

Network Video Recorder

Quick Operation Guide

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About this Manual

This Manual is applicable to Network Video Recorder (NVR).

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website

Please use this user manual under the guidance of professionals.

Legal Disclaimer

REGARDING TO THE PRODUCT WITH INTERNET ACCESS, THE USE OF PRODUCT SHALL BE WHOLLY AT YOUR OWN RISKS. OUR COMPANY SHALL NOT TAKE ANY RESPONSIBILITIES FOR ABNORMAL OPERATION, PRIVACY LEAKAGE OR OTHER DAMAGES RESULTING FROM CYBER ATTACK, HACKER ATTACK, VIRUS INSPECTION, OR OTHER INTERNET SECURITY RISKS; HOWEVER, OUR COMPANY WILL PROVIDE TIMELY TECHNICAL SUPPORT IF REQUIRED.

SURVEILLANCE LAWS VARY BY JURISDICTION. PLEASE CHECK ALL RELEVANT LAWS IN YOUR JURISDICTION BEFORE USING THIS PRODUCT IN ORDER TO ENSURE THAT YOUR USE CONFORMS THE APPLICABLE LAW. OUR COMPANY SHALL NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED WITH ILLEGITIMATE PURPOSES.

IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATER PREVAILS.

Regulatory Information

FCC Information

FCC compliance: This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2004/108/EC, the RoHS Directive 2011/65/EU.



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (B)/NMB-3(B) standards requirements.



Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into “Warnings” and “Cautions”

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

	
Warnings Follow these safeguards to prevent serious injury or death.	Cautions Follow these precautions to prevent potential injury or material damage.

Warnings

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100~240 VAC or 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.

If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.

Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact dealer.

NVR Installation

During the installation of the NVR:

1. Use brackets for rack mounting.
2. Ensure there is ample room for audio and video cables.
3. When routing cables, ensure that the bend radius of the cables are no less than five times than its diameter.
4. Connect both the alarm and RS-485 cable.
5. Allow at least 2cm (\approx 0.75-inch) of space between racks mounted devices.
6. Ensure the NVR is grounded.
7. Environmental temperature should be within the range of $-10^{\circ}\text{C} \sim 55^{\circ}\text{C}$, $14^{\circ}\text{F} \sim 131^{\circ}\text{F}$.
8. Environmental humidity should be within the range of 10% ~ 90%.

Hard Disk Installation

Before you start:

Disconnect the power from the NVR before installing a hard disk drive (HDD). A factory recommended HDD should be used for this installation.

Up to 2 SATA hard disks can be installed on your NVR.

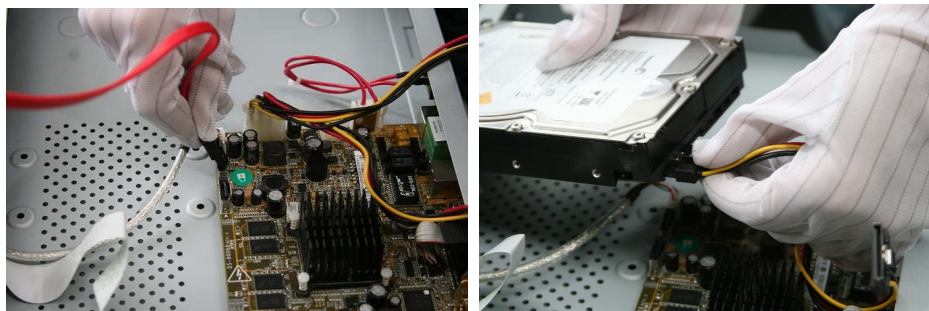
Tools Required: Screwdriver.

Steps:

1. Remove the cover from the NVR by unfastening the screws on the rear and side panel.



2. Connect one end of the data cable to the motherboard of NVR and the other end to the HDD.



3. Connect the power cable to the HDD.

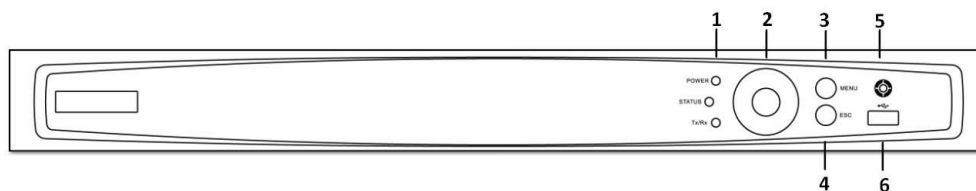


4. Place the HDD on the bottom of the device and then fasten the screws on the bottom to fix the HDD.



5. Re-install the cover of the NVR and fasten screws.

Front Panel

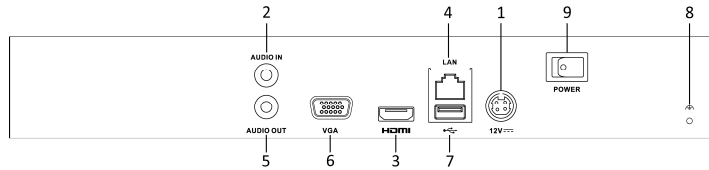


No.	Name	Function Description
1	POWER	POWER indicator turns green when NVR is powered up.
	STATUS	STATUS indicator lights in red when data is being read from or written to HDD.
	Tx/Rx	Tx/Rx indicator blinks green when network connection is functioning properly.
2	DIRECTION	<p>The DIRECTION buttons are used to navigate between different fields and items in menus.</p> <p>In the Playback mode, the Up and Down button is used to speed up and slow down recorded video. The Left and Right button will select the next and previous record files.</p> <p>In Live View mode, these buttons can be used to cycle through channels.</p> <p>In PTZ control mode, it can control the movement of the PTZ camera.</p>
	ENTER	<p>The ENTER button is used to confirm selection in any of the menu modes.</p> <p>It can also be used to <i>tick</i> checkbox fields.</p> <p>In Playback mode, it can be used to play or pause the video.</p> <p>In single-frame Playback mode, pressing the button will advance the video by a single frame.</p>
3	MENU	Access the main menu interface.
4	ESC	Exit and back to the previous menu.
5	IR Receiver	Receiver for IR remote.
6	USB Interface	Connects USB mouse or USB flash memory devices.

Rear Panel



The rear panel varies according to different models.



No.	Item	Description
1	Power Supply	DC 12V power supply.
2	Audio In	RCA connector for audio input.
3	HDMI Interface	HDMI video output connector.
4	LAN Network Interface	1 10 /100 /1000 Mbps self-adaptive Ethernet interface
5	Audio Out	RCA connector for audio output.
6	VGA Interface	DB9 connector for VGA output. Display local video output and menu.
7	USB Interface	Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD).
8	Ground	Ground (needs to be connected when NVR starts up).
9	Power Switch	Switch for turning on/off the device.

Specifications

Specifications

Model		4ch	8ch	16ch
Video/Audio input	IP video input	4-ch	8-ch	16-ch
	Two-way audio input	1-ch, RCA (2.0 Vp-p, 1KΩ)		
Network	Incoming bandwidth	40Mbps	80Mbps	160Mbps
	Outgoing bandwidth	80Mbps		
	Remote connection	32	128	
Video/Audio output	Recording resolution	6MP/5MP/3MP/1080P/UXGA/720P/VGA/4CIF/DCIF/2CIF/CIF/QCIF		
	Frame rate	Main stream: 50 fps (P) / 60 fps (N)		
		Sub-stream: 50 fps (P) / 60 fps (N)		
	HDMI/VGA output	1-ch, resolution: 1920 × 1080P /60Hz, 1600 × 1200 /60Hz, 1280 × 1024 /60Hz, 1280 × 720 /60Hz, 1024 × 768 /60Hz		
Audio output	1-ch, RCA (Linear, 1kΩ)			
Decoding	Live view / Playback resolution	6MP/5MP/3MP/1080P/UXGA/720P/VGA/4CIF/DCIF/2CIF/CIF/QCIF		
	Capability	4-ch@1080P	8-ch@720P, 6-ch@1080P	16-ch@4CIF, 12-ch@720P, 6-ch@1080P
Hard disk	SATA	1 SATA interface for 1 HDD	2 SATA interfaces for 2 HDDs	
	Capacity	Up to 4TB for each disk		
External interface	Network interface	1 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interface		
	USB interface	1 × USB 2.0 and 1 × USB 3.0		
Others	Power supply	12V DC		
	Consumption (without hard disk)	≤ 10W		
	Working temperature	-10 °C ~ +55 °C (+14 °F ~ + 131 °F)		
	Working humidity	10 % ~ 90 %		
	Chassis	1U chassis	380 chassis	
	Dimensions (W × D × H)	315 × 230 × 45 mm (12.4" × 9.0" × 1.8")	380 × 290 × 48mm (15.0" × 11.4" × 1.9")	
	Weight (without hard disk)	≤ 1 kg (2.2 lb)	≤ 1 kg (2.2 lb)	

HDD Storage Calculation Chart

The following chart shows an estimation of storage space used based on recording at one channel for an hour at a fixed bit rate.

Bit Rate	Storage Used
96K	42M
128K	56M
160K	70M
192K	84M
224K	98M
256K	112M
320K	140M
384K	168M
448K	196M
512K	225M
640K	281M
768K	337M
896K	393M
1024K	450M
1280K	562M
1536K	675M
1792K	787M
2048K	900M
4096K	1.8G
8192K	3.6G
16384K	7.2G

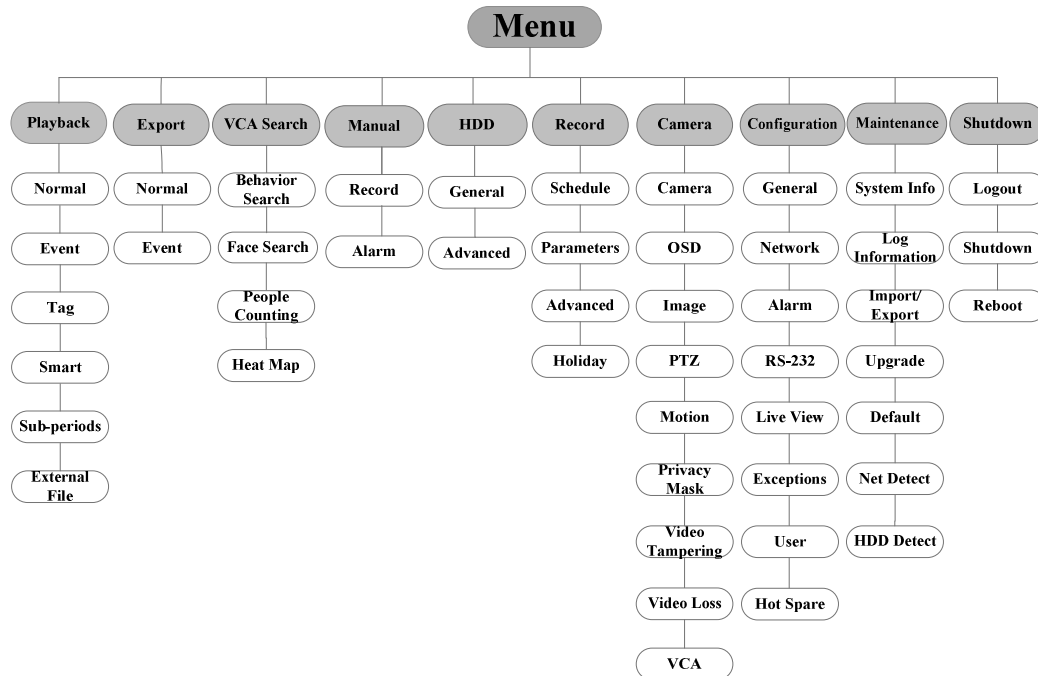


Please note that supplied values for storage space used is just for reference. The storage values in the chart are estimated by formulas and may have some deviation from actual value.

Menu Operation

Menu Structure

The menu structure is shown as follows. It varies according to different models.



The RS-232 and Hot Spare are not available for this series.

Startup and Shutdown

Proper startup and shutdown procedures are crucial to expanding the life of the NVR.

To start your NVR:

Steps:

1. Check the power supply is plugged into an electrical outlet. It is HIGHLY recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the device. The Power indicator LED on the front panel should be red, indicating the device gets the power supply
2. Turn on the power switch on the rear panel if the device starts up for the first time. The Power indicator LED should turn green indicating that the unit begins to start up.
After the device starting up, the wizard will guide you through the initial settings, including modifying password, date and time settings, network settings, HDD initializing, and recording.

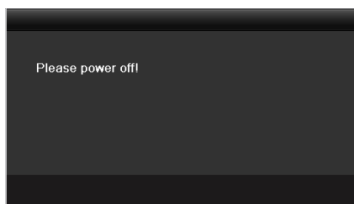
To shut down the NVR:

Steps:

1. Enter the Shutdown menu.
Menu > Shutdown



2. Select the **Shutdown** button.
3. Click the **Yes** button.
4. Turn off the power switch on the rear panel when the attention pops up.



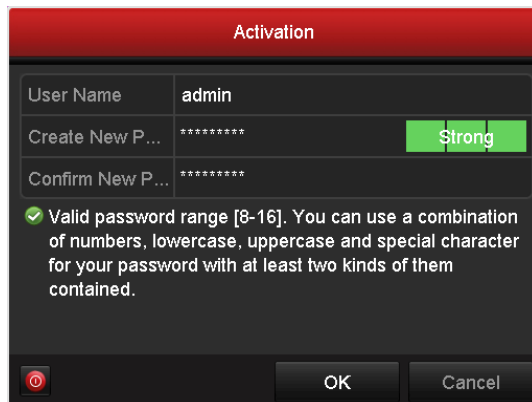
Setting the Admin Password


Purpose:

For the first-time access, you need to activate the device by setting an admin password. No operation is allowed before activation. You can also activate the device via Web Browser, SADP or Client Software.

Steps:

1. Input the same password in the text field of **Create New Password** and **Confirm New Password**.

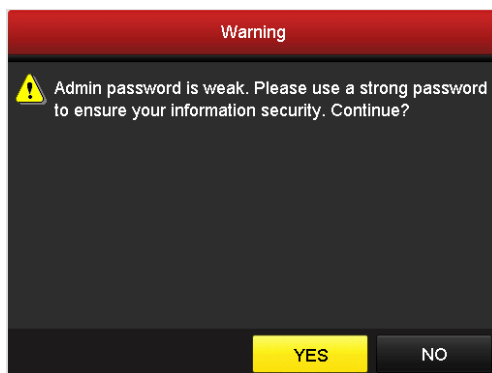


 **STRONG PASSWORD RECOMMENDED**– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

2. Click **OK** to save the password and activate the device.



For the old version device, if you update it to the new version, the following dialog box will pop up once the device starts up. You can click **YES** and follow the wizard to set a strong password.



Login and Logout

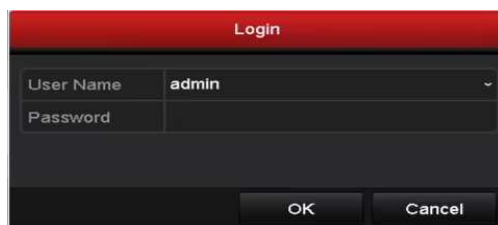
User Login

Purpose:

If NVR has logged out, you must login the device before operating the menu and other functions.

Steps:

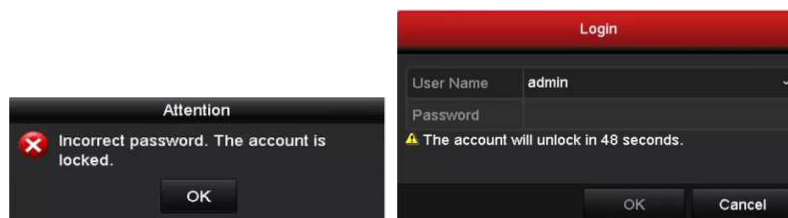
1. Select the **User Name** in the dropdown list.



2. Input **Password**.
3. Click **OK** to log in.



The device gets locked for 60 seconds if the admin user performs 7 failed password attempts (5 attempts for the guest/operator).



User Logout

Purpose:

After logging out, the monitor turns to the live view mode and if you want to do some operation, you need to enter user name and password to log in again.

Steps:

1. Enter the Shutdown menu.
Menu > Shutdown



2. Click **Logout**.



After you have logged out the system, menu operation on the screen is invalid. It is required to input a user name and password to unlock the system.

Live View

Some icons are provided on screen in Live View mode to indicate different camera status. These icons include:

Live View Icons

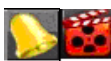
In the live view mode, there are icons at the upper-right corner of the screen for each channel, showing the status of the record and alarm in the channel, so that you can find problems as soon as possible.



Alarm (video loss, tampering, motion detection, VCA or sensor alarm)



Record (manual record, continuous record, motion detection, VCA and alarm triggered record)



Alarm & Record



Event/Exception (event and exception information, appears at the lower-left corner of the screen.)

Adding IP Cameras

Purpose:

Before you can get a live view or record of the video, you should add the network cameras to the connection list of the device.

Before you start:


Ensure the network connection is valid and correct, and the IP camera to add has already been activated.

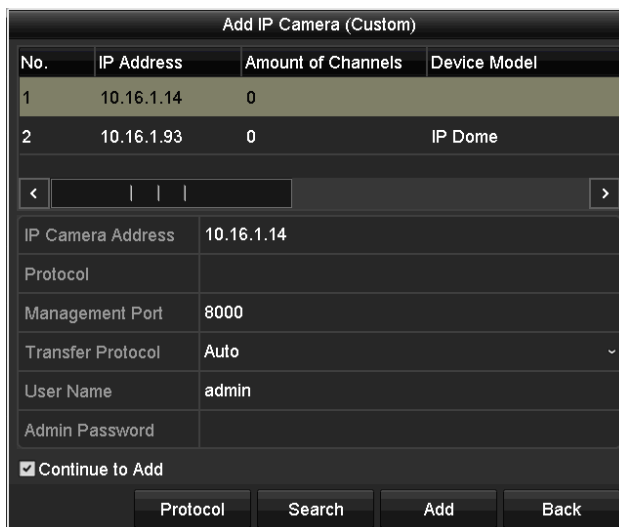
Please refer to the User Manual for activating the inactive IP camera.

You can select one of the following three options to add the IP camera.

- **OPTION 1:**

Steps:

1. Click to select an idle window in the live view mode.
2. Click the  icon in the center of the window to pop up the adding IP camera interface.



3. Select the detected IP camera and click the **Add** button to add it directly, and you can click the **Search** button to refresh the online IP camera manually.


Or you can choose to custom add the IP camera by editing the parameters in the corresponding textfiled and then click the **Add** button to add it.

- **OPTION 2:**

Steps:

1. Select the **Add IP Camera** option from the right-click menu in live view mode or click Menu> Camera> Camera to enter the IP camera management interface.



2. The online cameras with same network segment will be detected and displayed in the camera list.
3. Select the IP camera from the list and click the  button to add the camera. Or you can click the **One-touch Adding** button to add all cameras from the list.

- **OPTION 3:**

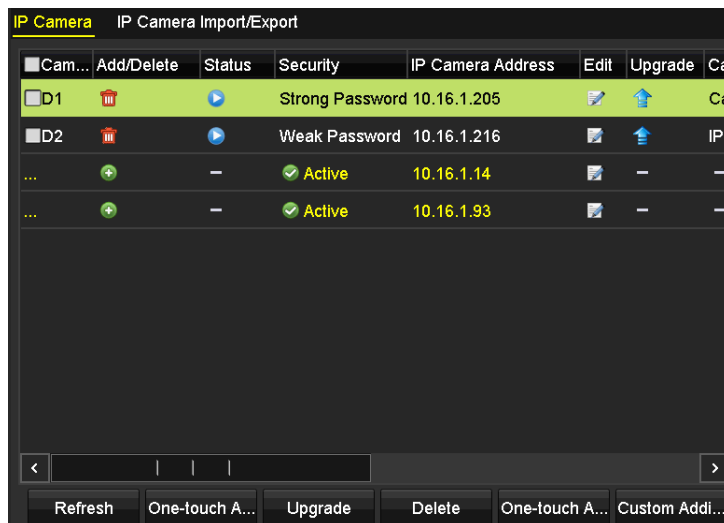
Steps:

- 1) On the IP Camera Management interface, click the **Custom Adding** button to pop up the Add IP Camera (Custom) interface.



- 2) You can edit the IP address, protocol, management port, and other information of the IP camera to be added.
- 3) Click **Add** to add the camera.

For the successfully added IP cameras, the Security status shows the security level of the password of camera: strong password, weak password and risk password.



Explanation of the icons

Icon	Explanation	Icon	Explanation
	Edit basic parameters of the camera		Add the detected IP camera.
	The camera is disconnected; you can click the icon to get the exception information of camera.		Delete the IP camera
	Play the live video of the connected camera.		Advanced settings of the camera.
	Upgrade the connected IP camera.	Security	Show the security status of the camera to be active/inactive or the password strength (strong/medium/weak/risk)

Recording

Before you start:

Make sure that the HDD has already been installed. If not, please install a HDD and initialize it. You can refer to the user manual for detailed information.

Purpose:

Two kinds of record types are introduced in the following section, including Instant Record and All-day Record. And for other record types, you may refer to the user manual for detailed information.







After rebooting all the manual records enabled are canceled.

Instant Recording

On the live view window of each channel, there is a quick setting toolbar which shows on the bottom of the window when you click on it.



Click the  icon to enable the record, and the icon turns to . And click  icon to disable the record, then the icon turns to .

All-day Recording


Steps:

1. On the live view window, right click the window and move the cursor to the **Start Recording** option, and select **Continuous Record** or **Motion Detection Record** on your demand.
2. And click the **Yes** button in the popup Attention message box to confirm the settings.
Then all the channels will start to record in the selected mode.

Playback

Play back the record files of a specific channel in the live view menu. Channel switch is supported.

● Option 1:

Choose a channel under live view using the mouse and click the  button in the shortcut operation menu.



Only record files recorded during the past five minutes on this channel will be played back.

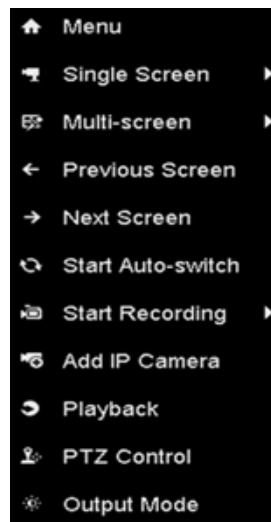


● **Option 2:**

Steps:

1. Enter the Playback menu.

Mouse: right click a channel in live view mode and select Playback from the menu.



Under multi-screen live view, record files of the selected channel will be played back.

2. Playback management.

The toolbar in the bottom part of Playback interface can be used to control playing process.



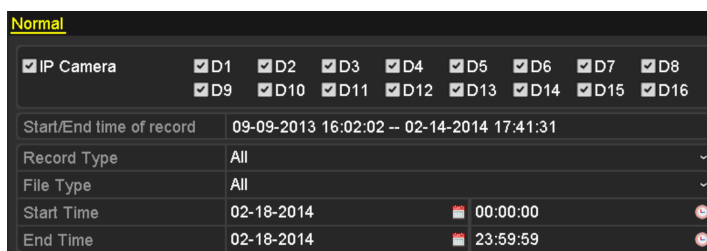
Just check the channel or channels if you want to switch playback to another channel or execute simultaneous playback of multiple channels.

Backup

Recorded files can be backed up to various devices, such as USB flash drives, USB HDDs or a DVD writer.

Steps:

1. Enter Video Export interface.
Choose the channel(s) you want to back up and click on the **Quick Export** button.



2. Enter Export interface, choose backup device and click **Export** button to start exporting.



3. Check backup result.



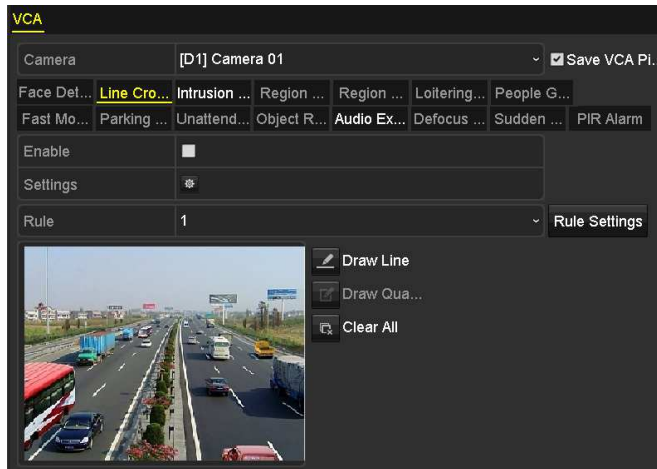
VCA Detection

Purpose:

The NVR supports the VCA detection alarm (*face detection, line crossing detection and intrusion detection, region entrance detection, region exiting detection, loitering detection, people gathering detection, fast moving detection, parking detection, unattended baggage detection, object removal detection, audio loss exception detection, sudden change of sound intensity detection, and defocus detection*) sent by IP camera. The VCA detection must be enabled and configured on the IP camera settings interface first.

Steps:

1. Enter VCA Alarm interface of Camera Management and select a camera you want to detect VCA alarm.
Menu > Camera > VCA



2. Enable the VCA detection and configure the rule settings. Please refer to the *User Manual* for detailed instructions.

VCA Search

The NVR supports the VCA search for the behavior analysis, face capture, people counting and heat map.

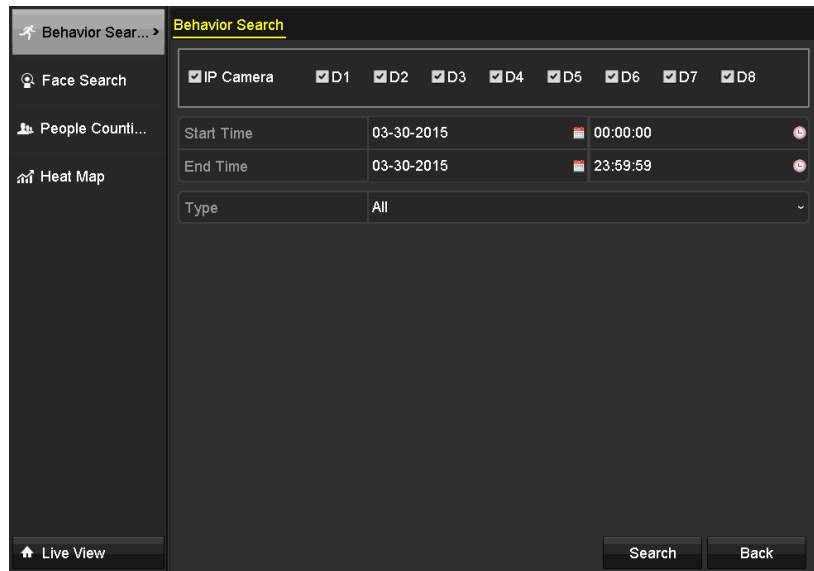
Face Search: Search the captured face picture results triggered by face detection.

Behavior Search: Search and view the behavior detection (including the line crossing detection, intrusion detection, unattended baggage detection, etc.) results in pictures and video files.

People Counting: Calculate the number of people entered or exited from a certain configured area and show in chart of daily/weekly/monthly/annual report.

Heat Map: Analyze the visit times and dwell time of customers in a configured area. The heat map is a

graphical representation of data represented by colors.



Accessing by Web Browser



You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.


Logging In

You can get access to the device via web browser. You may use one of the following listed web browsers: Internet Explorer 6.0, Internet Explorer 7.0, Internet Explorer 8.0, Internet Explorer 9.0, Internet Explorer 10.0, Apple Safari, Mozilla Firefox, and Google Chrome. The supported resolutions include 1024*768 and above.

Steps:

1. Open web browser, input the IP address of the device and then press Enter.
2. Login to the device.
 - If the device has not been activated, you need to activate the device first before login.

- 1) Set the password for the admin user account.
- 2) Click **OK** to login to the device.

 **STRONG PASSWORD RECOMMENDED**– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

- If the device is already activated, enter the user name and password in the login interface, and click the **Login** button.

3. Install the plug-in before viewing the live video and managing the camera. Please follow the installation

prompts to install the plug-in.



You may have to close the web browser to finish the installation of the plug-in.

Live View

The live view interface appears by default when you log in the device.



The live view interface may differ according to different models.

Interface Introduction

No.	Name	Description
1	Channel List	Displays the list of channels and the playing and recording status of each channel.
2	Live View Window	Displays the image of channel, and multi-window division is supported.
3	Play Control Bar	Play control operations are supported.
4	PTZ Control	Pan, tilt, zoom operations are supported, as well as preset editing and calling. PTZ function can only be realized if the connected camera supports PTZ control.

The PTZ control is supported by certain series NVR.

Start Live View

Steps:

1. In the live view window, select a playing window by clicking the mouse.
2. Double click a camera from the device list to start the live view.
3. You can click the button on the toolbar to start the live view of all cameras on the device list.

Refer to the following table for the description of buttons on the live view window:

Icon	Description	Icon	Description
	Select the window-division mode		Open/Close audio
	Start/Stop all live view		Start/Stop two-way Audio
	Capture pictures in the live view mode		Adjust volume
	Start/Stop all recording		Enable/Disable digital zoom
	Previous/Next page		Full screen
	Select different stream type for live view by clicking the icon : live view in main stream; : live view in sub stream;		

Recording

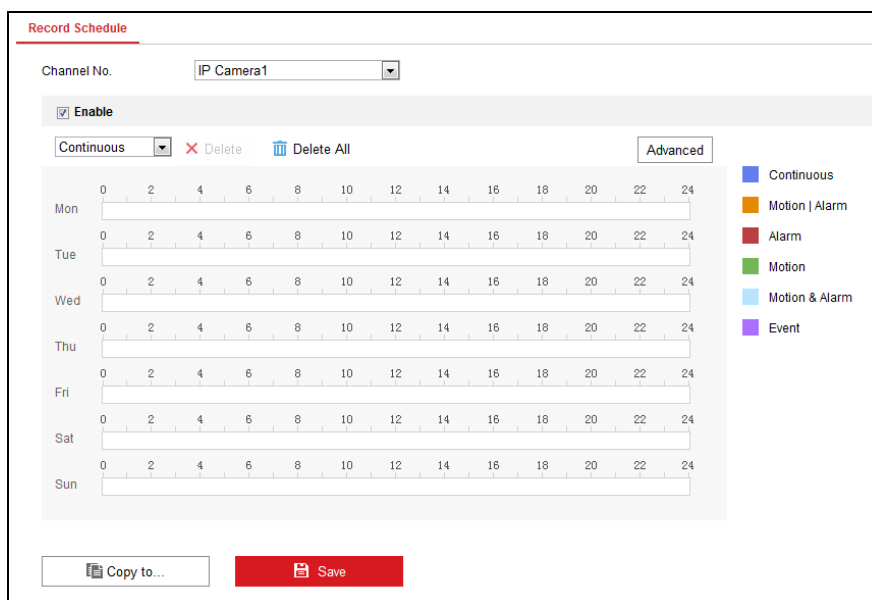
Before you start

Make sure the device is connected with HDD or network disk, and the HDD or network disk has been initialized for the first time to use.

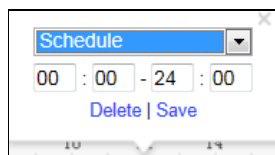
Two recording types can be configured: Manual and Scheduled. The following section introduces the configuration of scheduled recording.


Steps:

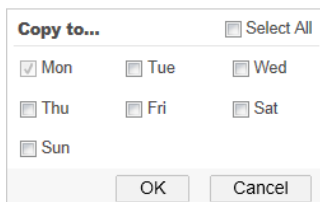
1. Click **Configuration > Storage > Schedule Settings** to enter Schedule Settings interface.
2. Select the camera to configure the record schedule.
3. Check the checkbox of **Enable** to enable recording schedule.



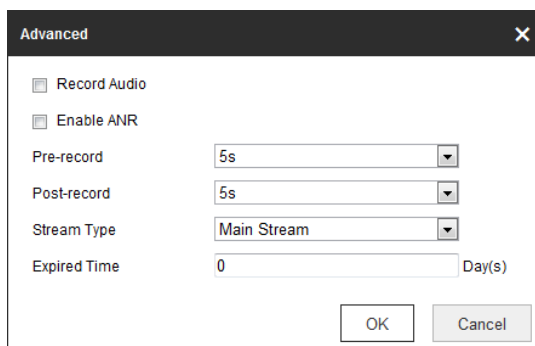
4. Choose the day in a week configure the recording schedule.
 - 1) Click a day to set the start time and end time for recording.

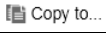


- 2) Select the **Record Type** for the period. The record type can be Schedule, Motion, Alarm, Motion & Alarm, Motion | Alarm and Event.
- 3) Click **Save** to save the settings.
- 4) Click the  icon of the day to copy the settings of current day to other days of the week if required.

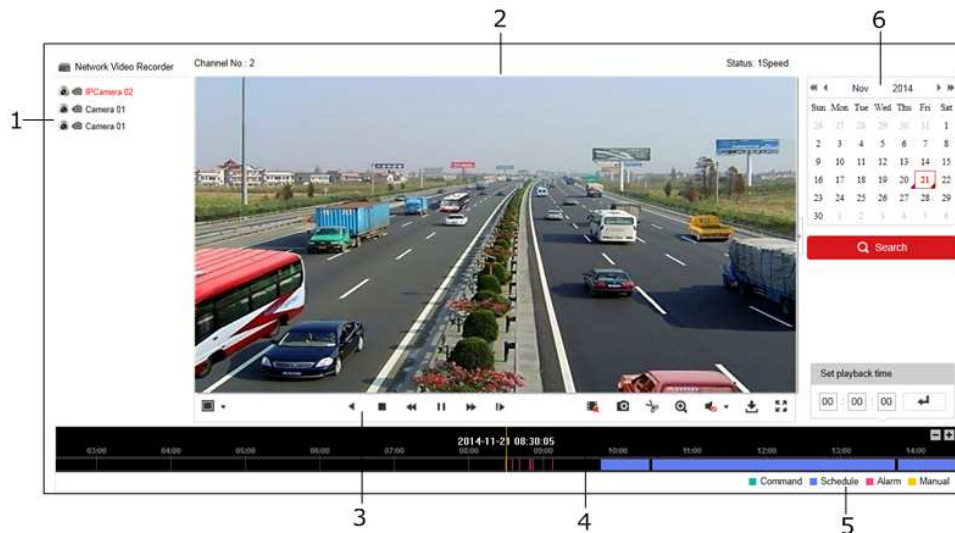


- 5) Click **OK** to save the settings.
5. Click **Advanced** to configure advanced record parameters, and click the **OK** button to save the settings.



6. You can click  to configure advanced record parameters to copy the schedule of current camera to other cameras.
7. Click **Save** to activate the above settings.

Playback



The playback interface may differ according to different models.

Interface Introduction







No.	Name	Description
1	Channel List	Displays the list of channels and the playing status of each channel.
2	Playback Window	Displays the image of channel.
3	Play Control Bar	Play control operations are supported.
4	Time Line	Displays the time bar and the records marked with different colors.
5	Playback Status	Displays the playback status, including channel number and playback speed.
6	Calendar	You can select the date to play.


Start Playback

Steps:

1. Click **Playback** on the menu bar to enter playback interface.
2. Click the camera from the device list for playback.
3. Select the date from the calendar and click **Search**.
4. Click the **Play** button to play the video file searched on the current date.
5. Use the buttons on the toolbar to operate in playback mode.

Button	Description	Button	Description
	Play/Pause		Stop
	Speed down		Speed up
	Play by single frame		Capture

Button	Description	Button	Description
	Stop all playback		Download
	Start/Stop video clipping		Open/Close audio
	Full screen		Reverse playback

6. You can drag the progress bar with the mouse to locate the exact playback point. You can also input the time in the textbox and click  button to locate the playback point.

The color of the video on the progress bar stands for the different video types.

