**HIKVISION**

# Quick Operation Guide of DS-9600/8600/7700/7600NI-ST and DS-7700/7600NI-SP Series NVR

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-7608NI-ST, DS-7616NI-ST, DS-7608NI-SP, DS-7616NI-SP, DS-7708NI-ST, DS-7716NI-ST, DS-7732NI-ST, DS-7708NI-SP, DS-7716NI-SP, DS-7732NI-SP, DS-8608NI-ST, DS-8616NI-ST, DS-8632NI-ST; DS-9608NI-ST, DS-9616NI-ST, DS-9632NI-ST series NVR.

# 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.

# NVR Pre-Installation

The DS-9600/8600/7700/7600NI-ST and DS-7700/7600NI-SP series NVR are highly advanced surveillance equipment that should be installed with care. Please take into consideration the following precautionary steps before installation of the NVR.

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

# 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 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 NVR is grounded.
7. Environmental temperature should be within the range of -10 ℃ ~ 55 ℃, 14 ℉ ~ 131 ℉.
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 NVR. A factory recommended HDD should be used for this installation.

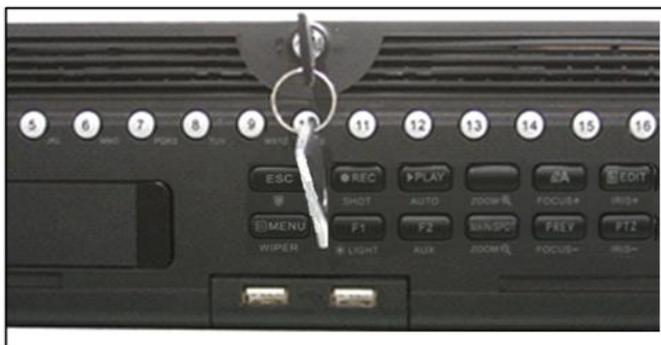Up to 8 SATA hard disks can be installed on your NVR.

**Tools Required:** Screwdriver.

*Steps (for DS-9600NI-ST):*

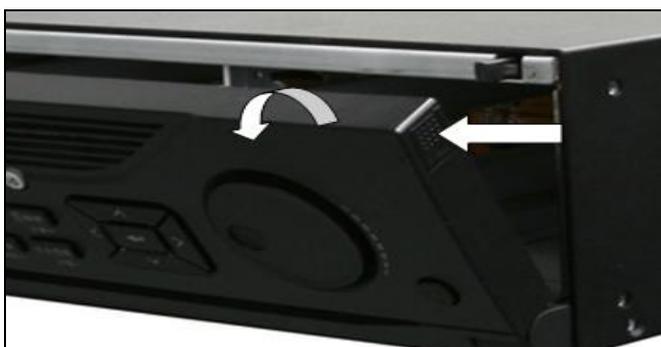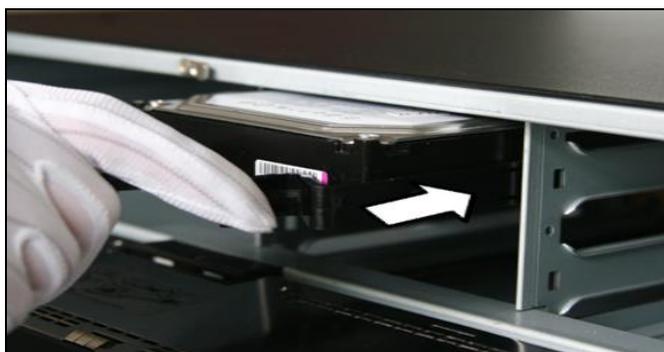1. Fasten the hard disk mounting handle to the hard disk with screws.



2. Insert the key and turn in clockwise direction to open the panel lock.

**3.** Press the buttons on the panel of two sides and open the front panel.



**4.** Insert the hard disk along the slot until it is placed into position.



**5.** Repeat the above steps to install other hard disks onto the NVR. After having finished the installation of all hard disks, replace the front panel and lock it with the key again.
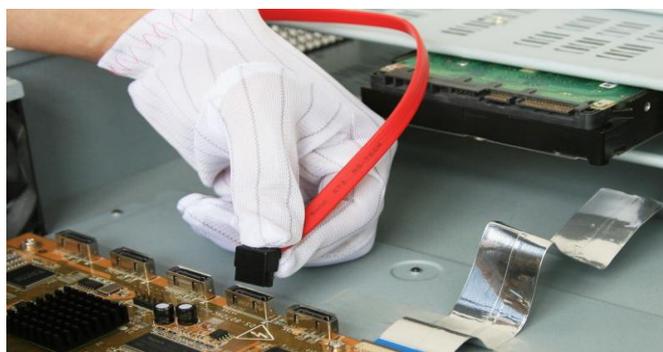
*Steps (for DS-8600NI-ST):*

1. Remove the cover from the NVR 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 button to fix the HDD.



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

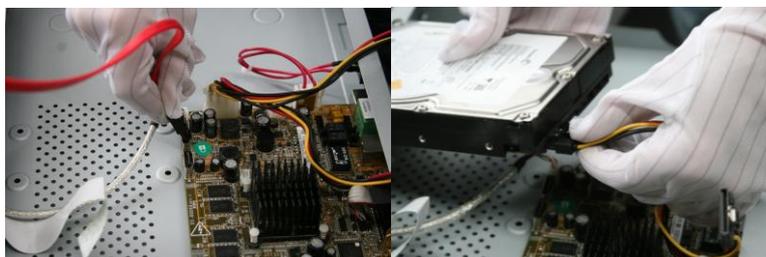

4. Connect the power cable to the HDD.



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

*Steps (for DS-7600NI-ST/SP and DS-7700NI-ST/SP):*

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.

# Front Panel

**DS-9600NI-ST**



**DS-8600NI-ST**



① Status Indicator(Alarm, Ready, Status, HDD, MODEM, Tx/Rx, Guard)

② IR Receiver

③ Front Panel Lock

④ DVD-R/W

⑤ Alphanumeric Buttons

⑥ USB Interface

⑦ Compound Buttons

⑧ DIRECTION/ENTER Buttons

⑨ JOG SHUTTLE Control

⑩ Power Button

**DS-7700NI-ST/SP**
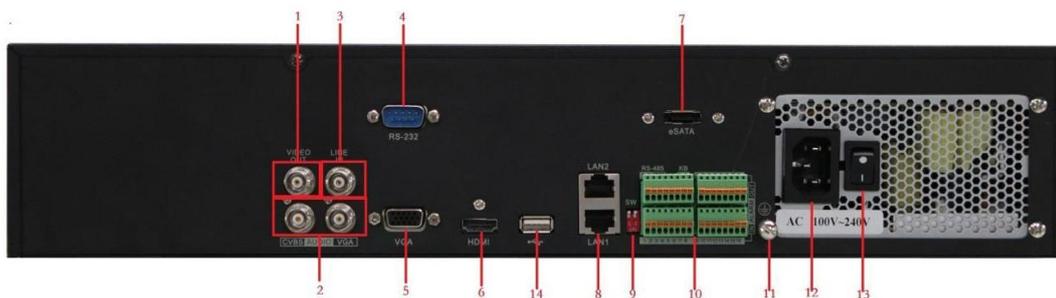


① Status Indicators (Alarm, Ready, Status, HDD, Power, Tx/Rx)

② DVD-R/W

③ Control Buttons

④ Compound Buttons

⑤ Shuttle Button
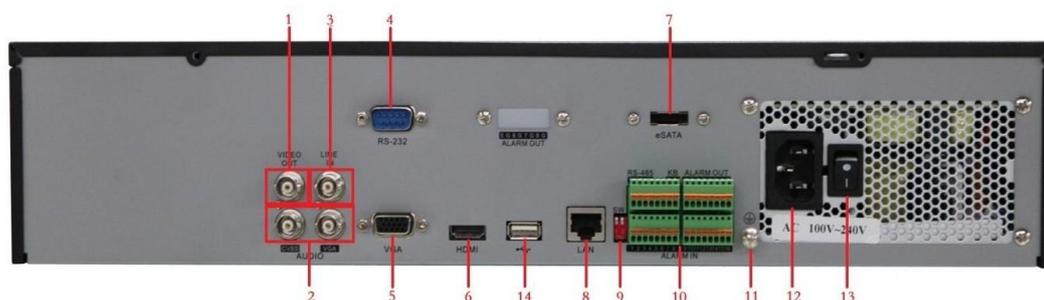
⑥ Power Button

⑦ USB interface

**DS-7600NI-ST/SP:**



① USB Interface

② Status Indicators (Alarm, Ready, Status, HDD, power, Tx/Rx)
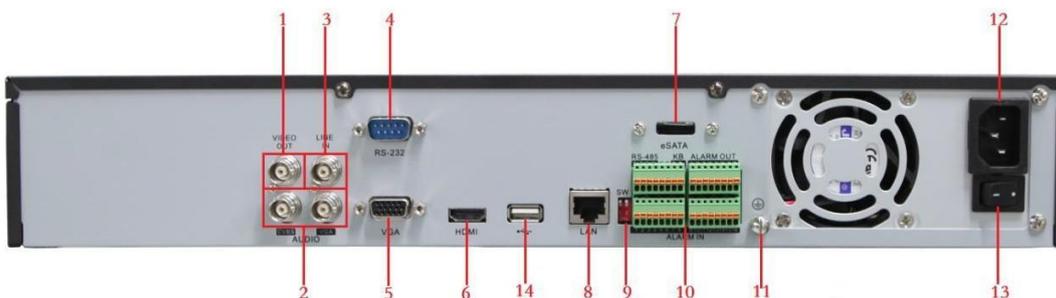
③ SHIFT

④ Compound Buttons

⑤ Control Buttons

# Rear Panel



**DS-9600NI-ST**



**DS-8600NI-ST**



**DS-7700NI-ST**

| No. | Item | Description |
|-----|------|-------------|
| 1 | **VIDEO OUT** | BNC connector for video output. |
| 2 | **CVBS AUDIO OUT** | BNC connector for audio output. This connector is synchronized with CVBS video output. |
| | **VGA AUDIO OUT** | BNC connector for audio output. This connector is synchronized with VGA video output. |
| 3 | **LINE IN** | BNC connector for audio input. |
| 4 | **RS-232 Interface** | Connector for RS-232 devices. |
| 5 | **VGA** | DB9 connector for VGA output. Display local video output and menu. |
| 6 | **HDMI** | HDMI video output connector. |
| 7 | **eSATA (Optional)** | Connects external SATA HDD, CD/DVD-RM. |
| 8 | **LAN Interface** | Connector for LAN (Local Area Network). 1 LAN interface provided for DS-8600/7700NI-ST and 2 LAN interfaces for DS-9600NI-ST. |
| 9 | **Termination Switch** | RS-485 termination switch. |

| No. | Item | Description |
|-----|------|-------------|
|     |      | Up position is not terminated. |
|     |      | Down position is terminated with 120Ω resistance. |
| 10  | RS-485 Interface | Connector for RS-485 devices. T+ and T- pins connects to R+ and R- pins of PTZ receiver respectively. |
|     | Controller Port | D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first NVR's D+, D- pin should be connected with the D+, D- pin of the next NVR. |
|     | ALARM IN | Connector for alarm input. |
|     | ALARM OUT | Connector for alarm output. |
| 11  | GROUND | Ground(needs to be connected when NVR starts up). |
| 12  | AC 100V ~ 240V | AC 100V ~ 240V power supply. |
| 13  | POWER | Switch for turning on/off the device. |
| 14  | USB interface | Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD). |



**DS-7700NI-SP**

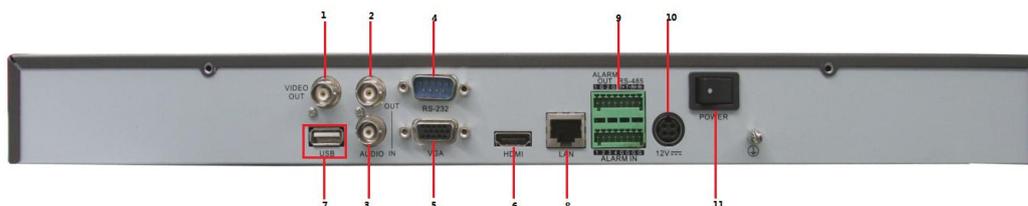| No. | Item | Description |
|-----|------|-------------|
| 1   | VIDEO OUT | BNC connector for video output. |
| 2   | CVBS AUDIO OUT | BNC connector for audio output. This connector is synchronized with CVBS video output. |
|     | VGA AUDIO OUT | BNC connector for audio output. This connector is synchronized with VGA video output. |
| 3   | LINE IN | BNC connector for audio input. |
| 4   | RS-232 Interface | Connector for RS-232 devices. |
| 5   | VGA | DB9 connector for VGA output. Display local video output and menu. |
| 6   | HDMI | HDMI video output connector. |
| 7   | eSATA (Optional) | Connects external SATA HDD, CD/DVD-RM. |
| 8   | LAN Interface | Connector for LAN (Local Area Network). 1 LAN interface provided for DS-8600NI-ST and 2 LAN interfaces for DS-9600NI-ST. |
| 9   | Termination Switch | RS-485 termination switch. Up position shows the RS-485 is not terminated. Down position shows the RS-485 is terminated with 120Ω resistance. |
| 10  | RS-485 Interface | Connector for RS-485 devices. T+ and T- pins connects to R+ and R- pins of PTZ receiver respectively. |
|     | Controller Port | D+, D- pin connects to Ta, Tb pin of controller. For cascading devices, the first NVR's D+, D- pin should be connected with the D+, D- pin of the next NVR. |
|     | ALARM IN | Connector for alarm input. |

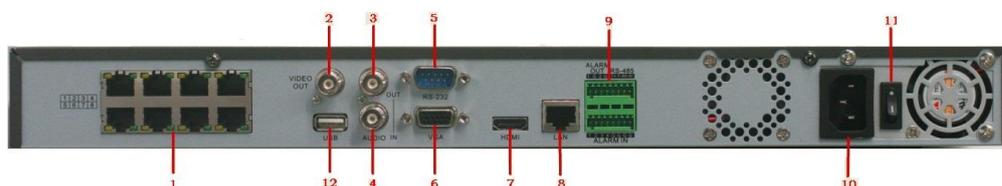| | | |
|---|---|---|
| | **ALARM OUT** | Connector for alarm output. |
| 11 | **GROUND** | Ground (needs to be connected when NVR starts up). |
| 12 | **AC 100V ~ 240V** | AC 100V ~ 240V power supply. |
| 13 | **POWER** | Switch for turning on/off the device. |
| 14 | **USB interface** | Universal Serial Bus (USB) ports for additional devices such as USB mouse and USB Hard Disk Drive (HDD). |
| 15 | **Network Interfaces with PoE function** | Network interface for the cameras and to provide power over Ethernet. |



**DS-7600NI-ST**

| No. | Item | Description |
|---|---|---|
| 1 | **VIDEO OUT** | BNC connector for video output. |
| 2 | **AUDIO OUT** | BNC connector for audio output. |
| 3 | **AUDIO IN** | BNC connector for audio input. (Also for voice talk) |
| 4 | **RS-232 Interface** | Connector for RS-232 devices. |
| 5 | **VGA** | DB9 connector for VGA output. Display local video output and menu. |
| 6 | **HDMI** | HDMI video output connector. |
| 7 | **USB** | Connects USB disks and devices. |
| 8 | **LAN Interface** | Connector for LAN (Local Area Network). |
| 9 | **RS-485 Interface** | Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively. |
| | **ALARM IN** | Connector for alarm input. |
| | **ALARM OUT** | Connector for alarm output. |
| 10 | **Power Supply** | 12VDC power supply. |
| 11 | **Power Switch** | Switch for turning on/off the device. |



**DS-7600NI-SP**

| No. | Item | Description |
|---|---|---|
| 1 | **Network Interfaces with PoE function** | Network interface for the cameras and to provide power over Ethernet. |
| 2 | **VIDEO OUT** | BNC connector for video output. |
| 3 | **AUDIO OUT** | BNC connector for audio output. |
| 4 | **AUDIO IN** | BNC connector for audio input. (Also for voice talk) |

| 5 | **RS-232 Interface** | Connector for RS-232 devices. |
|---|---|---|
| 6 | **VGA** | DB9 connector for VGA output. Display local video output and menu. |
| 7 | **HDMI** | HDMI video output connector. |
| 8 | **LAN Interface** | Connector for LAN (Local Area Network). |
| 9 | **RS-485 Interface** | Connector for RS-485 devices. T+ and T- pins connect to R+ and R- pins of PTZ receiver respectively. |
| | **ALARM IN** | Connector for alarm input. |
| | **ALARM OUT** | Connector for alarm output. |
| 10 | **Power Supply** | 12VDC power supply. |
| 11 | **Power Switch** | Switch for turning on/off the device. |
| 12 | **USB** | Connects USB disks and devices. |

# Peripheral Connections

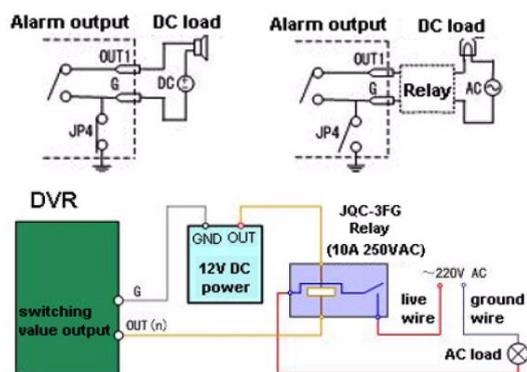## Connecting to Alarm Input / Output Device

The alarm input/output interface of the NVR is shown as below:
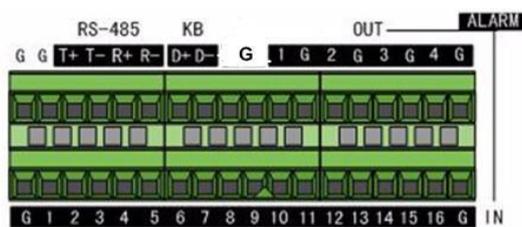


The alarm input is an open/closed relay. If the input is not an open/closed relay, follow the connection diagram below:
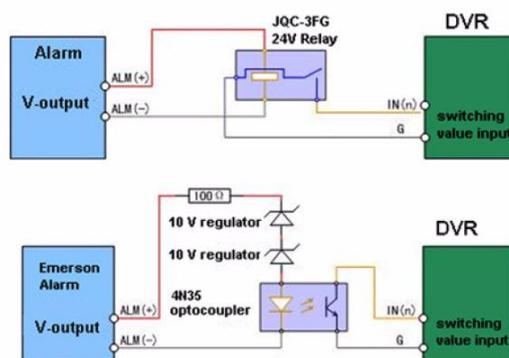


To connect to an AC/DC load, use the following diagram:

For DC load, JP4 can be used within the limit of 12V/1A safely. If the interface is connected to an AC load, JP4 should be left open. Use an external relay for safety (as shown in the figure above).

There are 4 jumpers (JP4, JP5, JP6, and JP7) on the motherboard, each corresponding with one alarm output. By default, jumpers are connected. To connect an AC load, jumpers should be removed.

*Note:* An external relay is needed to prevent electric shock when connecting to an AC load.
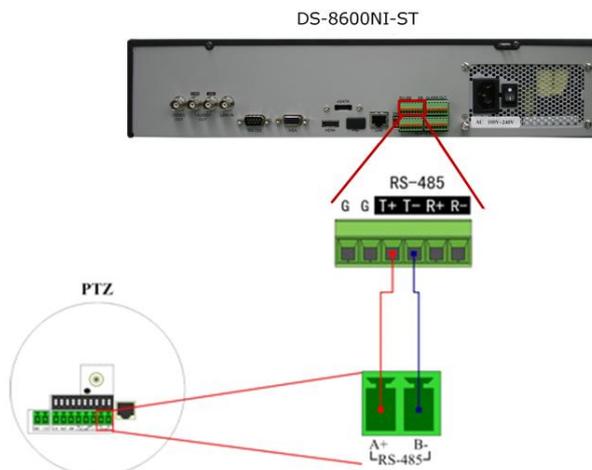
## Alarm Connection

To connect alarm devices to the NVR:

1. Disconnect *pluggable block* from the ALARM IN /ALARM OUT terminal block.
2. Unfasten stop screws from the *pluggable block*, insert signal cables into slots and fasten stop screws. Ensure signal cables are in tight.
3. Connect *pluggable block* back into terminal block.

## RS-485 Connection

In this manual we take the RS-485 connection of the DS-8600NI-ST as an example.



To connect RS-485 devices to the NVR:

1. Disconnect pluggable block from the RS-485 terminal block.
2. Unfasten stop screws from the *pluggable block*, insert signal cables into slots and fasten stop screws. Ensure signal cables are in tight.
3. Connect *pluggable block* back into terminal block.

*Note:* Make sure the pan/tilt receiver unit is connected to the T+ and T- of the NVR.

### Controller Connection
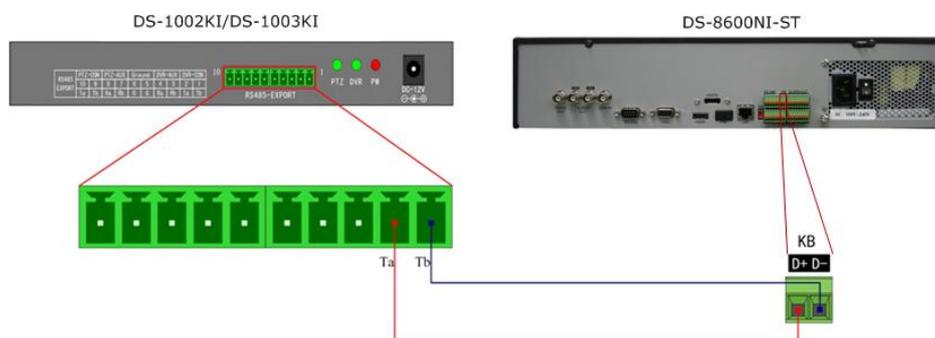


To connect a controller to the NVR:

1. Disconnect pluggable block from the KB terminal block.
2. Unfasten stop screws from the KB D+, D- *pluggable block*, insert signal cables into slots and fasten stop screws. Ensure signal cables are in tight.
3. Connect Ta on controller to D+ on terminal block and Tb on controller to D- on terminal block. Fasten stop screws.
4. Connect *pluggable block* back into terminal block.

*Note:* Make sure both the controller and NVR are grounded.

# Specifications

**Specifications of DS-9600NI-ST**

| Model | | DS-9608NI-ST | DS-9616NI-ST | DS-9632NI-ST |
|---|---|---|---|---|
| Video/Audio input | IP video input | 8-ch | 16-ch | 32-ch |
| | Two-way audio | 1-ch, BNC (2.0 Vp-p, 1kΩ) | | |
| Video/Audio output | Recording resolution | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | CVBS output | 1-ch, BNC (1.0 Vp-p, 75 Ω)<br>Resolution: 704 ×576 (PAL); 704 ×480 (NTSC) | | |
| | HDMI output | 1-ch, resolution:<br>1920 × 1080P /60Hz, 1920×1080P /50Hz, 1600 × 1200/60Hz, 1280 × 1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | | |
| | VGA output | 1-ch, resolution:<br>1920 × 1080P /60Hz, 1600 × 1200 /60Hz, 1280 × 1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | | |
| | Audio output | 2-ch, BNC (Linear, 600Ω) | | |
| | Playback resolution | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | Synchronous playback | 8-ch | 16-ch | 16-ch |
| Hard disk | SATA | 8 SATA interfaces for 4 HDDs + 1 DVD-R/W (default), or 8HDDs | | |
| | eSATA | 1 eSATA interface | | |
| | Capacity | Up to 4TB capacity for each HDD | | |
| External interface | Network interface | 2 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interfaces | | |
| | Serial interface | 1 RS-232 interface (for parameters configuration, maintenance, transparent channel);<br>1 RS-485 interface (reserved);<br>1 RS-485 keyboard interface (for special keyboard control) | | |
| | USB interface | 3 ×USB 2.0 | | |
| | Alarm in | 16 | | |
| | Alarm out | 4 | | |
| Others | Power supply | 100 ~ 240 VAC, 6.3 A, 50 ~ 60 Hz | | |
| | Consumption (without hard disk or DVD-R/W) | ≤ 35 W | ≤ 40 W | ≤ 45 W |
| | Working temperature | -10 ℃ ~ +55 ℃ | | |
| | Working humidity | 10 % ~ 90 % | | |
| | Chassis | 19-inch rack-mounted 2U chassis | | |
| | Dimensions (W × D × H) | 445 ×470 ×90 mm (17.52" ×18.5"×3.54") | | |
| | Weight | ≤ 8 Kg (17.64 lb) ( without hard disk or DVD-R/W ) | | |

**Specifications of DS-8600NI-ST**

| Model | | DS-8608NI-ST | DS-8616NI-ST | DS-8632NI-ST |
|---|---|---|---|---|
| **Video/Audio input** | **IP video input** | 8-ch | 16-ch | 32-ch |
| | **Two-way audio** | 1-ch, BNC (2.0 Vp-p, 1kΩ) | | |
| **Video/Audio output** | **Recording resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | **CVBS output** | 1-ch, BNC (1.0 Vp-p, 75 Ω) Resolution: 704 ×576 (PAL); 704 ×480 (NTSC) | | |
| | **HDMI output** | 1-ch, resolution: 1920 ×1080P /60Hz, 1920 ×1080P /50Hz, 1600 ×1200 /60Hz, 1280 × 1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | | |
| | **VGA output** | 1-ch, resolution: 1920 ×1080P /60Hz, 1600 ×1200 /60Hz, 1280 ×1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | | |
| | **Audio output** | 2-ch, BNC (Linear, 600Ω) | | |
| | **Playback resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | **Synchronous playback** | 8-ch | 16-ch | 16-ch |
| **Hard disk** | **SATA** | 8 SATA interfaces for 4 HDDs + 1 DVD-R/W (default), or 8HDDs | | |
| | **eSATA** | 1 eSATA interface | | |
| | **Capacity** | Up to 4TB capacity for each HDD | | |
| **External interface** | **Network interface** | 1 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interface | | |
| | **Serial interface** | 1 RS-232 interface (for parameters configuration, maintenance, transparent channel); 1 RS-485 interface (reserved); 1 RS-485 keyboard interface (for special keyboard control) | | |
| | **USB interface** | 3 ×USB 2.0 | | |
| | **Alarm in** | 16 | | |
| | **Alarm out** | 4 | | |
| **Others** | **Power supply** | 100 ~ 240 VAC, 6.3 A, 50 ~ 60 Hz | | |
| | **Consumption (without hard disk or DVD-R/W)** | ≤ 35 W | ≤ 40 W | ≤ 45 W |
| | **Working temperature** | -10 ℃ ~ +55 ℃ | | |
| | **Working humidity** | 10 % ~ 90 % | | |
| | **Chassis** | 19-inch rack-mounted 2U chassis | | |
| | **Dimensions (W ×D ×H)** | 445 ×470 ×90 mm (17.52" ×18.5"×3.54") | | |
| | **Weight** | ≤ 8 Kg (17.64 lb) ( without hard disk or DVD-R/W ) | | |

**Specification of DS-7700NI-ST**

| Model | | DS-7708NI-ST | DS-7716NI-ST | DS-7732NI-ST |
|---|---|---|---|---|
| **Video/Audio input** | **IP video input** | 8-ch | 16-ch | 32-ch |
| | **Two-way audio** | 1-ch, BNC (2.0 Vp-p, 1kΩ) | | |
| **Video/Audio output** | **Recording resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | **CVBS output** | 1-ch, BNC (1.0 Vp-p, 75 Ω)<br>Resolution: 704 ×576 (PAL); 704 ×480 (NTSC) | | |
| | **HDMI output** | 1-ch, resolution:<br>1920 ×1080P /60Hz, 1920 ×1080P /50Hz, 1600 ×1200 /60Hz, 1280 ×1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | | |
| | **VGA output** | 1-ch, resolution:<br>1920 ×1080P /60Hz, 1600 ×1200 /60Hz, 1280 ×1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | | |
| | **Audio output** | 2-ch, BNC (Linear, 600Ω) | | |
| | **Playback resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | **Synchronous playback** | 8-ch | 16-ch | 16-ch |
| **Hard disk** | **SATA** | 4 SATA interfaces for 2 HDDs + 1 DVD-R/W (default), or 4HDDs | | |
| | **eSATA** | 1 eSATA interface | | |
| | **Capacity** | Up to 4TB capacity for each HDD | | |
| **External interface** | **Network interface** | 1 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interface | | |
| | **Serial interface** | 1 RS-232 interface (for parameters configuration, maintenance, transparent channel);<br>1 RS-485 interface (reserved);<br>1 RS-485 keyboard interface (for special keyboard control) | | |
| | **USB interface** | 3 ×USB 2.0 | | |
| | **Alarm in** | 16 | | |
| | **Alarm out** | 4 | | |
| **Others** | **Power supply** | 100 ~ 240 VAC, 6.3 A, 50 ~ 60 Hz | | |
| | **Consumption (without hard disk or DVD-R/W)** | ≤ 35 W | ≤ 40W | ≤ 45 W |
| | **Working temperature** | -10 ℃ ~ +55 ℃ | | |
| | **Working humidity** | 10 % ~ 90 % | | |
| | **Chassis** | 19-inch rack-mounted 2U chassis | | |
| | **Dimensions (W ×D ×H)** | 445 ×390 ×90 mm | | |
| | **Weight** | ≤ 4 Kg (8.82 lb) ( without hard disk or DVD-R/W ) | | |

**Specification of DS-7700NI-SP**

| Model | | DS-7708NI-SP | DS-7716NI-SP | DS-7732NI-SP |
|---|---|---|---|---|
| **Video/Audio input** | **IP video input** | 8-ch | 16-ch | 32-ch |
| | **Two-way audio** | 1-ch, BNC (2.0 Vp-p, 1kΩ) | | |
| **Video/Audio output** | **Recording resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | **CVBS output** | 1-ch, BNC (1.0 Vp-p, 75 Ω)<br>Resolution: 704 ×576 (PAL); 704 ×480 (NTSC) | | |
| | **HDMI output** | 1-ch, resolution:<br>1920 × 1080P /60Hz, 1920 × 1080P /50Hz, 1600 × 1200 /60Hz, 1280 ×1024 /60Hz, 1280 × 720 /60Hz, 1024 × 768 /60Hz | | |
| | **VGA output** | 1-ch, resolution:<br>1920 × 1080P /60Hz, 1600 × 1200 /60Hz, 1280 × 1024 /60Hz,    1280 ×720 /60Hz, 1024 × 768 /60Hz | | |
| | **Audio output** | 2-ch, BNC (Linear, 600Ω) | | |
| | **Playback resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | | |
| | **Synchronous playback** | 8-ch | 16-ch | 16-ch |
| **Hard disk** | **SATA** | 4 SATA interfaces for 2 HDDs + 1 DVD-R/W (default), or 4HDDs | | |
| | **eSATA** | 1 eSATA interface | | |
| | **Capacity** | Up to 4TB capacity for each HDD | | |
| **External interface** | **Network interface** | 1 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interface | | |
| | | 8 independent 100 Mbps PoE network interfaces | | |
| | **Serial interface** | 1 RS-232 interface (for parameters configuration, maintenance, transparent channel);<br>1 RS-485 interface (reserved);<br>1 RS-485 keyboard interface (for special keyboard control) | | |
| | **USB interface** | 3 ×USB 2.0 | | |
| | **Alarm in** | 16 | | |
| | **Alarm out** | 4 | | |
| **Others** | **Power supply** | 100 ~ 240 VAC, 6.3 A, 50 ~ 60 Hz | | |
| | **Consumption (without hard disk or DVD-R/W)** | ≤ 35 W | ≤ 40W | ≤ 45 W |
| | **Working temperature** | -10 ℃ ~ +55 ℃ | | |
| | **Working humidity** | 10 % ~ 90 % | | |
| | **Chassis** | 19-inch rack-mounted 2U chassis | | |
| | **Dimensions (W ×D ×H)** | 445 ×390 ×90 mm | | |
| | **Weight** | ≤ 8 Kg (17.64 lb) ( without hard disk or DVD-R/W ) | | |

**Specifications of DS-7600NI-ST**

| Model | | DS-7608NI-ST | DS-7616NI-ST |
|---|---|---|---|
| **Video/Audio input** | **IP video input** | 8-ch | 16-ch |
| | **Audio in** | 1-ch, BNC (2.0 Vp-p, 1kΩ) (Two-way audio) | |
| **Video/Audio output** | **Recording resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | |
| | **CVBS output** | 1-ch, BNC (1.0 Vp-p, 75 Ω)<br>Resolution: 704 ×576 (PAL); 704 ×480 (NTSC) | |
| | **HDMI output** | 1-ch, resolution:<br>1920 ×1080P /60Hz, 1920 × 1080P /50Hz, 1600 × 1200 /60Hz, 1280 ×1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | |
| | **VGA output** | 1-ch, resolution:<br>1920 ×1080P /60Hz, 1600 ×1200 /60Hz, 1280 × 1024 /60Hz, 1280 ×720 /60Hz, 1024 ×768 /60Hz | |
| | **Audio output** | 1-ch, BNC (Linear, 600Ω) | |
| | **Playback resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | |
| | **Synchronous playback** | 8-ch | 16-ch |
| **Hard disk** | **SATA** | 2 SATA interfaces | |
| | **Capacity** | Each interface supports up to 4TB capacity for recording | |
| **External interface** | **Network interface** | 1 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interface | |
| | **Serial interface** | 1 RS-232 interface (for parameters configuration, maintenance, transparent channel);<br>1 RS-485 interface (reserved); | |
| | **USB interface** | 2 ×USB 2.0 | |
| | **Alarm in** | 4 | |
| | **Alarm out** | 2 | |
| **Others** | **Power supply** | 12 VDC | |
| | **Consumption** | ≤ 13 W (without hard disk or DVD-R/W) | |
| | **Working temperature** | -10 ℃ ~ +55 ℃ | |
| | **Working humidity** | 10 % ~ 90 % | |
| | **Chassis** | 19-inch rack-mounted 1U chassis | |
| | **Dimensions (W ×D ×H)** | 445 ×261 ×44.5 mm | |
| | **Weight** | ≤ 4 Kg (8.82 lb) ( without hard disk or DVD-R/W ) | |

**Specifications of DS-7600NI-SP**

| Model | | DS-7608NI-SP | DS-7616NI-SP |
|---|---|---|---|
| **Video/Audio input** | **IP video input** | 8-ch | 16-ch |
| | **Audio in** | 1-ch, BNC (2.0 Vp-p, 1kΩ) (Two-way audio) | |
| **Video/Audio output** | **Recording resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | |
| | **CVBS output** | 1-ch, BNC (1.0 Vp-p, 75 Ω)<br>Resolution: 704 ×576 (PAL); 704 ×480 (NTSC) | |
| | **HDMI output** | 1-ch, resolution:<br>1920 × 1080P /60Hz, 1920 × 1080P /50Hz, 1600 × 1200 /60Hz, 1280 ×1024 /60Hz, 1280 × 720 /60Hz, 1024 × 768 /60Hz | |
| | **VGA output** | 1-ch, resolution:<br>1920 × 1080P /60Hz, 1600 × 1200 /60Hz, 1280 × 1024 /60Hz,   1280 ×720 /60Hz, 1024 ×768 /60Hz | |
| | **Audio output** | 1-ch, BNC (Linear, 600Ω) | |
| | **Playback resolution** | 5MP /3MP /1080P /UXGA /720P /VGA /4CIF /DCIF /2CIF /CIF /QCIF | |
| | **Synchronous playback** | 8-ch | 16-ch |
| **Hard disk** | **SATA** | 2 SATA interfaces | |
| | **Capacity** | Each interface supports up to 4TB capacity for recording | |
| **External interface** | **Network interface** | 1 RJ-45 10 /100 /1000 Mbps self-adaptive Ethernet interface | |
| | | 8 independent 100 Mbps PoE network interfaces | |
| | **Serial interface** | 1 RS-232 interface (for parameters configuration, maintenance, and transparent channel);<br>1 RS-485 interface (reserved); | |
| | **USB interface** | 2 ×USB 2.0 | |
| | **Alarm in** | 4 | |
| | **Alarm out** | 2 | |
| **Others** | **Power supply** | 12 VDC | |
| | **Consumption** | ≤ 13 W (without hard disk or DVD-R/W) | |
| | **Working temperature** | -10 ℃ ~ +55 ℃ | |
| | **Working humidity** | 10 % ~ 90 % | |
| | **Chassis** | 19-inch rack-mounted 1U chassis | |
| | **Dimensions (W × D × H)** | 445 ×261 ×44.5 mm | |
| | **Weight** | ≤ 4 Kg (8.82 lb) ( without hard disk or DVD-R/W ) | |

# 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 DS-9600/8600/7700/7600 NI-ST and DS-7700/7600NI-SP Series NVR is shown as below:
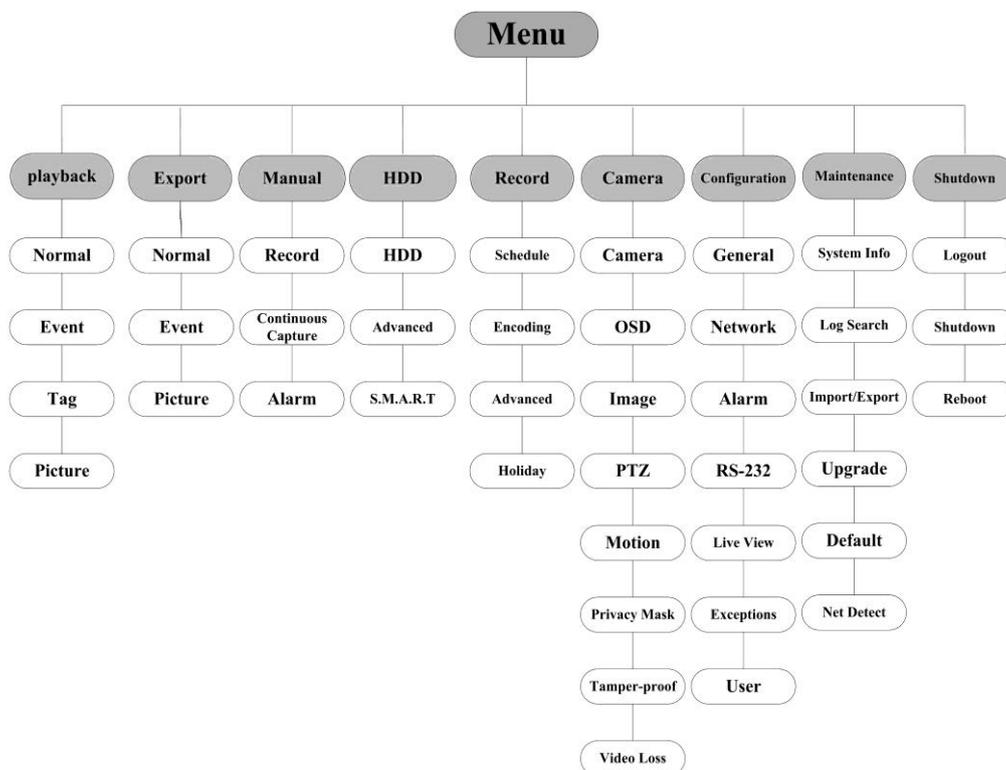


## Startup and Shutdown

Proper startup and shutdown procedures are crucial to expanding the life of the NVR.
To start your NVR:

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. Press the POWER button on the front panel. The Power indicator LED should turn green. The unit will begin to start.

To shut down the NVR:

1. Enter the Shutdown menu.

   Menu > Shutdown



Shutdown Menu

**2.** Select the **Shutdown** button.

**3.** Click the **Yes** button.


## Using the Start Wizard

By default, the Setup Wizard starts once the NVR has loaded, as shown in Figure below.
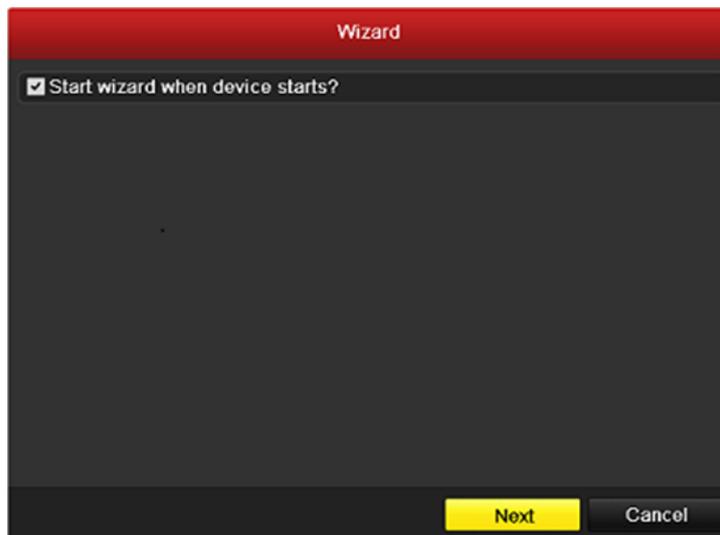
Start Wizard Interface

Operating the Setup Wizard:

**1.** The Setup Wizard can walk you through some important settings of the NVR. If you don't want to use the Setup Wizard at that moment, click the **Cancel** button. You can also choose to use the Setup Wizard next time by leaving the "Start wizard when NVR starts?" checkbox checked.

**2.** Click **Next** button on the Wizard window to enter the **Login** window.
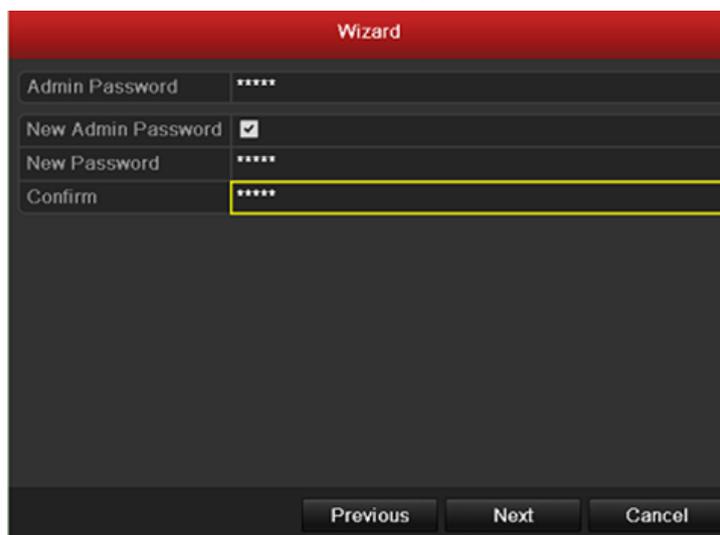
Login Window

**3.** Enter the admin password. By default, the password is 12345.

**4.** To change the admin password, check the **New Admin Password** checkbox. Enter the new password and confirm the password in the given fields.

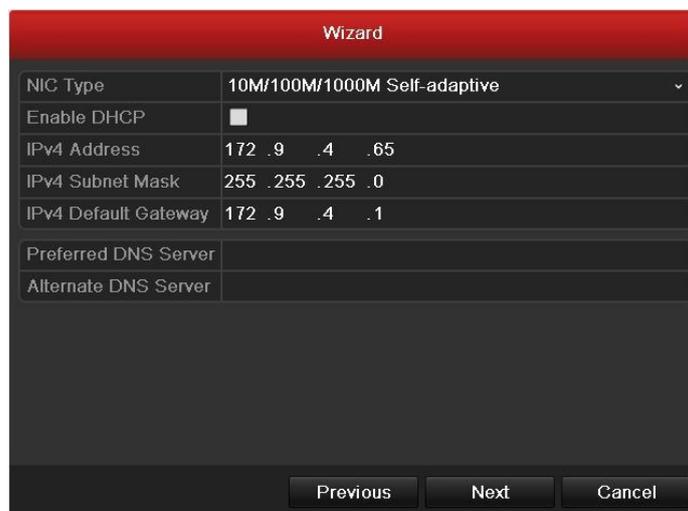**5.** Click the **Next** button to enter the date and time settings window.
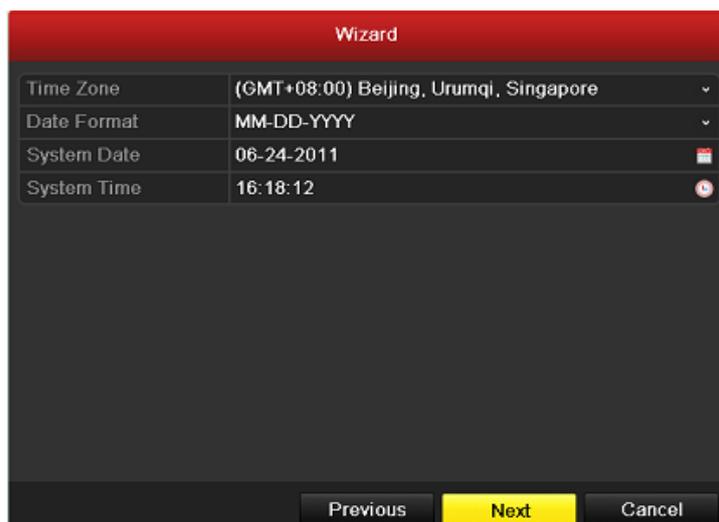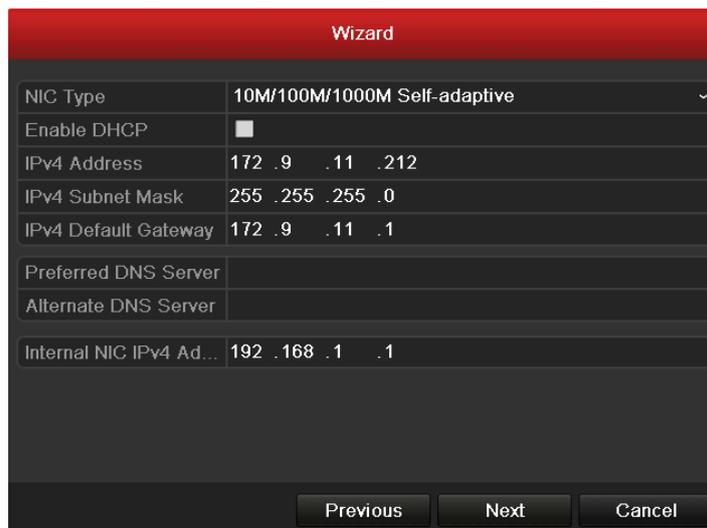
Date and Time Settings

**6.** After the time settings, click **Next** button which takes you back to the Network Setup Wizard window.
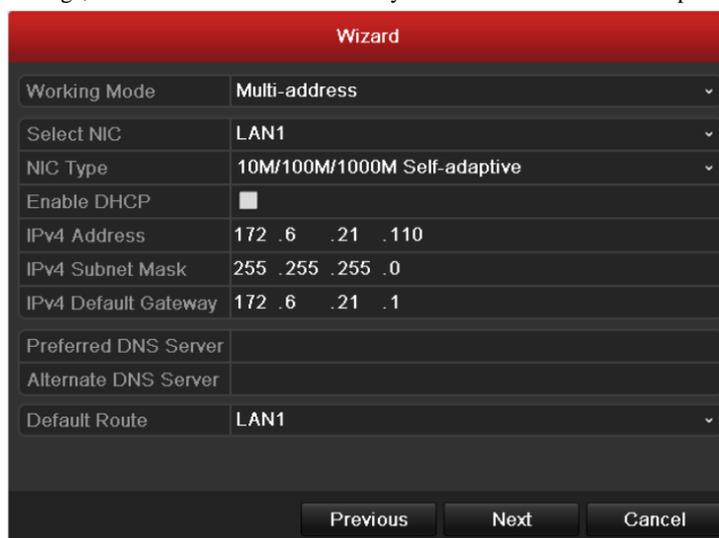


DS-9600NI-ST



DS-8600/7600/7700NI-ST

DS-7600/7700NI-SP

Network Configuration

*Note:* Dual-NIC is only supported by DS9600NI-ST series device. And for DS-7600/7700NI-SP series NVR, the internal NIC IPv4 address should be configured for the cameras connecting to the PoE network interface of the NVR.

7. Click **Next** button after you configured the network parameters, which takes you to the **HDD Management** window.
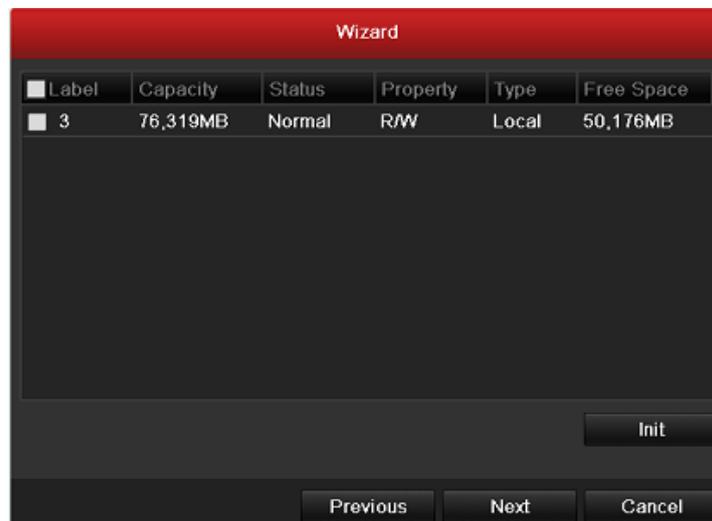


HDD Management

8. To initialize the HDD, click the **Init** button. Initialization removes all the data saved in the HDD.
9. Click **Next** button. You enter the **Adding IP Camera** interface.
10. Click **Search** to find online IP Camera. Select the IP camera to be added, and click the **Add** button.
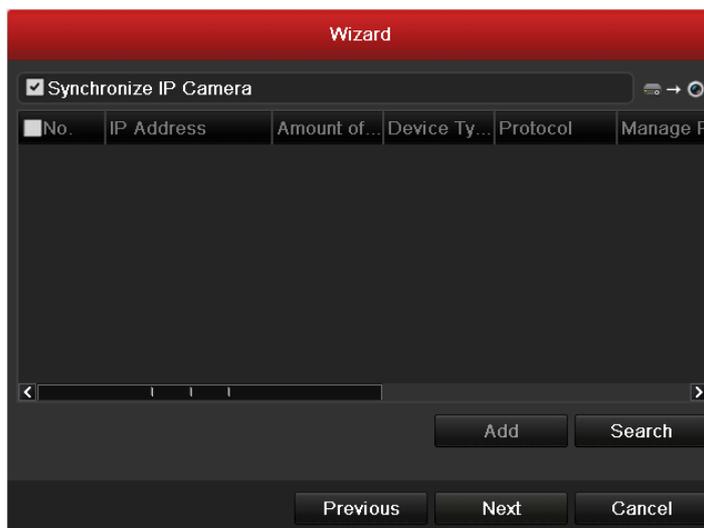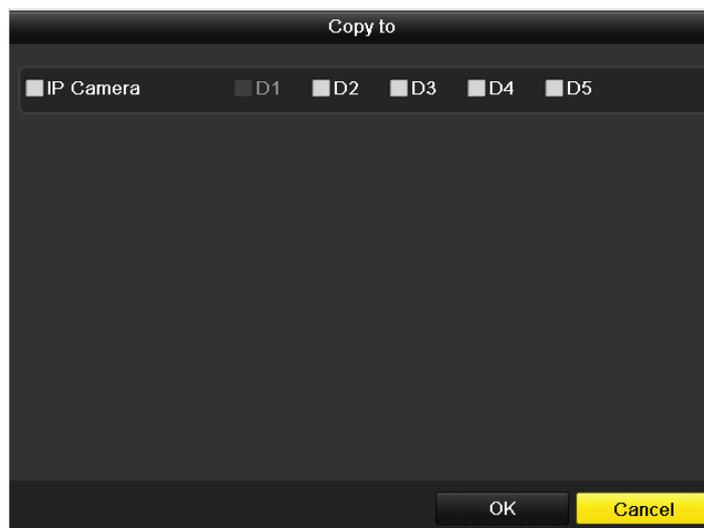
Search for IP Cameras

**11.** Click **Next** button. Configure the recording for the searched IP Cameras.

Record Settings

**12.** Click **Cop**y to copy the settings to other channels.

Copy Record Settings

---

**13.** 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, motion detection or sensor alarm).

  Record (manual record, schedule record, motion detection or alarm triggered record)

  Alarm & Record

## Adding and Configuring IP Cameras

You should add and configure the online IP cameras to enable the live view and recording function.

**Adding IP Cameras**

You can search and add the online IP cameras by following the startup wizard, or according to the following steps.

*Steps:*

1.  Enter the Camera Management interface.

    Menu> Camera> Camera

Main Menu

2. To add the online cameras with same network segment:

    1) Click **Search** to search the online cameras.



Camera Settings Interface

    2) Check the checkbox of certain cameras to be added.

    3) Click **Quick Add** to add the camera.

3. To add other IP cameras:

    1) On the left side of the interface, you can enter the IP address, protocol, management port, and other information of the IP camera to be added.

    2) Click **Add** to add the camera.

    *Note:* If you check the Synchronize IP Camera checkbox, the default settings of the NVR for the IP camera is applied to the added camera.
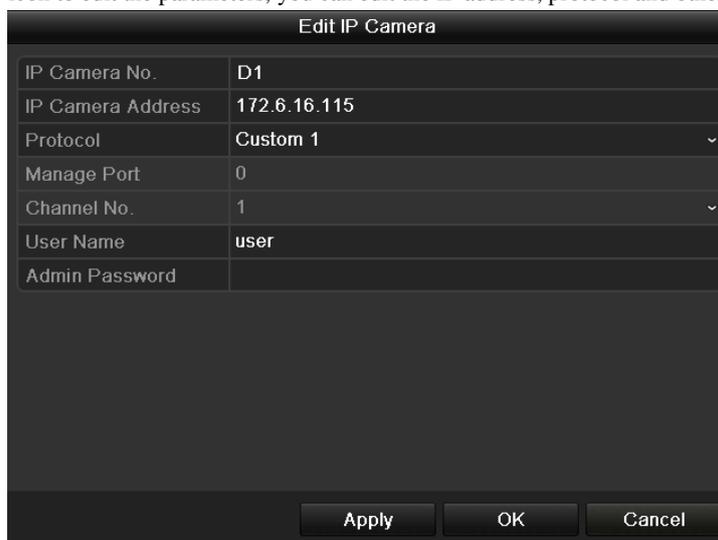
**Configuring Basic Parameters of IP Cameras**

After the adding of the IP cameras, the basic information of the camera lists in the page, and you can configure the

basic setting of the IP cameras.

*Steps:*

1.      Click the [icon] icon to edit the parameters; you can edit the IP address, protocol and other parameters.

| Edit IP Camera | |
| --- | --- |
| IP Camera No. | D1 |
| IP Camera Address | 172.6.16.115 |
| Protocol | Custom 1 |
| Manage Port | 0 |
| Channel No. | 1 |
| User Name | user |
| Admin Password | |

Edit the Parameters

2.      Click apply to save the settings and click OK to exit the editing interface.

To edit more parameters:

1.      Click the [Advance Set] icon.

| Advance Set | |
| --- | --- |
| **Network**    Password | |
| IP Camera No. | D3 |
| IP Camera Address | 172.6.21.116 |
| Manage Port | 8000 |

Network Configuration of the Camera

2.      You can edit the network information and the password of the camera.

3.      Click **Apply** to save the settings and click **OK** to exit the interface.

Explanation of the icons:

| [icon] | [icon] | [icon] |
| --- | --- | --- |
| Edit basic parameters of the camera | Delete the IP camera | Get the live view of the camera |

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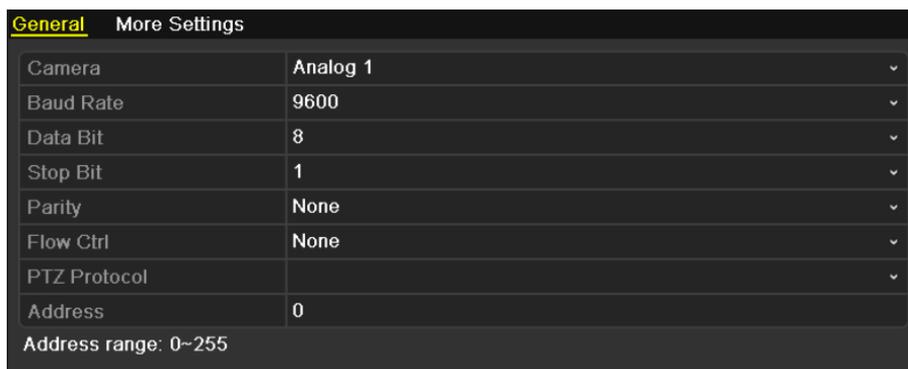
Before you start, please check that the PTZ and the NVR are connected properly through RS-485 interface.

### PTZ Settings

*Steps:*

1. Enter the PTZ Settings interface.

   Menu >Camera> PTZ



Camera Settings Interface

2. Choose the camera for PTZ setting next to **Camera** label.

3. Enter the parameters of the PTZ camera.

   *Note:* All the parameters should be exactly the same as the PTZ camera parameters.

4. Click **Copy** if you want to configure same settings to other PTZ cameras.

5. Click the **Apply** button to save and exit the interface.

### PTZ Control

In the Live View mode, you can press the PTZ Control button on the front panel or on the remote, or choose the PTZ Control icon  to enter the PTZ toolbar.
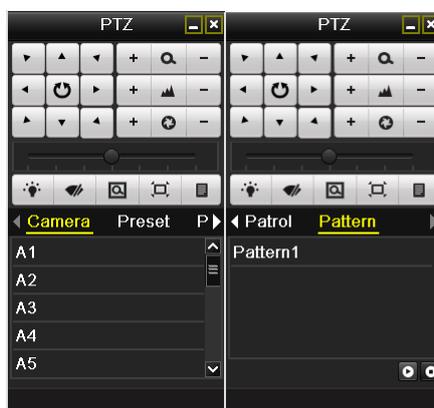


PTZ Control Bar

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 | Preset |
| Patrol | Patrol | Pattern | Pattern | | Menu |
| ◀ | Previous item | ▶ | Next item | | Start pattern/patrol |
| | Stop the patrol or pattern movement | | Minimize windows | ✕ | Exit |

## Playback

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

### Instant playback by channel

Choose a channel under live view using the mouse and click the [5m] button in the shortcut operation menu.

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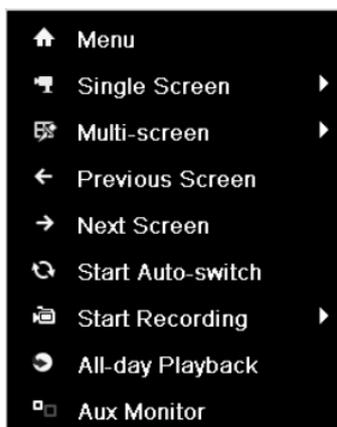


Instant Playback Interface

### All-day Playback by channel

*Steps:*

1.  Enter the All-day Playback menu.

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



All-day Playback Interface

The channel and time selection menu will display by moving the mouse to the right of the playback interface. Just tick the channel or channels if you want to switch playback to another channel or execute simultaneous playback of multiple channels.

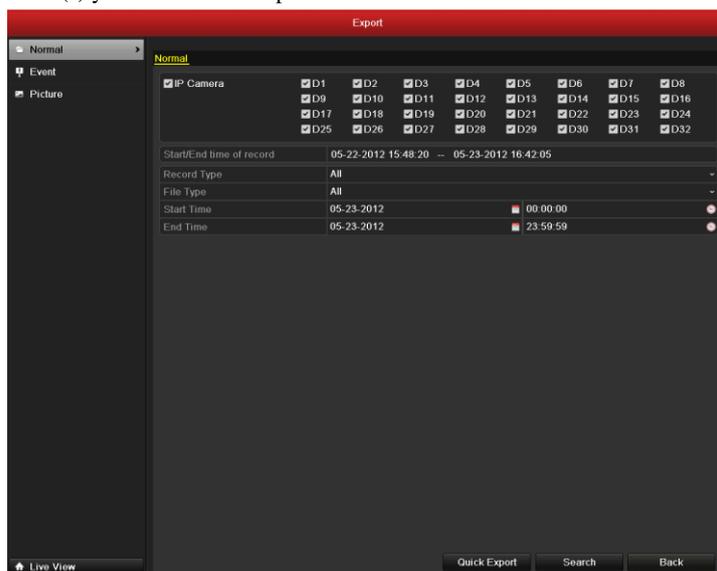All-day Playback Interface with Channel List

## 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.
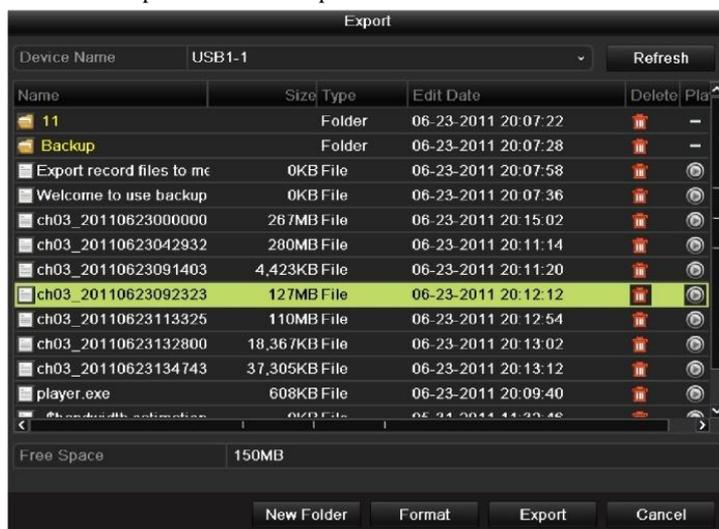


Quick Export Interface

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

Quick Export using USB1-1

3.    Check backup result.

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



Checkup of Quick Export Result Using USB1-1