NVR200 Series
Network Video Recorders
Quick Guide

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Safety and Compliance Information

Conventions Used Symbol

The symbols in this chapter are shown in the following table. They are used to remind the reader of the safety precautions during equipment installation and maintenance.

Safety Symbol	Description
	Generic alarm symbol: To suggest a general safety concern.
	ESD protection symbol: To suggest electrostatic-sensitive equipment.
	Electric shock symbol: To suggest a danger of high voltage.

Safety Information

WARNING!

Installation and removal of the unit and its accessories must be carried out by qualified personnel. You must read all of the Safety Instructions supplied with your equipment before installation and operation.

Warnings:

- If the product does not work properly, please contact your dealer or the nearest service center. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- To reduce the risk of fire or electrical shock, do not expose this product to rain or moisture.
- This installation should be made by a qualified service person and should conform to all the local codes.
- Please install blackouts equipment into the power supply circuit for convenient supply interruption.
- The separate earthing terminal must be permanently connected to earth.
- For AC supplied model: The plug-socket combination must be accessible at all times as it serves as the main disconnecting device.
- Before the power cable is installed or removed, the power must be turned off.
- To avoid heat accumulation, good ventilation is required for a proper operating environment.
- Improper use or replacement of the battery may result in hazard of explosion. Please use the manufacturer recommended battery type.

⚠️ **Caution:** Fiber optic ports – optical safety.

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Class 1
LASER PRODUCT
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Never look at the transmit laser while the power is on. Never look directly at the fiber ports and the fiber cable ends when they are powered on.

Caution: Use of controls or adjustments to the performance or procedures other than those specified herein may result in hazardous laser emissions.

Regulatory Compliance

FCC Part 15

This equipment has been tested and found to comply with the limits for 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.

This product 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.

LVD/EMC Directive

CE

This product complies with the European Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC.

WEEE Directive–2002/96/EC

The product this manual refers to is covered by the Waste Electrical & Electronic Equipment (WEEE) Directive and must be disposed of in a responsible manner.

Preface

Audience

This manual is intended for:

- Surveillance system planners
- Field technical support and servicing engineers
- Software installation, configuration, and servicing administrators
- Product users

Precautions

- If this equipment is used in a domestic environment, radio disturbance may arise. When such trouble occurs, you might be required to take corrective actions.
- Do not remove the dismantlement-preventive seal from the chassis cover of the device without permission. If you want to open the chassis, contact the local agent of our company for help. Otherwise, we shall not be held liable for any consequence caused thereby.
- Make sure the device is sturdy and well grounded and meets heat dissipation and lightning protection requirements. Avoid vibration when using the device.
- Provide a stable and compliant power supply before powering on the device.
- Before performing the verification (refer to section "Check Before Power-On"), make sure that the power is disconnected, for fear of bodily injury or equipment damage caused by incorrect cable connection.
- Power interruption may cause hard disk damage or abnormal functions. To shut down the device, strictly follow the instructions. If power interruption often occurs, configure an uninterrupted power supply (UPS).

Contents

1 Overview

As our network video recorder for use in small and medium surveillance applications, the NVR200 series ("NVR200") well satisfies digital monitoring needs. The NVR200 can connect to coding devices such as IP camera to form a separate network or to a central server platform for central networking to support a diverse range of video surveillance applications including audio and video access, video playback and real-time monitoring on networks of various sizes.

2 Mounting

Installation Check

Open the packing box and check the equipment model, accessory types and quantities to ensure all the components are available. For equipment model accessory types and quantities, please refer to the packing list.

The following tools are required for installation: flat-head and Phillips screwdrivers (nonmagnetic).

Installing Hard Disks

WARNING!

Make sure the equipment is disconnected from the power supply before installation. Please wear anti-static gloves when installing the device.
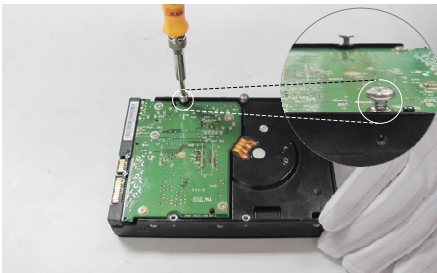
For supported hard disk types, consult our authorized sales or technical support staff. The installation process may varies according to conditions.

Install a hard disk as follows:

1. Loosen the seven screws that secure the chassis cover, and remove the cover.

2. Fix four screws, each half tight, to the hard disk.

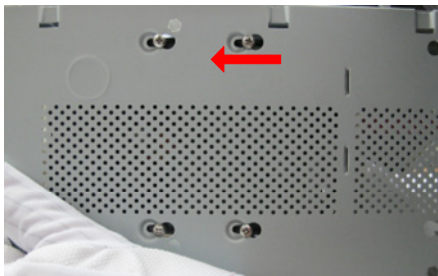**3.** Connect one end of the data cable to the hard disk.

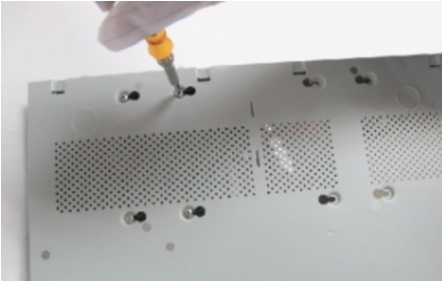**4.** Connect one end of the power cable to the hard disk.

5. Push the screws on the hard disk into the hardy holes in the chassis backplane.

6. Place the chassis in upright position, and slide the screws to the other ends of the hardy holes in the direction indicated in the figure below.

7. Tighten the screws on the hard disk.

8. Connect the other ends of the data and power cables to the motherboard.


9. Repeat the above procedure to install another hard disk. It is recommended that you install two screws on the diagonal.

10. Finally put on and secure the chassis cover with screws. The hard disk is completely installed.

Installing the Equipment

Leave room of at least 30cm to the front and back and 10cm to the left and right sides of the equipment for ventilation.

Install the equipment as follows:

1. Get the stickers from the foot pads delivered with the equipment, and attach the pads to the bottom of the equipment where appropriate.

2. Place the equipment on a clean workbench. Now the installation process is complete.
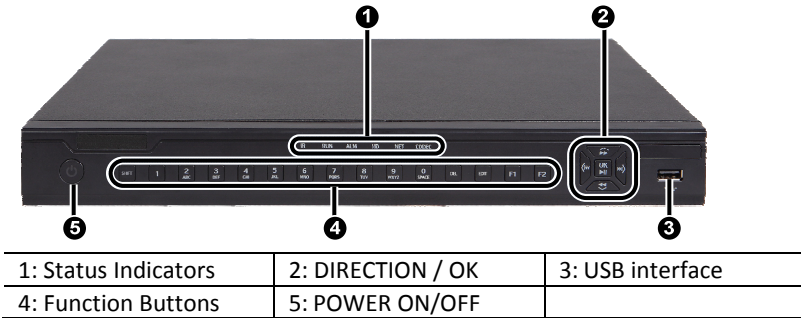
Attach the pads
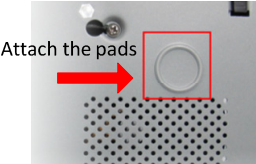
3 Appearance

Unless otherwise specified, the photos hereinafter show NVR202-16-IN. It is the same with other devices.

The photos herein are for illustration only and may vary according to actual conditions.

Front View

1: Status Indicators	2: DIRECTION / OK	3: USB interface
4: Function Buttons	5: POWER ON/OFF	

Indicators

As shown in the front view, the following table describes the indicators on the front panel.

Table 3-1 Status Indicators

Indicators	Color	Status	Description
⏻ (Power indicator)	Red	Constantly on	Device powered on.
IR	Blue	Blinking	Device is being verified.

Indicators	Color	Status	Description
(Remote control indicator)		Constantly on	Device is selected and can be remotely controlled.
ALM (Alarm indicator)	Red	Constantly on	Equipment alarms.
RUN (Running indicator)	Blue	Blinking	Starting.
		Constantly on	Running normally.
HD (Hard disk indicator)	Blue	Blinking	Running properly with data access.
		Constantly on	Running properly without data access.
	Red	Constantly on	Hard disk at fault.
		Blinking	Several hard disks at fault or array rebuilt.
NET (Network indicator)	Blue	Constantly on	Network properly connected.
CODEC (Codec indicator)	Blue	Blinking	Signal input with encoding.
		Constantly on	Signal input without encoding.

Panel buttons

The panel buttons may vary with the equipment model.

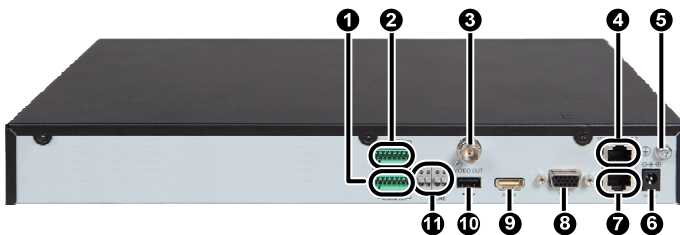| Item	Function and Description
DIRECTION	⌃/⌄/◁/▷: Move between different menu items; shift the focus; in PTZ mode, move the PTZ up, down, left, or right after the PTZ tool bar is hidden. ◁◁/▷▷: In playback mode, rewind or forward 30 seconds when the playback tool bar is hidden. ▷▷/◁◁: In playback mode, rewind or

Item		Function and Description
		forward at speed when the playback tool bar is hidden.
OK		● Confirm the operation. ● In playback mode, play or pause when the playback tool bar is hidden.
USB interface		USB2.0 (limited to 1A) used for connection with an external USB mouse or storage device. ***Note:*** *Use another device to partition and format a USB storage device into FAT32 file system before use.*
POWER ON/OFF		● In Soft OFF mode, press the ON/OFF button to start the device. ● In normal operation mode, press the ON/OFF button to turn off the device. Hold the ON/OFF button for at least 3 seconds to switch off the device.
Function Buttons	Alphanumeric Buttons	● Used to enter a password, number, or English characters. ● The number key 0 can be used to select or clear check boxes in the list box. ● In preview mode, used to switch between analog channels in focus panes.
	SPACE	Used to enter a space.
	DEL	Used to delete characters on the left of the cursor.
	F1	Used to switch between focus areas on an interface.
	F2	● Used to switch between menu sub-tabs. ● Used to capture images in the focus pane on the preview and playback interface (with playback toolbar hidden).
	EDIT	Used to switch between numbers, English (upper/lower-case) characters.
	LOGIN/OUT	Log in or out the device.

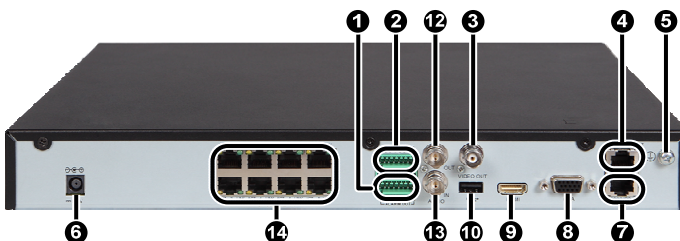| Item	Function and Description
MENU	Used to access the main menu.
RIGHTCLICK	Used to access the right-click context menu.
TOOLBAR	Used to show or hide the PTZ or playback toolbar.
SCREENS	In preview and playback mode, used to switch between different screens. Screens 3, 5 and 7 show videos in the corridor.
MAIN/AUX.	Reserved.
SEQUENCE	Used to start/stop sequence display in preview mode.
BACKUP	Used to enter the video backup interface in preview mode.
PLAYBACK	Used to enter the video playback interface and display the playback toolbar in preview mode.
PTZ	Used to enter the PTZ control interface and display the PTZ toolbar in preview mode.
REC	Used to manually start or stop storing images on a hard disk in preview mode.
PRESET	Used to set the PTZ into the preset position in PTZ control mode when the PTZ toolbar is hidden.
MUTE	Used to turn on/off the mute function.
ESC	Used to quit the current interface.
SHIFT	Used to switch between reuse functions.

Rear View

NVR202-16-IN

The following figures show a rear view of the NVR202-16-IN. The LINE interface of the NVR202-09-IN is a phoenix connector. Other interfaces are a similar type.

NVR202-09P/16P-IN

Interfaces

As shown in the rear view, the following table describes interfaces on the rear panel.

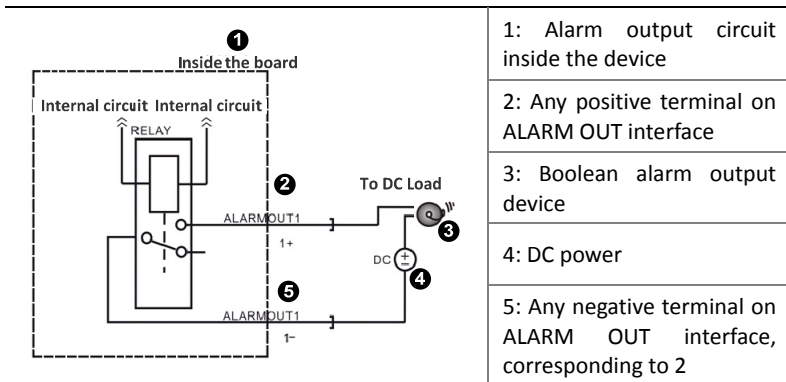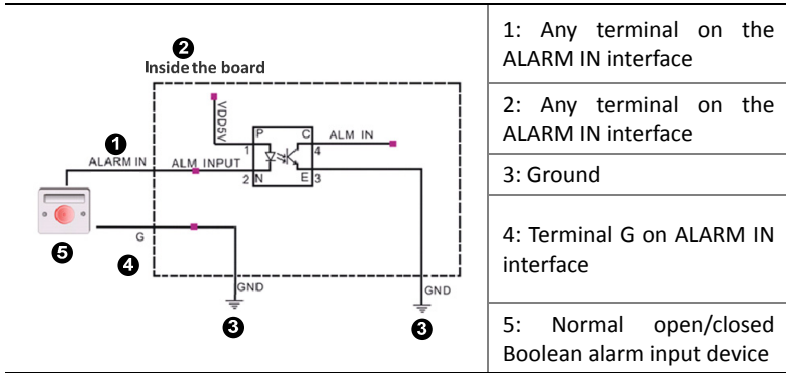**Table 3-2** Interfaces

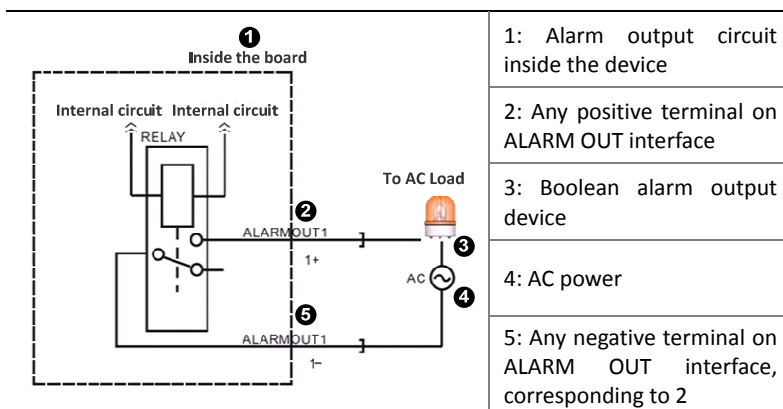| No	Item	Description	Function and Instructions
❶	ALARM OUT	Relay output, Phoenix connector ● NVR202-16/16P-IN: 4 ● NVR202-09/09P-IN: 2	Connecting to alarm output device
❷	ALARM IN	Boolean input, Phoenix connector ● NVR202-16/16P-IN: 8 ● NVR202-09/09P-IN: 4	Connecting to alarm input device
❸	VIDEO OUT	Composite video output (PAL/NTSC), BNC connectors, 1V (P-P), 75 Ω	Connecting to a CVBS analog display device

No	Item	Description	Function and Instructions
❹	LAN interface	10/100/1000 BASE-T adaptive Ethernet electrical port, RJ45 connector	Connecting to Ethernet
❺	GROUND	Equipment grounding	Ground cable
❻	DC POWER	● NVR202-09/16-IN: 12V DC,5A ● NVR202-09P/16P-IN: 52V DC,1.8A	Connects to power adapter
❼	RS-232/485 Interface	Compatible with RS232 and RS485 serial ports and RJ45 connectors	Connecting to RS232 or RS485 devices
❽	VGA	Analog video output, VGA interface	Connecting to a VGA analog display device
❾	HDMI	High-definition digital audio and video output, HDMI interface	Connecting to HDMI display device
❿	USB interface	USB2.0 interfaces, limited to 1A	Connecting to an external USB mouse or storage device
⓫	LINE	Two-way voice input, (shared for output and analog output), Phoenix connector Only for NVR202-09/16-IN	Connecting to audio input / output devices
⓬	AUDIO OUT	Analog audio output,BNC, single channel, 1.4V (P-P), 300 Ω	Connecting to an audio output device
⓭	AUDIO IN	Analog audio input,BNC, single channel, 2V (P-P),10 KΩ	Connecting to an audio input device
⓮	PoE	10M/100M Base-TX self-adaptive Ethernet electrical port, RJ45 connector	Connecting to Ethernet and powered device

4 Connecting Cables

Connecting to Alarm Input/Output Device

Twisted pair is recommended. 22-28AWG insulating core wire, preferably 24AWG or 26AWG can be used.

	1: Any terminal on the ALARM IN interface
	2: Any terminal on the ALARM IN interface
	3: Ground
	4: Terminal G on ALARM IN interface
	5: Normal open/closed Boolean alarm input device

	1: Alarm output circuit inside the device
	2: Any positive terminal on ALARM OUT interface
	3: Boolean alarm output device
	4: DC power
	5: Any negative terminal on ALARM OUT interface, corresponding to 2

	1: Alarm output circuit inside the device
	2: Any positive terminal on ALARM OUT interface
	3: Boolean alarm output device
	4: AC power
	5: Any negative terminal on ALARM OUT interface, corresponding to 2

Connecting to a Third-Party Device

The device supports the RJ45 type of RS485 interface for connection with third-party devices.

RS485 Serial Cables

Twisted pair is recommended. 22-28AWG insulating core wire, preferably 24AWG or 26AWG can be used.

Refer to the table below for the maximum length of RS485 serial cables with different baud rates.

Table 4-1 Maximum length of RS485 serial cables at different baud rates

Baud rate (bps)	Maximum length (m)
1200,2400,4800,9600,19200	900
38400	850
57600	550
115200	250

Connecting to a third-party device via RS485 interface

The RJ45 connector should be connected with the PTZ control cable as follows:

- The RJ45's RS485+ terminal is connected to the PTZ; RJ45's RS485- terminal is connected to the PTZ, as shown in the following figure.

- If the PTZ is grounded, the PTZ control cable's G terminal is connected to the RJ45 connector's Terminal G (No.5).

- For connection with several PTZs, connect the control cables of the PTZs and follow the figure below for further connection.

(1):RS485+ (2):RS485- (3):RS232_TXD (4):N/A (5):G (6):RS232_RXD (7):N/A (8):N/A	1: PTZ's RS485 control cable
	2: PTZ's RS485+ terminal
	3: RJ45's RS485+ terminal
	4: PTZ's RS485- terminal
	5: RJ45's RS485- terminal
	6: Twisted pair
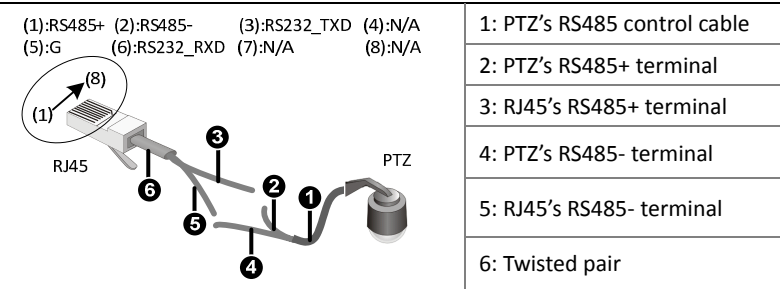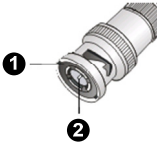
Connecting using an audio/video cable

- Common video cables: composite video cable, VGA cable, HDMI cable.

- Common audio cables: RCA universal audio cable and ordinary coaxial cable

To facilitate the plugging and unplugging of audio and video cables, please insert audio/video cables from center to the two ends without interval and remove the cables in the opposite sequence.
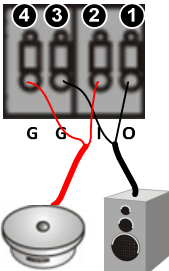
Refer to the figure below to connect the required audio and video cables in accordance with Table 3-2.

| | 1: Connect the common ground for audio and video devices |
| | 2: Connect the signal cables for audio and video devices |

Connecting to an Audio Intercom Device

NVR202-16-IN

- Push down Terminal I of the NVR202-16-IN LINE device's LINE interface. Plug the audio intercom device's audio input signal cable into the jack and release the terminal.

- Push down Terminal O of the NVR202-16-IN LINE device's LINE interface. Plug the audio intercom device's audio output signal cable into the jack and release the terminal.

- Push down Terminal G of the NVR202-16-IN LINE device's LINE interface. Plug the audio intercom device's ground cable into the jack and release the terminal.

	1: Connect a signal cable for the audio output device
	2: Connect a signal cable for the audio input device
	3/4: Connect the common ground for audio and video input devices

NVR202-09-IN

- Push down Terminal I of the NVR202-09-IN LINE device's LINE interface and connect the audio intercom device's audio input signal cable.

- Push down Terminal O of the NVR202-09-IN LINE device's LINE interface and connect the audio intercom device's audio output signal cable.
- Push down Terminal G of the NVR202-09-IN LINE device's LINE interface and connect the audio intercom device's ground cable.

	1: Connect a signal cable for the audio output device
	2: Connect a signal cable for the audio input device
	3/4: Connect the common ground for audio and video input devices

Connecting RS232 Serial And Network Cables

Through an RS232 serial port, connect the equipment to a serial device such as a PC. For maintenance, use the following serial cables (take PCX-based DB9 as an example).

| | 1: DB9 interface |
| | 2: RJ45 interface |

As shown in the following figure, please connect the RS232 serial and network cables as required.

Connecting to a Powered Device

Only NVR202-09P/16P-IN supports PoE. A PoE port can support data transfer and DC power for IP terminals such as IPC.

Connect an external powered device as shown in the figure below if necessary. The powered device must also support PoE.
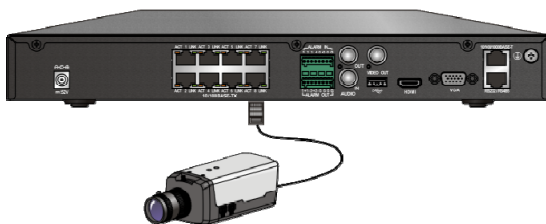
NOTE!

The NVR202-09P/16P-IN device's PoE port supports an output power of up to 64 W. A single PoE port provides a maximum output power of30 W. The The NVR202-09P/16P-IN will first supply power to PoE ports with smaller numbers if a number of powered devices are connected to a PoE port and the required total power exceeds 64 W.

Connecting a GroundCable

To ensure personal and equipment safety equipment (lightning protection and resistance against interference), ground the device properly.

The ground cable must not exceed 30m and provide a grounding resistance of less than 5 Ω. For specific requirements, refer to the standards for the IEC61024 series.

As shown in the following figure connect one end of the ground cable to the ground terminal of the device and the other end to a reliable grounding point.

5 Switching On/Offthe Device

Check Before Power-On

To avoid bodily injury or damage to components, check the following items before turning off the power.

- The device is firmly and securely installed without any screw left unscrewed.

- Do not place anything on the device.

- All the installed cables are connected correctly.

- Use a power supply approved for the device.

Turning on the Device

Plug in the power , the device is started when the power indicator on the front panel lights up.

In Soft OFF mode, press the **POWER ON/OFF** button on the front panel or Remote control to start the device.

Soft Off

Soft off means a device is turned off to terminate the running system processes, so that the device enters power saving mode.It is recommended that you disconnect the device from the power supply when the device is left idle for a long time.

Soft Off Using the POWER ON/OFF Button

Press the **POWER ON/OFF** button on the front panel or Remote control and confirm on the man-machine interface to perform soft off. the device. Hold the **POWER ON/OFF** button for at least 3 seconds to switch off the device.

Soft Off Through Man-Machine Interface

Choose **Menu > Maintenance > Shutdown.** Click **Shutdown** to perform soft shutdown after confirmation.

Soft Off Through Web Interface

Choose **Maintenance > Device Maintenance > Shutdown**. Click **Shutdown** to perform soft shutdown after confirmation.

> ⚠️ **WARNING!**
> In the course of normal operation of the equipment or device is closed, do not disconnect the power while the equipment is running properly or shutting off, so as to not to damage the equipment.

6 Common Configurations

The DVR200 can be operated through man-machine and Web interfaces.

The photos herein are for illustration only and may vary according to actual conditions.

Man-Machine Interface

About the Interface

Startup of the device takes a littlt time the man-machine interface appear after a progress bar. You can use the mouse, Remote control or the front panel to do the configuration and monitoring service on the man-machine interface.You c refer to the user manual for detailed information.
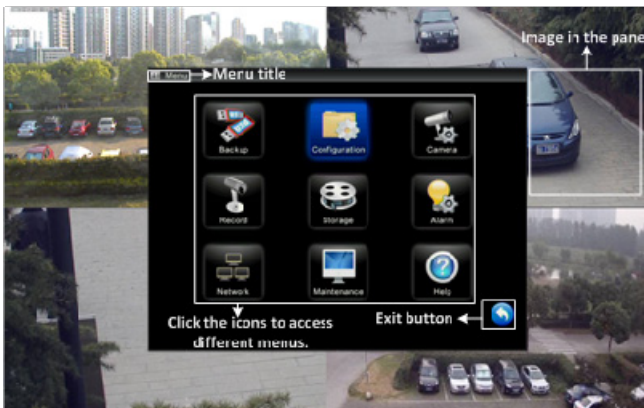
Menu Structure
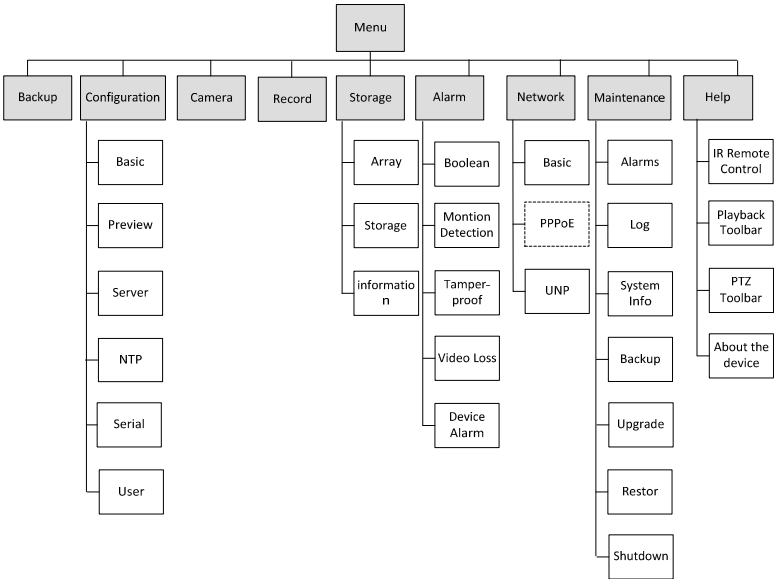
Initial Configuration

You can simply configure the device to work properly as instructed by the startup wizard.If you do not want the startup wizard to guide you through fast configuration, just skip the wizard and log in as admin. Follow steps 3 to 5 for fast configuration.

1. Determine whether to start wizard when device starts and click Next.
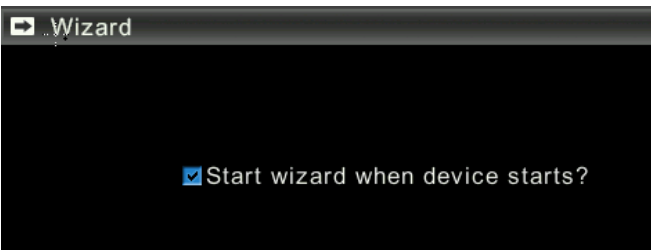
2. Enter the admin user's password (admin by default). Click **Next** and the Configuration Wizardinterface appears.
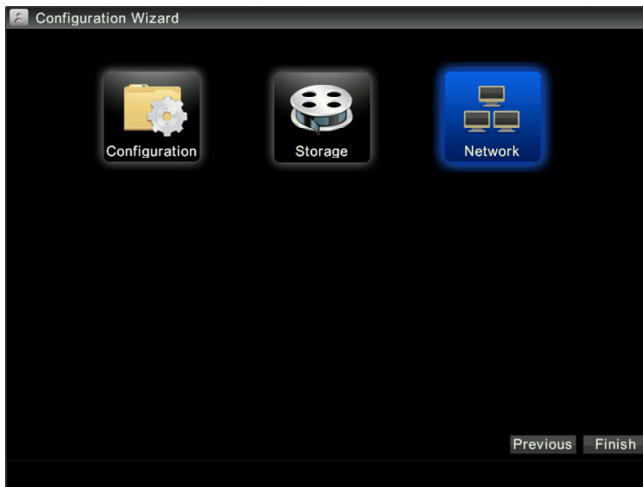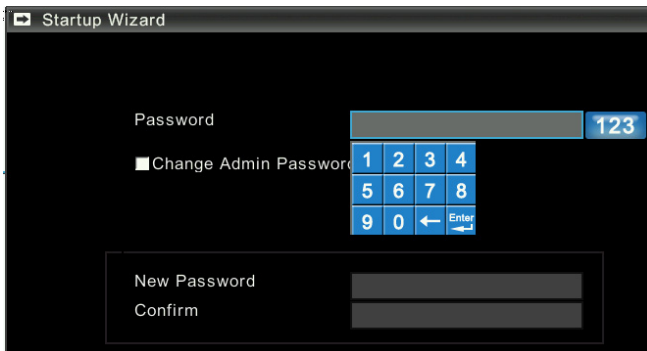
3. Configure the network parameters.

 a. Click **Network Configuration** to enter the Network Configuration interface.

b. On the Basic tab, configure the IP address, subnet mask, and default gateway.Normally, set other network parameters to defaults.
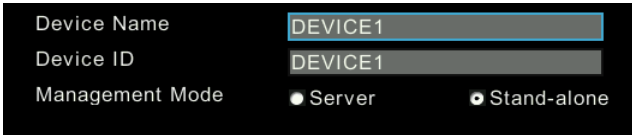
c. After configuration, click **OK**. Configuring eth0 card causes the system to restart service and then return to the Configuration Wizard interface.
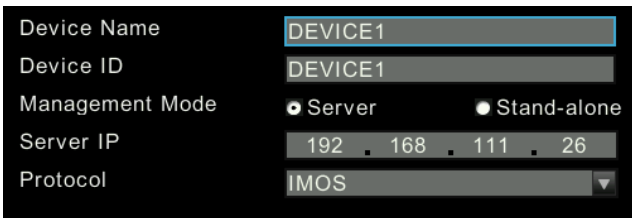
4. Configure system parameters.

    a. Click **System Configuration**. The System Configuration interface appears.

    b. In the Server Configtab, select the management mode based on the actual networking conditions.Normally, set other system parameters to defaults.

    c. After configuration, click **OK**.Changing the management mode will restart the device.

5. Configure storage parameters.

    a. Click **Storage Configuration**. The Storage Configuration interface appears.

    b. Building an array

        i. In the Build Array box under the Array tab, enter the array name, select the array type, and idle slots;

        ii. Click **Create**. The newly created array is shown on the array list.

c. Virtualizing anarray

Be sure to virtualize an array before using it. To do so, select the array in the Virtualization Array box and click **Virtualization**.

> 📓 **NOTE!**
>
> Virtualization takes time. After virtualization is complete, "virtualized" in the array list is displayed as "Yes".

d. Configuring storage resources

On the Storagetab, configure storage resource parameters. The following table lists the important parameters.

e. Configuringstorage plans

i. On the Storage tab, click **Storage Plan** to configure a general or exceptional storage plan.

ii. After configuration, click **OK**. The system returns to the Storage Configuration tab.

iii. Click **OK**. The system returns to Configuration Wizard interface.

> 📝 **NOTE!**
> - On the day of exception plan, only storage plans outside of the exception period are implemented. Conventional plans are implemented in other days.
> - The periods under a storage plan cannot overlap each other.

6. After all configurations, click **Finish** to save the settings and then you can perform various operations.

Quickly Adding IPC

Only an admin user can add IPC. Before adding the IPC, confirm that:

- The IPC is functional, and the network is connected;
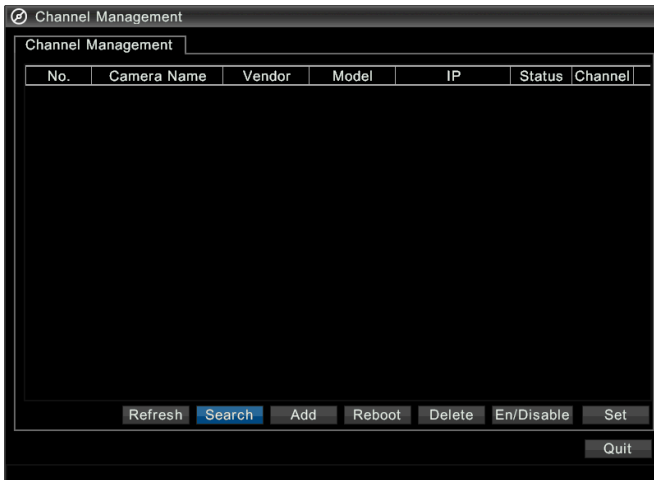- The IPC resolution must not exceed 1920 in width and 1088 in height.

The procedure is as follows:

1. Enter the video channel configuration interface.

To do so, choose **Menu > Channel Management > Video Channel**.

2. Quickly search for the IPC.

Click **Search** to enter the IPC Search interface. By default, a quick search is performed automaticlly after entering this interface.

3. Add our company's IPC.

- Add single IPC: Select one of our IPCs you want to add. The IPC parameters are displayed below the list.(You can modify related parameters, Important parameters are described in the following table.) Click **Add** to add the IPC.

- Add IPCs in batches: Select a number of our IPCs you want to add. Click **Batch Add** and the system will add IPCs in batches according to default parameters.

4. Adding third-party IPCs

● Add single third-party IPC: Select a third-party IPC you want to add. The IPC parameters are displayed below the list. (You can modify related parameters, Important parameters are described in the following table.) Click **Add** to add the IPC.

● Add IPCs in batches: Select a number of third-party IPCs you want to add. Click **Batch Add** and the system will add IPCs in batches according to default parameters.
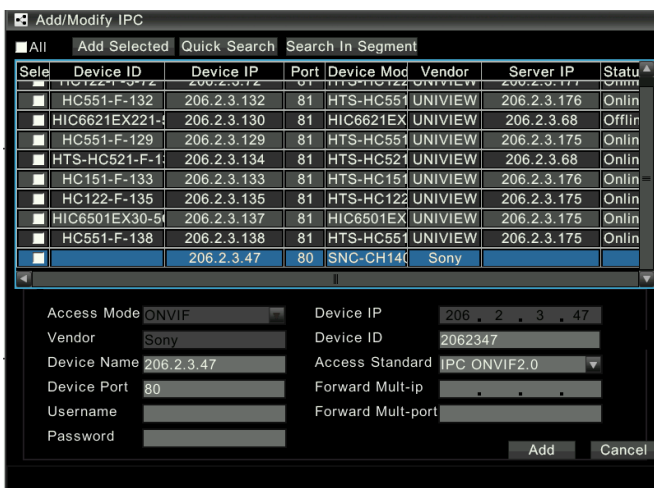
Preview

Pane Toolbar on the Preview Interface

In preview mode, click a pane. Pane toolbar appears below the pane.

Table 6-1 Button Description in Pane Toolbar

Icon	Name	Description
	Stop live	Stops playing the live video in the current pane
	PTZ control	Click this button to enter the PTZ control interface in preview mode.
	Manual record	Records the live video in the current pane to a local destination. Click the button again to stop manual recording.
	Instant playback	Plays back the videos recorded within 5 minutes before the current time point.
	Digital zoom	Zoom in on the live or recorded video in the current pane on a certain scale.
	Capture image	Saves images in the current pane to a designated folder. ***Note:***

Icon	Name	Description
		- *Images captured are stored by date in the root directory of your USB drive (a folder is automatically created and named "snap_ date").For example, images captured on March 24, 2013 are stored in a folder named "snap_2013-03-24".* - *Before capturing images, ensure that you have inserted a USB drive into the device.* - *Images captured in preview mode are named as follows: user name (camera name) current time.jpg.*
	Exit the tool bar	Exit the toolbar for the current pane.

Preview Status

On the preview screen, video and alarm status of each channel can be identified by the identifier on the corresponding preview screen.

Table 6-2 Preview Icons

Icon	Name	Description
	Video playback	This icon is shown in video playback mode (the playback toolbar).
	Motion detection alarm	This icon is shown when a motion detection alarm occurs.
	Temperature alarm	This icon is shown when a low or high temperature alarm occurs.
	Disassembly alarm	This icon is shown when the front panel is removed.
	Fan alarm	This icon is shown when a fan alarm occurs.

Icon	Name	Description
	Boolean input alarm	This icon is shown when a Boolean input channel alarm occurs.
	Alarm triggering	This icon is shown when alarm triggering preview screen occurs.
	Video tampering alarm	This icon is shown when a shield alarm occurs.
	Mute	This icon is shown in mute mode.
	Manual record	This icon is shown in manual record mode.

Right-click Context Menu

In the preview screen, the right-click context menu is shown in the following figure. Menu functions are described in the following table.
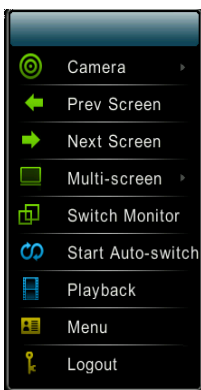

Table 6-3 Preview Operations

Menu Item	Description
Camera	When the selected pane switches to a digital channel screen, you can start or stop previewing digital channels such as IPC.

Menu Item	Description
	Note:
	When the camera connected on the channel gets offline, the corresponding digital channel will become unavailable. You can perform preview only when the camera comes online.
Prev Screen/ Next Screen	Displays the images available for preview on the previous or next screen based on current split screen mode and screen number during polling switching.
Multi-Screen	Switches the split-screen mode.
	Note:
	● *Screens 3, 5 and 7 show videos in the corridor.*
	● *In split-screen mode, services in panes other than the current screen will be disabled automatically.*
Switch Monitor	Switches between screens on a man-machine interface
Start Auto-Switch	In the preview screen, poll-switch between videos on various channels.
Video playback	Enters the channel video playback interface.
	Note:
	You can display this interface only when you preview images after logging into the device.
Main Menu	Used to access the main menu
	Note:
	You must log into the device.
Logout	Logs out and returns to the preview mode before login.
	Note:
	You can display this interface only when you preview images after logging into the device.

Recording

This article describes how to manually record audio and video data on different channels and store the data to a hard disk.

1. On the preview screen, select a pane for video recording. Click **Manual Record** to start recording.

2. An icon will appear above the pane.

3. To stop manual recording, click **Stop Recording** on the toolbar.

Playback

The device can play back the videos recorded within 5 minutes before the current time point to facilitate instant playback in case of exceptions.

Before instant playback, ensure that videos are recorded within 5 minutes before the current time point.

Do as follows:

On the preview screen, select the pane for video recording. Click the **Instant Playback** icon to start playing.

Backup

On the man-machine interface, search a hard disk for video records and save the video records in the USB storage device as files.

Prerequisites

- The USB storage device is FAT32-partitioned and formatted, and properly connected to the device.

- You are permitted to play back videos.

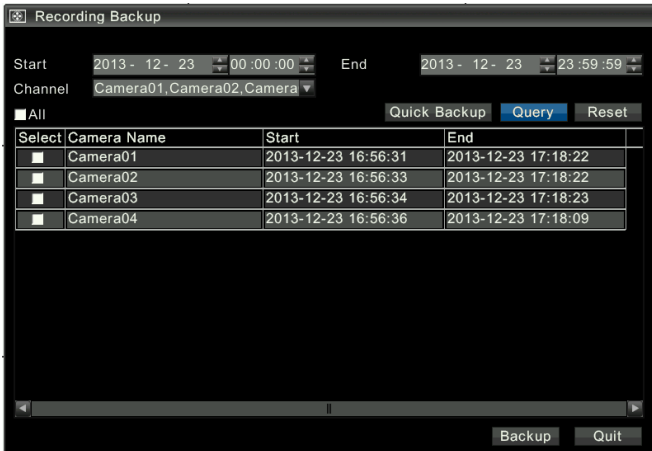- Ensure that video records are stored on the device's hard disks.

Procedure

1. Access the interface for record backup interface.

To do so, choose **Menu > Recording Backup**.

2. Query videos.

After selecting one or more channels on which you want to query video records. Enter the start/end time. Click **Query** to display search results.

3. Select video records you want to back up.

Select one or more video records you want to back up. Click **Backup** to enter the backup interface.

ⓘ **CAUTION!**

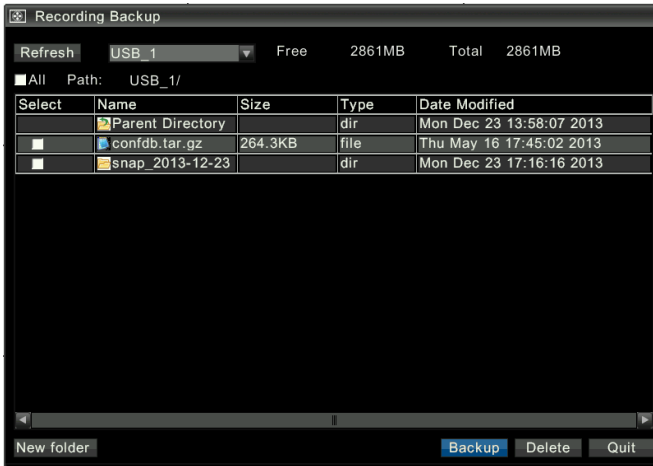After selecting the channel and entering the start/end time, click Quick Backup. On the interface for record backup, all the video records within the specified time periods on the selected channel will be backed up by default.

---

4. Select the backup path.

Select a partition of a USB storage device from the USB drive drop-down list.Select a folder, or double-click to enter the directory and then select a folder.

Recording Backup

| Refresh | USB_1 ▼ | Free | 2861MB | Total | 2861MB |

■All   Path: USB_1/

Select	Name	Size	Type	Date Modified
	📁 Parent Directory		dir	Mon Dec 23 13:58:07 2013
■	📦 confdb.tar.gz	264.3KB	file	Thu May 16 17:45:02 2013
■	📁 snap_2013-12-23		dir	Mon Dec 23 17:16:16 2013

New folder   Backup   Delete   Quit
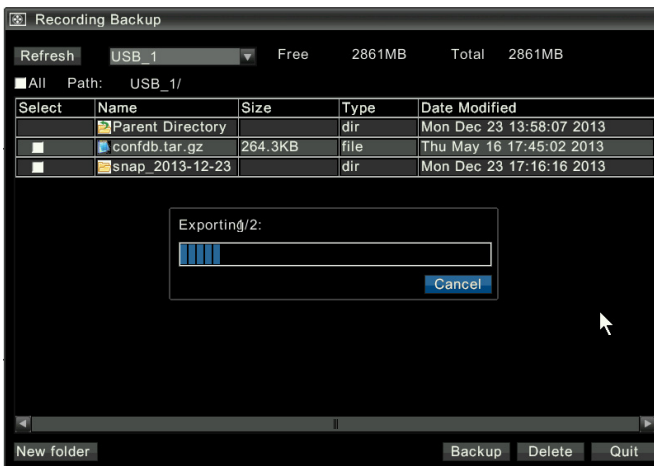
5.   Backing up a video

Click **Backup** to start video backup.

---

① CAUTION!

During the backup process, the progress bar will show "backing up X/Y:"
x indicates the video records currently being backed up; y represents the
total number of video records you want to back up.During the backup
process, click Cancel on the progress bar to stop video backup.

NOTE!

- If the duration of a video record for backup is less than half an hour, the record will be saved as a separate file; if the record exceeds half an hour, the record will be automatically split into half-hour units and saved as separate video files.
- A backup video file is named as follows: camera name-video start time-end time-random value.file format.For example: camera 01-20121222000000-20121223103000-719885386.ts.
- Click Refresh to show the free and full capacities of the current partition on the USB storage device.
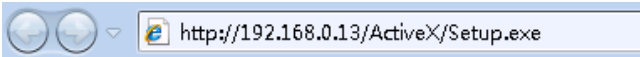

Web Interface

1. Start a Web browser on the client computer. Enter the IP address of the device in the address box (192.168.0.13 by default). Press **Enter**. For first login, load all latest controls as prompted by the system.You should preferably install controls in the default directory.

2. Enter the user name and password in the login dialog box (admin by default), and click **Log In** to access the web interface.

CAUTION!

If you change to another OS user on the client and log in to the web page again after controls are successfully installed, you need to load the controls manually. Otherwise, you cannot log in.To load controls manually, enter /ActiveX/Setup.exe in the address bar after the device's IP address, and press **Enter**.

After successfully logging in to the web interface, perform related configuration operations.

7 Specifications

For more information about technical specifications of the device, refer to the datasheets.

Table 7-1 Technical Specifications

Item	Description
Dimensions (W × D × H)	● 1U high ● 360.0mm×297.6mm×43.6mm (14.2" × 11.7" × 1.72") (with front panel)
Power supply	● NVR202-09/16-IN: 12V DC,5A ● NVR202-09P/16P-IN: 52V DC,1.8A
Consumption	● 10W（without hard disk, without PoE） ● 30W(fully equipped with hard disks, without PoE)
Working temperature	−10°C to +55°C
Working humidity	10%～90% (noncondensing)
Weight	● Bare device <4kg ● Fully equipped with hard disks <6kg

8 HDD Storage Calculation Chart

The following chart shows an estimation of storage space used based on recording at one channel for 24 hour at a fixed bit rate.

Table 8-1 Storage Calculation

Bit Rate (Kbps)	Storage Used (GB)
256	2.900
512	5.801
768	8.701
1024	11.602
1536	17.402
2048	23.203
3072	34.805
4096	46.406

NOTE!

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.

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