Network Video Recorder

Quick Start Guide

1 Instructions

- Before using the product, please read this manual carefully and keep it properly for future reference.
- The actual product shall prevail. This manual is for reference only.
- The company reserves the right to modify and finally explain the problems of the manual, including printing error, software upgrade, product improvement, and inconsistency with the latest version. Information in this manual is subject to change without notice, and the changes are directly added to the new edition of the manual.
- This manual is for the reference of the Network Video Recorder (NVR) series products. The specific operations on the products are not enumerated, and only a certain model is used as an example instead. You need to perform operations in accordance with the actual products.
  he product must use the cable assembly (power cable) recommended for the local area within the rated specification.
- The power specification of the product must comply with the specifications on the guide label of the manufacturer. You need to use the attached power cable to get power supply.
- The device should be installed stably and reliably in a well-ventilated environment. You need to ensure that the air vents are unblocked when the device is operating.
- The device should be operated within the allowed range of temperature, humidity, and power supply, and should be well grounded to meet the lightning protection requirements. The device should not be placed in an environment with much dust, strong electromagnetic radiation, or vibration.
- Abnormal power-off may cause device damage or function failure. If the device is used in an environment where power-off occurs frequently, a UPS should be equipped.
- To avoid fire and electric shock, it is prohibited to allow water or other liquids to flow into the device during use.

2 Hardware Installation

Before installation, you need to prepare a cross screwdriver. For the types of hard disks supported by the device, consult sales support or technical support of the company. The following figures are for illustration only. The actual situation shall prevail.

Note :
Before installation, you need to ensure that the device is disconnected from the power supply. During installation, you need to wear anti-static gloves or anti-static wrist straps.

Installing a Hard Disk

Step 1 : Install the ejector lever of the hard disk.

Step 2 : Open the front panel.

Use screws to fix the hard disk on the ejector lever. You can distinguish between the left side and right side in accordance with the indicators on the ejector lever.

Press the buckles on the two sides on the upper part of the front panel and then pull the front panel outwards.

Step 3 : Insert the hard disk.

Step 4 : Buckle up the hard disk and close the front panel.

Align the hard disk slot and then insert the hard disk gently and smoothly.

Push in the hard disk until you hear a click. After the hard disk is installed, close the front panel.

Installing the Device

The device should be placed in the cabinet as far away from vibration sources as possible.

Note :
Before installing the device in the cabinet, ensure that the tray or slide rails are installed in the cabinet. It is prohibited to use only hangers to support the hard disk.
To guarantee heat dissipation and other functions of the device, during installation, it is prohibited to stack the device or place other heavy objects on the device.

The schematic diagram is as follows:

3 Panel Description

Front Panel / Rear Panel

Item	Status	Description
Power status indicator	Solid on	The device is operating properly.
	Not lit	The device is shut down or not powered on.
LAN interface status indicator	Solid on	The device is connected to the network properly.
	Not lit	The device is disconnected from the network.
WAN interface status indicator	Solid on	The device is connected to the network properly.
	Not lit	The device is disconnected from the network.
Hard disk status indicator	Lit green	The hard disk is operating properly and no data is read or written.
	Flashing green	The hard disk is operating properly and there is data read or written.
	Not lit	The hard disk cannot be detected or the hard disk is faulty.
Standby button		It is used to power on/off the system when the device has a constant power supply. You can press and hold the button for three seconds to shut down the device, and you can press and hold the key for 10 seconds to forcedly restart the device.

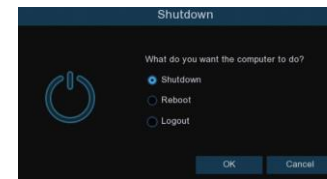| Item	Description
Audio input/output	Connected to an analog audio input/output device.
eSATA interface	Connected to an external storage device.
USB interface	Connected to a mobile USB device or a mouse.
RS485 interface	Connected to an RS485 standard device, such as a keyboard.
RS232 interface	Used for debugging and maintaining the device.
LAN1/2	Gigabit network interface for connecting network cables.
HDMI-1	Primary output interface of the device, supporting output with 4K resolution.
HDMI-2	Secondary output interface of the device, supporting output with 4K resolution.
HDMI-3	Secondary output interface of the device, supporting output with 4K resolution.
HDMI-4	Secondary output interface of the device, supporting output with 1080P resolution.
Alarm input interface	16-Channel input, connected to alarm input devices.
Alarm output interface	4-Channel output, connected to alarm output devices.
Reset button	Used to restore the factory settings. You can press and hold the button for 10 seconds to make the system automatically restore the factory settings, and the buzzer rings four times at the same time.
Power switch	Used to power on/off the device.
Grounding terminal	Connected to the grounding cable.

4 Power-on/off

Before powering on the device, you need to ensure that the cable is properly connected and the device is well grounded. The standard power supply must be used.

Power-on
Connect a video output display device to the HDMI1 interface on the rear panel of the device, connect the device to the power supply, and press the power switch of the device.

Power-off
You can power off the device through the main menu. Path: Main Menu > Shutdown. Choose Shutdown and click OK to power off the device. You can also long-press the standby button on the front panel of the device for three seconds to power off the device. After the device is powered off, disconnect it from the power supply.
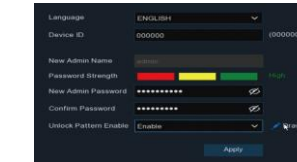
Note :
Do not forcedly disconnect the device from the power supply when the device is operating or being powered off.

5 Local Configuration

Device Login

At the first login, you need to select the language and set the administrator password as needed. You can enable the pattern unlock function and edit the pattern lock. After clicking the app, you can open the password retrieval setting page to set one or multiple methods for retrieving the password as needed.
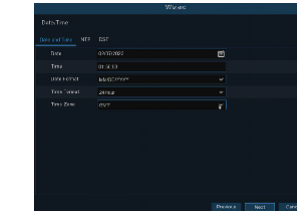
Note :
Note: To ensure the device security, it is recommended that you set the default password to a strong password that is at least eight characters long and includes letters, numbers, and special characters.

Enter the password to login to enter the system boot wizard page. Set the system time and time zone as instructed by the wizard to ensure that the system time of the device is accurate.
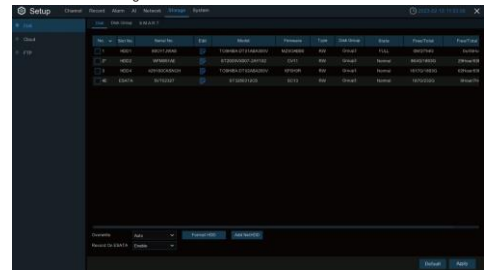
Date/Time Configuration

Set the system time and time zone as instructed by the wizard to ensure that the system time of the device is accurate.

Disk Configuration

Configuring Hard Disks

1. Path: Main Menu > Disk. Open the disk management page, and check the quantity, capacity, serial number, and read/write status of the installed hard disks.

2. Select the hard disk to be formatted, click Format HDD, and enter the device password to confirm formatting the hard disk.

3. After the formatting is completed, click the corresponding button in the Edit column to pop up a menu to set the disk group number of the hard disk.

4. On the disk group configuration page, select the recording channels, and ensure that camera recording is normal.

⚠️ **Note :**
It is recommended that a single disk group be configured with not more than 32 channels. You ffeed to calculate the quantity of the required disk groups in accordance with the actual number of recording channels so as to connect to sufficient hard disks.

Correspondence between the Number of Recording Channels and the Number of Required Hard Disks.
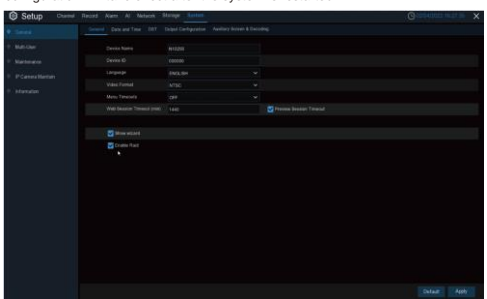
Number of Recording Channels	Number of Required Disk Groups	Number of Required Hard Disks
225–256	≥ 8	≥ 16
193–224	≥ 7	≥ 14
161–192	≥ 6	≥ 12
129–160	≥ 5	≥ 10
97–128	≥ 4	≥ 8
65–96	≥ 3	≥ 6
33–64	≥ 2	≥ 4

Configuring RAID

1. Enabling RAID

Only after the RAID function is enabled can the device support RAID configuration, for example, creating RAID.

1) Choose Main Menu > System > General to open the general setting page. Select Enable Raid to enable the RAID function, and then save the configuration. The configuration will take effect after the system is restarted.

⚠️ **Note :**
The RAID function has a high requirement on hard disk performance. To ensure long-term stable operation and reliability of RAID, it is recommended that you use enterprise-class hard disks (including brand, model, and capacity) for RAID creation and other configurations. If surveillance-class or desktop-class hard disks are used, data security may be affected.
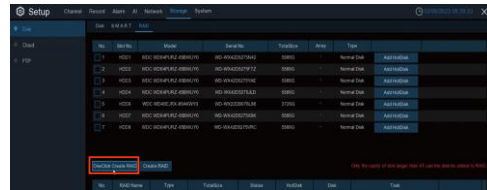The company shall not be liable for the data loss or data damage caused thereby.

You can create RAID in one click or manually. For one-click configuration, RAID5 is created by default. For manual configuration, RAID0, RAID1, RAID5, RAID6, and RAID10 are supported. You can create different types of RAID as needed.

Hard Disk Quantity for RAID Creation

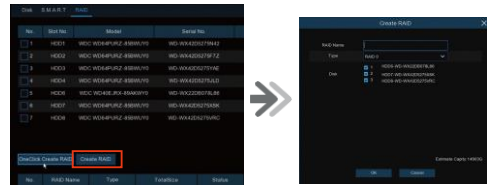| RAID Type	Hard Disk Quantity
RAID0	≥ 2
RAID1	2
RAID5	≥ 3
RAID6	≥ 4
RAID10	≥ 4

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2. Creating RAID in One Click

Through one-click configuration, the device can quickly create RAID and virtual disks. RAID5 is created by default in one-click configuration, and at least four hard disks should be installed.

⚠️ **Note :**
A channel can be configured for one disk group only.
To avoid data loss, it is recommended that hot spare disks be configured to ensure that the system can be automatically rebuilt in case of RAID failure.

3. Creating RAID Manually

Choose Main Menu > Disk > RAID to open the RAID page. Click Create RAID to open the Create RAID page. Set the RAID name, select the RAID type, select the hard disks, and click OK to create the RAID. After the RAID is created, format the RAID.

After RAID formatting is completed, open the disk group configuration page, select the recording channels of the disk group configuration, and ensure that camera recording is normal.

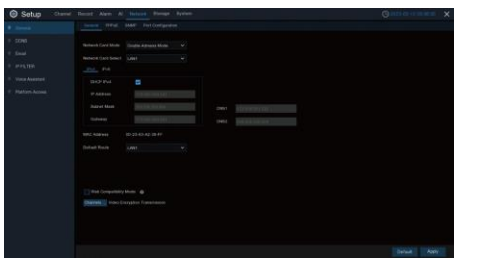## Network Configuration and Camera Addition

Configuring the Network

1. Choose Main Menu > Network > General to open the General page.

2. On the General page, set the working mode, default route, IP address, gateway, subnet mask, DNS, and other parameters. Enter the IP address, subnet mask, gateway, and other information as needed. If the DHCP service is enabled for the router connected to the device, you can select DHCP IPv4 or DHCP IPv6 to obtain the IP address automatically.

Single-address mode:
Two network interfaces are bound to one IP address. In this mode, the bandwidth can be increased and redundant arrays of network adapters can be formed to share the load. When a network interface fails, the other network interface immediately takes over all the load, and thus the service is not interrupted.
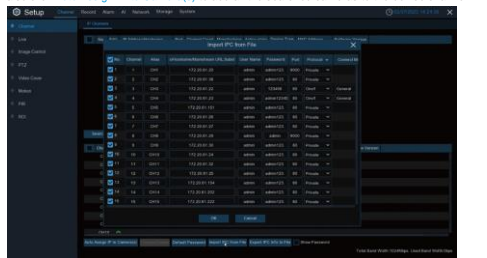

Dual-address mode:
Two network interfaces are configured with IP addresses and gateways of different network segments respectively, and the two network interfaces are operating independently of each other. The LAN interface for connecting the external network should be configured as the default route.

⚠️ **Note :**
The total bandwidth of cameras connected to the device cannot exceed 1,000 Mbps.
In normal circumstances, all searched IP cameras can be added to the NVR and can go online.
If they fail to go online, you need to check the network connection status and ensure that the user names and Passwords of the IP cameras are correct.

Adding a Camera

Before adding and managing IP channels, ensure that the camera is connected to the network.

1. Choose Main Menu > Channel to open the IP Channels page.

2. Select the camera to be added, and click Add to add the selected camera to the device. You can also click Auto Assign IP to Camera(s) to add all the searched cameras to the device channel.

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3. Click Export IPC Info to File to export the IPC list Csv template. Fill in IPC information on the PC side in accordance with the template, click Import IPC from File, and select the IPC to import the camera to the NVR.

▶ Instant Playback

On the preview page, click ◁► on the toolbar of the channel window to start instant playback from five minutes ago.
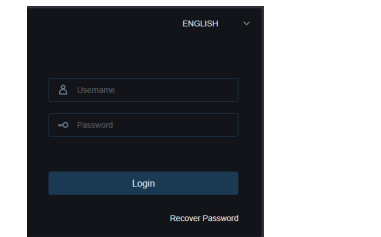
▶ Normal Playback

On the preview page, click ◁► on the toolbar at the bottom to playback the video of the day. You can also click Start > Search to open the playback page to customize the playback channels and event types, and then playback the video. On the playback page, you can play, stop, single-frame play, clip, and back up the video. The NVR also supports intelligent playback and playback by time slice, event, or picture.

⚠️ **Note :**
By default, 7x24-hour regular video recording is enabled for each channel. Choose Main Menu > Record to open the recording configuration page, and then set the recording time and recording type as needed.
To playback alarm videos, you need to ensure that the relevant types of alarms are enabled and the video recording function is enabled.

Before logging in to the Web page, you need to ensure that the client computer and the device network are interconnected.

1. Open the Device Config Tool to search out the IP address of the NVR, click the IP address to access the browser. Plug-ins are required for some browsers. You need to download and install the plug-ins as instructed. After the installation is completed, restart the browser.

2. Enter the correct user name and password in the login dialog box, and click Login to open the web page.

※ Visit "www.aitt.co" you can download Device Config Tool, application, user manual and other needed tools.

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