	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
No.8	ST10000VX0004-1ZE101	9766 GB	Formatted	RAID ID-1	RAID-6		
e-SATA1	---	0 GB	Not Installed				
e-SATA2	---	0 GB	Not Installed				

Storage Tools					
Format	File System Defrag.	Bad Blocks Check	Regular Check	Unmount All HDD(s)	Mount All HDD(s)
Create RAID	Add HDD(s) to RAID	Delete RAID			

Select desired RAID then click **Format** to format or click **Delete RAID** to delete.

**Note:**

1. The limitation size for each RAID group is 16TB on NVR5832S.
2. For more detail about RAID level, please refer to <https://en.wikipedia.org/wiki/RAID>
3. Availability depends on models.

For details about File System Defrag, Bad Blocks Check, Regular Check please refer to the descriptions above.

**Note:** When HDD error happened, raid's status will change to degrade.

Port	Model	Size	Status	RAID ID	Level	Size	Select
No.1	---	0 GB	Not Installed				
No.2	ST6000VX0003-1ZH110	5860 GB	Degrade	RAID ID-1	RAID-5	11679 GB	<input checked="" type="checkbox"/> Parameters...
No.3	ST6000VX0003-1ZH110	5860 GB	Degrade	RAID ID-1	RAID-5		
No.4	ST6000VX0001-1SH11Z	5860 GB	Formatted				<input type="checkbox"/> Parameters...
No.5	---	0 GB	Not Installed				
No.6	---	0 GB	Not Installed				
No.7	---	0 GB	Not Installed				
No.8	---	0 GB	Not Installed				
e-SATA1	---	0 GB	Not Installed				
e-SATA2	---	0 GB	Not Installed				

Storage Tools					
Format	File System Defrag.	Bad Blocks Check	Regular Check	Unmount All HDD(s)	Mount All HDD(s)
Create RAID	Add HDD(s) to RAID	Delete RAID			

### Unmount All HDD(s)

Port	Model	Size	Status	RAID ID	Level	Size	Select
No.1	ST6000VX0003-IZH110	5860 GB	Unformatted	RAID ID-1	RAID-5	11679 GB	<input checked="" type="checkbox"/> Parameters...
No.2	ST6000VX0003-IZH110	5860 GB	Unformatted	RAID ID-1	RAID-5		
No.3	ST6000VX0003-IZH110	5860 GB	Unformatted	RAID ID-1	RAID-5		
No.4	---	0 GB	Not Installed				
No.5	---	0 GB	Not Installed				
No.6	---	0 GB	Not Installed				
No.7	---	0 GB	Not Installed				
No.8	---	0 GB	Not Installed				
e-SATA1	---	0 GB	Not Installed				
e-SATA2	---	0 GB	Not Installed				

Storage Tools

Format    File System Defrag    Bad Blocks Check    Regular Check    Unmount All HDD(s)    Mount All HDD(s)

Create RAID    Add HDD(s) to RAID    Delete RAID

### Mount All HDD(s)

Port	Model	Size	Status	RAID ID	Level	Size	Select
No.1	---	0 GB	Not Installed				
No.2	ST6000VX0003-IZH110	5860 GB	Degrade	RAID ID-1	RAID-5	11679 GB	<input checked="" type="checkbox"/> Parameters...
No.3	ST6000VX0003-IZH110	5860 GB	Degrade	RAID ID-1	RAID-5		
No.4	ST6000VX0001-1SH1TZ	5860 GB	Formatted				<input type="checkbox"/> Parameters...
No.5	---	0 GB	Not Installed				
No.6	---	0 GB	Not Installed				
No.7	---	0 GB	Not Installed				
No.8	---	0 GB	Not Installed				
e-SATA1	---	0 GB	Not Installed				
e-SATA2	---	0 GB	Not Installed				

Storage Tools

Format    File System Defrag    Bad Blocks Check    Regular Check    Unmount All HDD(s)    Mount All HDD(s)

Create RAID    Add HDD(s) to RAID    Delete RAID

### Add HDD to RAID(s)

RAID ID 1 Level 5 ✕

Port	Model	Size	Status
No.4	ST6000VX0001-1SH1TZ	5589 GB	Formatted

Add HDD(s) to RAID    Cancel

Add success

Port	Model	Size	Status	RAID ID	Level	Size	Select
No.1	---	0 GB	Not Installed				
No.2	ST6000VX0003-1ZH110	5860 GB	Recovering	RAID ID-1	RAID-5	11679 GB	<input checked="" type="checkbox"/> Parameters
No.3	ST6000VX0003-1ZH110	5860 GB	Recovering	RAID ID-1	RAID-5		
No.4	ST6000VX0001-1SH1TZ	5860 GB	Recovering	RAID ID-1	RAID-5		
No.5	---	0 GB	Not Installed				
No.6	---	0 GB	Not Installed				
No.7	---	0 GB	Not Installed				
No.8	---	0 GB	Not Installed				
e-SATA1	---	0 GB	Not Installed				
e-SATA2	---	0 GB	Not Installed				

Storage Tools

Format File System Defrag Bad Blocks Check Regular Check Unmount All HDD(s) Mount All HDD(s)

Create RAID Add HDD(s) to RAID Delete RAID

### Chapter 2-4-2 S.M.A.R.T.

The screenshot shows the 'S.M.A.R.T.' section of the 'STORAGE' menu. It features a table for 'HDD S.M.A.R.T. Analysis' with columns for Port, Model, Analysis, Spinning, and Status. Below the table are 'Analysis' and 'Cancel' buttons. To the right, there is a section for 'HDD S.M.A.R.T. Information (Port:1 WDC WD8001PURP-85B6RV0)' with sub-sections for Status, HDD Info., Attributes, and Event.

Port	Model	Analysis	Spinning	Status
<input type="checkbox"/> 1	WDC WD8001	Short	2Min	Result
<input type="checkbox"/> 2	ST10000VX0	Short	1Min	Normal
<input type="checkbox"/> 3	WDC WD8001	Short	2Min	
<input type="checkbox"/> 4	ST10000VX0	Short	1Min	
<input type="checkbox"/> 5	ST10000VX0	Short	1Min	
<input type="checkbox"/> 6	ST10000VX0	Short	1Min	
<input type="checkbox"/> 7	ST10000VX0	Short	1Min	
<input type="checkbox"/> 8	ST10000VX0	Short	1Min	

The S.M.A.R.T. status of your hard drive is displayed in **S.M.A.R.T.**, where you can run analysis (either short or extended) on the HDD. Choose between **Short** or **Extended** analysis and click **Analysis** to start the process. You will see HDD status, information, attributes, and event history under **HDD S.M.A.R.T. Information**.

### Chapter 2-4-3 USB MGT.

The screenshot shows the 'USB MGT.' section of the 'STORAGE' menu. It features a table with columns for Model, Size, Status, and Select. Below the table are 'Format' and 'Refresh' buttons.

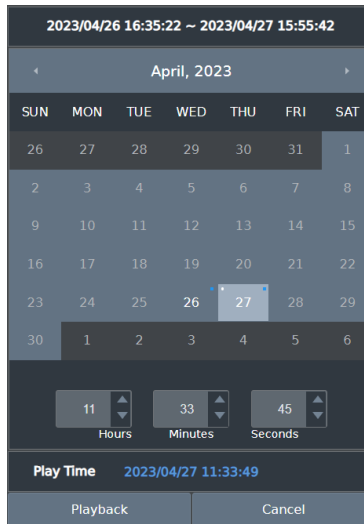
Model	Size	Status	Select
1. None	0MB	None	<input type="checkbox"/>
2. None	0MB	None	<input type="checkbox"/>


Connect a USB device (flash drive or hard drive) to the NVR, and check the one you want to format under this page, and then click **Format**.

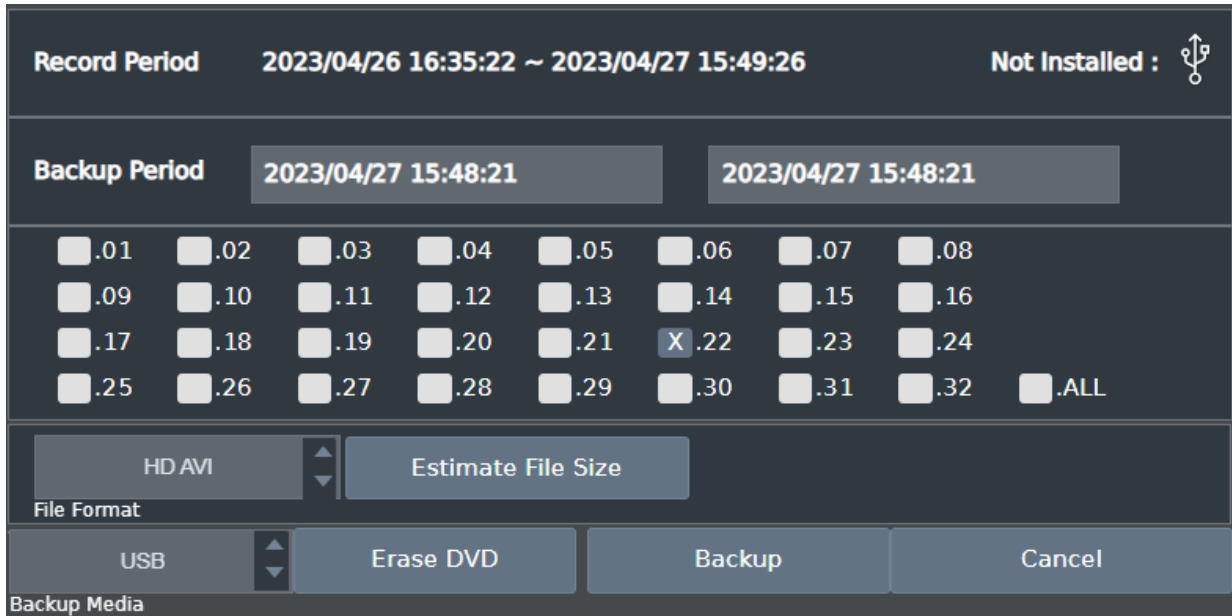
## Chapter 2-4-4 Digital Watermark Checker

LILIN NVR support digital watermark feature to ensure the backup footage is not getting forged and modified. A user can use the tool WaterMarkChecker.exe to verify if the backup footage gets forged or not.

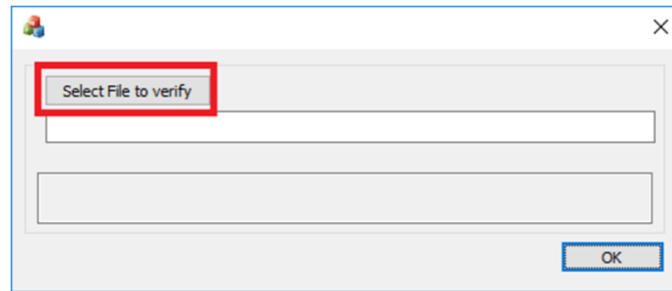
1. Backup video footage to the USB flash drive
  - 1.1 Insert an USB flash drive into the NVR.
  - 1.2 Click the **Playback** button.
  - 1.3 Click the **Cancel** button.



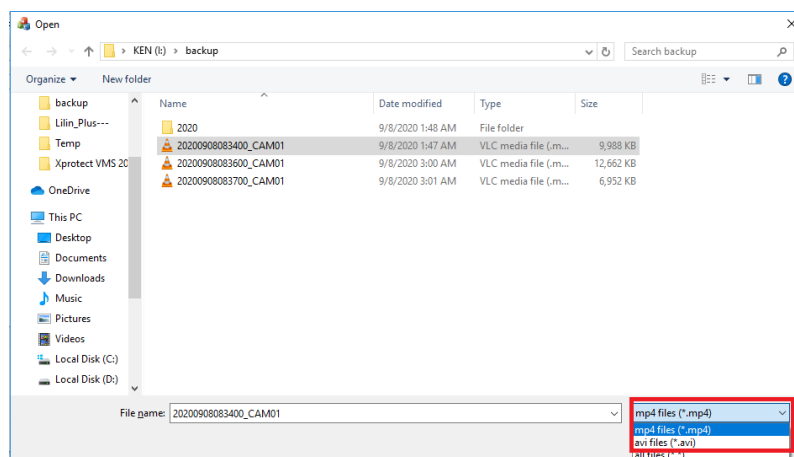
- 1.4 Click the USB icon 
- 1.5 Select the date, time, channel and file format, and then click **Backup** button.



2. To verify each backup footage by the tool WaterMarkChecker.exe
  - 2.1 Insert the USB flash drive into the PC.
  - 2.2 Execute Water Mark Checker.exe.
  - 2.3 Click **Select File to verify** button.

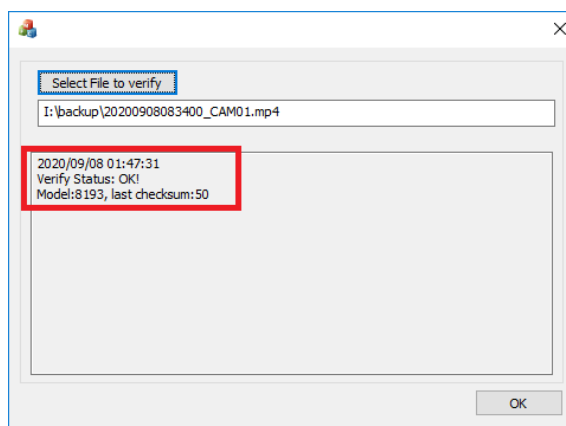


- 2.4 Select backup folder from the USB flash drive, file format, and choose one file.



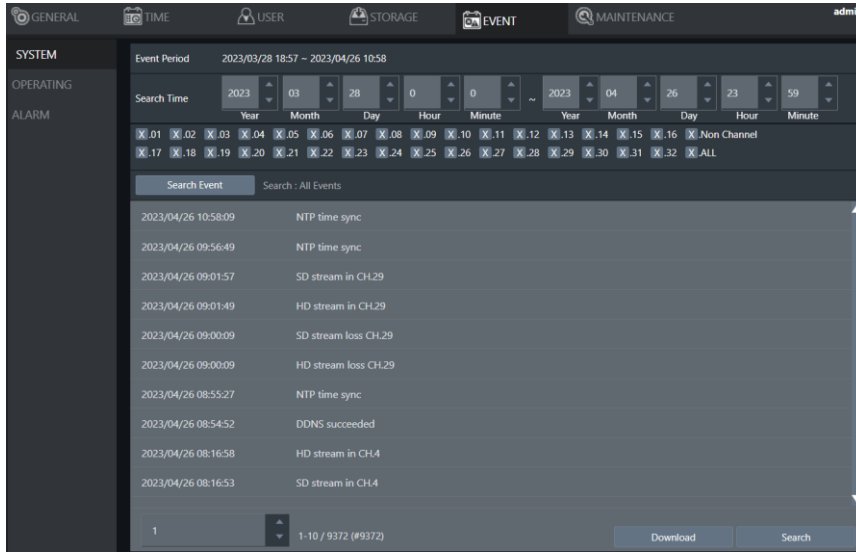
**Note:** File format supports mp4 and AVI only.

- 2.5 The verify status will show **OK** if the back up footage is not modified.



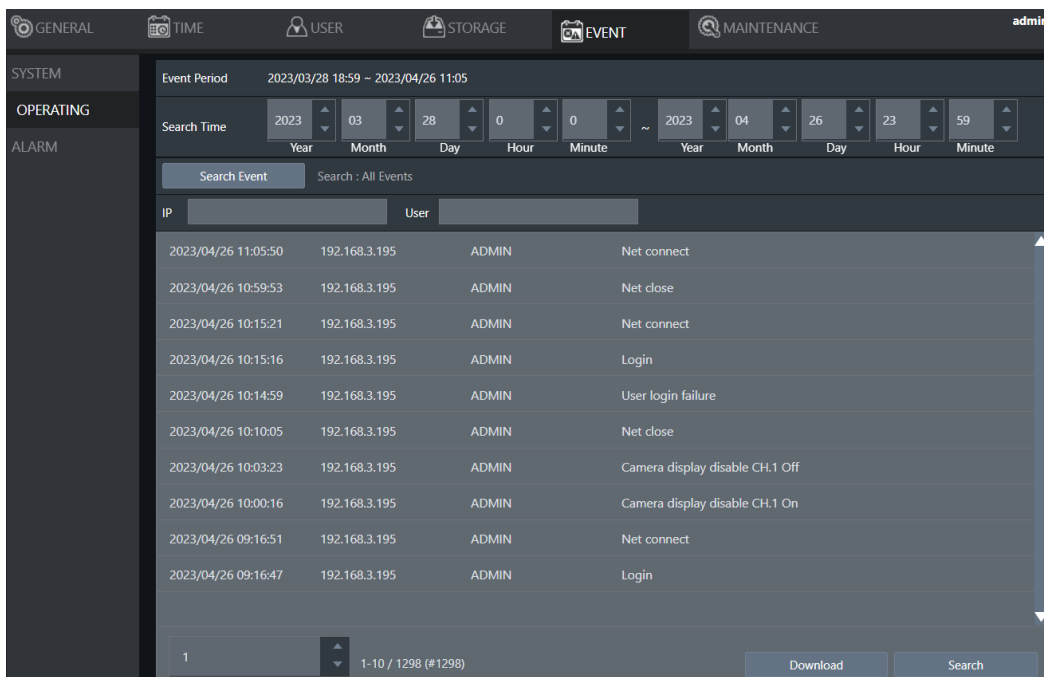
## Chapter 2-5 Event

### Chapter 2-5-1 System



The search field in this page allows you to search for specific event reports at different time and of different content. Press **Download** to export the event report.

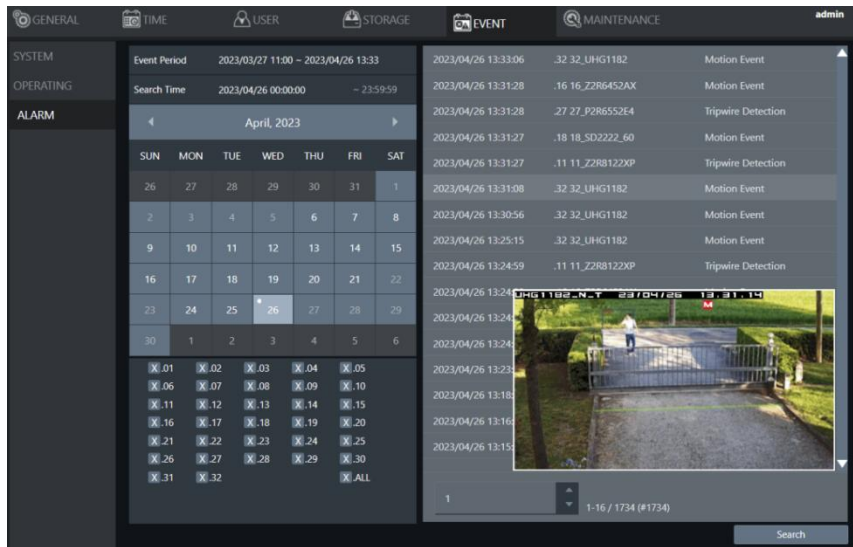
### Chapter 2-5-2 Operating



You can examine the operating status of different users under this page. Press **Download** to export the event report. By clicking on **Search**, events can be searched based on the set search criteria: time interval, event, IP, and user.

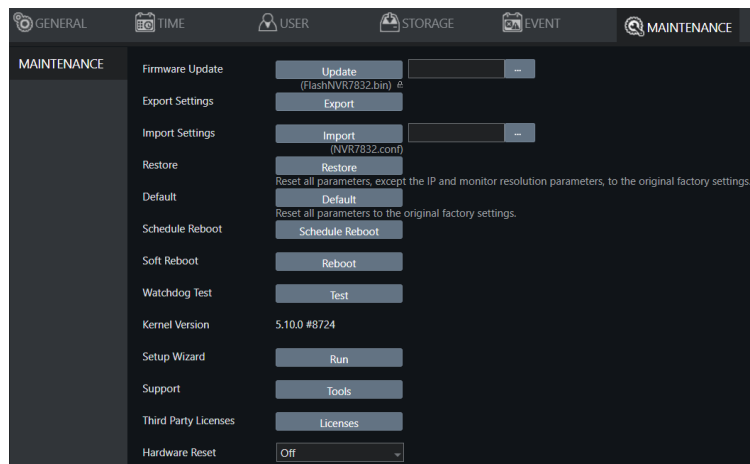
## Chapter 2-5-3 Alarm

The event history is displayed in alarm log.



- Event Period: Recorded event duration.
  - Search Time: Display search duration.
  - Calendar: Select date to search.
  - Channel: Select channel number to search.
- By clicking on the event list, the image captured at the time of the event can be previewed.

## Chapter 2-6 Maintenance



- Firmware Update: Choose a firmware file and click **Update** to proceed firmware update.
- Export Settings: Click **Export** to copy system settings to a USB flash drive.
- Import Settings: Click **Import** to apply a system setting that is stored in the plugged USB flash drive.
- Restore: Restore the NVR to its default settings, except for the NVR IP and screen resolution settings.
- Default: Click **Reset** to restore the system to the factory settings.
- Schedule Reboot: Click Schedule Reboot to set the device reboot time.
- Soft Reboot: Click to soft reset the system.
- Watchdog Test: Click to test the system watchdog function. This will reboot the NVR.
- Kernel Version: The kernel version of the system.

- Setup Wizard: Click to execute the quick setup wizard.
- Support: Click to open server execution log options dialog, record system execution details.
- Third Party Licenses: Click **Licenses** to display third-party software license information.
- Hardware Reset: After the function is enabled, press the RESET button on the back panel for ten seconds to reset the NVR to factory defaults.

## Chapter 2-6-1 Firmware Update

The local NVR firmware update method is as follows:

1. Create a "firmware" folder to the root directory of the USB flash drive.
2. Put the firmware of the NVR to the created "firmware" folder.
3. Plug the flash drive into the USB Port in the NVR rear panel.
4. Click the gear icon in the upper left corner of the NVR to enter the NVR's Menu.
5. Click **SYSTEM>MAINTENANCE**, select the correct firmware file, then click the **Update** button to firmware update, and press **Submit** to start the firmware update.

## Chapter 3 Network Setup

Click NVR Settings icon to enter **NVR SETTINGS**, and then click **NETWORK** in the left menu to enter **NETWORK SETUP** page. The setting options are described below:

### Chapter 3-1 General

Enter the required information in the fields:

- IP Mode: Select the connection type of the NVR from **Static**, **DHCP**, and **PPPoE**.
- IP Address: Enter the IP address you want to use, and press **IP Test** if necessary.
- Subnet Mask: Enter the desired subnet mask.
- Default Gateway: Enter the desired default gateway.
- Primary DNS: Enter the first priority DNS server.
- Secondary DNS: Enter the secondary DNS server in case the primary DNS is not available.
- HTTP Port: Specify a desired HTTP port.
- HTTPS Port: Specify a desired HTTPS port and configure HTTPS.
- RTSP Port: Specify a desired RTSP port.
- FTP Port: Specify the desired FTP port.
- MAC: This is the MAC address of your NVR.
- PPPoE Account: If you choose to connect through PPPoE, enter the account name here.
- PPPoE Password: Enter the required password for PPPoE connection.
- PPPoE IP: Your PPPoE IP will be displayed here.
- Hotspot IP: Your hotspot IP will be displayed here.

**Note:** When connected to an Android device via a USB connector, please turn on the USB tethering function to assign a hotspot IP to the NVR.

### Chapter 3-1-1 Configuring HTTPS Service

NVR support HTTPS (Hypertext Secure Transmission Protocol) service. HTTPS is an Internet protocol that ensures the integrity and confidentiality of data as it travels between users' computers and websites. When users visit any website, they want a secure and private online experience.

HTTPS can be regarded as the advanced security version of HTTP. The SSL protocol is added as a security certificate. Therefore, the website can prevent data thief from directly seeing the transmitted data even if they intercept the transmitted information by using the encryption on the agreement.

There are three options to set HTTPS service:

1. The first option is to create a free self-signed certificate by filling-in the blank field below. Then, click **Create Self-signed Certificate**.

The screenshot shows the 'HTTPS Certificate' configuration window. The fields are filled with the following values:

Country Code	TW	(Max. length 2)
State or Province	Taiwan	(Max. length 64)
Locality	New Taipei City	(Max. length 64)
Organization	LILIN	(Max. length 64)
Organization Unit	NVR	(Max. length 64)
Common Name	NVR7832.myDomain.com	(Max. length 64)
Validity	3650	(1 ~ 3650 Day(s))

Buttons at the bottom: Create Self-signed Certificate, Create Certificate Request, Export Certificate Request (with subtext 'CSR not created.'), Using Wild Card, Import Signed Certificate, and Exit.

2. The second option is to use the wild card by clicking **Using Wild Card**.

The screenshot shows the 'HTTPS Certificate' configuration window. The fields are filled with the following values:

Country Code		(Max. length 2)
State or Province		(Max. length 64)
Locality		(Max. length 64)
Organization		(Max. length 64)
Organization Unit		(Max. length 64)
Common Name	*.ddnsipcam.com	(Max. length 64)
Validity	83	(1 ~ 3650 Day(s))

Buttons at the bottom: Create Self-signed Certificate, Create Certificate Request, Export Certificate Request (with subtext 'CSR not created.'), Using Wild Card, Import Signed Certificate, and Exit.

- The third option is to purchase an SSL certificate by filling-in the blank field below and click on **Create Certificate Request**. Then, click on the **Export Certificate Request** to download the request into a PC and use to apply for official certification. After purchasing the SSL certificate from a third party company, click on the **Import Signed Certificate**.

## Chapter 3-2 Advance

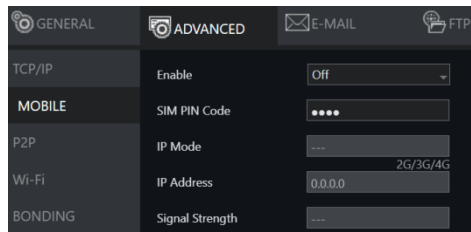
### Chapter 3-2-1 TCP/IP

NVR supports three sets of virtual IP addresses. When **TCP/IP** is switched **On**, the NVR can access the camera or another NVR using the specific IP.

For 4K PoE NVR series, 4K PoE NVR series use Advanced TCP/IP for automatically setting cameras' IP addresses.

**Note:** For 4K PoE NVR series, when **Auto** is selected as the camera source, the IP addresses of the cameras will be changed automatically. The IP addresses of the cameras will be in sequence assigned after the IP address of the NVR.

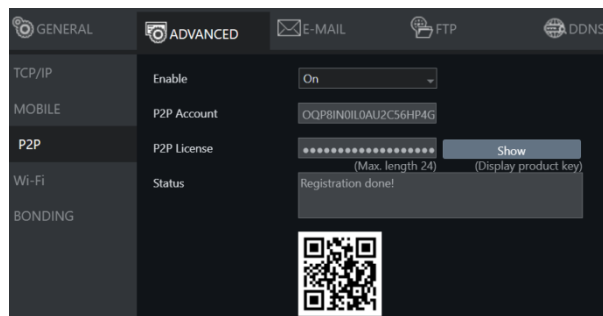
## Chapter 3-2-2 Mobile



The NVR is compatible with several mobile data adapters (D-Link DWM-221, HUAWEI E3372h, ALCATEL L800, etc.). Plug in the device and adjust the settings below.

- Enable: Choose **On** to activate the service.
- SIM PIN Code: Enter the PIN of the SIM card you use to connect to the mobile network.
- IP Mode: The connection status of your mobile network.
- IP Address: The IP address of your connection.
- Signal Strength: The signal strength of your connection.

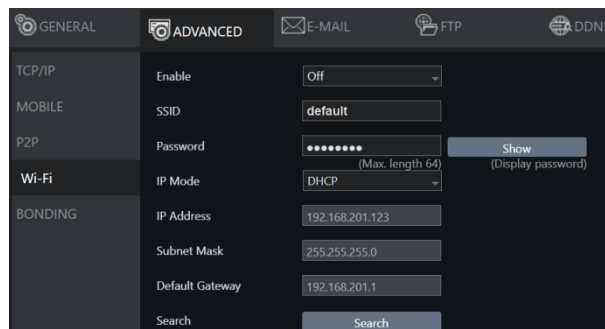
## Chapter 3-2-3 P2P



### Note:

1. You can purchase a P2P account from your dealer.
  2. Availability depends on models.
  3. When activated successfully, a QR code will appear on the screen, and you can access the NVR with a dedicated App by scanning the QR code.
- Enable: Choose **On** to activate the service.
  - P2P Account: Enter your account ID.
  - P2P License: Enter your license code.

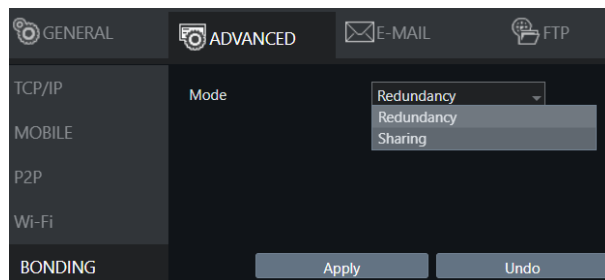
## Chapter 3-2-4 Wi-Fi



The NVR is compatible with several Wi-Fi dongle (EDIMAX EW-7811Un, ASUS USB-N13, TP-LIINK TL-WN822M, Bointec CUB811K or others with 8192cu/mt7601cu chip set etc.)

- Enable: Choose **On** to activate the service.
- SSID: Service set identifier, enter required network name.
- Password: Enter the password that you use to connect to the WiFi host.
- IP Mode: Choose **STATIC** or **DHCP** to suit your WiFi network.
- IP Address: DHCP chosen, display assigned IP address, STATIC enter required IP address.
- Subnet Mask: DHCP chosen, display assigned subnet mask, STATIC enter required subnet mask.
- Default Gateway: DHCP chosen, display assigned gateway, STATIC enter required gateway address.

### Chapter 3-2-5 Bonding

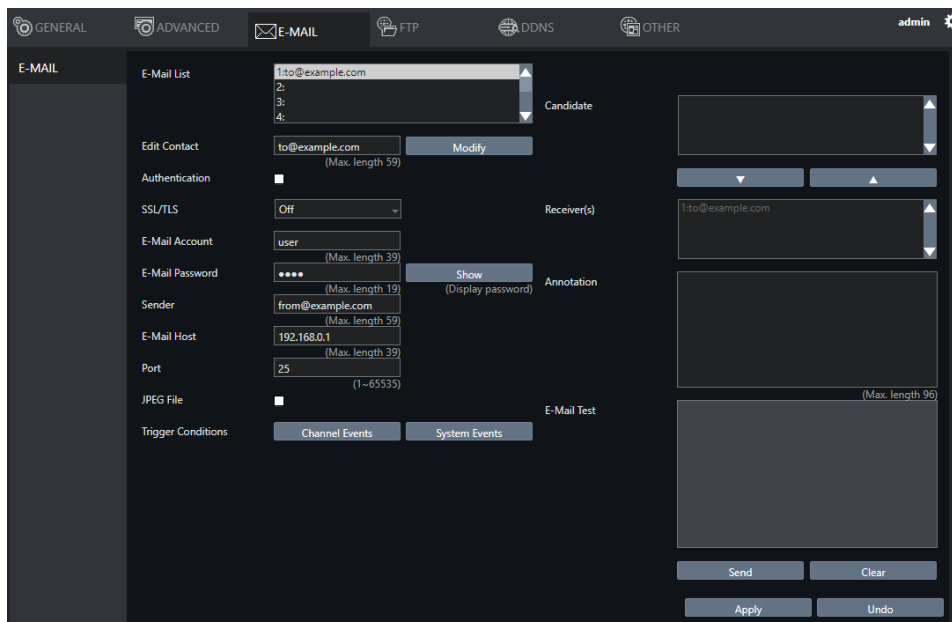


Choose **Redundancy** or **Sharing** mode for dual Ethernet NVR.

**Note:** Availability depends on models.

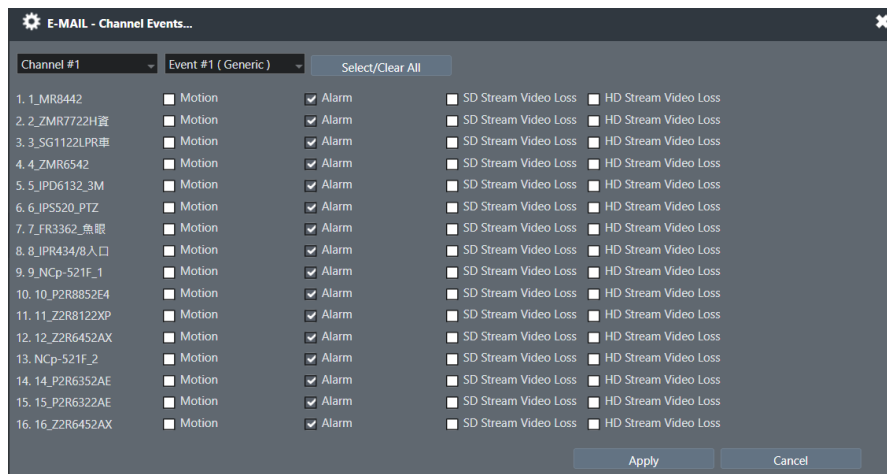
### Chapter 3-3 E-Mail

When an alarm is triggered, the NVR can automatically send e-mail notifications to the recipients you designated. The setting options are described below:

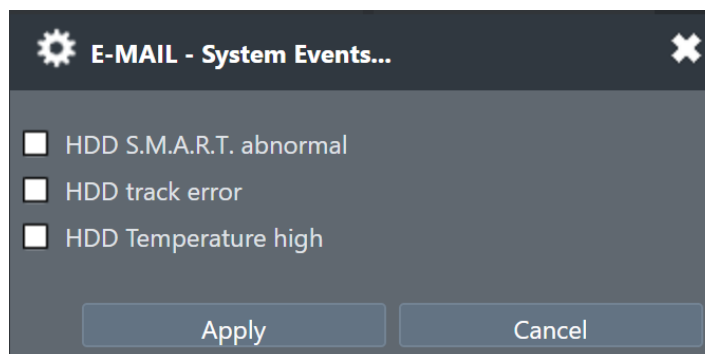


- E-Mail List: The list shows all saved e-mail addresses.
- Edit Contact: Enter the e-mail address you want to save as contacts and click **Modify**.
- Authorization: Check if your e-mail account requires login authorization.
- SSL/TLS: Check if your e-mail server requires encryption.

- E-Mail Account: Enter the account name of your e-mail.
- E-Mail Password: Enter the password of your e-mail.
- Sender: Enter the name you would like to display in the e-mail.
- E-Mail Host: Enter the IP address of your e-mail server.
- Port: Enter the port of your e-mail server.
- JPEG File: Check to also attach JPEG photos when an alarm is triggered.
- Candidate: Choose an e-mail address and press Down or Up arrows to add contacts as recipients.
- Receiver: The list of recipient(s).
- Annotation: Content of the e-mail notification.
- Trigger Conditions: Designate when to send the notification e-mail by **Channel Events** and **System Events**.
- Channel Events: Click to open the dialog below.



- Channel Group: Every 16 channels form a group.
- Event Category: General (motion detection, alarm, video loss), license plate recognition, AI (traffic enforcement, license plate recognition, traffic detection, healthcare, construction site safety, smoke and fire detection, perimeter line/area detection and other), as well as IVS events.
- System Events: Click to open the dialog below.



- HDD S.M.A.R.T. abnormal: Check to send E-Mail when an S.M.A.R.T. error is detected.
- HDD track error: Check to send E-Mail when an HDD error is detected.
- HDD Temperature high: Check to send E-Mail when an HDD temperature high is detected.
- E-Mail Test: Click to send the testing e-mail to verify out the settings.

## Chapter 3-4 FTP

When an alarm is triggered, the NVR can automatically send snapshots to the FTP server you designated. The setting options are described below:

- FTP Server: Enter the IP address of the FTP server.
- Port: Enter the port of the FTP server.
- Communication protocol: Standard (unencrypted); FTPS Explicit (encrypted).
- Account: Enter the account name of the FTP server.
- Password: Enter the password of the FTP server
- Prefix & Postfix: Specify the prefix and postfix of snapshot files.
- File Name Format: Change the file name format to suit your need.

Check the cameras that you want to send notifications to the FTP when an alarm is triggered, and specify the folder name where the images are saved.

For details about **Trigger Conditions** and **Channel Events**, please refer to the descriptions above.

## Chapter 3-5 DDNS

With DDNS, you can access an NVR connected to the Internet through the DDNS URL, whatever the actual IP is. The setting options are described below:

- Server: Choose the DDNS server you want to use.
- Hostname: Enter the hostname of the DDNS server.
- User: Enter the username to log in to the DDNS server.
- Password: Enter the password to log in to the DDNS server.
- WAN IP: Enter your **WAN IP** if the NVR cannot automatically get the correct address.
- Check Interval: Choose the time interval you want the system to check the DDNS connection.
- Status: Display update status.

**Note:** The DDNS feature requires Internet connection.

## Chapter 3-6 Other

The NVR also supports other protocols such as UPnP and SDDP, and related configurations can be modified in the **OTHER** tab. The setting options are described below:

- UPnP Device Name: The device name shown on the UPnP network.
- UPnP Service: Switch on/off the UPnP service.
- Network Places: Switch on/off **Network Places** to display shortcuts to shared devices.
- Workgroup: The workgroup name displayed in **Network Places**.
- Device Name: The device name displayed in **Network Places**.
- IE Default Liveview: Select the default streaming type (H.264 or MJPEG) when streaming using Internet Explorer.
- Reset on Ethernet Error: Reset the PHY when an Ethernet error is detected, and leave a record entry in the event table
- Browser Auto Logout (30 Minutes): Log out automatically after 30 minutes of inactivity.
- SDDP Device Name: The device name shown on the SDDP network.
- SDDP Service: Switch on/off the SDDP service.
- IP Address Filtering: Switch on/off the IP filtering function, press **Setup** to open the filtering IP address setting dialog.
- Over Bitrate Protection: Switch on/off protection function that when network input throughput over the limitation reducing live video decode to protect recording data.
- ONVIF Service: Switch on/off ONVIF Service. If ONVIF service is enabled, third party video

management system (Web Services Dynamic Discovery(WS-Discovery) and ONVIF Profile S conformant) can search and retrieve video stream of NVR easily.

- IPScan Service: Switch on/off the IPScan service of NVR.
- NTP Service: Switch on/off the NTP service of the NVR.
- HTTP CORS: Switch on/off the HTTP CORS function.

**Note:** Availability depends on model.

## Chapter 3-6-1SNMP

Section	Parameter	Value
OTHER	Enable	Off
SNMP	SNMP v1/v2	
	Read Only Community	public (Max. length 31)
	Read/Write Community	private (Max. length 31)
CLOUD SERVICE	SNMP v3	
	User	admin (Max. length 31)
	Authentication Password	password (Max. length 31)
	Privacy Password	password (Max. length 31)
	Read Only User	public (Max. length 31)
	Read/Write User	private (Max. length 31)
	Heartbeat Trap	Off
	Heartbeat Interval	10 (1~60 seconds)
	Trap Destination IP	192.168.0.255
	Export MIB File	Export Enable SNMP to generate NVR7832.mib

Simple Network Management Protocol, you can use for collecting information from NVR .

- Enable: Switch on/off SNMP service.

### SNMP v1/v2

- Read Only Community: Enter a "read-only" information for remote device to retrieve.
- Read/Write Community: Used in responses for information from device and to modify settings on device.

### SNMP v3

- User: Username with authentication.
- Authentication Password: Password use to authentication, communication with authentication and without privacy.
- Privacy Password: Password use to authentication, communication with authentication and privacy.

- Read Only User: Users with read-only permission.
  - Read/Write User: Users with read/write permission.
  - Heartbeat Trap: An SNMP trap is a notification, switch on/off.
  - Heartbeat Interval: Use this property to specify the length (in seconds) of the heartbeat period.
  - Trap Destination IP: Specify the IP address for the SNMP trap destinations.
- Export MIB File: Export MIB File.

## Chapter 4 Camera Setup

Click NVR Settings icon to enter **NVR SETTINGS**, and then click **CAMERA** in the left menu to enter the **CAMERA SETUP** page. The setting options are described below.

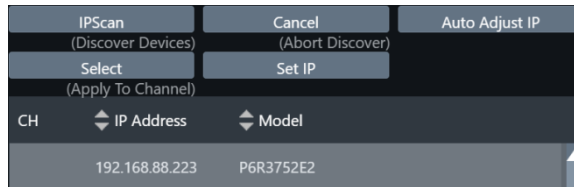
### Chapter 4-1 General

CH	IP Address	Model
	192.168.88.223	P6R3752E2
	192.168.160.238	DS362
	192.168.178.190	DS362
	192.168.66.79	S8R572(4E/8)X25
	192.168.160.215	Z7R8052EX30
	192.168.77.82	S7R5554/8/9EX30
	192.168.4.220	UHG1182
	192.168.4.83	S7R5584/8/9EX30
	192.168.160.216	Z7R8052EX30
	192.168.4.150	S8D4624EX25
	192.168.160.201	Z7R8082EX30
	192.168.88.190	MD2242

- Camera Name: Enter the camera name to be displayed on the streaming screen.
- Camera Source: Allocate a NVR channel for the camera. Select Off, IP camera, or Auto.  
**Note:** The Auto mode is only supported by 4K PoE NVR series.
- IP Address: Enter the IP address of the camera you want to connect.
- HTTP Port: Enter the port for HTTP connection.
- RTSP Port: Enter the port for RTSP connection.
- User: Enter the username required for camera authorization.
- Password: Enter the password required for camera authorization.
- Stream Type: Choose whether to stream only the primary video or dual (primary & secondary) videos.
- SD Stream: Enter the FPS (frames per second) and GOP (group of pictures) of SD (standard definition) steam.
- SD Stream Bitrate: Select SD stream bitrate.
- HD Stream: Enter the FPS and GOP of HD (high definition) stream.
- HD Stream Bitrate: Select HD stream bitrate.
- Decode Ref.: Select the number of reference frame for the decoder, and choose **Immediate** for lower latency or **Smooth** for smoother but higher latency video.
- Hide Display: Disable the video function (live feeds and playback) of the selected camera.
- Sync Time with NVR: Turn **On** for the camera to sync time with the NVR.
- Security Protocol: Check box to allow HTTPS connections to the IP camera. The

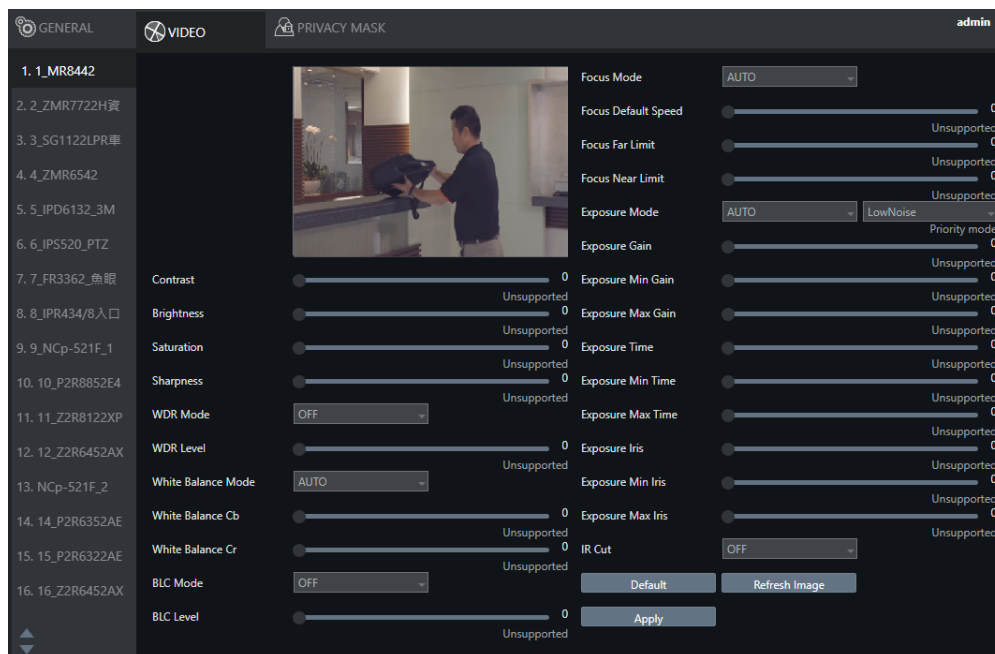
recommended HTTP port setting is 443.

- Test: Press to check ONVIF device information including manufacturer, model #, firmware version, serial # and hardware ID.
- Assign RTSP URL: Assign required RTSP URL, NVR will connect to camera via required RTSP URL but not Onvif.
- RTSP Multicast Setting: Assign required RTSP multicast port.



- IPScan: Click **IPScan** to scan for connected devices on the network.
- Cancel: Click **Cancel** to stop scanning.
- Auto Adjust IP: Automatically assign IP for connected cameras.
- Set IP: Assign an IP address to the camera.

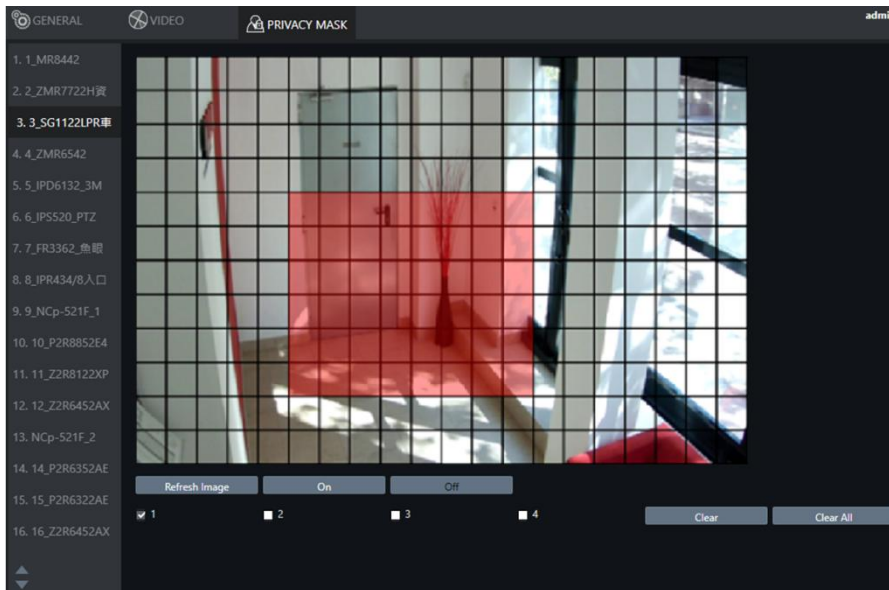
## Chapter 4-2 Video



In this page, you can adjust several camera parameters including **Contrast**, **Brightness**, **Saturation**, and **Sharpness**.

Click **Default** to restore the NVR to its factory settings. Click **Refresh Image** to update the preview image.

## Chapter 4.3 Privacy Mask

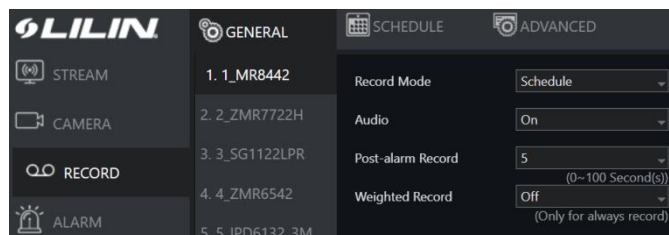


- Refresh Image: Reload camera image preview.
- On / Off: Turn on or off the privacy mask function.
- 1~4 Select Box: Select the privacy mask you want to set up.
- Privacy Mask: Use the mouse to select the privacy mask setting area on the camera image.
- Clear: Delete the selected privacy mask.
- Clear All: Delete all privacy masks.

## Chapter 5 Record Setup

Click NVR Settings icon to enter **NVR SETTINGS**, and then click **CAMERA** in the left menu to enter the **RECORD SETUP** page. The setting options are described below:

### Chapter 5-1 General



- Record Mode: Switch on/off scheduled recording.
- Audio: Switch on/off audio recording.
- Post-alarm Record: Enable to record after an event takes place. Set the time (second) for the NVR to record after the alarm is triggered.
- Weighted Record: If any alarm is triggered when **Weighted Record** is turned on, the recording frame rate will be adjusted to the pre-determined value (which can be set in **CAMERA SETUP**). Otherwise, the NVR will record at a lower frame rate (approximately 4–5 FPS).

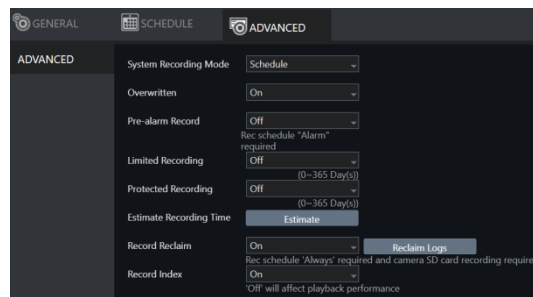
**Note:** System Recording Mode must set to **Schedule** and Recording schedule set to **Always**.

## Chapter 5-2 Schedule

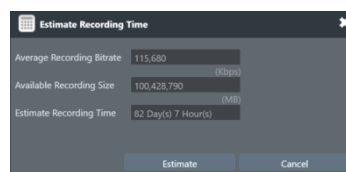


To modify the recording schedule, switch the recording type from **Always** (continuous recording), **Alarm** (record only when an alarm is triggered), or **No Record** (disable recording), and highlight the desired date and time accordingly. Click **Apply All** to apply your selection of recording type to all dates and time. Click **Apply To All Channels** to apply the recording type of this channel to all channels.

## Chapter 5-3 Advanced



- System Recording Mode: Choose between **Manual** or **Scheduled** recording.
- Overwritten: Switch on to overwrite old files when the storage is full.
- Pre-alarm Record: Switch on to start recording for a period before an alarm occurs.
- Limited Recording: Set the number of days to record (from now to the designated day).
- Protected Recording: Set how many days of video the NVR will preserve.
- Estimate Recording Time: The estimate number of days that can be recorded based on the hard disk size.

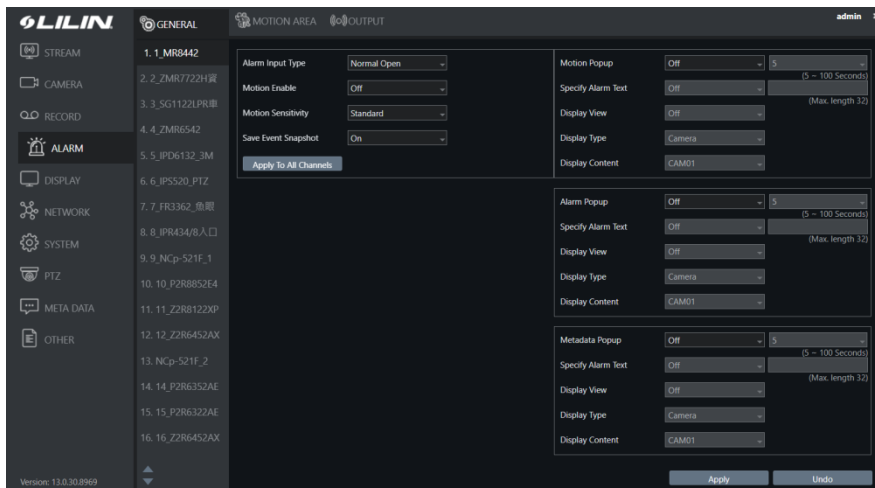


- Average Recording Bitrate: The average video stream size based on the current bandwidth received by the NVR.
- Average Recording Size: The available recording space according to the current installed hard disk.
- Average Recording Time: The estimate number of days that can be recorded based on the hard disk size.
- Record Reclaim: The camera disconnection recovery function requires the camera to have SD card recording/playback function. Click on the **Reclaim Logs** button to view the record reclaim log.
- Record Index : Turn on/off the index function.

## Chapter 6 Alarm Setup

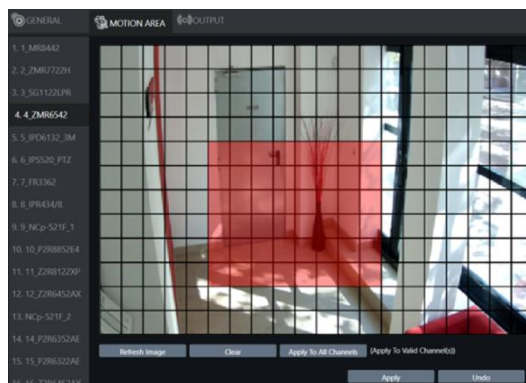
Click NVR Settings icon to enter **NVR SETTINGS**, and then click **ALARM** in the left menu to enter the **ALARM SETUP** page. The setting options are described below:

### Chapter 6-1 General



- Alarm Input Type: Set the alarm sensor to **Normally Open (NO)**, **Normally Closed (NC)**, or **IP Camera**. The last option will trigger the alarm only when receiving a signal from IP cameras.
- Motion Enable: Switch on/off motion detection. Remember also to set the motion detection area in the tab **MOTION AREA**.
- Motion Sensitivity: Adjust the sensitivity of motion detection. Higher sensitivity indicates that the alarm can be more easily triggered.
- Save Event Snapshot: Enable to store a snapshot on the hard drive when an alarm is triggered.
- Motion Popup: The display view pops up when the motion is triggered.
- Specify Alarm Text: The alarm text displays on the channel when the alarm is triggered.
- Display View: Turn on/off the display view when the alarm is triggered.
- Display Type: The mode displayed on the screen when the alarm is triggered.
- Alarm Popup: The display view pops up when the alarm input is triggered.
- Display Content: Switch the display to the selected channel or to the selected split view group.
- Metadata Popup: The display view pops up when the metadata event is triggered

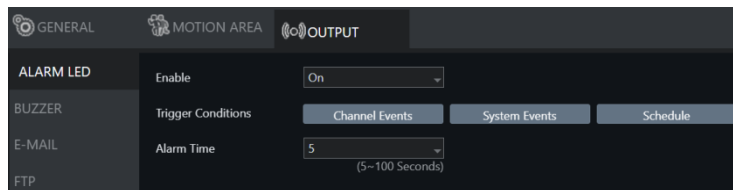
### Chapter 6-2 Motion Area



Click and drag across the grid to highlight motion detection areas. Then, click **Apply** to complete the settings. Click **Clear** to remove the currently highlighted range, or click **Undo** to return to the original set range. Click **Apply All Channels** to apply the areas to all camera channels.

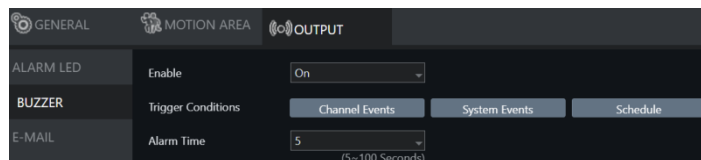
## Chapter 6-3 Output

### Chapter 6-3-1 Alarm Led



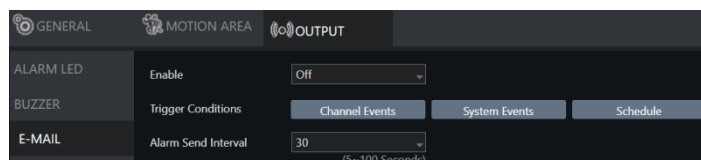
- Enable: Turn **On** to activate the alarm LED.
- Trigger Conditions: See **Channel Events**, **System Events** and **Schedule** above for more details.
- Alarm Time: Set the amount of time the LED blinking when an alarm is triggered.

### Chapter 6-3-2 Buzzer



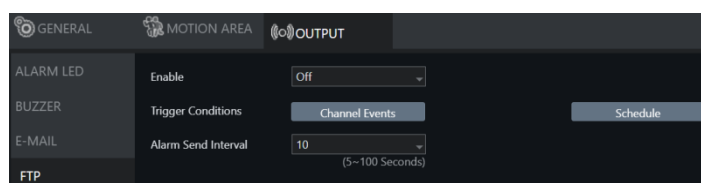
- Enable: Turn **On** to activate the buzzer.
- Trigger Conditions: See **Channel Events**, **System Events** and **Schedule** above for more details.
- Alarm Time: Set the amount of time the buzzer beeping when an alarm is triggered.  
**Note: SYSTEM SETUP>GENERAL >Buzzer must be enabled.**

### Chapter 6-3-3 E-Mail



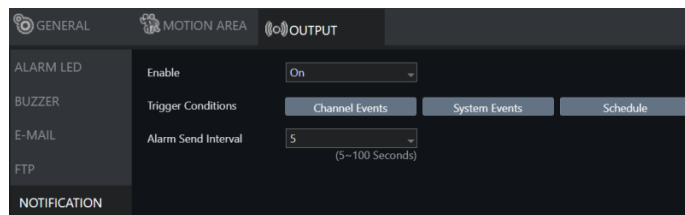
- Enable: Turn **On** to activate e-mail sending.
- Trigger Conditions: See **Channel Events**, **System Events** and **Schedule** above for more details.
- Alarm Send Interval: Set the frequency of sending alarm notification e-mail.

### Chapter 6-3-4 FTP



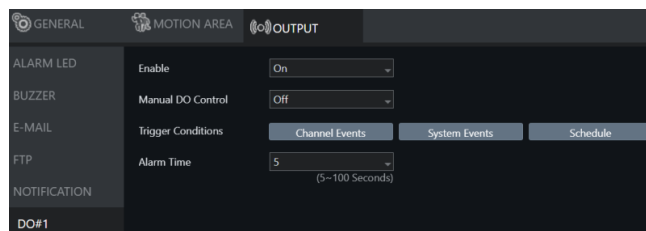
- Enable: Turn **On** to activate FTP sending.
- Trigger Conditions: See **Channel Events** and **Schedule** above for more details.
- Alarm Send Interval: Set the frequency of FTP sending image files when an alarm is triggered.


## Chapter 6-3-5 Notification



- Enable: Turn **On** to activate app push notification sending.
- Trigger Conditions: See **Channel Events**, **System Events** and **Schedule** above for more details.
- Alarm Send Interval: Set the frequency of sending the app push notification when an alarm is triggered.

## Chapter 6-3-6 DO#1–DO#4

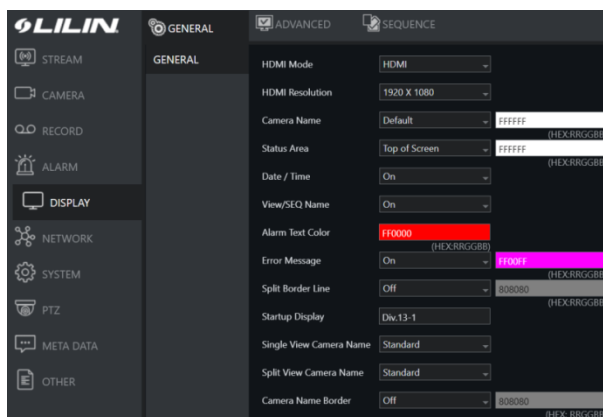


- Enable: Enable/Disable the buzzer sound when the alarm occurs.
- Manual DO Control: Turn **On** to enable directly DO control, in live video window will show the corresponding DO number icon , click to control DO output.
- Trigger Conditions: **Channel Events**, **System Events**, **Schedule**, please refer to the previous description for details.
- Alarm Time: Select the time for the buzzer to sound on the alarm.

## Chapter 7 Display Setup

Click NVR Settings icon to enter **NVR SETTINGS**, and then click **DISPLAY** in the left menu to enter the **DISPLAY SETUP** page. The setting options are described below:

### Chapter 7-1 General

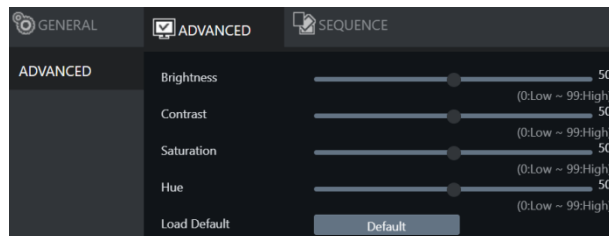


- HDMI Mode: Switch the output mode between DVI and HDMI.
- HDMI Resolution: Select a screen resolution that fits your screen.
- Camera Name: Adjust the channel name OSD position on local live view display. Opposite field

- is to select channel name text color for on-screen display.
- Status Area: Adjust the status OSD position on local live view display. Opposite field is to select status text color for on-screen display.
- Date / Time: Enable or disable the date and time OSD from the local live view screen.
- View/SEQ Name: Turn on/off View/Sequence OSD on split screen view.
- Alarm Text Color: Select alarm text color for on-screen display.
- Error Message: Turn on/off error message in live view.
- Split Border Line: Select borderline size/color on split screen view.
- Startup Display: Specify video to display after the DVR startup is completed.
- Single View Camera Name: The text size for the designated full-screen camera name.
- Split View Camera Name: The text size for the designated camera names in the split-screen display.
- Camera Name Border: The border size for the camera name.

**Note:** Availability depends on model.

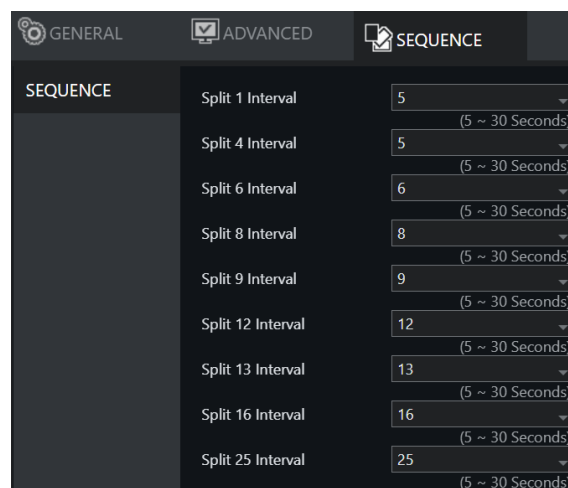
## Chapter 7-2 Advanced



In this page, you can adjust brightness, contrast, saturation and hue of the NVR output. Click **Load Default** to restore to the factory settings.

**Note:** Availability depends on model.

## Chapter 7-3 Sequence

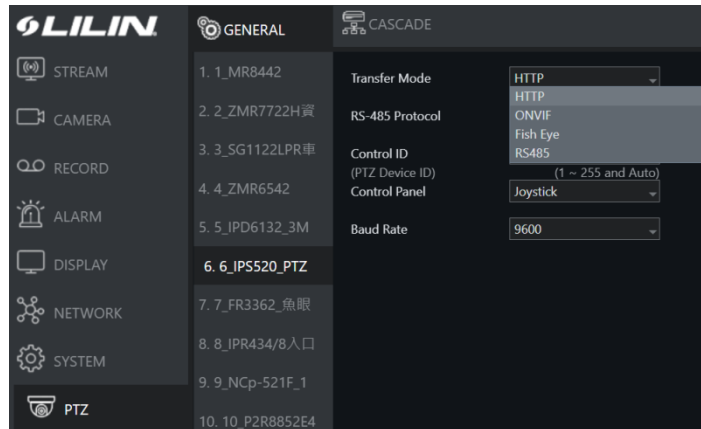


You are allowed to view videos of multiple cameras in sequence. Specify the **Sequence Interval** for the NVR to switch to the next camera or camera group for monitoring.

## Chapter 8 PTZ Setup

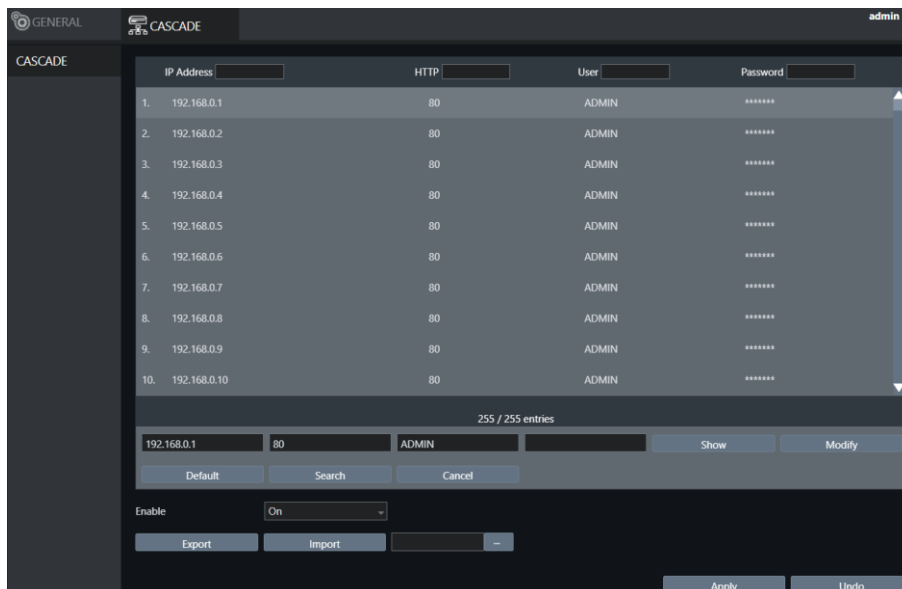
Click NVR Settings icon to enter **NVR SETTINGS**, and then click **PTZ** in the left menu to enter the **PTZ SETUP** page. The setting options are described below:

### Chapter 8-1 General

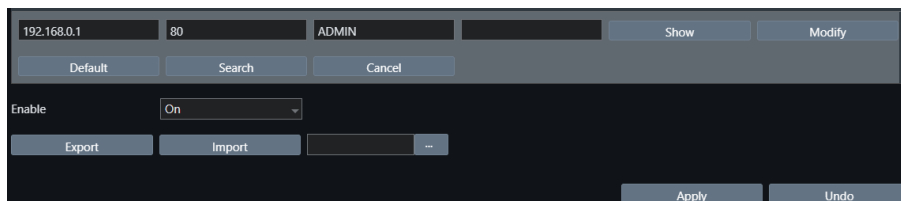


- Transfer Mode: Choose a PTZ communication protocol from HTTP, ONVIF, or Fish Eye. Otherwise use RS-485.
- RS-485 Protocol: Choose a RS-485 control protocol for your RS-485 PTZ device.  
**Note: Transfer Mode** must be set to **RS-485**. Availability depends on models.
- Control ID: Choose the corresponding device ID to control the camera.
- Control Panel: The type of PTZ control panel.
- Baud Rate: The baud rate of RS-485 communication.

### Chapter 8-2 NVR Cascade



This tab allows you to cascade multiple NVRs or adjust relevant settings. For detailed instructions on how to use the NVR cascade function, visit our official website. Enter **Support > SDK**, and download the document named **DVR/NVR IR/keyboard serial commands over HTTP**. The settings listed in this tab are described in details as follows:

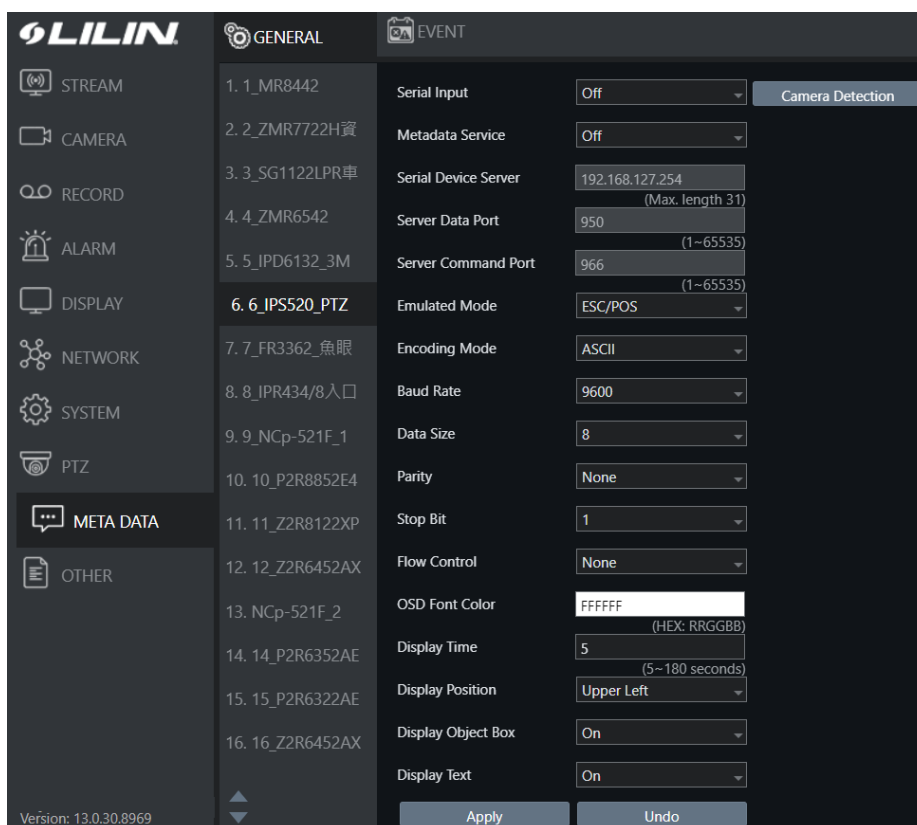


- Show/Hide: Reveal or hide the password.
- Modify: Apply the changes you've made.
- Default: Restore to factory settings.
- Search: Find all other NVR(s) connected to your network.
- Enable: Enable/Disable the cascade.
- Export: Export the settings to the USB flash drive connected to the NVR.
- Import: Load the settings from the USB flash drive connected to the NVR.

## Chapter 9 Metadata Setup

Click NVR Settings icon to enter **NVR SETTINGS**, and then click **METADATA** in the left menu to enter the **METADATA SETUP** page. The setting options are described below:

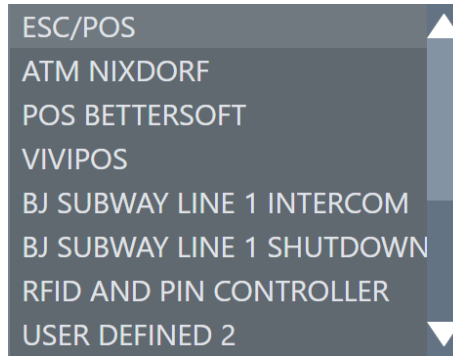
### Chapter 9-1 General



The NVR supports various external devices such as GPS or POS, and in this page you are allowed the change the settings for these devices. The setting options are described as follows:

- Serial Input: Select the USB port to which your external device is connected.
- Metadata Service: Turn **On** to enable using external devices.
- Serial Device Server: Enter the server IP for your serial device.
- Server Data Port: Enter the port of your serial device.

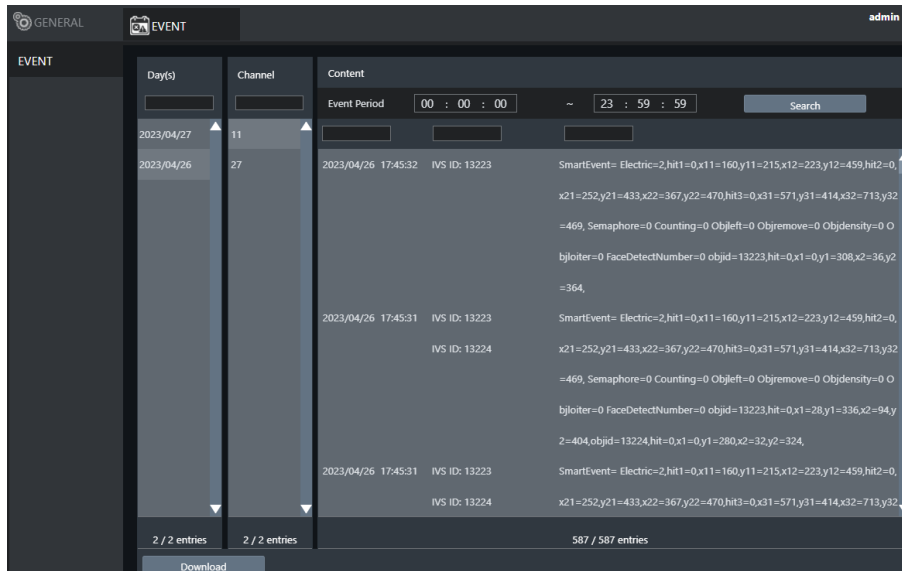
- Server Command Port: Enter the command port of the device.
- Emulated Mode: Choose an emulation type from the drop-down menu (see image below).



- Encoding Mode: Choose between ASCII and UTF-8.
- Baud Rate: Select an option suitable for your device.
- Data Size: Select an option suitable for your device.
- Parity: Select an option suitable for your device.
- Stop Bit: Select an option suitable for your device.
- Flow Control: Select an option suitable for your device.
- OSD Font Color: Choose a color for the OSD font from the spectrum (see image below).
- Display Time: The time when the external device data is displayed on the image.
- Display Position: The location where the external device data is displayed on the image.
- Display Object Box: Enable or disable the display of object box for AI recognition.
- Display Text: Enable or disable the display of text on the image of the external device data.
- Camera Detection: The types of data that the detection camera can provide.

## Chapter 9-2 Event

This tab displays a history of received metadata. You are allowed to search for events based on time, channel, or content.

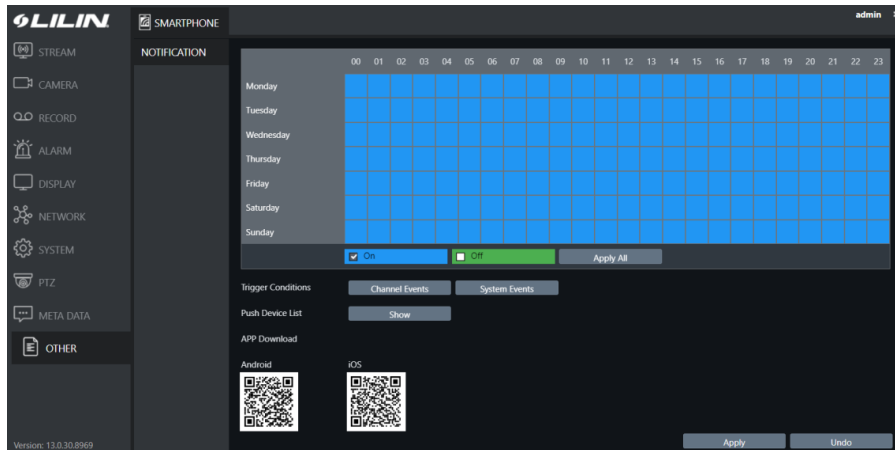


Click on the **Download** button to export the external metadata.

## Chapter 10 Other Setup

Click NVR Settings icon to enter **NVR SETTINGS**, and then click **OTHER** in the left menu to enter the **OTHER SETUP** page. The setting options are described below:

### Chapter 10-1 Smartphone



This tab provides settings for sending alarm notifications to your smartphone that is paired with the NVR. You can download **LILINHome** in App Store or Google Play for your iPhone, iPad, and other Android devices.

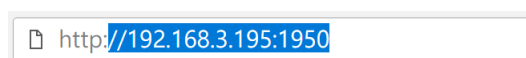
- Trigger Conditions: See **Channel Events** and **System Events** above for more details.
- Push Device List: Click **Show** to open a dialog, display all registered mobile devices that required push notification.
- APP Download: Scan the QR code to download LILINHome.

## Chapter 11 Stream

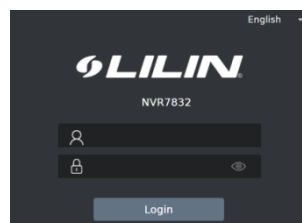
Once the network configurations are completed and cameras connected, you can remotely view live streams of cameras via an Internet browser, and access other functions such as playing recorded video and backing up video files.

**Note:** IE 10 or above, or Chrome are recommended.

Enter the NVR IP address or domain name in the address bar:



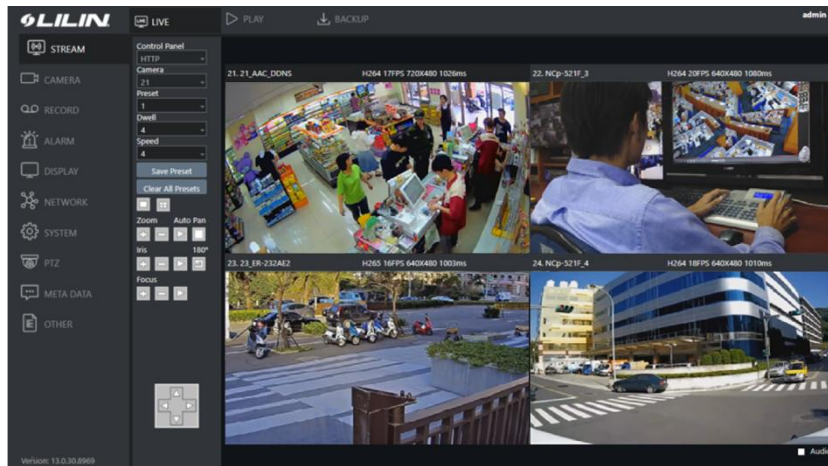
Enter the NVR username and password required for login authorization



Then log into the **STREAM** menu.

**Note:** NVR remote access requires corresponding access privileges.

## Chapter 11-1 Live



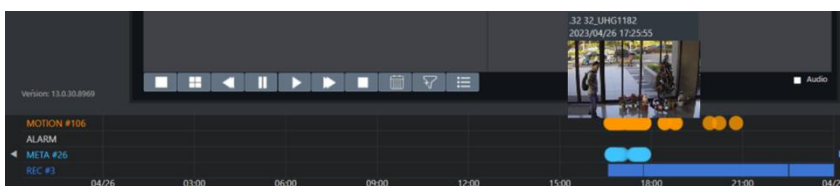
The **LIVE** tab displays the streams of all connected cameras. With the control buttons and joystick you can control the movement of the selected camera.

## Chapter 11-2 Play

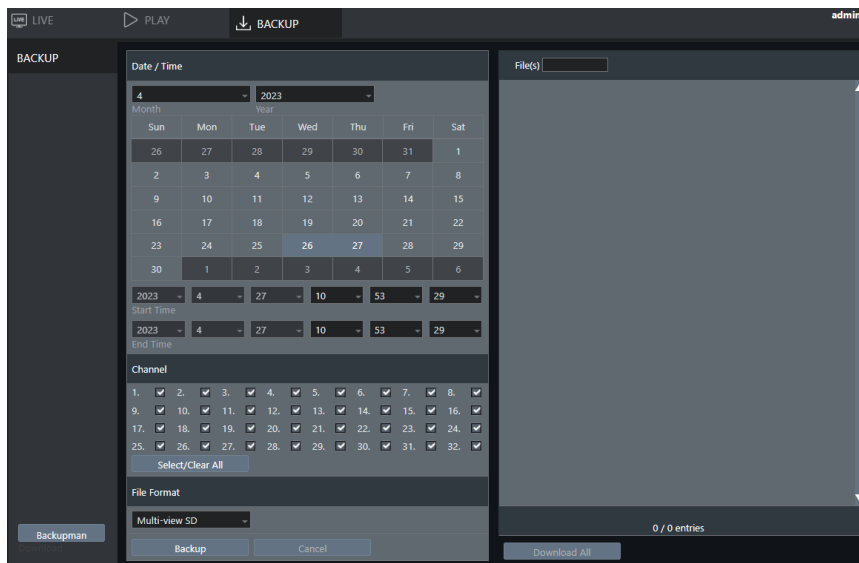


Icons	Description
	Split screen switch
	Rewind, Pause, Play, Fast Forward, Stop
	Time selection, event and channel filters, event capture and list.

View event snapshots through the timeline, or click on the timeline to change the playback time.



## Chapter 11-3 Backup



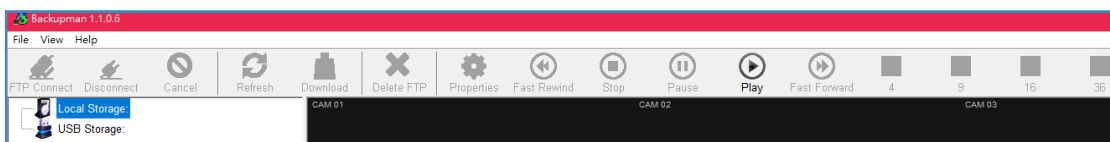
In BACKUP, you could back up recorded videos by choosing the date/time, channel, and file format. Click Backup to start the backup process.

### Chapter 11-3-1 Backup Manager

To reduce the NVR loading, user may back up the NVR files to a PC and playback from the PC independently. Click on **Stream ->Backup ->Backupman** to download the software. Please follow the instructions to install the Backup Manager.

#### Chapter 11-3-1-1 Backup Manager NVR Backup

1. Launch the Backup Manager on a PC, click on Start -> Backupman and will display the below image.



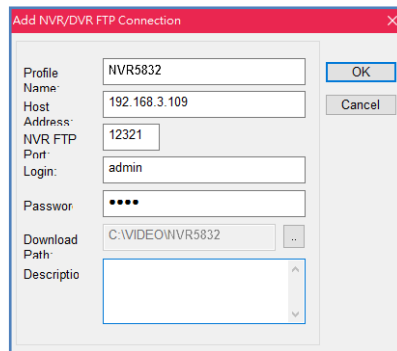
Below are the Menu descriptions:

- File: To select file properties
- Open File: To select a file for playback.
- Open Folder: To select a folder for playback.
- Open Folder with HD Files: To playback the HD files.
- Convert AVI File: Convert a file to AVI.
- Add NVR/DVR FTP Connection: Add an NVR/DVR.
- Connect NVR/DVR FTP Connection: Connect to the NVR/DVR.
- Delete NVR/DVR FTP Connection: Delete an NVR/DVR.
- Exit: Leave the Backup Manager window.
- View: To select display properties.
- Toolbar: Display or hide the tools icon.
- Video Size 1:1: Enlarge or reduce the image.
- Hardware Graphics Acceleration: Accelerate the hardware graphics. (**Note:** Make sure the computer support this function to utilize this feature.)
- Help (H): Main menu for About Backup manager.
- About Backup Manager: Displays the Backup Manager version number.

2. Connect the Backup Manager to the NVR.

2.1 Click on **File**

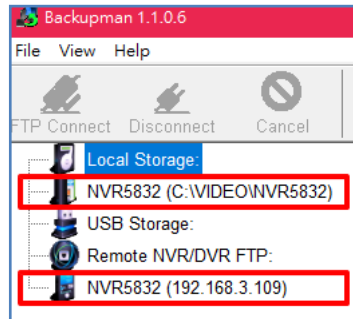
2.2 Click on **Connect NVR/DVR FTP connection**, and a window will pop up



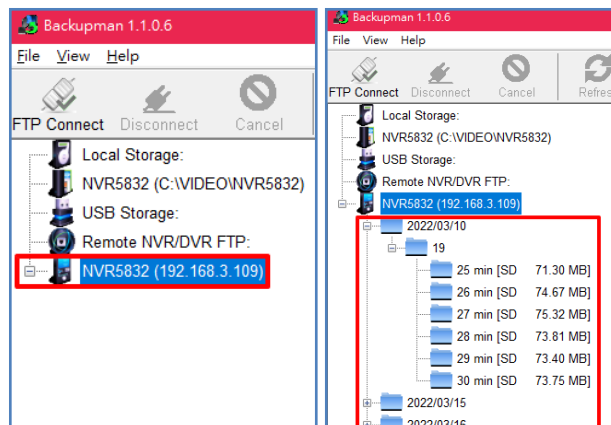
2.3 Please fill in the same information as NVR/DVR you want to back up (Please refer to NVR: **Network ->General**)

- Profile Name: Enter the name of the NVR.
- Host Address: Enter the IP Address of the NVR.
- NVR FTP Port: Enter the FTP Port of the NVR. (**Note:** Please turn ON the NVR FTP Service to enable to connect).
- Login: Enter the NVR login account name.
- Password: Enter the NVR login password.
- Press Submit

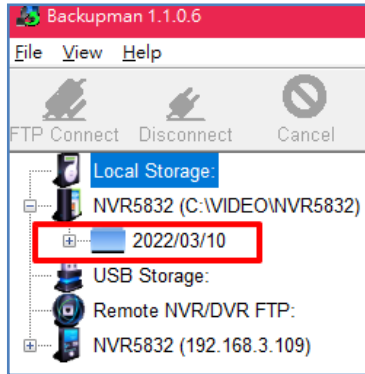
After filling in the information, It will show on the tree diagram.



2.4 Click on the added remote NVR and press **File ->Connect NVR/DVR FTP Connection** and all NVR recorded files will be displayed in Backup Manager Remote NVR/DVR FTP tree diagram.



2.5 Select a file for download to the Backup Manager and click on **Download** icon. The user may select a date, hour, or minutes. Once download is complete, the file name will be displayed under Local Storage.



### Chapter 11-3-1-2 Backup Manager NVR Playback

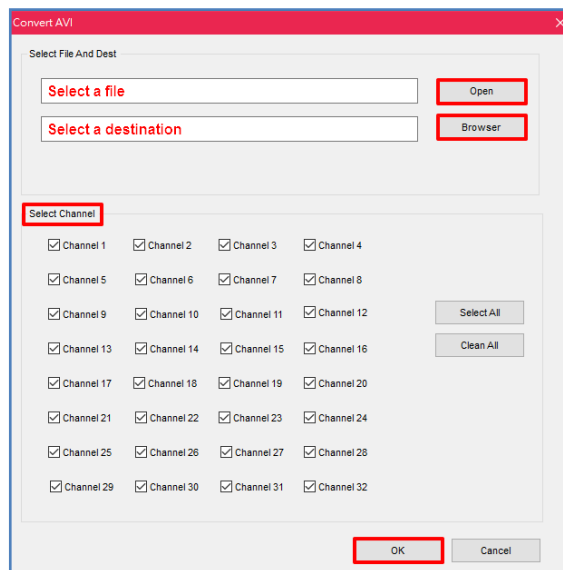
To playback the downloaded NVR backup file on a PC, click on the **Local Storage** -> the selected Device Name -> the selected date/time and click on **Play** icon.

Details of the Playback controls are described as follows:

Icons	Description
	Rewind
	Stop
	Pause
	Play
	Forward
	Select the number of split-screens according to your needs

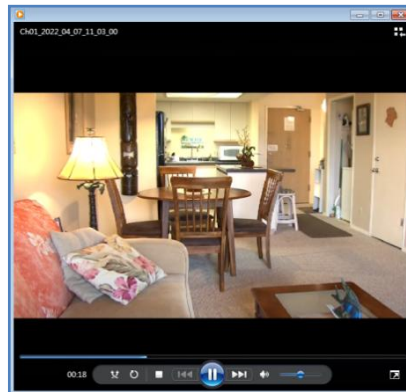
### Chapter 11-3-1-3 Convert Files to AVI Format

To convert to AVI file, click **File** ->**Convert AVI File** -> Select a file, destination and channel and click **OK**.



### Chapter 11-3-1-4 AVI File Playback

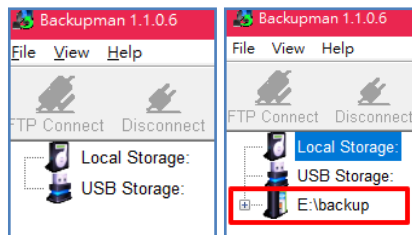
To playback the AVI file, go to the selected destination folder on the PC, and mouse double right click on the file name.



### Chapter 11-3-1-5 USB Storage

For USB flash drive file playback or convert to AVI format, please follow below:

1. Download the NVR recorded files to USB flash drive
2. Insert the USB flash drive to local PC
3. Launch the backup manager software and the USB flash drive will be displayed in the tree diagram automatically.



4. The user may select date/hour/minutes for playback or convert the files to AVI format.


## Appendix Install LILINHome

Search and download LILINHome in the iOS App Store or Android Play Store. Or you can scan the QR code below:

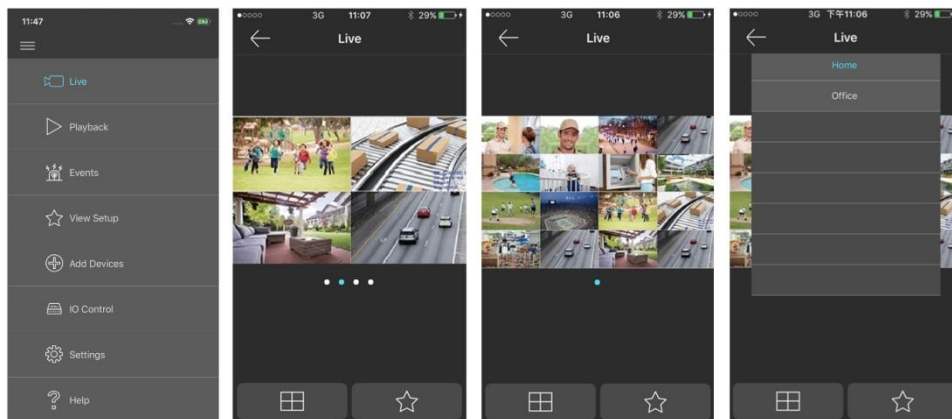


### 1. Live View

Click on the Menu button and the Live button for accessing live video of cameras. Entering the Live page is going to show the last accessed view page.


 Quad button: Click on the Quad button is to show 4 cameras in a sequence of a view page. Swipe the cameras for next quad view. Click on a camera for full screen.

 View button: Click on the View button that allows choosing a view page.



### 2. Playback

Click on the Playback button from the menu. Enter playback page. Playback is able to play SD card on an IP camera, NVR/DVR, and Navigator.

 Click on the calendar button. The calendar control shows up. Select the date and time for playback. Click on the date control on the bottom for entering a date. Click on the timebar control for the time of playback.



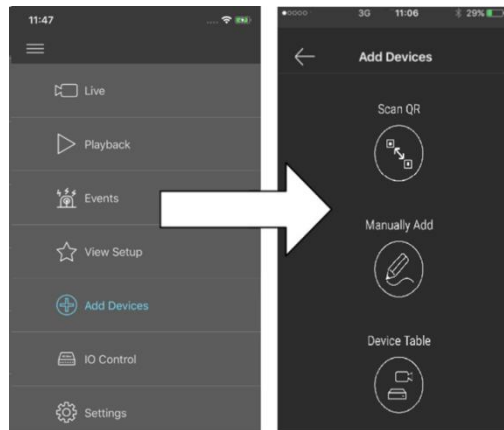
For controlling the playback video for LILIN products, click fast rewind, pause, fast forward, audio, video download, or quad view.

Video download: Click on the video download button for downloading video from LILIN products. Click on the quad view button for switching 4 camera views.



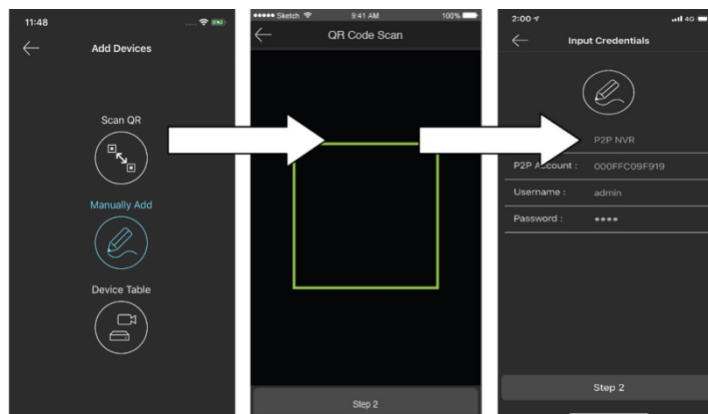
### 3. Add Devices

LILINHome can support NVR/DVR for remote access.



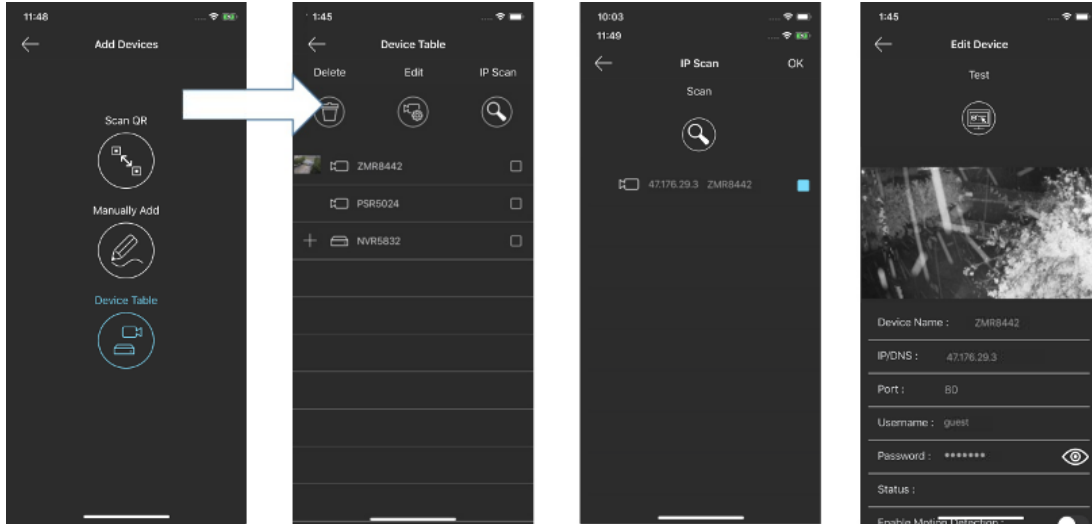
#### 3.1 Add Devices for LILINHome App

Click on Scan QR for adding a NVR. Point to the QR code of a NVR for scanning QR code license ID for adding the NVR. Once a NVR gets added, the NVR goes to the View automatically. Enter Windows division is set automatically. If you are a home owner, you can just use LILINHome for easy access purpose.



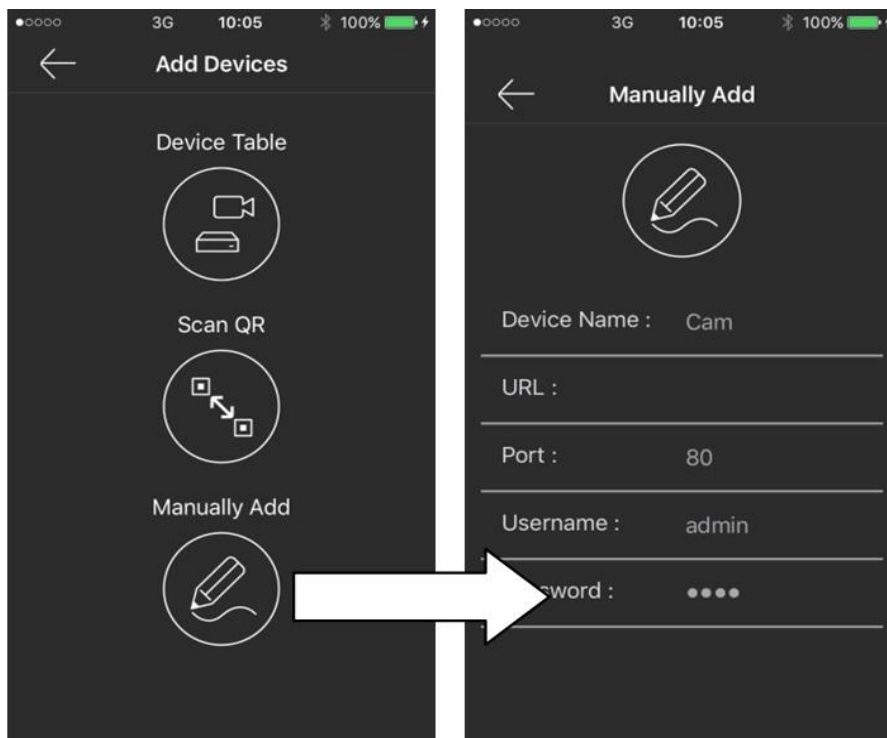
### 3.2 IPScan via Device Table

Use IPScan for all LILIN devices within a network. Enter username and password for the device. Click on Test button for accessing the video. This is to use cameras and NVRs that are in a network. For Internet access, make sure that the IP addresses of cameras and NVRs are Internet IP addresses.






### 3.3 Manually Add Devices

A user can manually add device via Manually Add feature for entering the global IP address or LILIN DDNS of LILIN IP camera or NVR at the URL field. Enter the Port number for the camera or NVR. Finally, enter username and password to gain Internet access.



#### 4. View Setup

A camera view is to create a group of cameras for IP cameras or NVRs. This allows choosing cameras from different IP cameras or NVRs to form a view. Once a view is created, choose cameras from Device Table.

Icon	Description
	Click on New View button to create a new viewing group of cameras.
	Delete button: Click on Delete button for deleting a camera view.
	Edit button: Click on Edit button for choosing cameras from Device Table after selecting a camera view.

#### 5. Help

Click on Help button. You are able to get the user manual for using LILINHome Apps.

