
Digital Video Recorder

Quick Operation Guide

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

This manual is applicable to **Hybrid 4CH/8CH/16CH series DVR**.

The figures shown in this manual are for reference only. The appearance and interface of the device are subject to the actual model.

DVR Pre-Installation

The DVR is highly advanced surveillance equipment that should be installed with care. Please take into consideration the following precautionary steps before installation of the DVR.

1. Keep all liquids away from the DVR.
2. Install the DVR in a well-ventilated and dust-free area.
3. Ensure environmental conditions meet factory specifications.
4. Install a manufacturer recommended HDD.

DVR Installation

During the installation of the DVR:

1. Use brackets for rack mounting.
2. Ensure there is ample room for audio and video cables.
3. When installing 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 (≈ 0.75 -inch) of space between racks mounted devices.
6. Ensure the DVR is grounded.
7. Environmental temperature should be within the range of $-10\text{ }^{\circ}\text{C} \sim 55\text{ }^{\circ}\text{C}$, $14\text{ }^{\circ}\text{F} \sim 131\text{ }^{\circ}\text{F}$.
8. Environmental humidity should be within the range of $10\% \sim 90\%$.

Hard Disk Installation

Before you start:

Before installing a hard disk drive (HDD), please make sure the power is disconnected from the DVR. A factory recommended HDD should be used for this installation.

Up to 8 or 16 SATA hard disks can be installed on your DVR.

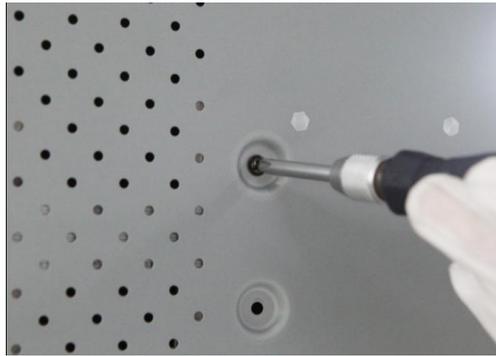
Tools Required: Screwdriver.

Steps:

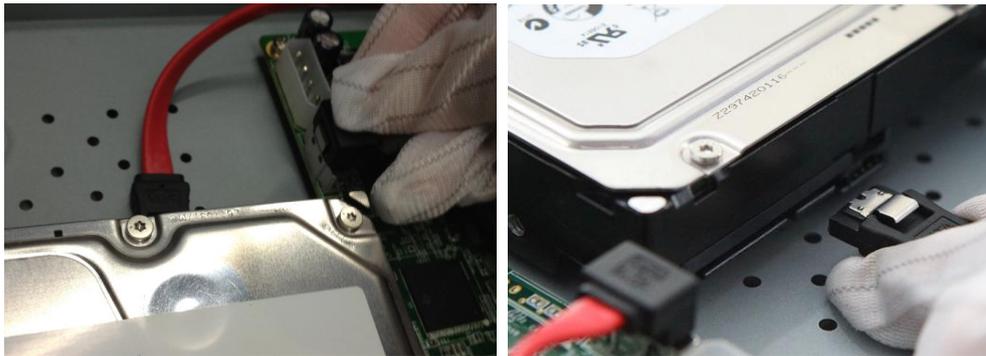
1. Remove the cover from the DVR by unfastening the screws on the back and side.



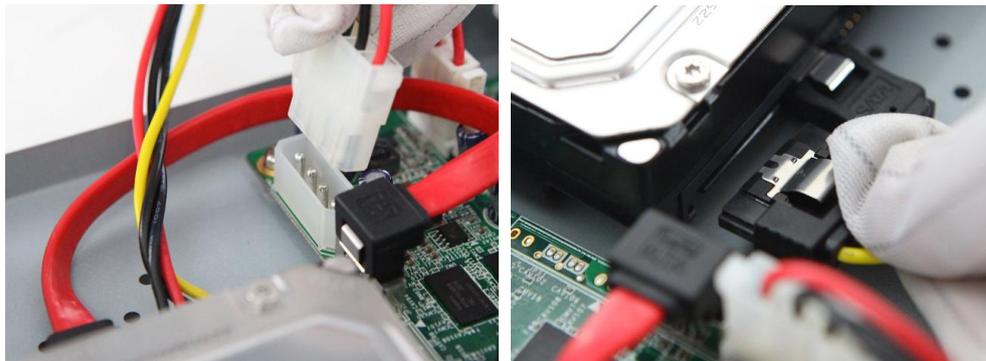
2. Install the HDD in the HDD rack using the provided screws. Fasten the screws on the bottom to fix the HDD.



3. Connect the HDD to the motherboard of the DVR with the included data cable.



4. Connect the power cable to the HDD.



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

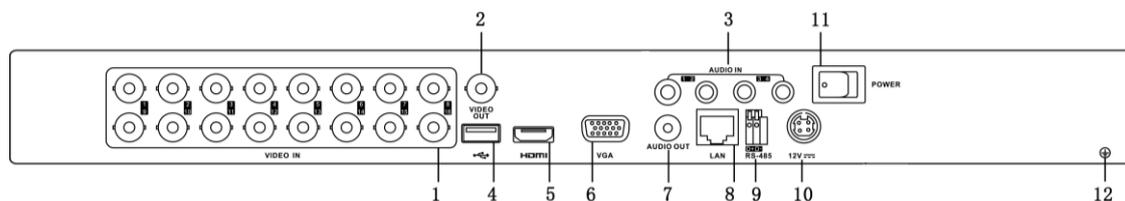
Front Panel



No.	Name	Function Description	
1	USB Interface	Connects USB mouse or USE flash memory devices.	
2	Status Indicators	POWER: the POWER indicator turns green when NVR is powered up.	
		READY: The indicator light is green when the device is running normally.	
		STATUS: 1.The light is green when the IR remote control is enabled; 2.The light is red when the function of the composite keys (SHIFT) are used; 3. The light is out when none of the above condition is met/	
		ALARM: the light is red when there is an alarm occurring.	
		HDD: the indicator flickers red when HDD is reading/writing.	
		Tx/Rx: TX/RX indicator flickers green when network connection is functioning normally.	
3	SHIFT	Switch between the numeric or letter input and functions of the composite keys. (Input letter or numbers when the light is out; Realize functions when the light is red.)	
4	Composite Keys	1/MENU:	Enter numeral "1";
			Access the main menu interface.
		2/ABC/F1:	Enter numeral "2";
			Enter letters "ABC";
			The F1 button when used in a list field will select all items in the list.
			In PTZ Control mode, it will turn on/off PTZ light and when the image is zoomed in, the key is used to zoom out.
		3/DEF/F2:	Enter numeral "3";
			Enter letters "DEF";
			The F2 button is used to change the tab pages.
			In PTZ control mode, it zooms in the image.
		4/GHI/ESC:	Enter numeral "4";
			Enter letters "GHI";
			Exit and back to the previous menu.
		5/JKL/EDIT:	Enter numeral "5";
			Enter letters "JKL";
			Delete characters before cursor;
			Check the checkbox and select the ON/OFF switch;
			Start/stop record clipping in playback.
6/MNO/PLAY:	Enter numeral "6";		

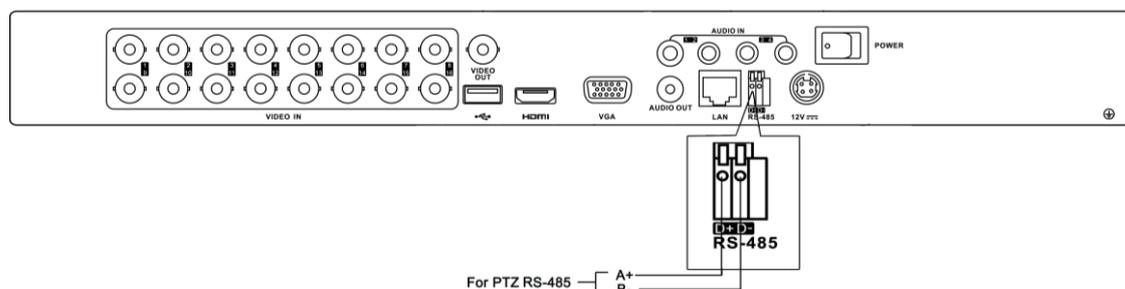
			Enter letters "MNO";
			Playback, for direct access to playback interface.
		7/PQRS/REC:	Enter numeral "7";
			Enter letters "PQRS";
			Open the manual record interface.
		8/TUV/PTZ:	Enter numeral "8";
			Enter letters "TUV";
			Access PTZ control interface.
		9/WXYZ/PREV:	Enter numeral "9";
			Enter letters "WXYZ";
			Multi-channel display in live view.
		0/A:	Enter numeral "0";
			Shift the input methods in the editing text field. (Upper and lowercase, alphabet, symbols or numeric input).
			Double press the button to switch the main and auxiliary output.
		5	Control Buttons

Rear Panel



No.	Item	Description
1	VIDEO IN	BNC connector for analog video input.
2	VIDEO OUT	BNC connector for video output.
3	AUDIO IN	RCA connector for audio input.
4	USB Interface	Connects USB mouse or USB flash memory devices.
5	HDMI	HDMI video output.
6	VGA	DB15 connector for VGA output. Display local video output and menu.
7	AUDIO OUT	RCA connector for audio output.
8	LAN Interface	Network interface.
9	RS-485 Interface	Connector for RS-485 devices. Connect the D+ and D- terminals to R+ and R- of PTZ receiver respectively.
10	12V	12 VDC power supply.
11	POWER	Switch for turning on/off the device.
12	GND	Ground (needs to be connected when DVR starts up).

RS-485 Connection



To connect RS-485 devices to the DVR:

1. Disconnect pluggable block from the RS-485 terminal block.
2. Press and hold the orange part of the *pluggable block*; insert signal cables into slots and release the orange part. Ensure signal cables are in tight.
3. Connect *pluggable block* back into terminal block.

Specifications

Model		4CH	8CH	16CH
Video/Audio input	Analog video input	4-ch	8-ch	16-ch
		BNC (1.0 Vp-p, 75 Ω), PAL / NTSC self-adaptive		
	IP video input	Up to 8-ch	Up to 16-ch	Up to 32-ch
	Composite video input	Up to 8-ch (Analog video + IP video)	Up to 16-ch (Analog video + IP video)	Up to 32-ch (Analog video + IP video)
	Audio input	4-ch RCA (2.0 Vp-p, 1 KΩ)		
	Incoming bandwidth	20 Mbps	40 Mbps	80 Mbps
Video/Audio output	HDMI / VGA output	1920 × 1080 / 60 Hz (1080P), 1600 × 1200 / 60 Hz, 1280 × 1024 / 60 Hz, 1280 × 720 / 60 Hz, 1024 × 768 / 60 Hz		
	CVBS output	1-ch, BNC (1.0 Vp-p, 75 Ω), resolution: PAL: 704 × 576, NTSC: 704 × 480		
	Audio output	1-ch, RCA (Linear, 1 KΩ)		
	Max. remote connection	128-ch		
	Outgoing bandwidth	40 Mbps	240 Mbps	240 Mbps
Encoding/Decoding parameters	Video compression	H.264		
	Encoding resolution	Main stream: WD1 / 4CIF / 2CIF / CIF / QCIF Sub-stream: CIF / QCIF		
	Frame rate	Main stream: 25 fps (P) / 30 fps (N) Sub-stream: 25 fps (P) / 30 fps (N)		
	Video bitrate	32 Kbps ~ 3 Mbps		
	Audio compression	G.711	OggVorbis	
	Audio bitrate	64 Kbps		
	Stream type	Video, Video & Audio		
	Dual-stream	Support		
	Playback resolution	5MP/3MP/1080P/UXGA/720P/WD1/4CIF/VGA/DCIF/2CIF/CIF/QCIF		
	Synchronous playback	8-ch	16-ch	16-ch
Record	Recording mode	Manual recording, Continuous recording, Motion detection recording, Alarm recording, Motion Alarm recording, Motion & Alarm recording		
	Playback mode	Instant playback, Normal playback, Event playback, Tag playback		
	Backup mode	Normal backup, Event backup		
Network	Protocol	IPv6, HTTPS, UPnP™, SNMP, NTP, SADP, SMTP, NFS, iSCSI, PPPoE, etc.		
Hard disk	Type	1 SATA interface	2 SATA interfaces	
	Capacity	Up to 4 TB capacity for each disk		
External interface	Two-way audio	1-ch, RCA (2.0 Vp-p, 1 KΩ) (Using audio input)		
	Network interface	1, 10M/100M self-adaptive Ethernet interface	1, 10M/100M/1000M self-adaptive Ethernet interface	
	Serial interface	1 RS-485 half-duplex interface		
	USB port	2 × USB2.0		
	Alarm in/out	Optional		
	General	Power supply	12 VDC	
Consumption		Max. 10W (without hard disk)		
Working temperature		-10 °C ~ +55 °C (14 °F ~ 131 °F)		
Working humidity		10%~90%		
Chassis		1U chassis	1U chassis	
Dimensions (W × D × H)		315 × 230 × 45 mm (12.4 × 9.0 × 1.8 in)	445 × 290 × 45 mm (17.5 × 11.4 × 1.8 in)	
Weight		Approx. 2 kg / 4.4 lb (without hard disk)		

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.

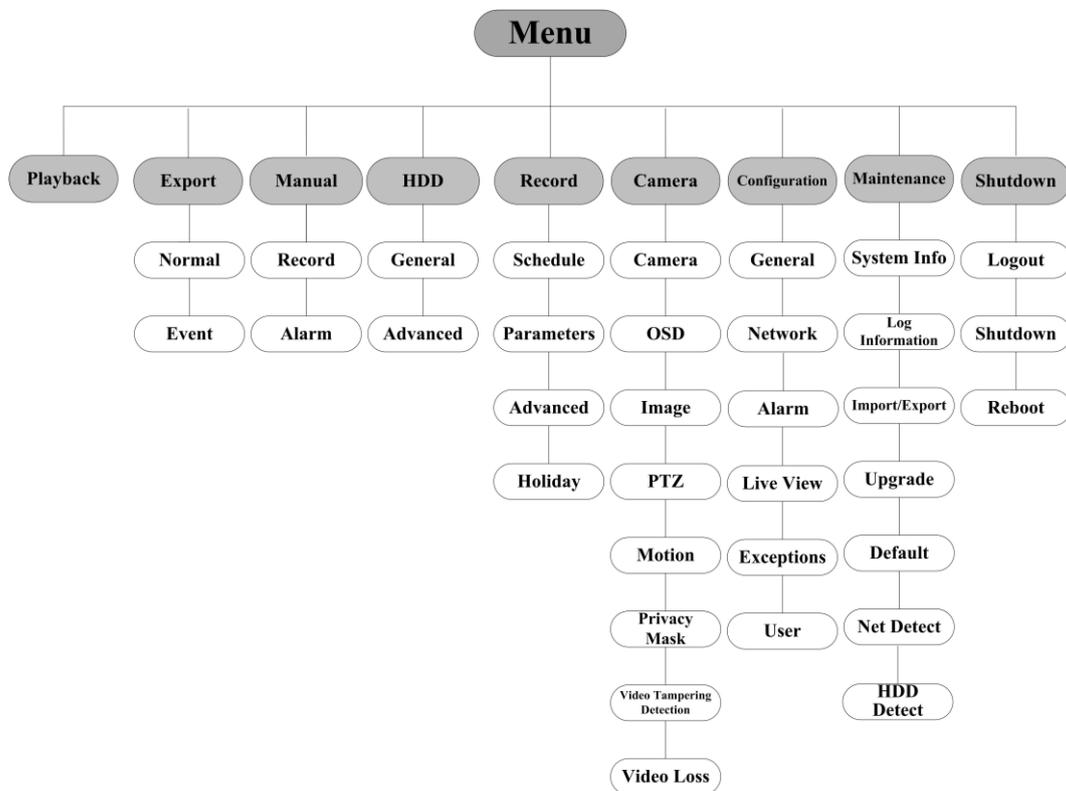
Bit Rate	Storage Used
96K	42M
128K	56M
160K	70M
192K	84M
224K	98M
256K	112M
320K	140M
384K	168M
448K	196M
512K	225M
640K	281M
768K	337M
896K	393M
1024K	450M
1280K	562M
1536K	675M
1792K	787M
2048K	900M
3072K	1.32G

Note: Please note that supplied values for storage space used is just for reference. Storage space used is estimated by formulas and may have some deviation from actual value.

Menu Operation

Menu Structure

The menu structure of the device is shown as below:



Startup and Shutdown

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

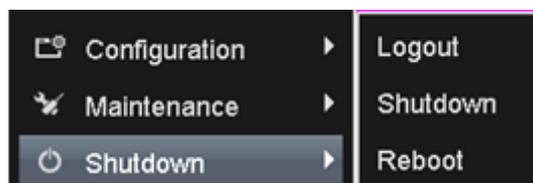
To start your device:

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.
2. Press the POWER button on the rear panel. The Power indicator LED should turn green indicating that the device begins to start up.

After the device starting up, you can follow the setup wizard to set the some basic operations for the device, including password modifying, date and time settings, network settings, HDD initializing, IP camrea connecting and recording configuration.

To shut down your device:

1. Enter the Shutdown menu.
Menu > Shutdown



2. Select the **Shutdown** button.
3. Click the **Yes** button.
4. Press the POWER button on the rear panel when the hint “Please power off” pops up to shut down the device properly.

Live View

Live view shows you the video image getting from each camera in real time. The device automatically enters Live View mode when powered on successfully. It is also at the very top of the menu hierarchy, thus right-clicking the mouse many times (depending on which menu you’re on) brings you to the Live View mode.

Live View Icons

In the live view mode, there are icons at the right top of the screen for each camera, 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 or sensor alarm).



Record (manual recording, continuous recording, motion detection or sensor alarm triggered recording).



Alarm & Record

Adding IP Cameras

You can add the online IP cameras to realize the live view and recording function of them. You can search and add the online IP cameras by following the setup wizard, or performing to the following steps.

Steps:

1. Right-click the mouse when you in the live view mode to show the right-click menu.



2. Select  (Auto) or  (Manual) on your demand.

• **Auto**

The device will add the detected IP cameras or encoders automatically by the default user name and password of administrator.

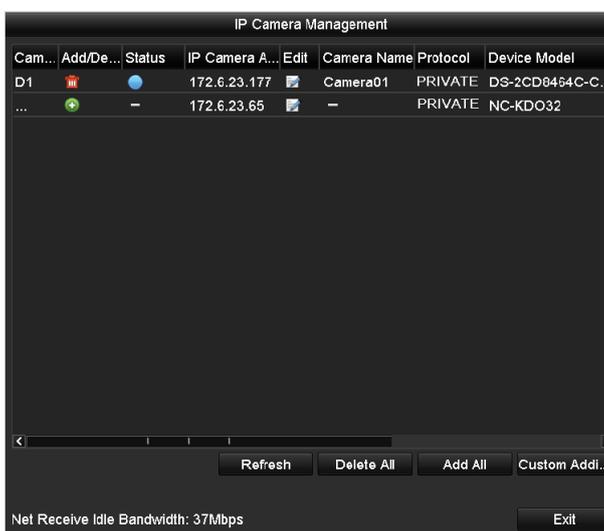


Note: If the user name and password is changed, the auto adding of IP camera will fail, you may add it manually.

• **Manual**

Steps:

1. To add the online cameras with same network segment:
 - 1) The detected online camera will be listed in the camera list, as shown in the figure below.



- 2) Click the  button to add the camera.

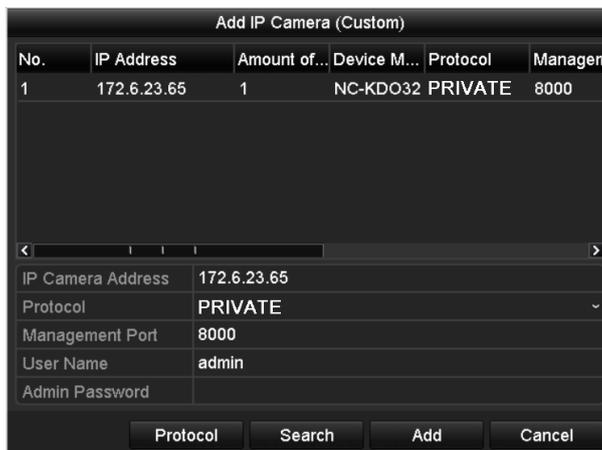
Explanation of the icons:

Icon	Explanation	Icon	Explanation
	Edit basic parameters of the camera		Add the detected IP camera.
	Delete the IP camera		The camera is disconnected; you can click the icon to get the exception information of camera.

	The camera is connected.		Advanced settings of the camera.
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2. To add other IP cameras:

1) 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.

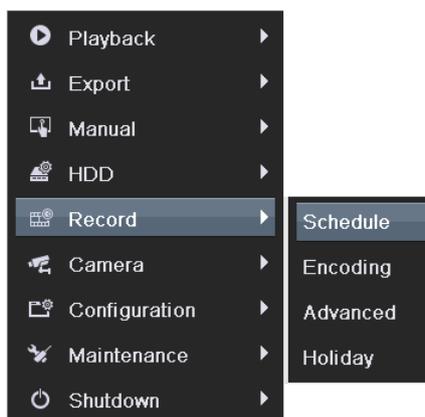
Recording

Before you start:

Make sure that the HDD or network disk has already been connected and initialized for storage. For detailed information, see the user manual.

You can use the right-click menu in live view mode to configure recording for all channels.

1. In the live view mode, use the mouse to right-click on the window to access the following menu:



2. Click the **Start Recording** submenu and select the recording mode to **Normal Record** or **Motion Detection Record**.

3. In the pop-up message box, click **Yes** to finish the quick recording settings for all channels.



Note: The full-screen motion detection triggered recording is configured by default in this mode.

Playback

Play back the record files of a specific channel in the live view menu.

Instant playback by channel

Steps:

Choose a channel in live view mode using the mouse and click the  button in the quick setting toolbar.

Note: In the instant playback mode, only record files recorded during the last five minutes on this channel will be played back.



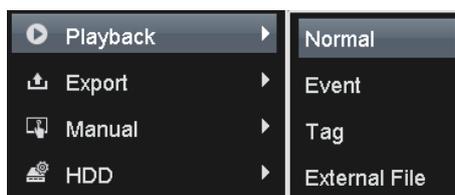
Instant Playback Interface

Playback by channel

Steps:

1. Enter the Playback menu.

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



Right-click Menu under Live View

Front Panel: press PLAY button to play back record files of the channel under single-screen live view.

Under multi-screen live view, record files of the top left channel (not masked) will be played back.

Note: pressing numerical buttons will switch playback to related channels during playback process.

2. Playback management.

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



Playback Interface

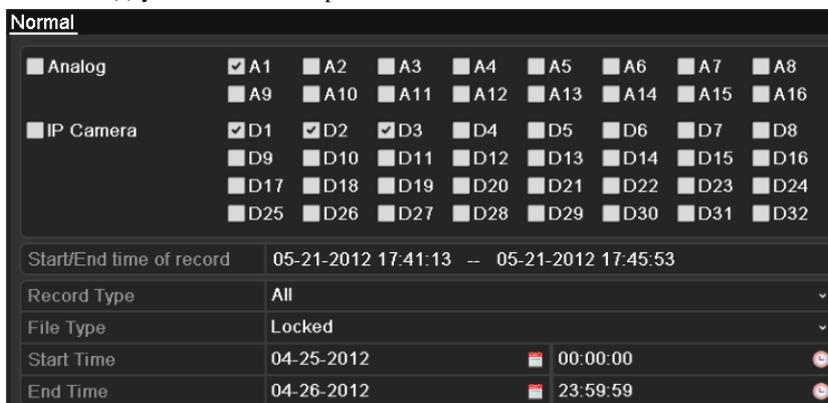
Just check the channel or channels if you want to switch playback to another channel or execute simultaneous playback of multiple channels.

Backup

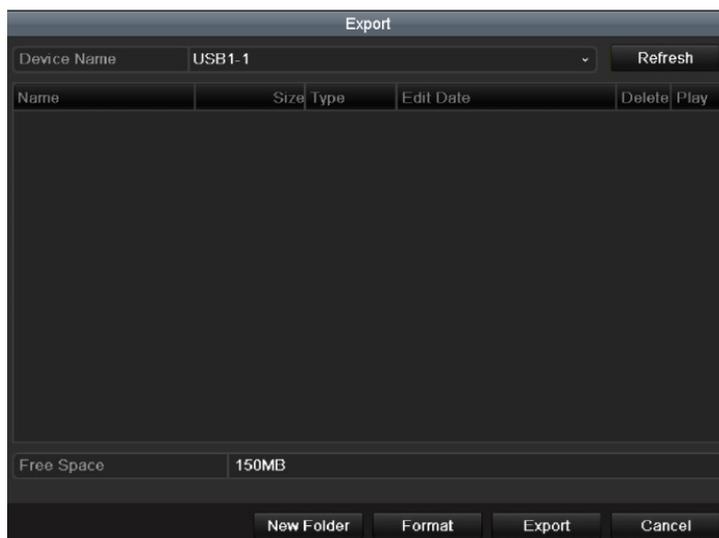
Record files can be backed up to various devices, such as USB flash drives, USB HDDs or a DVD-R/W.

Steps:

1. Enter Video Export (Menu>Export) interface.
Choose the camera(s) you want to back up and click **Quick Export**.

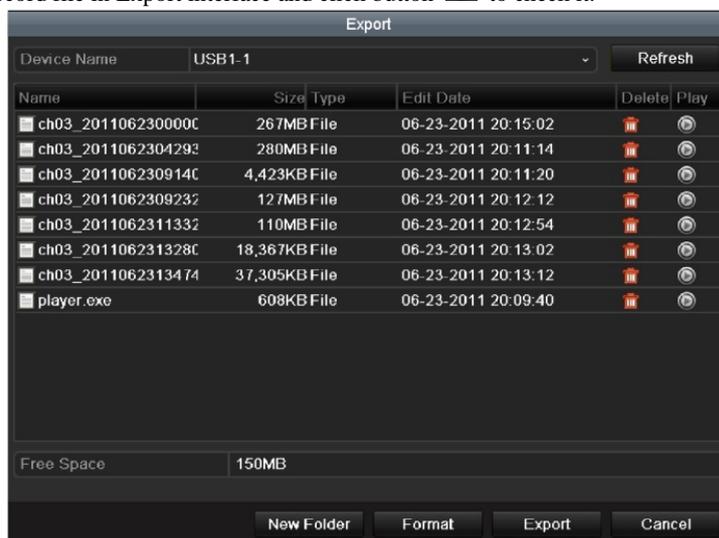


2. Enter Export interface, choose backup device and click **Export** button to start exporting.



3. Check backup result.

Choose the record file in Export interface and click button  to check it.



Accessing by Web Browser

Logging In

If the device has successfully connected to the network, you can get access to the device via web browser. Open web browser, input the IP address of the device and then press Enter. The login interface appears.



Input the user name and password, and click the Login button.

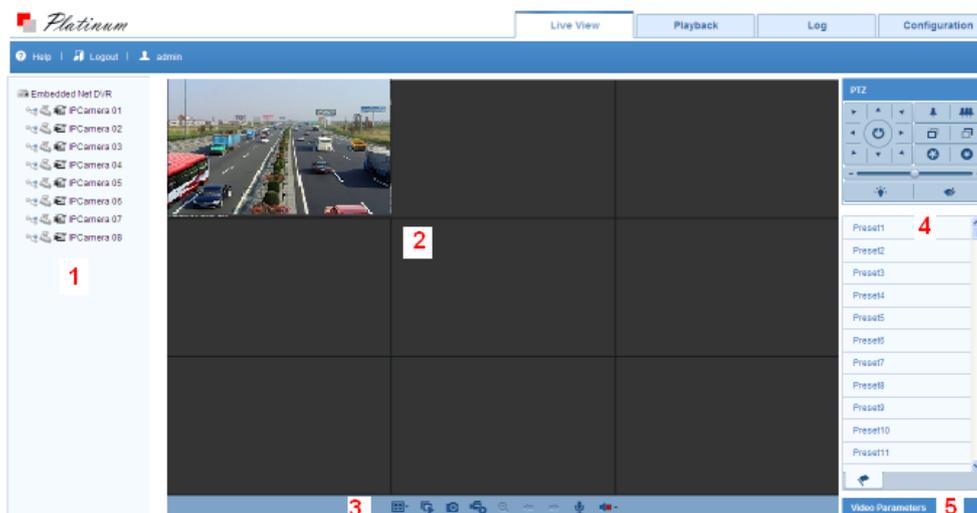
Notes:

1. The default IP address is 192.0.0.64.
2. The default user name is admin, and password is 12345.
3. 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.
4. The supported resolutions include 1024*768 and above.

When you log in for the first time, the system will remind you to install the Plug-in control. After the installation, you can configure and manage the device remotely.

Live View

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



Interface Introduction

- ① Camera List: Displays the list of cameras and the playing and recording status of each camera.
- ② Live View Window: Displays the image of camera, 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.

Note: PTZ function can only be realized if the connected camera supports PTZ control.

- ⑤ Video Parameters Configuration: Brightness, contrast, saturation and other parameters of the image can be modified.

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		Start/Stop all live view
	Capture pictures in the live view mode		Start/Stop all recording
	Previous page		Next page
	Open/Close audio		Start/Stop two-way audio
	Adjust volume		Enable/Disable digital zoom
	Full-screen		

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 Remote Configuration> Camera Settings> Record Schedule to enter Record Schedule settings interface.
2. Select the camera to configure the record schedule.
3. Check the checkbox of **Enable Record Schedule** to enable recording schedule.
4. Click **Edit** to edit record schedule.
5. Choose the day in a week to configure scheduled recording.
 - 1) Configure All Day or Customize record:
 - If you want to configure the all-day recording, please check the **All Day** checkbox.
 - If you want to record in different time sections, check the **Customize** checkbox. Set the **Start Time** and **End Time**.
6. Click **Advanced** to configure advanced record parameters.
7. Optionally, check the checkboxes of other cameras to copy the settings to.
8. Click **Save** to validate the above settings.

Note: The time of each segment can't be overlapped. Up to 8 segments can be configured.

Playback



Interface Introduction

- ① Camera List: Displays the list of cameras and the playing status of each camera.
- ② Playback Window: Displays the video of camera.
- 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 camera No. 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**.

Note: The day with record will be marked like .

4. Click the  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
	Slow down		Speed up
	Play by single frame		Capture
	Stop All Playback		Download
	Video Clip		Open/Close audio
	Full-screen		

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.

 Command  Schedule Recording  Alarm Recording  Manual Recording

Log

You can view and export the log files at any time, including operation, alarm, exception and information of device.

Before you start

The Log function can be realized only when the device is connected with HDD or network disk. And make sure the HDD or network disk has been initialized for the first time to use.

Steps:

1. Click Log on the menu bar to enter the Log interface.

No.	Time	Major Type	Minor Type	Channel No.	Local/Remote User	Remote Host IP
1	2013-09-11 08:58:14	Operation	Power On			0.0.0.0
2	2013-09-11 08:58:14	Information	HDD Information			0.0.0.0
3	2013-09-11 08:58:18	Operation	Local Login		admin	0.0.0.0
4	2013-09-11 08:58:19	Exception	IP Address Conflicted			0.0.0.0
5	2013-09-11 08:58:39	Information	System Running State			0.0.0.0
6	2013-09-11 08:58:40	Exception	IP Camera Disconnect			0.0.0.0
7	2013-09-11 08:58:40	Exception	IP Camera Disconnect			0.0.0.0
8	2013-09-11 08:58:40	Exception	IP Camera Disconnect			0.0.0.0
9	2013-09-11 08:58:40	Exception	IP Camera Disconnect			0.0.0.0
10	2013-09-11 08:58:40	Exception	IP Camera Disconnect			0.0.0.0
11	2013-09-11 08:58:40	Exception	IP Camera Disconnect			0.0.0.0
12	2013-09-11 08:58:42	Information	S.M.A.R.T. Information	5		0.0.0.0
13	2013-09-11 08:58:49	Exception	IP Camera Disconnect			0.0.0.0
14	2013-09-11 08:58:49	Exception	Video Signal Loss	D1		0.0.0.0
15	2013-09-11 08:58:49	Exception	IP Camera Disconnect			0.0.0.0
16	2013-09-11 09:09:39	Information	System Running State			0.0.0.0
17	2013-09-11 09:18:38	Information	System Running State			0.0.0.0
18	2013-09-11 09:21:27	Operation	Local: Set IP Camera		admin	0.0.0.0
19	2013-09-11 09:22:11	Operation	Local: Set IP Camera		admin	0.0.0.0

2. Set the log search conditions to refine your search, including the Major Type, Minor Type, Start Time and End Time.
3. Click the **Search** button to start searching log files.
4. The matched log files will be displayed on the list shown below.

Note: Up to 100 log files can be displayed on each page.

You can click the  Save Log button to save the searched log files to local directory.