



DS-7200HVI/HFI-SH Series DVR

Quick Operation Guide

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 **DS-7204HVI-SH, DS-7208HVI-SH, DS-7216HVI-SH; DS-7204HFI-SH, DS-7208HFI-SH and DS-7216HFI-SH series DVR.**

Verify Contents

Verify that the package contents are correct by checking the items against the packing list.

Note: Please contact your dealer for damaged or missing items.

DVR Pre-Installation

The DS-7200HVI/HFI-SH Series 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 °C ~ 55 °C, 14 °F ~ 131 °F.
8. Environmental humidity should be within the range of 10% ~ 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.

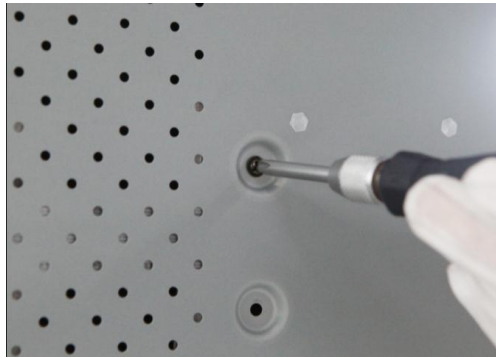
Tools Required: Screwdriver.

To install a HDD on your DVR:

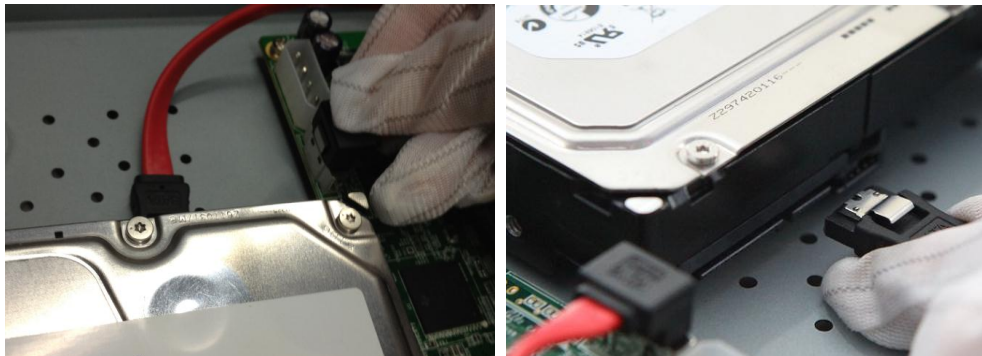
1. Remove the cover from the DVR by unfastening the screws on the back and side.



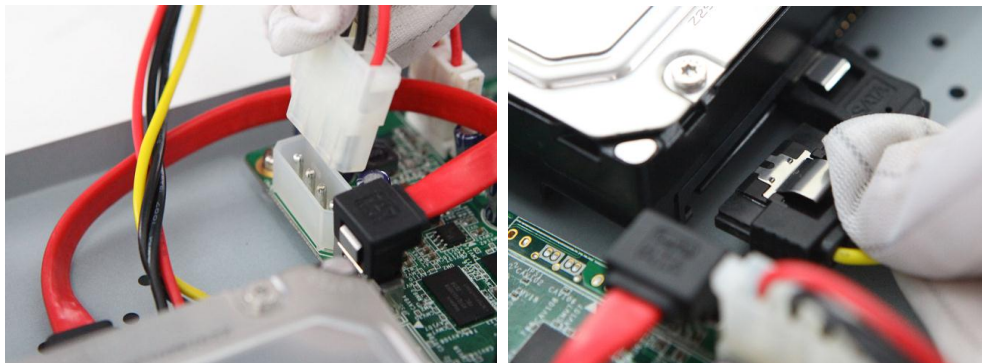
2. Install the HDD in the HDD rack using the provided screws. Fasten the screws on the bottom to fix the HDD.



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

The front panel of DS-7200HVI-SH/DS-7200HFI-SH is shown below:



Table 1 Description of Control Panel Buttons

No.	Name	Function Description
1	POWER	POWER indicator turns green when DVR is powered up.
2	STATUS	STATUS indicator lights in red when HDD is reading/writing.
3	Tx/Rx	Tx/Rx indicator blinks green when network connection is functioning properly.
4	USB Interface	Connects USB mouse or USB flash memory devices.
5	IR Receiver	Receiver for IR remote.

Rear Panel

DS-7204HVI/HFI-SH:

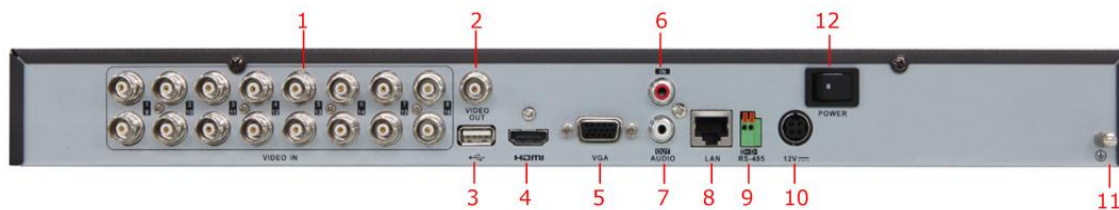


DS-7216HVI-SH:



Note: The rear panel of **DS-7208HVI-SH** provides 8 video input interfaces.

DS-7216HFI-SH:



Note: The rear panel of **DS-7208HFI-SH** provides 8 video input interfaces.

Table 2 Description of Rear Panel

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

Peripheral Connections

RS-485 Connections

To connect RS-485 devices (e.g., pan/tilt unit) to the DVR:

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.

Note: Make sure the pan/tilt receiver unit is connected to the D+ and D- of the RS-485 terminal of DVR.

Specifications

Table 3 Specifications for DS-7200HVI-SH

Model		DS-7204HVI-SH	DS-7208HVI-SH	DS-7216HVI-SH
Video/Audio input	Video compression	H.264		
	Video input	4-ch	8-ch	16-ch
	Video input interface	BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive		
	Audio compression	G.711u		
	Audio input	1-ch, RCA (2.0 Vp-p, 1 k Ω)		
	Two-way audio input	1-ch, RCA (2.0 Vp-p, 1 k Ω) (using the audio input)		
Video/Audio output	HDMI/VGA output	1-ch, resolution: 1920 \times 1080P / 60 Hz, 1600 \times 1200 / 60 Hz, 1280 \times 1024 / 60 Hz, 1280 \times 720 / 60 Hz, 1024 \times 768 / 60 Hz		
	CVBS output	1-ch, BNC (1.0 Vp-p, 75 Ω), resolution: PAL: 704 \times 576, NTSC: 704 \times 480		
	Encoding resolution	4CIF / 2CIF / CIF / QCIF		
	Frame rate	Model1: 4CIF / 2CIF @ 12 fps or CIF / QCIF @ 25 fps (P) / 30 fps (N) Mode2: Channel 1: 4CIF / 2CIF / CIF / QCIF @ 25 fps (P) / 30 fps (N), Channel 2~4: CIF / QCIF @ 25 fps (P) / 30 fps (N)	Model1: 4CIF / 2CIF @ 8 fps or CIF / QCIF @ 25 fps (P) / 30 fps (N) Mode2: Channel 1& Channel 5: 4CIF / 2CIF / CIF / QCIF @ 25 fps (P) / 30 fps (N), Other Channels: CIF / QCIF @ 25 fps (P) / 30 fps (N)	Model1: 4CIF / 2CIF @ 6fps or CIF / QCIF @ 25 fps (P) / 30 fps (N) Mode2: Channel 1: 4CIF / 2CIF / CIF / QCIF @ 25 fps (P) / 30 fps (N), Channel 2~16: CIF / QCIF @ 25 fps (P) / 30 fps (N)
	Video bit rate	32 Kbps ~ 3072 Kbps, or user defined (Max. 3072 Kbps)		
	Audio output	1-ch, RCA (Linear, 1 k Ω)		
	Audio bit rate	64 Kbps		
	Dual-stream	Support; Sub-stream: CIF @ 6 fps, QCIF @ 25 fps (P) / 30 fps (N))		
	Stream type	Video, Video & Audio		
	Synchronous playback	4-ch	8-ch	16-ch
Hard disk	SATA	1 SATA interface		
	Capacity	Up to 4TB capacity		

External interface	Network interface	1, RJ45 10M / 100M Ethernet interface		
	Serial interface	1 RS-485 interface, half-duplex		
	USB interface	2, USB 2.0		
General	Power supply	12 VDC		
	Consumption (without hard disk or DVD-R/W)	$\leq 10\text{ W}$	$\leq 10\text{ W}$	$\leq 15\text{ W}$
	Working temperature	$-10\text{ }^{\circ}\text{C} \sim +55\text{ }^{\circ}\text{C}$		
	Working humidity	10% ~ 90%		
	Chassis	Standalone 1U chassis		
	Dimensions (W × D × H)	315 × 230 × 45 mm		
	Weight (without hard disk or DVD-R/W)	$\leq 2\text{ kg}$	$\leq 4\text{ kg}$	$\leq 4\text{ kg}$

Table 4 Specifications for DS-7200HFI-SH

Model		DS-7204HFI-SH	DS-7208HFI-SH	DS-7216HFI-SH
Video/Audio input	Video compression	H.264		
	Video input	4-ch	8-ch	16-ch
	Video input interface	BNC (1.0 Vp-p, 75 Ω), PAL /NTSC self-adaptive		
	Audio compression	G.711u		
	Audio input	1-ch, RCA (2.0 Vp-p, 1 kΩ)		
	Two-way audio input	1-ch, RCA (2.0 Vp-p, 1 kΩ) (using the audio input)		
Video/Audio output	HDMI/VGA output	1-ch, resolution: 1080P: 1920×1080×60Hz UXGA: 1600×1200×60Hz SXGA: 1280×1024×60Hz 720P: 1280×720×60Hz XGA: 1024×768×60Hz	1-ch, resolution: 1080P: 1920×1080×60Hz, SXGA: 1280×1024×60Hz, 720P: 1280×720×60Hz, XGA: 1024×768×60Hz	
	CVBS output	1-ch, BNC (1.0 Vp-p, 75 Ω), resolution: PAL: 704 ×576, NTSC: 704 ×480		
	Encoding resolution	4CIF / 2CIF / CIF / QCIF		
	Frame rate	25 fps (P) / 30 fps (N)		
	Video bit rate	32 Kbps ~ 3072 Kbps, or user defined (Max. 3072 Kbps)		
	Audio output	1-ch, RCA (Linear, 1 kΩ)		
	Audio bit rate	64 Kbps		
	Dual-stream	Support; Sub-stream: CIF / QCIF @ 25 fps (P) / 30 fps (N))		
	Stream type	Video, Video & Audio		
	Synchronous playback	4-ch	8-ch	16-ch
Hard disk	SATA	1 SATA interface	2 SATA interfaces	2 SATA interfaces
	Capacity	Up to 4TB capacity		
External interface	Network interface	1, RJ45 10M / 100M Ethernet interface		
	Serial interface	1 RS-485 interface, half-duplex		
	USB interface	2, USB 2.0		
General	Power supply	12 VDC		
	Consumption (without hard disk or DVD-R/W)	≤ 10 W	≤ 15 W	≤ 20 W
	Working temperature	-10 ℃ ~+55 ℃		
	Working humidity	10% ~ 90%		
	Chassis	Standalone 1U chassis	19-inch rack-mounted 1U	19-inch rack-mounted 1U

			chassis	chassis
	Dimensions (W × D × H)	315 × 230 × 45 mm	445 × 290 × 45 mm	445 × 290 × 45 mm
	Weight (without hard disk or DVD-R/W)	≤ 2 kg	≤ 4 kg	≤ 4 kg

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.

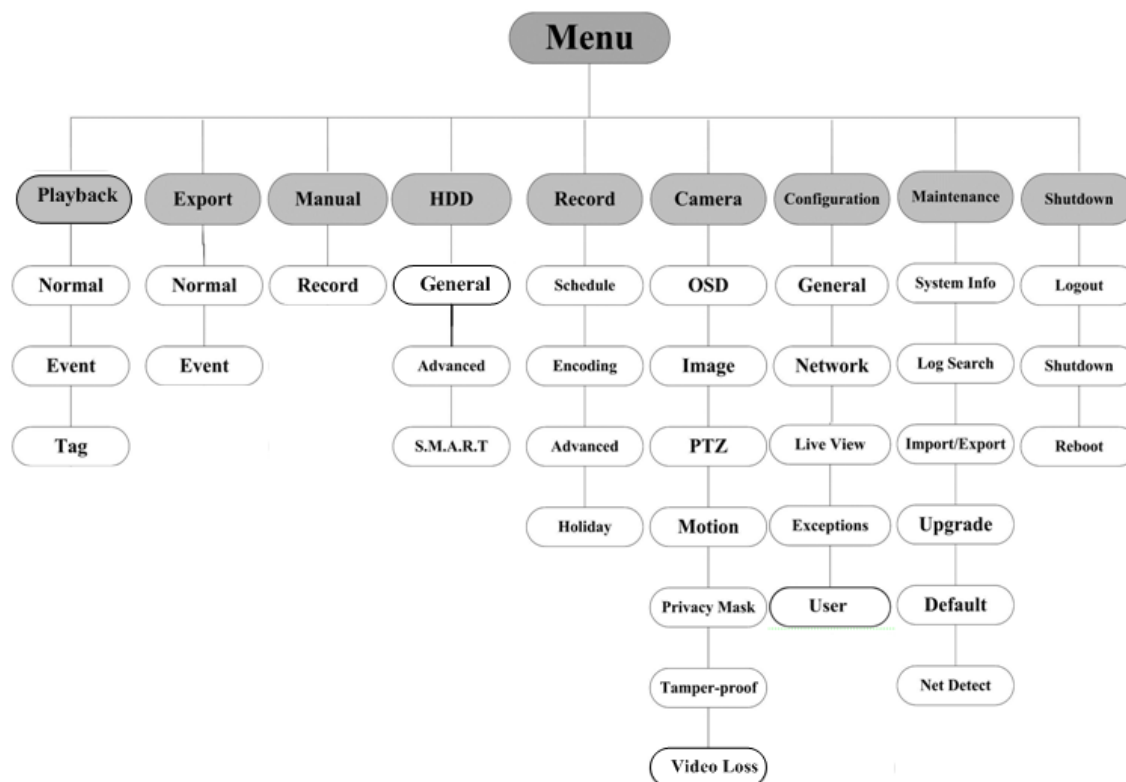
Bit Rate	Storage Used
96K	42M
128K	56M
160K	70M
192K	84M
224K	98M
256K	112M
320K	140M
384K	168M
448K	196M
512K	225M
640K	281M
768K	337M
896K	393M
1024K	450M
1280K	562M
1536K	675M
1792K	787M
2048K	900M

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 DVR is shown as below:



Startup and Shutdown

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

Before you start:

Check that the voltage of the extra power supply is the same with the device's requirement, and the ground connection is working properly.

Starting up the device:

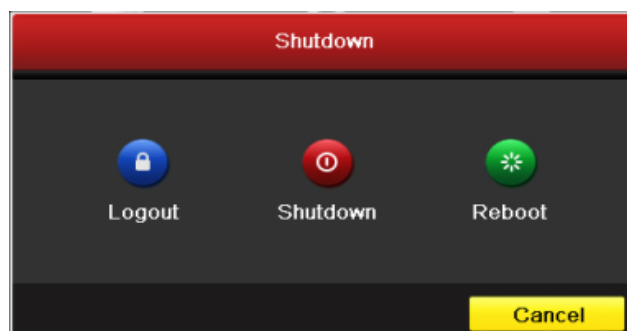
Steps:

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

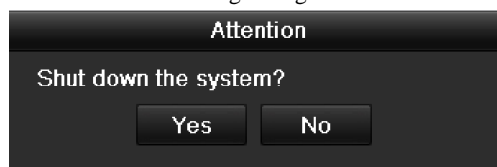
Shutting down the device:

Steps:

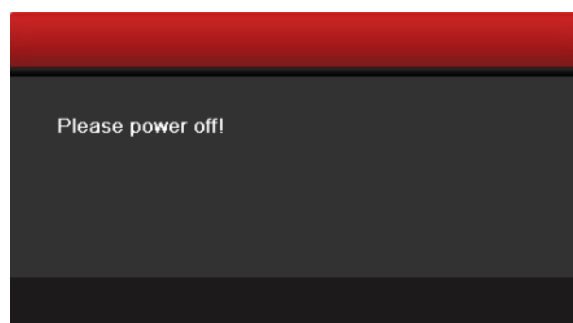
1. Enter the Shutdown menu.
Menu > Shutdown



2. Click the **Shutdown** button to enter the following dialog box:



3. Click the **Yes** button. The following message box pops up:



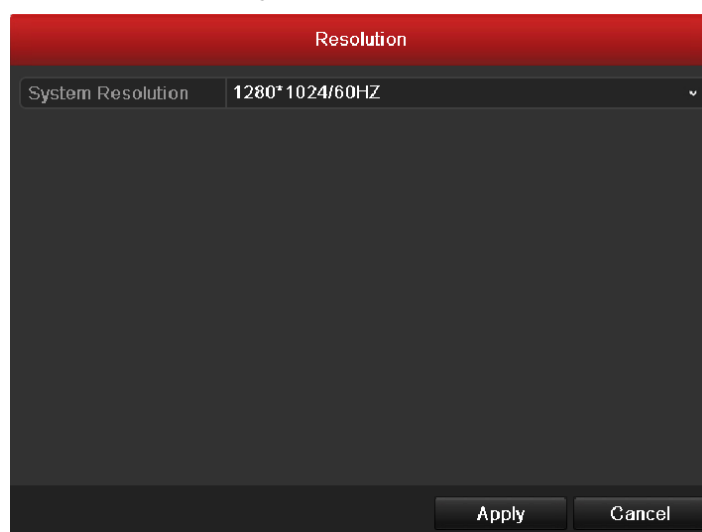
4. Turn off the power switch on the rear panel of DVR.

Using the Setup Wizard

The Setup Wizard can walk you through some important settings of the device. By default, the Setup Wizard starts once the device has loaded.

Operating the Setup Wizard:

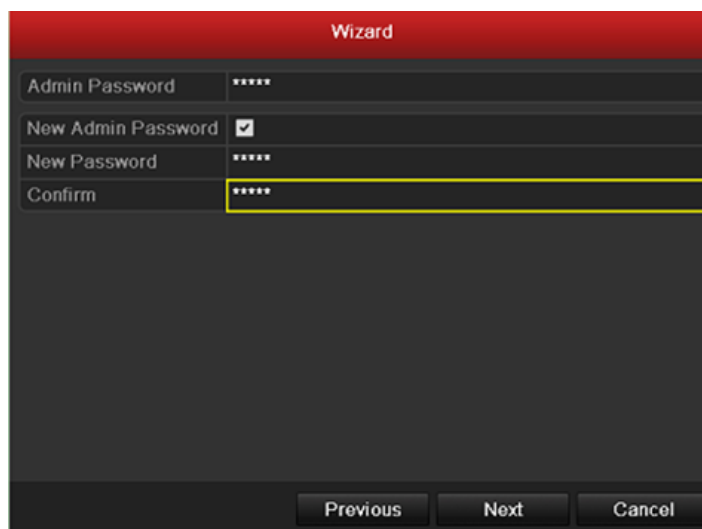
1. Select the system resolution from the drop-down menu. The default resolution is 1280×1024/60Hz.
Click **Apply** to save the resolution settings.



2. Check the checkbox to enable Setup Wizard when device starts. Click **Next** to continue the setup wizard.
You can also click **Cancel** to exit the Setup Wizard, or use the Setup Wizard next time by leaving the “Start wizard when DVR starts?” checkbox checked and exit.



3. Click **Next** button on the Wizard window to enter the Login window.
 - 1) Enter the admin password. By default, the password is 12345.
 - 2) To change the admin password, check the **New Admin Password** checkbox. Enter the new password and confirm the password in the given fields.



4. Click the **Next** button to enter the Date and Time settings window.
Set the time zone, date format, system date and system time.



The screenshot shows a 'Wizard' window with a red title bar. It contains a table with the following settings:


Field	Value
Time Zone	(GMT+08:00) Beijing, Urumqi, Singapore
Date Format	MM-DD-YYYY
System Date	06-24-2011
System Time	16:18:12

At the bottom, there are three buttons: 'Previous', 'Next' (highlighted in yellow), and 'Cancel'.

5. Click **Next** button which takes you back to the Network Setup Wizard window.

Set the network parameters, including the NIC type, IPv4 address, IPv4 subnet mask, default gateway, etc.

You can enable the DHCP to automatically obtain an IP address and other network settings from that server.



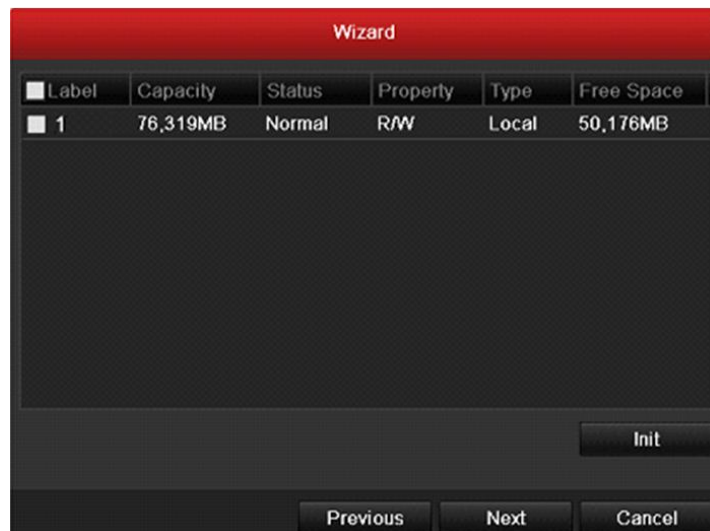
The screenshot shows a 'Wizard' window with a red title bar. It contains a table with the following settings:

Field	Value
NIC Type	10M/100M Self-adaptive
Enable DHCP	<input type="checkbox"/>
IPv4 Address	172 . 9 . 4 . 65
IPv4 Subnet Mask	255 . 255 . 255 . 0
IPv4 Default Gateway	172 . 9 . 4 . 1
Preferred DNS Server	
Alternate DNS Server	

At the bottom, there are three buttons: 'Previous', 'Next', and 'Cancel'.

6. Click **Next** button to enter the **HDD Management** window.

To initialize the HDD, click the **Init** button. Initialization removes all the data saved in the HDD.



7. Click **Next** button to enter the **Record Settings** window.

- 1) Select the camera to configure.
- 2) Check the checkbox to enable **Start Recording**.
- 3) Select the recording mode to Normal or Motion Detection.



- 4) Click **Copy** to copy the record settings of the current camera to other camera (s) if needed.



- 5) Click **OK** to return to the **Record Settings** window.
8. Click **OK** to complete the startup Setup Wizard.

Live View

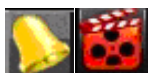
Some icons are provided on screen in Live View mode to indicate different camera status. These icons include:

Live View Icons

In the live view mode, there are icons at the right top 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 or motion detection).




Alarm & Record

PTZ Control

Follow the procedure to set the parameters for PTZ. The configuring of the PTZ parameters should be done before you set the PTZ camera.

Before you start, please check that the PTZ and the DVR are connected properly through RS-485 interface.

In the Live View mode, you can press the PTZ Control button on the IR remote control, or choose the PTZ

Control icon  to enter the PTZ toolbar.

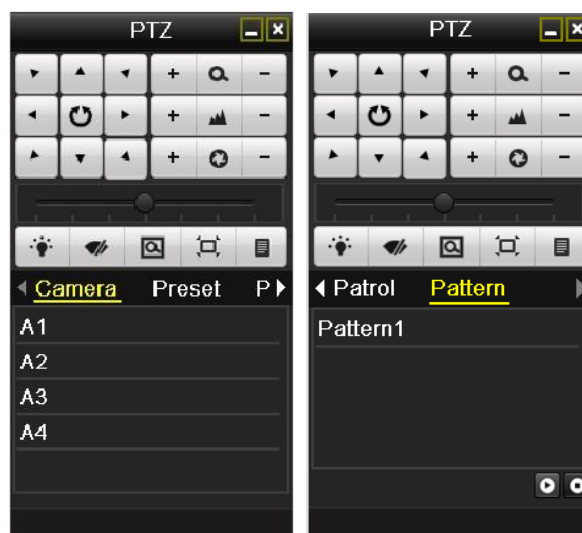


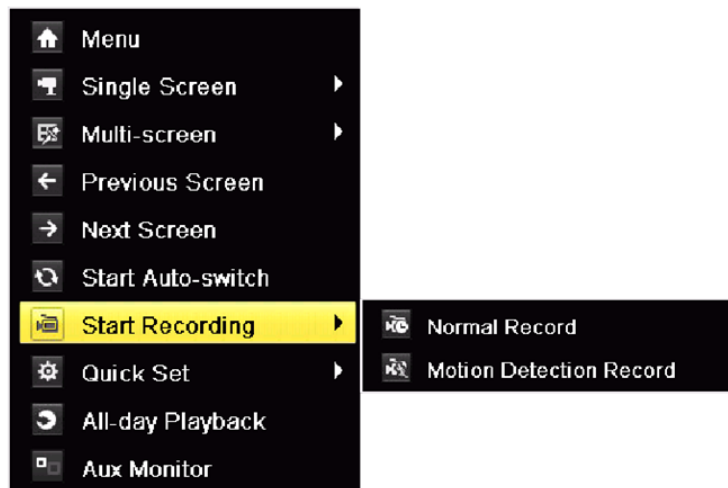
Table 5 Description of the PTZ toolbar icons

Icon	Description	Icon	Description	Icon	Description
	Direction button and the auto-cycle button		Zoom+, Focus+, Iris+		Zoom-, Focus-, Iris-
	The speed of the PTZ movement		Light on/off		Wiper on/off
	3D-Zoom		Image Centralization		Preset
	Patrol		Pattern		Menu
	Previous item		Next item		Start pattern/patrol
	Stop the patrol or pattern movement		Minimize windows		Exit

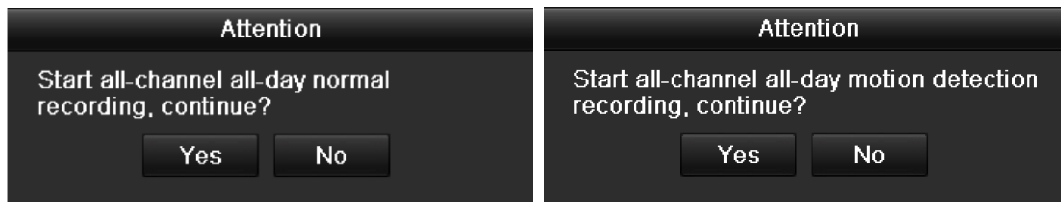
Record

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

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

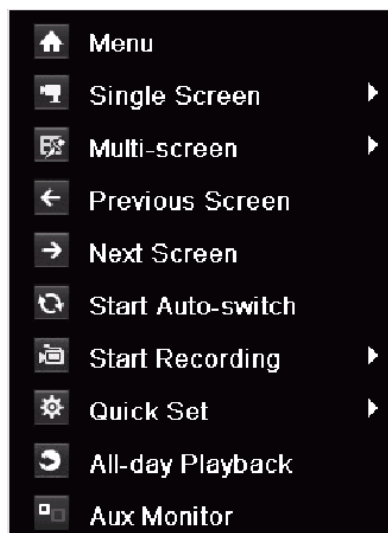
Note: Only record files recorded during the past five minutes on this channel will be played back.



All-day Playback by channel

1. Enter the All-day Playback menu.

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



Press **PLAY** button on the IR remote control 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.

2. Playback management.

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



The channel and time selection menu will display by moving the mouse to the right of the playback interface. Tick 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.

To export recorded files:

1. Click Menu>Export to enter Video Export interface.
Choose the channel (s) you want to back up and click the **Quick Export** button.



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 the button to check it.



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