CONCORD

CONNECTING TOGETHER

QV8820 – 10 Channel 5MP
QV8822 – 10 Channel 4K

USER MANUAL

1. Main Function List

1.1. Device-side functions

1.1.1. Power On/Off

Power-on: Connect the 12 V⎓ 2 A adapter to the DC jack first, then plug the adapter into a mains outlet. The device will be ready in about 30 s.
Power-off: Disconnect the adapter from the mains outlet first, then unplug the DC jack.

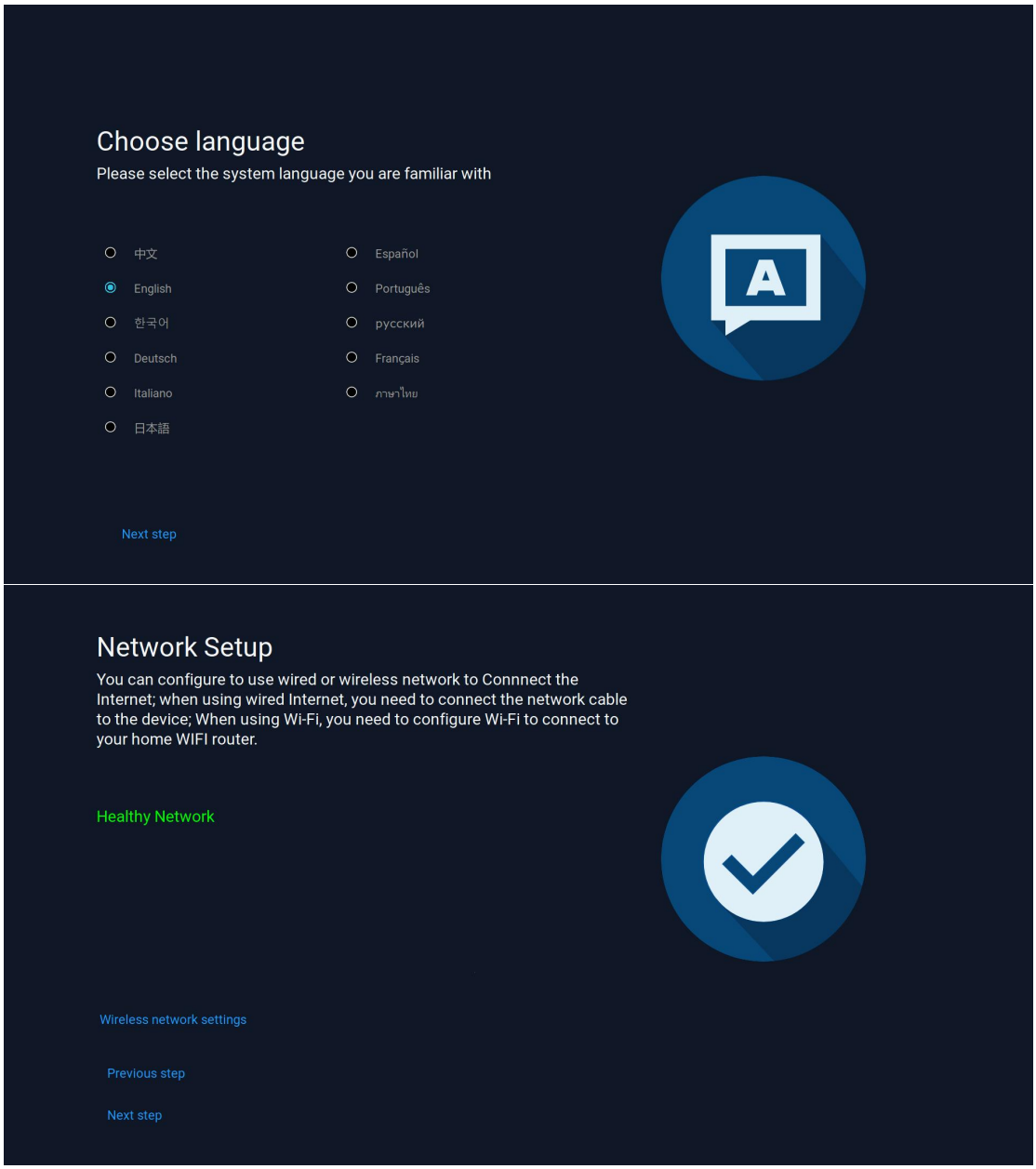
1.2. Setup Wizard

The wizard is used by users to quickly configure necessary system functions when purchasing new products, such as system language, network, time, hard drive, and password.

- A setup wizard pops up after firmware flashing.
- The boot wizard suppresses the login screen; users proceed directly to the wizard.
- When restoring factory settings, the wizard needs to pop up again.
- After the wizard has been completed once, it will not reappear on subsequent start-ups unless the device is factory-reset.
- The setup wizard will still pop up on the next boot if the setup is not completed.
- Setup process guided by the wizard: Language -> Network -> Time -> Hard Drive -> Password -> APP Download and Add Device
- The first page must contain language entries. Different language entries should be displayed in their corresponding languages so that people from different countries can easily identify them. For example, Chinese should be displayed as "中文" and English as "English".
- The second page must be connected to the network; time synchronization must be done after network settings are configured.
    - Network settings require support for both wired and wireless networks. Devices that do not support a wireless network module will not display "Wireless Network Settings".
    - The wired network settings interface will automatically configure the network using the wizard.

    - When entering the network configuration wizard, the interface should not immediately display a network error message followed by a successful configuration; instead, it should display "Network configuration in progress, please wait patiently..." until the configuration is complete, at which point the actual network status should be shown.
- The time settings interface supports both automatic and manual time setting.
    - Date format settings are supported. The following four date formats are supported: YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY, and YYYY-MM-DD.
- The first page of the wizard supports an exit button. After clicking exit, the wizard will pop up again on the next boot. Other pages of the wizard do not support exiting, nor can they be exited by right-clicking, until completion.
- The wizard process supports clicking to go to the next page and the previous page. The first page does not have a "Previous Page" button. The last page does not have a "Next Page" button.
- The wizard saves settings when you leave the current page.
- In the hard drive settings interface of the wizard, if the hard drive is not formatted, a prompt should appear asking the user to format it. The user can choose to cancel or format. If the user chooses to cancel without formatting, a message should appear saying, "The hard drive is not formatted; the device will not record. Are you sure you want to continue?"
- When setting a password in the wizard, you don't need to enter the old password; just enter the new password.
- Upon entering the setup wizard, the password input field should be empty. Even if you go back and re-enter the password setup interface, it will remain empty. The password is only saved after you click "Next".
- Password settings support 6 to 19 characters, with no character limit.
- A "Remember Password" checkbox has been added to the wizard and is selected by default (the default value can be customized through the IsRememberPwd option).
    - After selecting "Remember password" in the wizard, exit the wizard. On the login screen, "Remember password" is selected by default and the password set in the wizard is automatically filled in.
    - After unchecking "Remember password" in the wizard, exit the wizard and enter the login screen. By default, "Remember password" is not selected on the login screen, the password input box is empty, and no password will be entered automatically.

- The app download page features two QR codes: one for Android/iOS app download (accessible to both domestic and international users, Android and Apple users); and a second QR code for a cloud ID (which can be scanned by EasyVision users after app installation to add devices).
- Once the wizard setup is complete, accessing the wizard interface will no longer be allowed (including via the right-click menu) -- no other entry points to the wizard interface will be provided.
- Users cannot exit the wizard interface directly (but there is a hidden exit point: click the icon to the right of "Select Language" on the first page of the wizard, then left-click five times consecutively to exit the wizard interface).



Date and Time

Date Format
YYYY/MM/DD

Automatically set time

Date
2025/12/01

Time
17:03:28

Time Zone
(GMT +08:00) Beijing, Hong Kong

Daylight Saving Time

Daylight Saving Time Set

Previous step

Next step

Storage Management

Make sure your storage device is working properly.

Storage Type
HDD

Storage Status
Formatted

Storage Capacity
929.5 GB

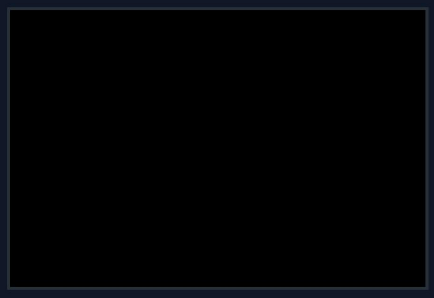
File System Version
1.0.0.1

Previous step

Next step

See the Live View for cameras

Press the camera (On/Off) button, you can see the Live View for each paired camera after the camera has started up.



Previous step

Next step

Set Password

The password is 6 to 19 characters

You need to enter this password when binding the device through the APP.

User name

admin

Set password

123456789AB

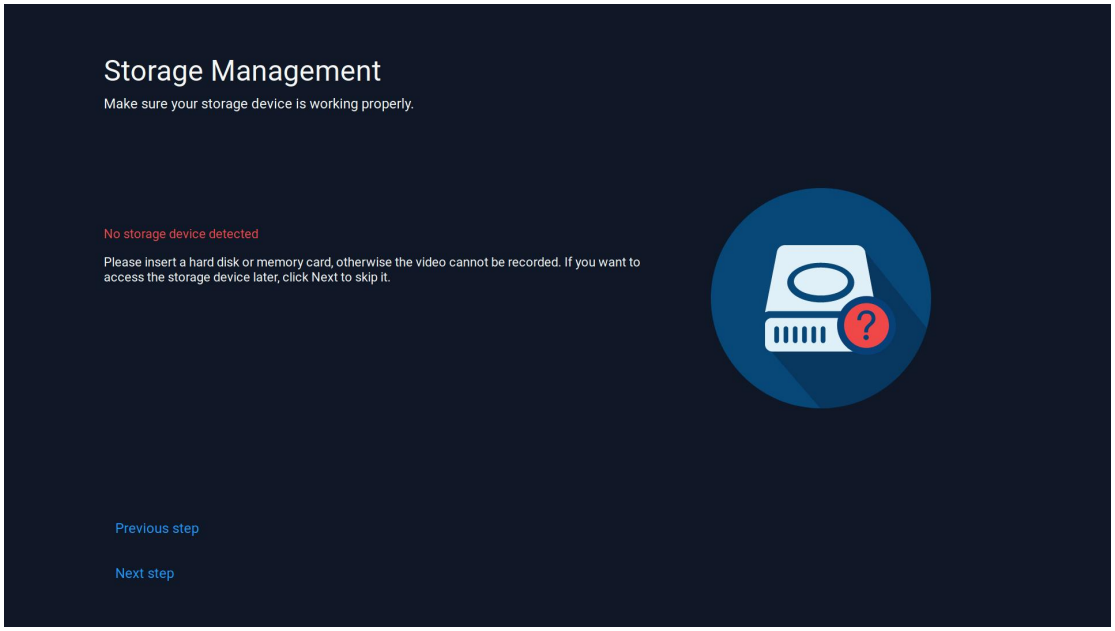
Confirm password

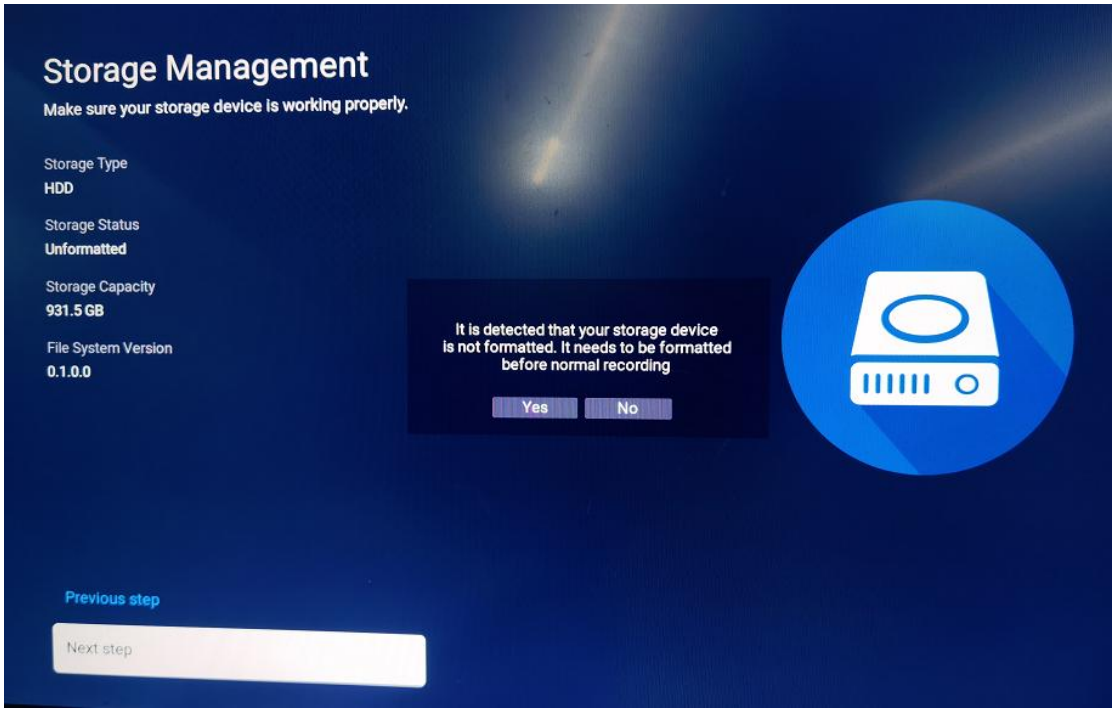
123456789AB

Save my username

Previous step

Next step


Storage Management
Make sure your storage device is working properly.
No storage device detected
Please insert a hard disk or memory card, otherwise the video cannot be recorded. If you want to access the storage device later, click Next to skip it.
Previous step
Next step


Storage Management
Make sure your storage device is working properly.
Storage Type
HDD
Storage Status
Unformatted
Storage Capacity
931.5 GB
File System Version
0.1.0.0
It is detected that your storage device is not formatted. It needs to be formatted before normal recording
Yes
No
Previous step
Next step

Storage Management

Make sure your storage device is working properly.

Storage Type
HDD

Storage Status
Unformatted

Storage Capacity
931.5 GB

File System Version
0.1.0.0

Previous step

Next step

Storage Management

Make sure your storage device is working properly.

Storage Type
HDD

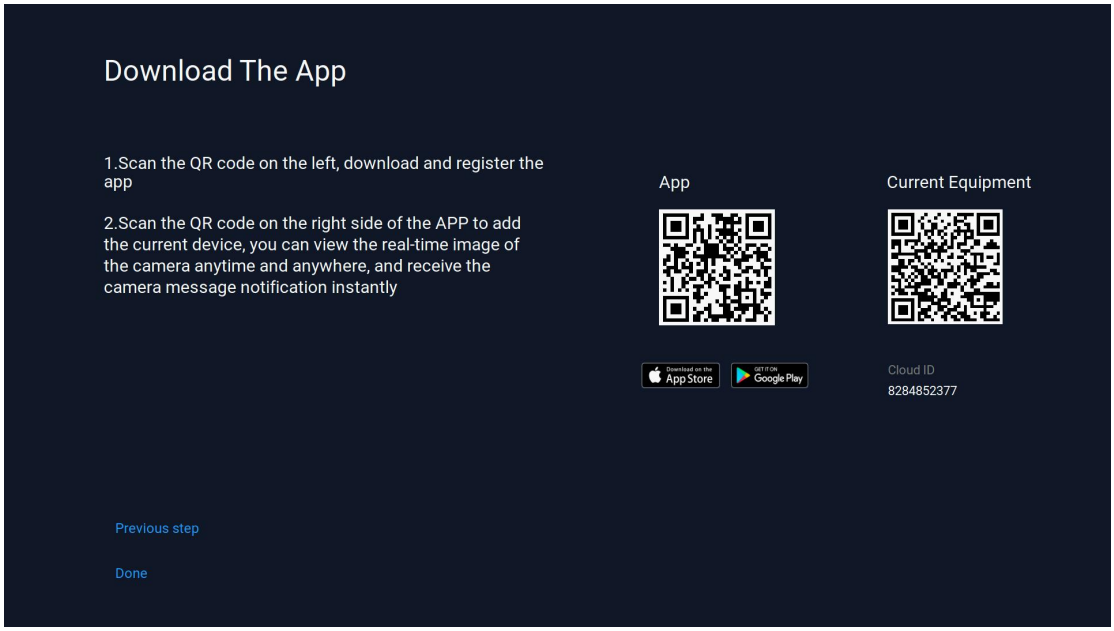
Storage Status
Formatted

Storage Capacity
929.5 GB

File System Version
1.0.0.1

Previous step

Next step



1.3. Login

- Users can log in.
- The default username and password at factory settings are (username: admin, password: blank).
- Users need to log in before they can access settings, playback, or other functions; they cannot access the corresponding interfaces without being logged in.
- The user login page has the default username "admin" and a blank password (if the user has not remembered their password).
- After entering the correct username and password, you can log in successfully. Once logged in, you will be directed to the relevant interfaces without needing to log in again.
- When entering a password, the password is not displayed by default, but is replaced with "*"; users can click to view or hide the entered password.
- A "Remember Password" checkbox has been added to the wizard and is selected by default (the default value can be customized through the IsRememberPwd option).
  - After selecting "Remember password" in the wizard, exit the wizard. On the login screen, "Remember password" is selected by default and the password set in the wizard is automatically filled in.
  - After unchecking "Remember password" in the wizard, exit the wizard and enter the login screen. By default, "Remember password" is not selected on the login screen, the password input box is empty, and no password will be entered automatically.

- When logging in, users can set "Remember Password". If the option to remember the password is checked and the login is successful, the username and password from the previous successful login will be automatically entered the next time the user logs in. There is no need to enter them again. Just click "Log in" to log in successfully.

- If the user does not select "Remember password", the user must manually enter the password each time they log in.
- If a user cancels the " Remember password" option and logs in successfully, they will be required to enter their password the next time they log in.
- Entering the wrong password will display the message "Incorrect password," and you can only try 4 times.
- If the wrong password is entered after four consecutive retries, the device will lock for 10 minutes and a countdown will begin.
- If a user forgets their password, they can reset it using the following methods: (1) Click "Forgot Password" and follow the prompts to obtain a temporary password; (2) Use the password calculator to obtain a temporary password; (3) Click the "left-right ...
- The temporary password is valid for 1 h and can be entered only in the “Forgot password” box; it will not work on the login screen or in the mobile app. The temporary password can only be used in the "Forgot Password" input box, **and cannot be used on the login page or for remote login via the app.**
- **After entering the temporary password, the system will redirect you to the "Reset Password" screen** . You do not need to enter the old password on the reset screen.
- The system has automatic logout enabled by default. Logout will occur automatically after 5 minutes of inactivity.
- After logging into the device, you need to log in again.
- Usernames and passwords can be up to 19 characters long (including ASCII letters, characters, and numbers), and passwords must be at least 6 characters long.
- When setting a password, the password length must be between 6 and 19 characters; otherwise, an error message will be displayed.

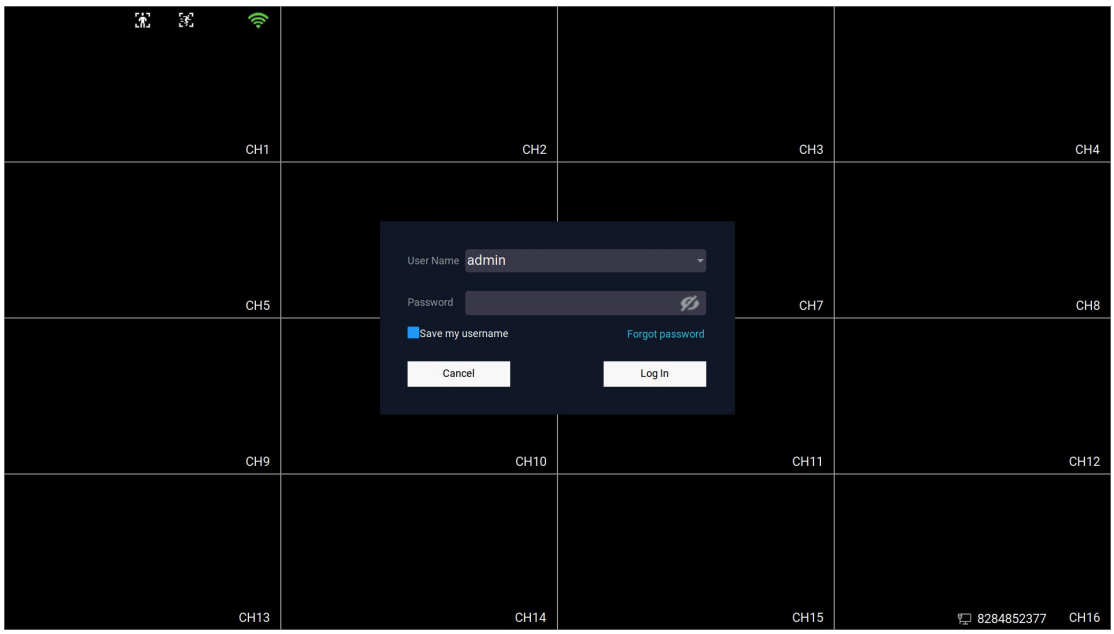
1.4. Login Device

1.4.1. Accessing the login interface

When performing a complete factory reset, the device will display a wizard. At this time, the login screen will not appear; you will directly enter the wizard

interface.

1.4.1.1. First time entering the login interface



- Remember password, this option is not checked by default.
- The default username is admin.
- The password input box is empty by default.

1.4.1.2. Login successful

1) Check the "Remember password" box.

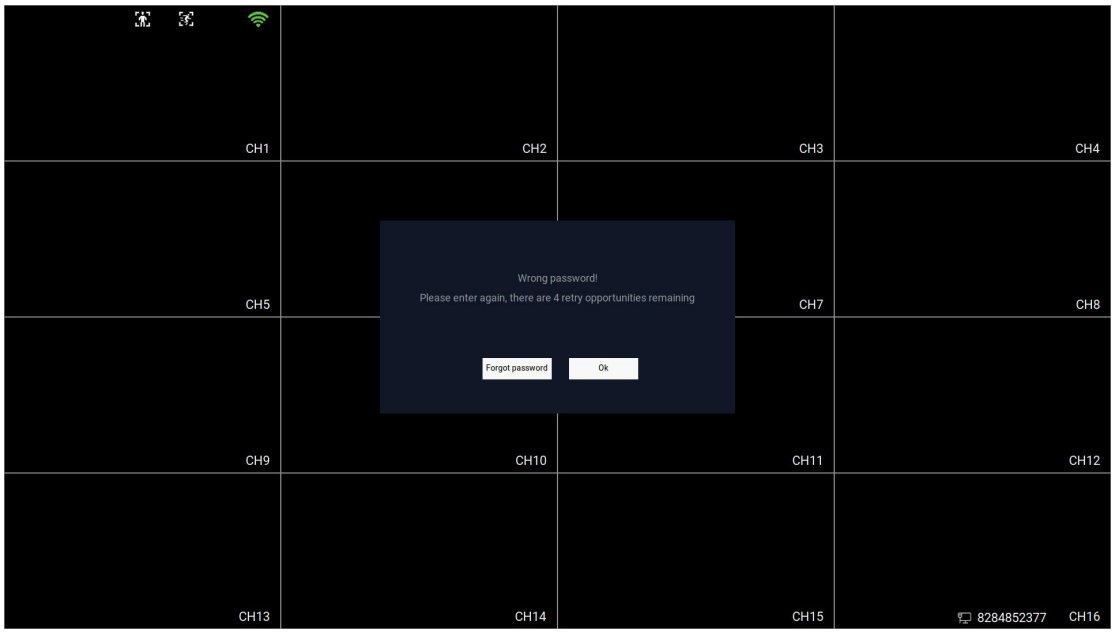
- Save the "Remember Password" option. The next time you log in, "Remember Password" will be checked by default, and the password will be automatically entered (the password will not be visible).
- Once the device is logged in, it will directly enter the corresponding window (without needing to display a login success message).

2) When "Remember password" is not checked

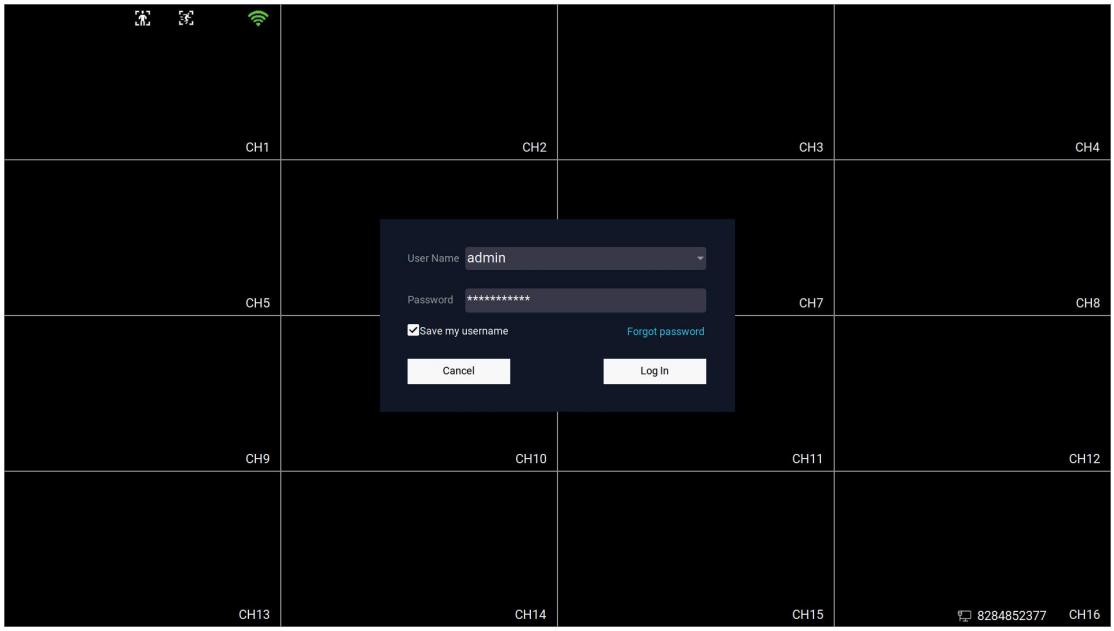
Once the device is logged in, it will directly enter the corresponding window (without needing to display a login success message).

1.4.1.3. Login failed

1) Indicates incorrect password and remaining retry attempts.

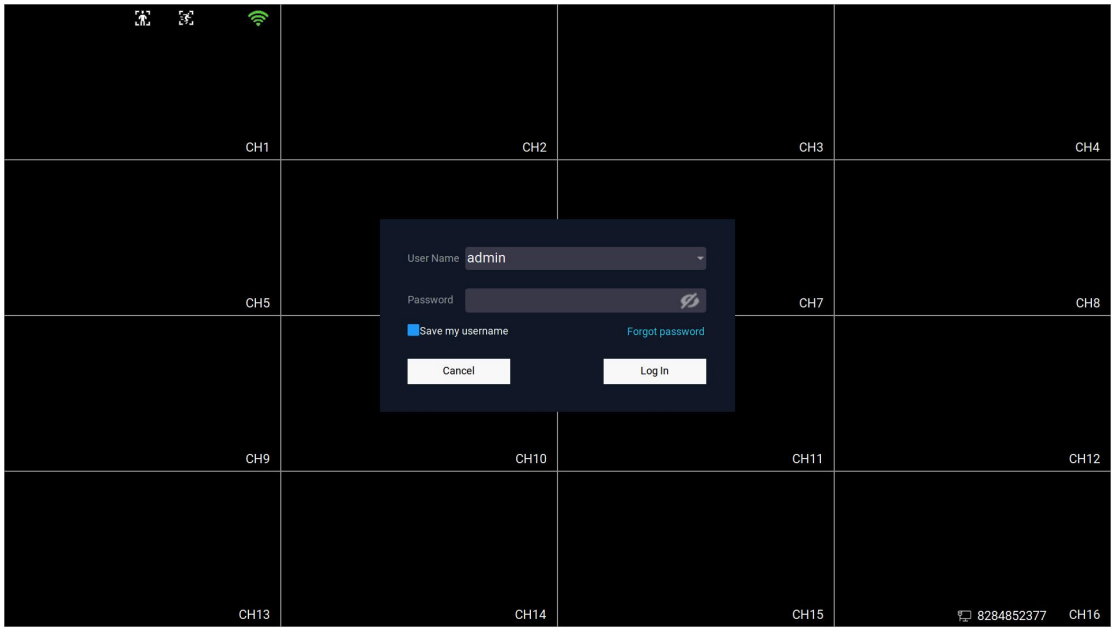


1.4.1.4. Entering the login page for the Nth time (remember password)



- Remember password, checked by default.
- The default username is admin.
- Password is entered automatically (but not visible).

1.4.1.5. The Nth time entering the login interface (no password recorded)



- Remember password, this option is not checked by default.
- The default username is admin.
- The password input box is empty by default.

1.4.1.6. After forgetting your password - you will be taken to the login screen after resetting your password.

- Remember password and configure as before (check the box if you originally saved password, otherwise do not check the box if you originally did not save password).
- The default username is admin.
- The password input field is empty by default (even if the password is saved, it's because the saved password is different from the original one).

1.4.1.7. The first time you enter the login interface after changing your password.

- Remember password and configure as before (check the box if you originally saved password, otherwise do not check the box if you originally did not save password).

- The default username is admin.
- The password input field is empty by default (even if the password is saved, it's because the saved password is different from the original one).
-

1.5. Display password input

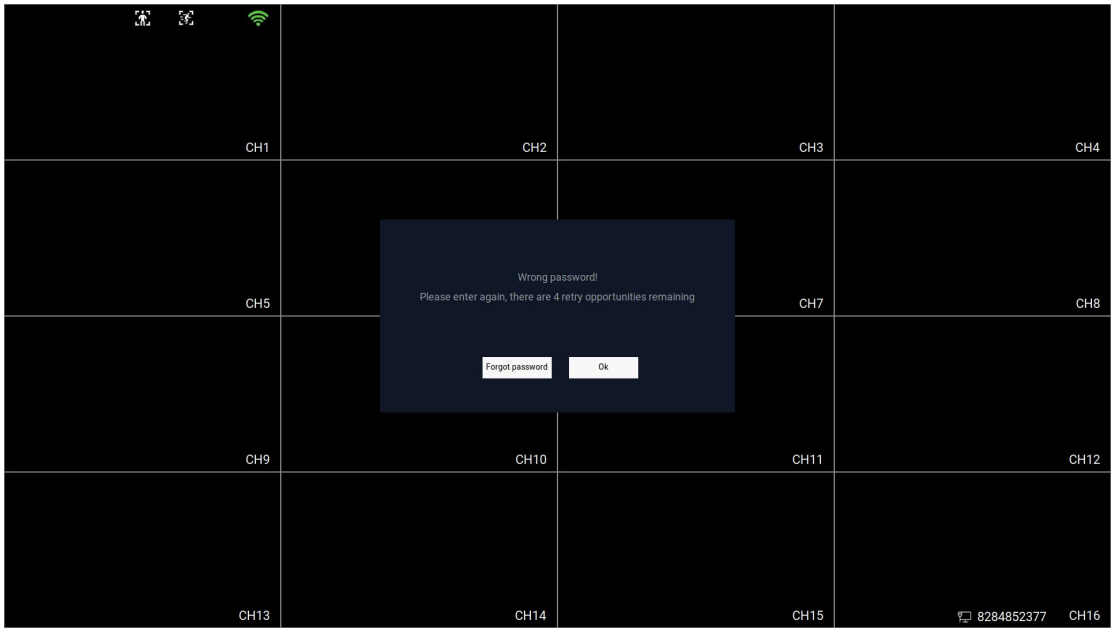
Click the "Show National Standard" button to the right of the password input box to make the password visible; click it again to hide the password.

If the password in the password field is an auto-entered password, there will be no "View Password" button on the right. You can only view the password if **all the content in the password display box is manually entered** . (For example, if you enter new characters directly after the auto-entered password without clearing all the auto-entered passwords, you still cannot view the password; you can only view it by manually entering the password after deleting all the auto-entered passwords.)

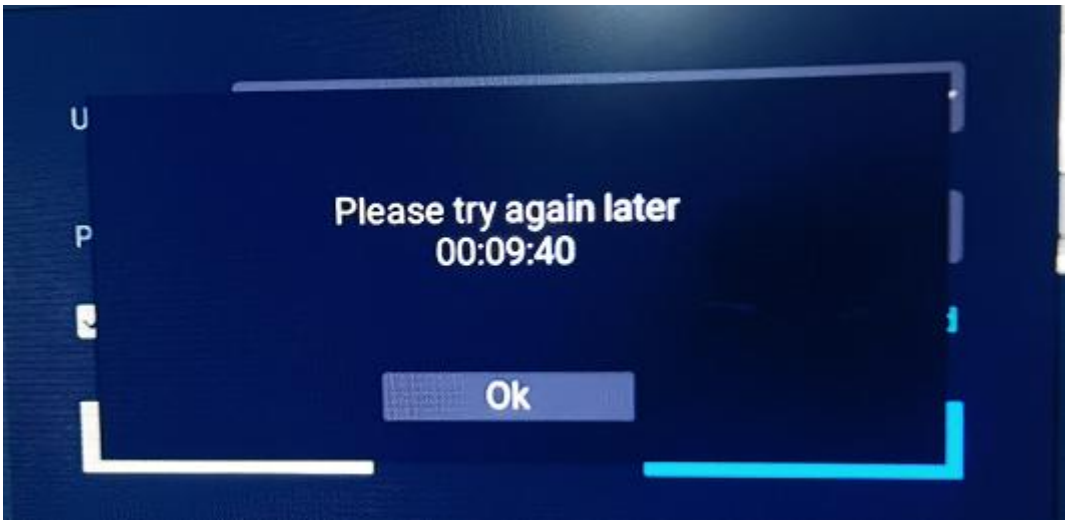
1.5.1. Entering an incorrect password

1.5.1.1. Retry if password is incorrect

You can retry 4 times. After 4 attempts, the device will be locked.



1.5.1.2. Equipment Locking



After entering the password four times, the device will lock for 10 minutes and display a countdown.

(Device locked, please try again later)

1.6. Logout device

Automatic logout is enabled by default and the system will automatically log out every 5 minutes.

Log out via right-click shortcut menu -> Exit System -> Logout.

After clicking "Logout," you will need to log in again the next time you access the settings or replay interface.

1.6.1. Forgot Password

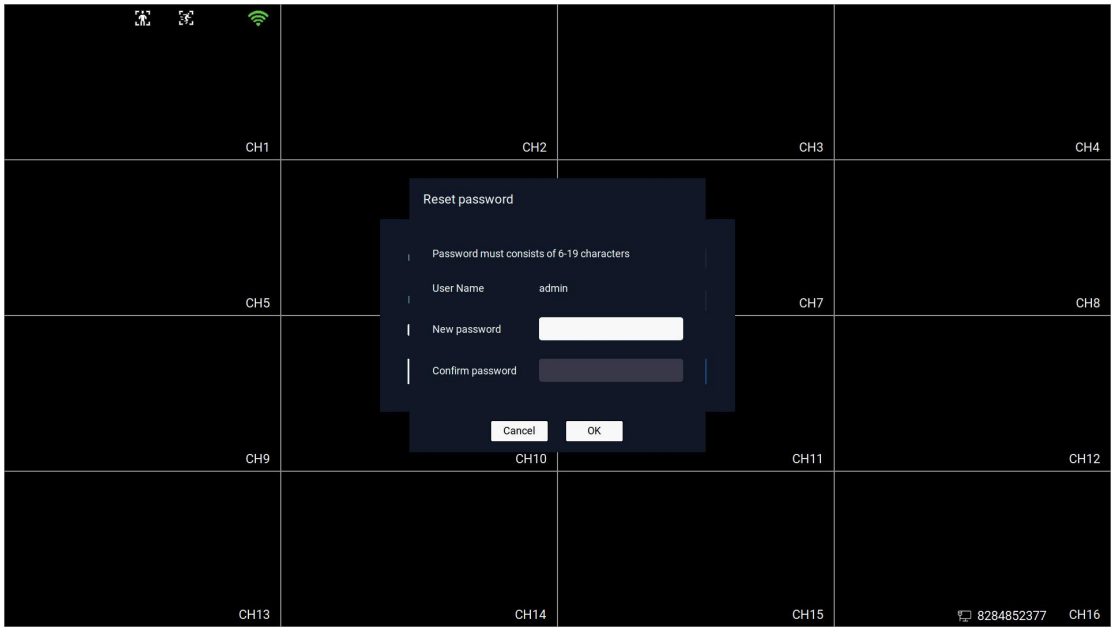
The method of guiding users to reset their passwords when recording passwords requires the user to be in close proximity to the NVR to operate.

1.6.1.1. Forgot Password

- Information on resetting their password by scanning a "customer service" QR code.
- The "Customer Service" QR code must include the device ID, system time, and other necessary password calculation information, in the following format:
  eseecloud://app.custom.page/help?ctype=1&deviceId=G19C2712121778&model=K8508-W&time=2022-03-08T162633
- **The app no longer calculates temporary passwords when scanning QR codes. After scanning the customer service QR code, it provides methods to retrieve the password, but does not directly provide the temporary password.**

1.6.1.2. Reset a new password

After entering an incorrect password, a "Password Incorrect" message box will pop up. Click the left , right, left, right, left, right, left, right, left, right, left, right, left, right in sequence . A "Reset Password" interface will then pop up.



- When setting a new password, the password input field is visible.
- After setting up, you will be redirected to the login page.
- The password reset screen does not require you to enter your old password.
- The two passwords must match; otherwise, the setup will fail.
- Passwords can be set to all ASCII characters (uppercase and lowercase letters, numbers, symbols, excluding double quotes).
- **Password length requirement: 6-19 characters; no restrictions on character type .**
- **After resetting your password, remember that the password is no longer valid and you need to enter it again to log in.**

1.7. Camera Addition

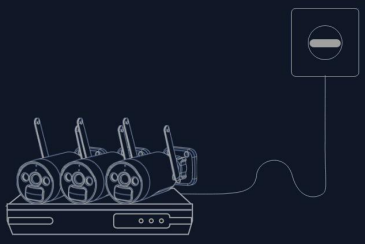
1.7.1. Adding a camera wirelessly

< Go back

Manually

Power the cameras

Within 1 meter of the camera, turn on the power of the camera. After the camera has started up, please press and hold the Reset button to reset the camera (for devices with network ports, please use a network cable to connect to the NVR's network).



Continue

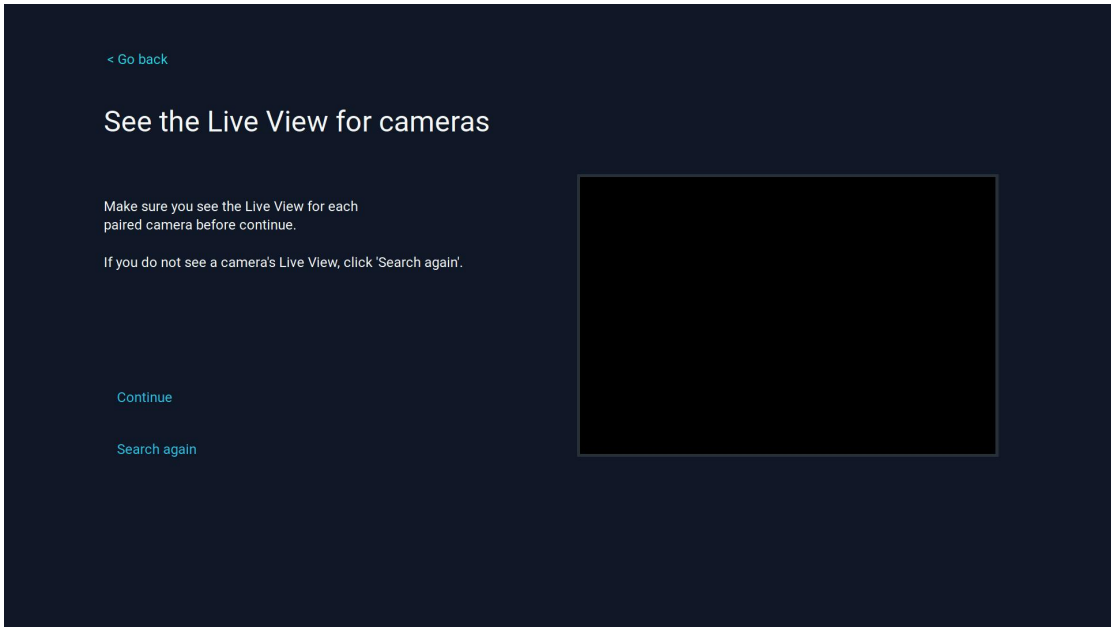
< Go back

Searching for Cameras...

The table lists all paired cameras. DO NOT click 'Continue' until all cameras are listed.

Channel	Device Name	IP Address	Status
1	5323-W6	172.20.14.116	Connect success

Continue



Requirement description:

- Supports code pairing for constantly powered cameras
- Supports battery camera code pairing
  - ❖ After pairing a video recorder with a battery-operated recorder that supports display output, you must force it to switch to optimal recording mode.

    Equipment List:
    K8208-W/K8208-3W/K8208-5W/K8208-3WS/K8208-5WS/G4H-2/K8508-W/T8204-W/

    T8204-3W
  - ❖ After pairing a recording host (such as a base station) with a battery-operated recorder that does not support display output, do not modify the battery-operated recorder's configuration. Keep the battery-operated recorder's original operating mode configuration (the battery-operated recorder is generally set to the best power-saving mode by default).

    Equipment list: G4S-2/G4S-3/G4H
- Supports wired code pairing
- Supports wireless code pairing
- Supports pairing with different iAn cameras (except for standalone cameras, which can only be paired with base station products and cannot be paired with wireless NVR devices).
- The pairing interface prompts: Before pairing, the user should be prompted to reset the camera.
- The code-matching interface allows you to delete cameras.

- After adding the code, you can see the added camera and connect to it to display images.
- Supports pairing with different iAn cameras (except for standalone cameras, which can only be paired with base station products and cannot be paired with wireless NVR devices).
  - ❖ Devices that support single-item code matching

    G4S-2/G4S-3/G4H
  - ❖ Devices that do not support single-item code matching

    K8208-W/K8208-3W/K8208-5W/K8208-3WS/K8208-5WS/G4H-2/K8508-W/

    T8204-W/T8204-3W
- Code matching success rate
  - ❖ Simultaneous pairing success rate with 8 cameras (wired pairing): 0 failures out of 20 attempts; image output time after pairing is no less than the benchmark.
  - ❖ Simultaneous pairing success rate with 8 cameras (wireless pairing): 0 failures out of 20 attempts; image output time after pairing is no less than the benchmark.
  - ❖ Simultaneous pairing success rate with 8 cameras (battery-powered pairing): 0 failures out of 20 attempts; image output time after pairing is no less than the benchmark.
- Supports code pairing for production testing (connect via USB, enter the production testing interface to perform code pairing).

  The production test code also meets the above requirements.
- Supports barcode scanning and matching using USB barcode scanners.
  - ❖ Simultaneously, the success rate of scanning and matching codes with 8 cameras was 0 out of 20 times; the image output time after code matching was no less than the benchmark.
  - ❖ QR code scanning supports ordinary standard cameras
  - ❖ QR code scanning supports battery cameras
- Base station products (G4H-2/G4S-3) support NVR operation code pairing.
- Abnormal code matching situation:
  - ■ NVR WIFI module malfunction -- Upon entering the pairing interface, the message "WIFI module malfunction" is displayed.
  - ■ Camera WIFI module malfunction -- unable to pair codes (V3520 has no related error message)
  - ■ Camera has no ID -- cannot be matched (V3520 has no related error message)
  - ■ Invalid MAC address (not a Jiuan MAC address) -- can be matched

- Clicking "Add Manually" will take you to the "Add Manually" interface, where you can add wired cameras and cameras using the ONVIF third-party protocol.
- Right-clicking to exit is prohibited during code matching.
- On the wireless pairing interface, do not exit automatically immediately after the pairing is complete (otherwise, when the user returns to this interface to delete a channel after the pairing is complete, they will be unable to operate and will be automatically exited and jump to the next interface). If the pairing is slow, you need to stay on this interface for 10 seconds before exiting.

1.7.2. Add wired camera

1.7.2.1. Requirements Description

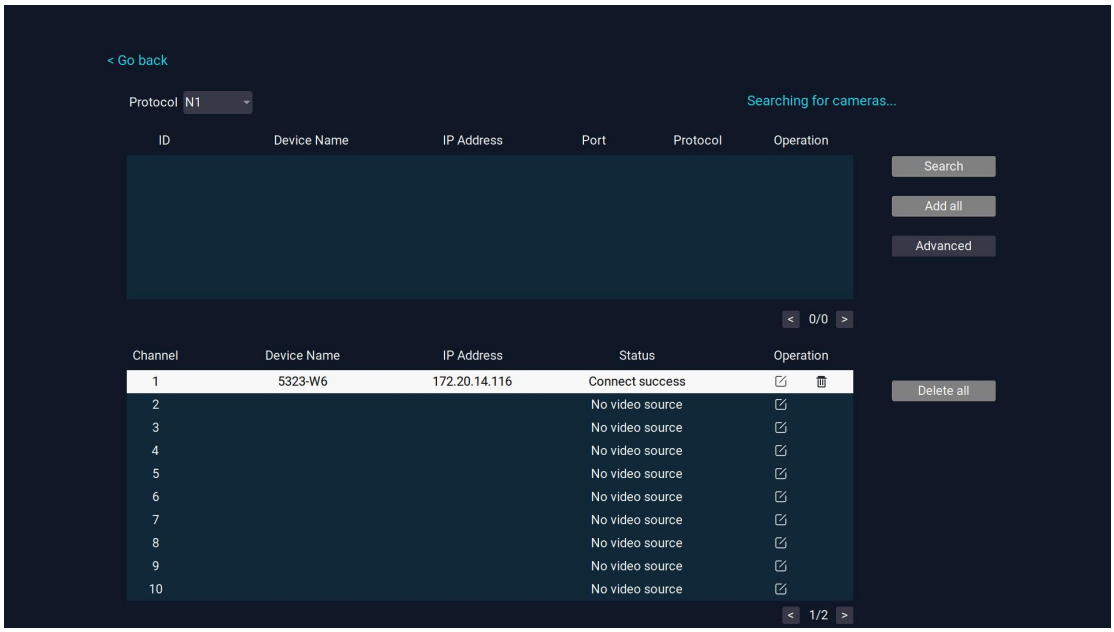
- The interface can display the search list and the list of added devices.
- The channel list displays the cameras that have been added.
  - The channel list can display 8 channels per page; additional channels can be displayed using pagination.
  - For devices with more than 8 channels, the channel list supports page turning.
  - The channel list supports viewing the channel number, device name (model), IP address, and connection status; it also supports editing and deleting channels.
  - Click the delete button in the channel list to delete the selected channel.
  - Clicking the edit button in the channel list will take you to the channel editing interface.
  - Channel list sorted by channel
- The search list displays the cameras currently found.
  - Click "Search" to search for cameras on the currently selected protocol within the local area network.
  - After clicking "Search", the search will proceed again. The search timeout is typically around 5 seconds.
  - The search list supports display on at least 5 devices and allows pagination (showing the total number of pages, the current page, and the ability to navigate between different pages).
  - The search list displays device model, IP address, port, and protocol; it supports adding devices and modifying IP addresses.
  - Clicking the "Modify IP" button in the search list will take you directly to the IP modification interface, where you can change your IP address.

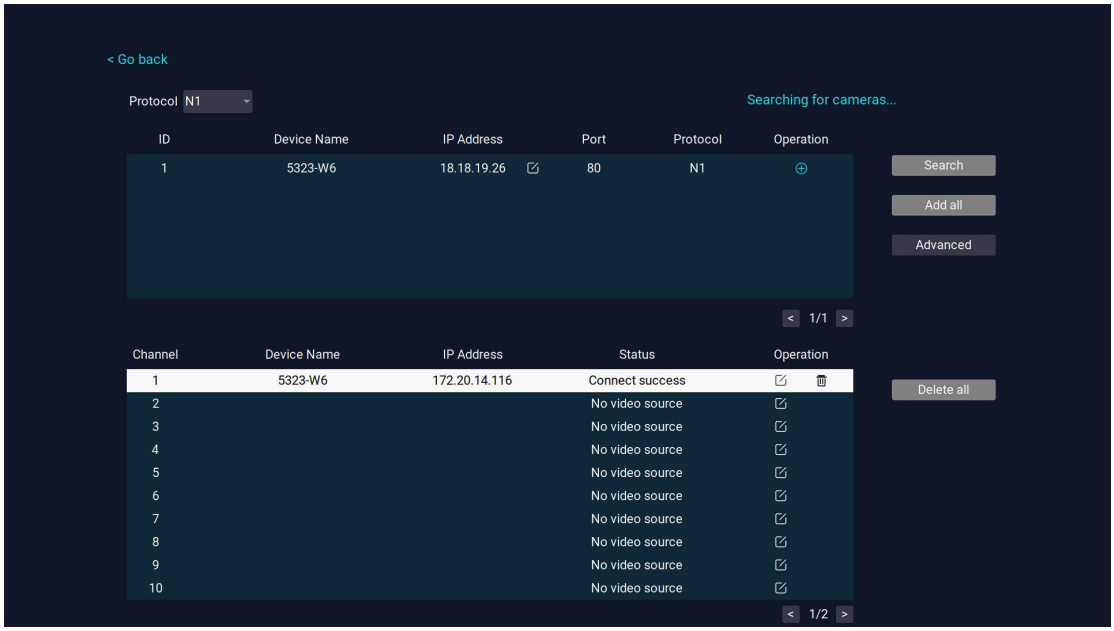
- Added devices are not displayed in the search list (filtered by MAC address).
- The search results are sorted by IP address from smallest to largest.
- Double-click the camera in the search list to add it to an available channel.
- Click the "Add" button in the search list to directly add this device to the channel list.
  - If a channel is selected in the channel list, the channel will be added to the selected channel; if no channel is specified in the channel list, the channel will be added to the first available channel.
- When searching for N1 protocols, both wired and wireless paired devices can be displayed simultaneously.

- The option to select a protocol (after entering the interface) is supported. The default display is the N1 protocol, and the protocol list has two items: "N1" and "ONVIF".
  - Removing the protocol might result in a single camera displaying multiple protocols; this would particularly affect IP auto-adaptation functionality, causing some searches to return IPs from before auto-adaptation and others from after auto-adaptation.
  - When using the N1 protocol for searching, it can simultaneously search for Jiuan wired cameras, paired wireless cameras, and paired battery-operated cameras.
  - When using ONVIF search, you must also add third-party proprietary protocols (including Hikvision, Dahua, Xiongmai, Tianshitong, and Zhongwei proprietary search protocols) to support searching on devices in different network segments.
  - Cameras that support IP auto-adaptive technology and support full network segment search.
- The interface supports "Search", "Delete All", and "Add All" buttons.
- Add all
  - Click "Add All" to add all cameras using a wired connection.
  - When adding all cameras, the following steps must be completed simultaneously: camera search, IP address detection, abnormal IP correction (IP allocation), port auto-adaptation, username and password autofill (detecting different manufacturers' devices and automatically filling in the manufacturer's factory default password), and adding to the channel.
  - If the IP address is incorrect (e.g., different network segments, IP conflict), it can automatically modify the IP address to the correct one.
  - When using a third-party search protocol, it can automatically match the device's port.
  - When adding all items, do not use the wireless pairing method.
  - When adding all protocols, add them according to the selected protocols.

- The image was successfully generated after adding the IP address, indicating that the IP address was correctly assigned.
- Multiple cameras should be able to be added successfully when they are restored to factory settings (all cameras have the same IP address) by using the "Add All" function.
- When the NVR's network segment and the camera's IP address are inconsistent, the connection should be added successfully and an image should be generated.
- Adding all N1 protocols should take less than 10 seconds (without changing the IP address).
- Adding all N1 protocols should take less than 30 seconds (when changing the IP address).
- Adding the ONVIF protocol should take less than 60 seconds (when the IP address is changed).

- Click "Delete All " to delete all cameras.
- When adding a camera, the interface does not lag or freeze, and the image loading time is less than 2 seconds.



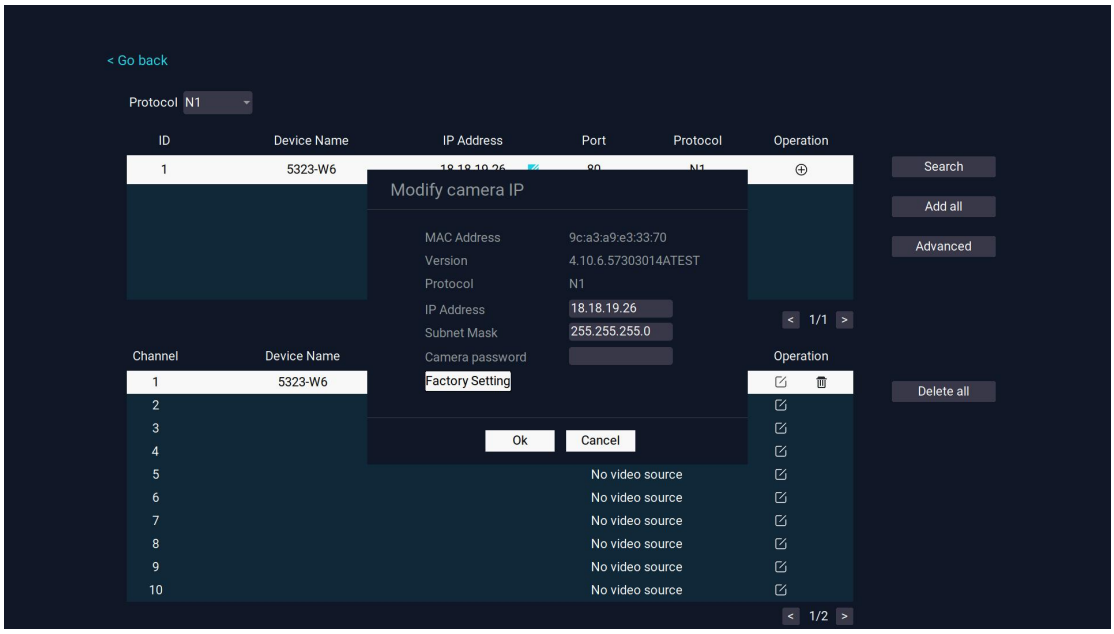


1.7.2.2. Change IP

Requirement description:

- This interface should display the device's MAC address, version number, and protocol (not editable).
- This interface should allow you to input the camera's IP address and subnet mask.
  - If the entered information is on a different network segment than the NVR, the setting cannot be configured, and the message "Please enter an IP address on the same network segment as the NVR" will be displayed.
  - If the entered IP address conflicts, the message "This IP address is invalid, please re-enter" will be displayed.
- This interface should allow you to enter the device password (Note: This is not for changing the camera's password, but for changing the IP address; changing the camera's IP address requires user verification).
- Supports N1/ONIVF IP modification
  - The IP address should be able to be changed successfully when the camera and NVR are on different network segments (both N1 and ONVIF must support this).
  - When the device being modified experiences an IP conflict (due to conflicts with other devices on the local network), the device's IP address should still be successfully modified (both N1 and ONVIF must be supported).

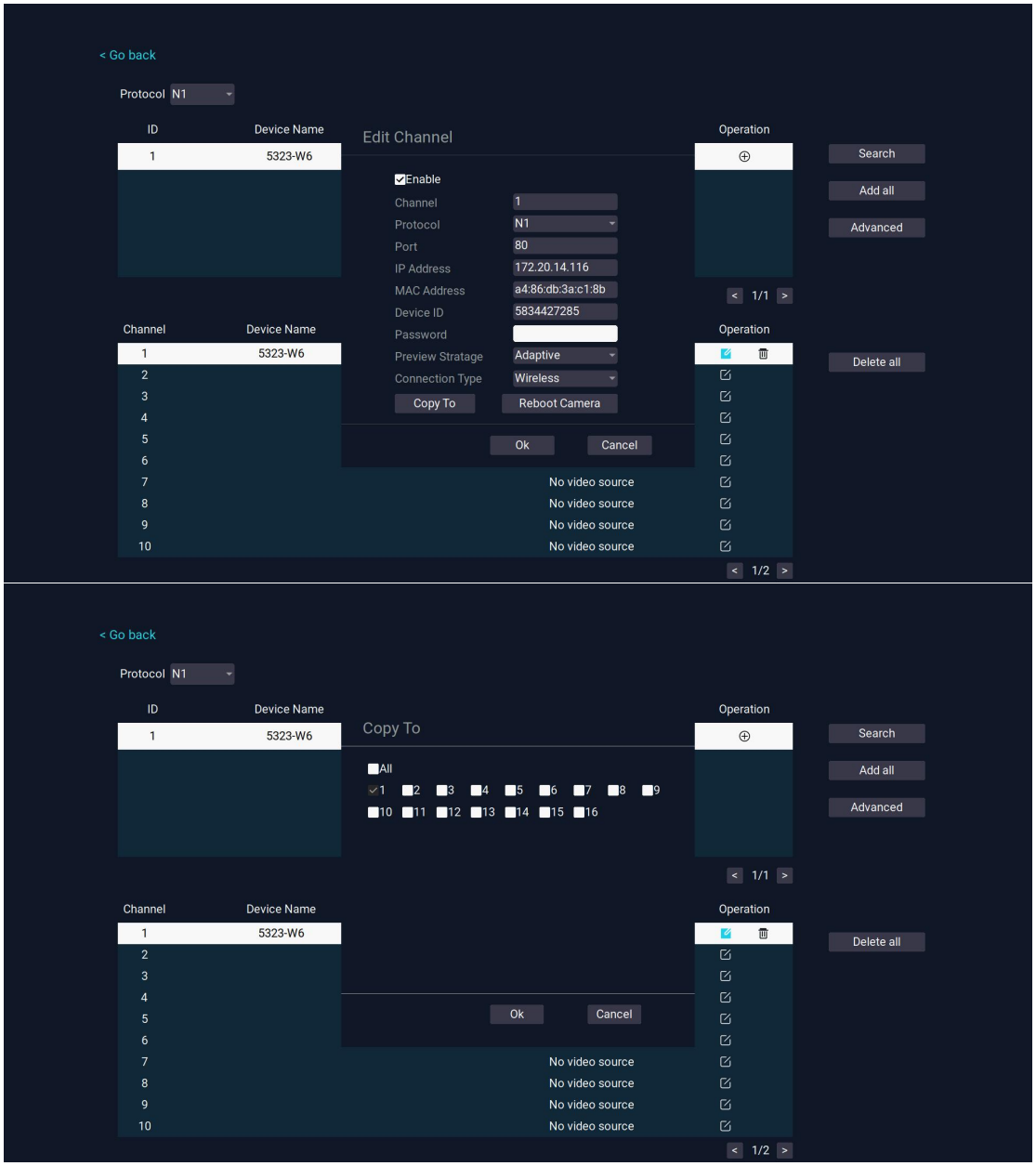
- Supports factory reset of cameras (including Jiuan constant-charge cameras and battery-powered cameras).



1.7.3. Channel Editing

Requirement description:

- This interface should display the channel number, protocol, port, IP address, MAC address, and device ID (equivalent to the EasyCloud ID for Jiuan) – this information is not editable, only viewable.
- Supports inputting channel password
- Supports modifying the camera's preview strategy (adaptive, real-time, balanced, smooth), with adaptive as the default.
- The copy operation is supported. When copying, the password and preview policy of the current channel are copied to the selected channel.
- Supports camera restart (supports N1/ONVIF protocols)



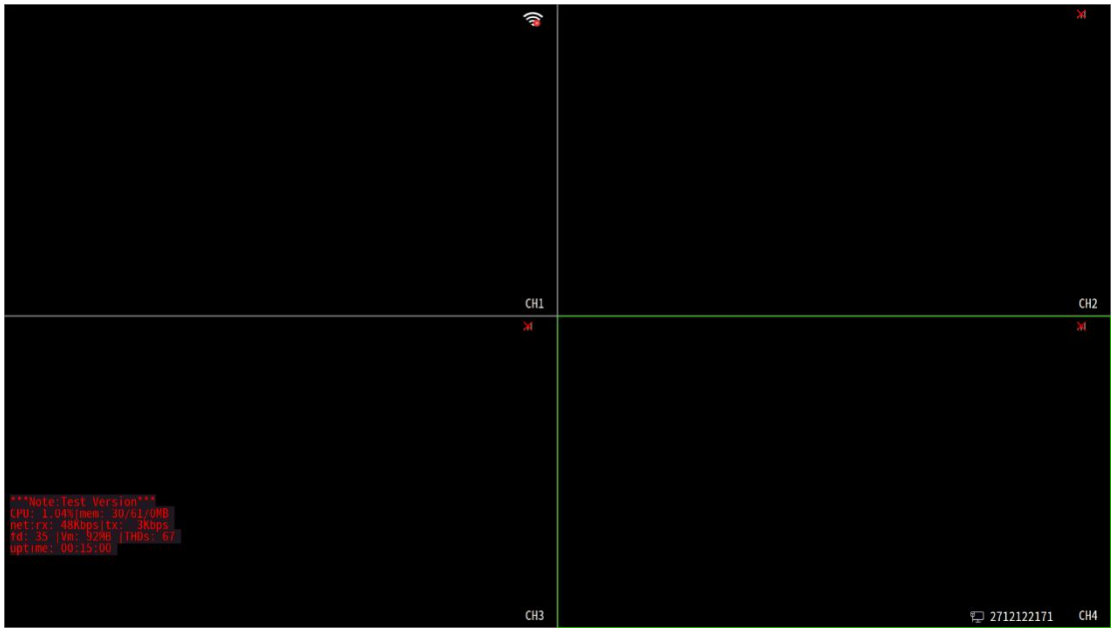
1.7.4. Channel Addition Configuration Instructions

When adding a channel, the configuration that needs to be modified, and the explanation of the default values.

Requirement description:

- When adding a channel, you need to save the necessary connection information such as the protocol, IP address, port, username, and password.
- Preview strategy needs to be set; the default is "adaptive" mode.

1.7.5. Channel Sorting



Requirement description:

- Supports swapping any two channels by dragging the mouse on the interface.
- When switching channels, all configurations related to the NVR and the channels should be switched, but the configurations on the camera side do not need to be switched.
  - The camera-side configuration refers to the relevant configurations obtained from the camera, and is based on the camera's specifications, including camera encoding configuration, white light configuration, image parameters, etc.
  - NVR-side local configuration refers to configurations stored by the NVR and independent of the camera, such as channel IP addresses and port information stored locally by the NVR; recording schedules.
  - Some configurations are related to both the NVR and the camera; such as audio switches; alarm plans (alarm plans are related to local NVR alarms such as APP push notifications, as well as the camera's sound alarm and light alarm times).
- When switching channels, the camera's configuration is updated from the camera's cache by preloading.
- When switching channels, camera parameters are generally not set, except in the following exceptions. Some exceptions require camera parameter settings, for example...

- The channel names for the wireless kit (wired NVR, DVR, no configuration required), such as CAM1, CAM2, are swapped. After the swap, the local configuration will switch CAM1 <-> CAM2, and the OSD displayed by the camera will also be updated accordingly.
- The audio switch also needs to be configured.

1.7.6. Preloading

Preloading refers to the process of synchronizing camera configuration when an NVR connects to a camera; that is, reading the camera's configuration into the NVR, and caching the read configuration (this configuration generally does not need to be saved to flash, but only needs to be cached in memory).

Requirement description:

- When an NVR connects to a camera, it needs to obtain all the configuration information used by the NVR from the camera.
- When an NVR connects, it acquires the camera's capability set.
- When preloading configuration information, do not affect the connection and graph output time; prioritize ensuring the connection and graph output.
- When connecting a camera to an NVR, the camera's configuration generally cannot be modified manually, except in the following exceptions.
- Exceptions to requiring active camera configuration when connecting a camera:
  - Time synchronization (actively synchronizing the NVR's time to the camera), and in addition to the initial connection synchronization, timed synchronization should also be performed every 5 minutes.
  - When connecting a wireless kit to an NVR, channel names need to be set to synchronize the channel names saved by the NVR to the cameras.
  - Adaptive resolution adjusts the camera's bitrate and frame rate according to the current NVR specifications (adaptive resolution will no longer be adjusted when it is turned off). Adaptive resolution will not actively modify the camera's resolution (if the resolution exceeds the system's supported range, a "resolution too large" message will be displayed).
  - When connecting a wireless kit, the channel name will be automatically set (wired NVRs and DVRs do not require setting a channel name).
  - If other customizable features are enabled, and the user has customized a specific camera parameter, the NVR will modify that camera value upon connection.
- Exceptions to automatically modifying camera parameters when adding codes:
  - When a wireless camera is paired, an IP address is assigned to the camera, and an ESSID and password are set.
  - When a wired camera is added, an IP address will be assigned to the camera.
  - When a battery-powered camera is added, its operating mode will be changed from "Best Power Saving" mode to "Best Recording" mode.

- The preloading of the constantly powered camera is performed every time it is connected or when the channel is switched and reconnected.
- For battery-powered cameras, to save power, preloading is only performed the first time they are added, the first time they are connected upon power-on, or when reconnecting after switching channels.

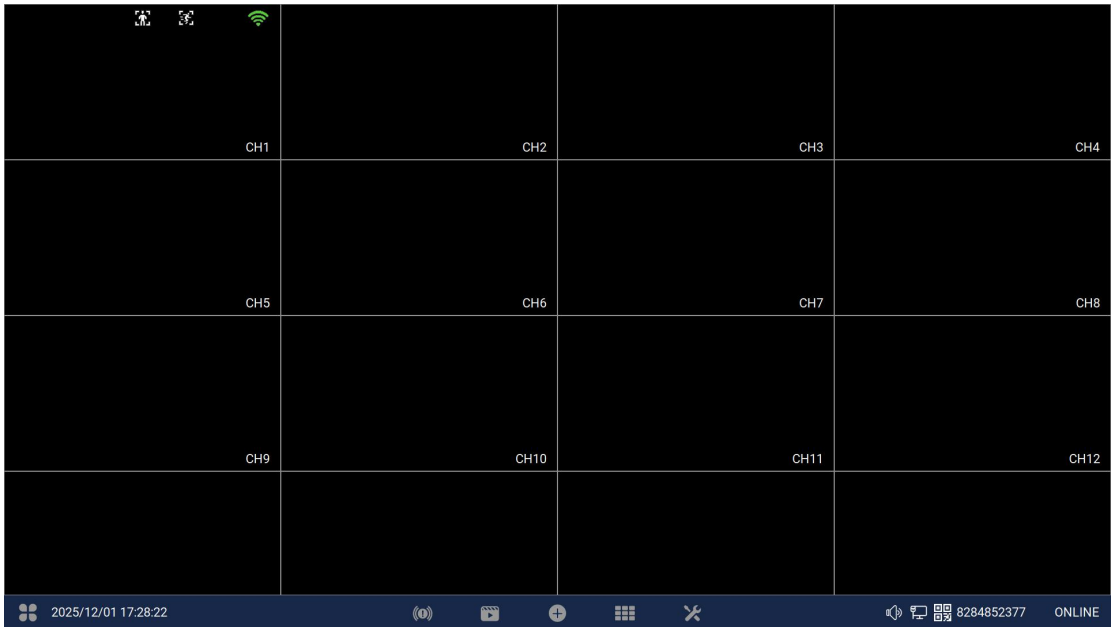
1.7.7. Camera anti-disconnection (ID connection method)

need:

- The added camera's IP address can be updated back after it changes, and it can reconnect and output images (e.g., by modifying the IP address through a search tool).
  - After the IP address changes to the same network segment, simply update the IP address again and connect to display the image.
  - After an IP address changes to a different network segment, it can automatically revert to an IP address within the same network segment and connect to the output diagram.
- After the MAC address of the channel changes, it can be updated back.
- The camera disconnects, but the searched IP address and MAC address remain unchanged; however, it cannot connect to display images. If this happens multiple times, the camera will attempt to restart, but will not restart multiple times after the initial restart.

1.8. Preview Interface

The preview interface includes the following items:



Requirement description:

1. The preview interface includes features such as channel logo, preview taskbar, channel toolbar, channel status icon, right-click menu, and channel border.
2. The channel logo is determined by the current state of the channel, the type of camera added, or the current position of the mouse.
3. The preview taskbar is located near the bottom of the monitor and consists of a series of interactive icons (including Add Camera, Settings, Playback, Split Screen Switching, Network Status, System Time, and Device Cloud ID).
4. The channel toolbar, located near the display channel, consists of a series of operable icons (including channel zoom, audio on/off, image settings, intercom, PTZ operation, etc.).
5. By default, in the preview interface—if the bottom preview taskbar is not displayed—the lower right corner should show the ID number and network status icon. The network status icon has two states (corresponding to the device being online and offline, respectively).

1.8.1. Channel LOGO -- Channel Status

Requirement description:

- The display channel shows the content of the corresponding channel based on the current channel status , the type of camera added, or the mouse position.
- The channel image is displayed normally (clear, clean, and without jagged edges).
- The channel display status is mainly divided into the following types:
  - ❖ Status 1: Not added

If no device is added, the "Manufacturer Channel Logo" will be displayed; the neutral default is the "NVR" logo.

- ❖ Status 2: Added and connected successfully

The added device displays the decoded image when connecting to the output screen.

- ❖ Status 3: After adding, the device disconnects and no image is displayed (including battery camera Wi-Fi disconnection).

The video connection between the NVR and the camera is lost, causing the NVR to be unable to obtain audio and video data from the camera.

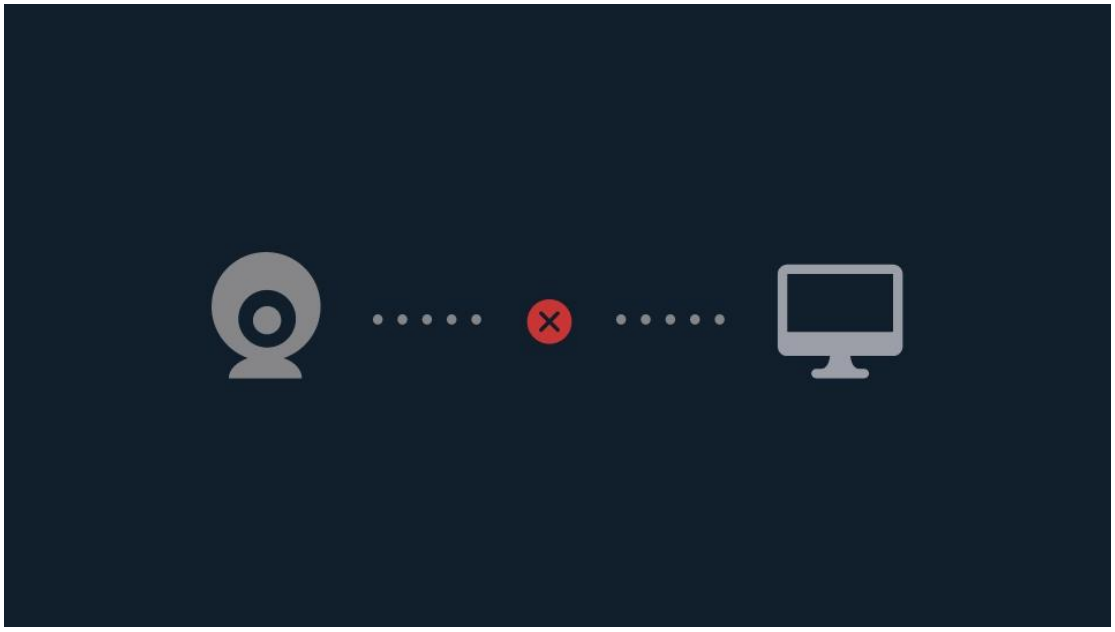
- ■ Status 3-1: Camera disconnected (but Wi-Fi also disconnected).

  When the WIFI connection is not lost, the last I-frame is displayed (this logic also applies to cameras with constant power, which is consistent with the sleep display logic of battery-powered cameras).

- ■ Status 3-2: Camera disconnected (Wi-Fi also disconnected).

  At this point, the display channel shows a "Disconnected" image.

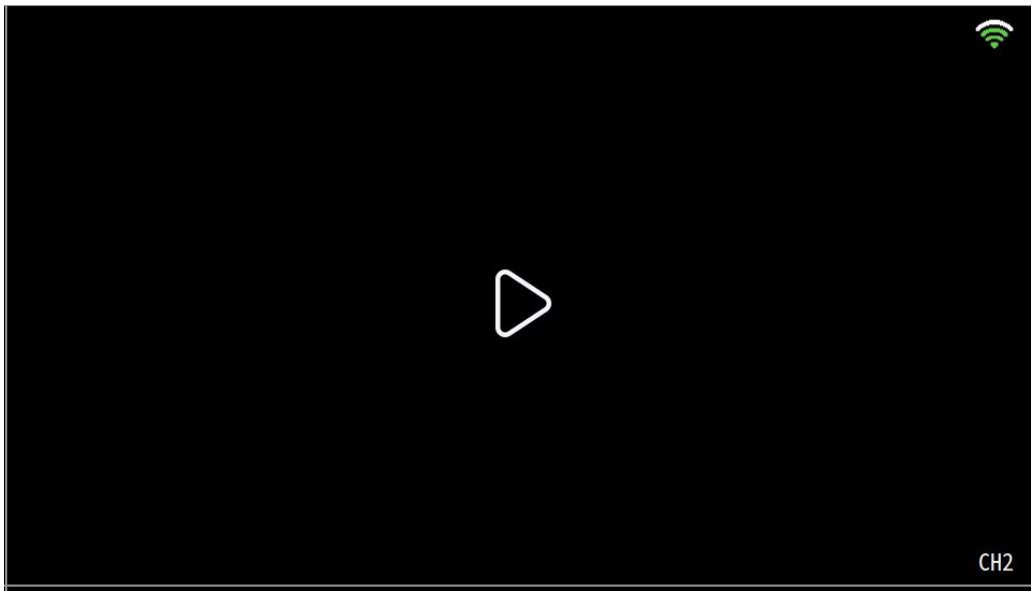
Battery-powered and non-battery-powered cameras, wired cameras, and Wi-Fi connected cameras all use the same "disconnected" image.



❖ Status 4: Battery camera in sleep mode (WIFI connected)

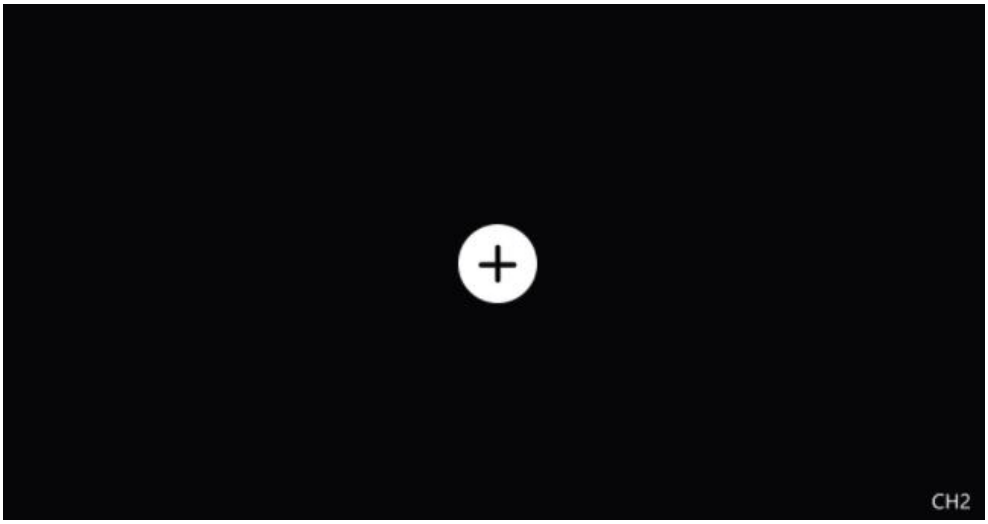
This state applies only to battery-powered devices. It indicates that the battery-powered device is connected to Wi-Fi but has entered sleep mode. The NVR displays the last I-frame of video footage from before the battery-powered device went into sleep mode.

A "Play" button is also superimposed on top, which can be clicked to wake up the battery-powered camera.



❖ Status 5: A "+" icon appears when the mouse hovers over an unadded channel.

After removing it, it will revert to "Status 1: Not Added ".



- The channel display status switches between the above 5 states, and the switching logic is as follows:
  - ❖ After the added channel camera has successfully connected and outputs an image, during decoding and playback, switch to displaying the decoded content.
  - ❖ After the camera connection drops (for a constantly powered camera, this means the stream socket connection is disconnected; for a battery-powered camera, this means the Wi-Fi connection is disconnected), after a delay, the system will display a status 3 image: " Disconnected after being added, no image displayed".

    The delay times differ depending on the camera's timeout value.

    Wired camera disconnection delay duration: 90 seconds

    Delay time for disconnection of a constantly powered camera connected via WIFI: (related to WIFI driver, should be no less than 30 seconds and no more than 300 seconds)

    Delay duration of battery-powered camera disconnection due to WIFI connection: Differences exist between different WIFI drivers?
  - ❖ State 4: Timing for the battery camera to enter sleep mode

    The battery-powered camera's TCP socket connection is lost, and it enters sleep mode after a 5-second delay ; it cannot display immediately after reconnecting to the socket, and in cases of severe interference, the camera will not immediately display the sleep state after disconnecting, requiring the camera to reconnect.
  - ❖ Entry timing of state 5

    Move the mouse over the display area of the unadded channels.
  - ❖ After adding or deleting a channel, the status should be updated promptly.
  - ❖ When splitting the screen, the status display must be correct.

- ❖ The display status of each channel must be correct upon power-on.
- ❖ When returning to the preview screen from the settings or playback screen, the channel status should be displayed correctly.

1.8.2. Preview Taskbar

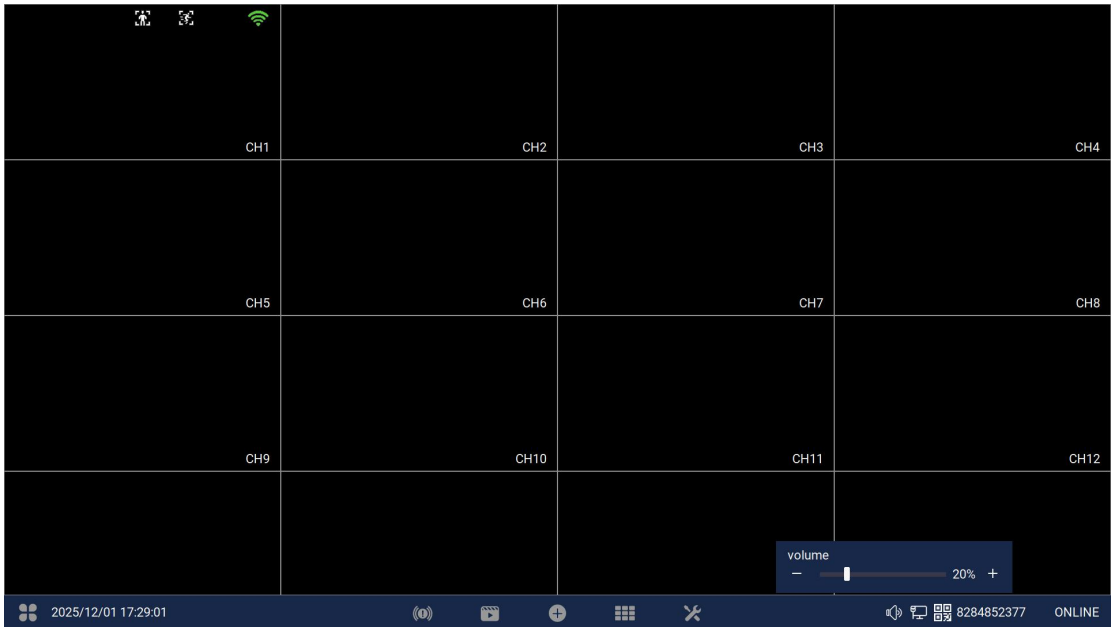
Requirements:

1. When the mouse moves **(to any position in the preview interface) ,** the preview taskbar appears automatically.
2. After the preview taskbar appears, it will automatically hide and disappear if the mouse hovers over it for 5 seconds.
3. The Channels toolbar disappears when the mouse hovers over the preview taskbar.
4. The preview taskbar must include shortcuts to the following commonly used functions.
   - Split-screen switching, allowing you to switch between x1/x4/x8/x9/x16/x25/x36 displays, etc.

     The split-screen switching icon needs to be adjusted according to the largest channel of the recorder;

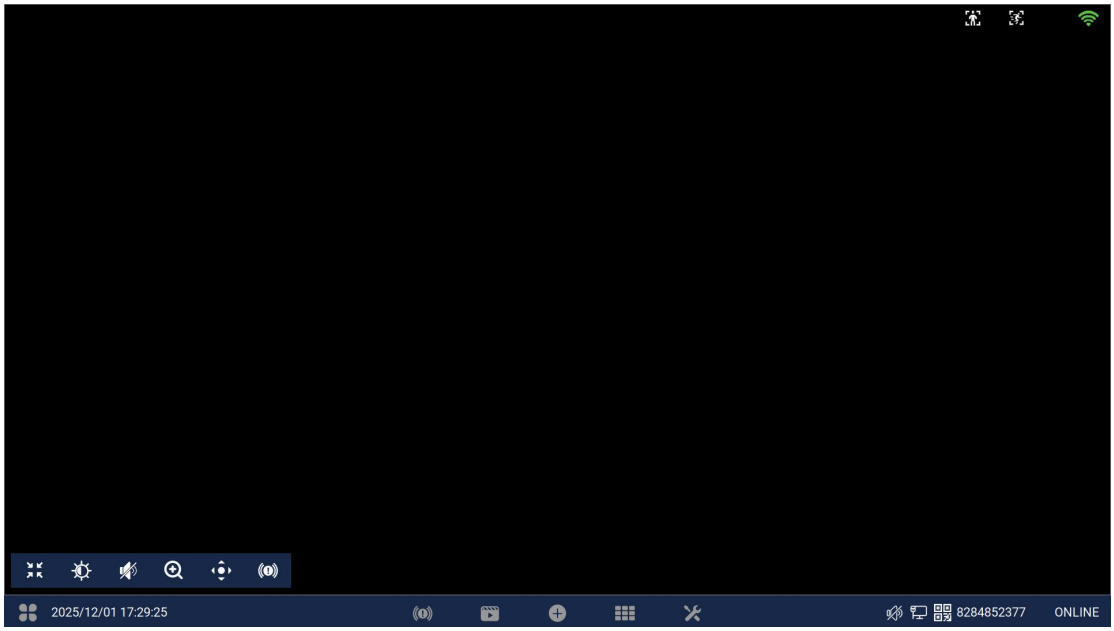
     If a split screen has multiple pages, multiple clicks will switch pages; for example, clicking the icon for split screen 1 will switch to page 1 on the first click, page 2 on the second click, and so on, in **a continuous loop .**
   - Add camera
   - System Settings
   - Replay
   - Message Center (Not supported in the first version)
   - One-click alarm (not supported in the first version)
5. The preview taskbar must display the following status:
   - The current system time, including year, month, day, hour, minute, and second, **is displayed according to the current date and time format** . The system time must be running continuously and cannot be fixed. Clicking will take you to the system time settings interface.
   - The network status indicator can distinguish between devices that are online or offline; clicking it will take you to the network settings interface.
   - Device cloud ID, click to enter the APP/account interface
6. When you move the mouse over an icon, a focus effect will appear, and corresponding text will appear explaining the function of the icon.
7. When the split-screen icon appears, clicking outside the icon with the mouse will make the split-screen icon disappear.
8. The preview status bar disappears when the mouse clicks outside of it.
9. The mouse moves smoothly without lag, and the interface displays correctly.
10. The preview taskbar is displayed directly on top of the video layer, without modifying the size or position of the video layer.

11. The preview taskbar allows you to adjust the volume and display the current audio output status (and whether it's muted).
    (1) The volume can be adjusted between 0% and 100%, in 10% increments.
    (2) When the volume is set to 0, the volume icon shows the off state; when it is not 0, the audio output status is displayed.
    (3) After setting the volume and restarting, the set volume remains the same as before the restart; the actual volume level is the same as before the restart.
    (4) The default volume is 20%?



1.8.3. Channel Toolbar

The channel toolbar, located near the display channel, consists of a series of operable icons (including channel zoom, audio switch, image settings, intercom, PTZ operation, electronic zoom, etc.).



Requirement description:

- If the channel has been added and successfully connected, proceed with playback; when moved to any position within the currently displayed window, the channel toolbar will pop up.
- For channels not added, channel connections will not display a graph, or the device may be in sleep mode due to battery power, and the channel toolbar may not appear when the mouse moves.
- When you move from one channel to another, the channel toolbar also moves to the other channel and appears thereafter, while the toolbar of the previous channel is hidden.
- The Channels toolbar disappears when the mouse hovers over the preview taskbar.
- The Channels toolbar disappears after the mouse hovers over it for 5 seconds.
- The channel toolbar is displayed neutrally in the lower left corner of the channel by default.
- The channel toolbar is displayed semi-transparently.
- The channel toolbar operates smoothly, displays correctly, and the icons are clearly visible.
- The walkie-talkie icon will only be displayed on supported models. For example, it will not be displayed on the G4H-2 model, but it will be displayed on the K8508-W model.
- The zoom status icons should be displayed correctly: in multi-view mode, an outward zoom-in icon should be displayed; in single-view mode, an inward zoom-out icon should be displayed.
- The audio switch icon must be displayed correctly. By default, all audio channels are off. Only one channel can be on at a time; multiple channels cannot be on simultaneously. If one channel is on, the other channels must be off.

- After audio is enabled, the status icon bar of the channel should display that audio is enabled for the current channel; users should be able to clearly see which channel has audio enabled.
- Audio channels that are enabled can play sound normally, while channels that are not enabled cannot play sound.
- Click on Image Adjustment to enter the Image Adjustment interface.
- Click the gimbal icon to enter the gimbal interface. The gimbal icon is displayed according to the capability set; only devices that support gimbals will display this icon.
- When this model supports NVR intercom, an intercom icon will be displayed in the channel toolbar. Clicking it will enter intercom mode.
- Hovering the mouse over an icon in the toolbar will display a text description indicating the icon's function.
- The number of icons displayed in the Channels toolbar is consistent regardless of whether it's in full-screen (single-view) or multi-view mode; there is no discrepancy in the number of icons displayed in full-screen and multi-view modes.
- For functions requiring full-screen operation (such as image adjustment, intercom, and PTZ control), when clicking the corresponding control button in a multi-screen environment, in addition to entering the corresponding settings interface, the user must switch to the corresponding full-screen display. After exiting the settings interface (such as image adjustment), the user must return to the original split-screen interface.
- The Channels toolbar supports an electronic magnification button. Clicking the electronic magnification button will take you to the full-screen electronic magnification interface.

1.8.3.1. Audio Output Switch

NVRs can only play audio from one channel at a time; they do not support simultaneous playback of multiple channels. Therefore, you must use the shortcut keys (audio switches) in the channel toolbar to control whether a channel's audio is on or off.

Requirement description:

- The audio switch icon has two states, corresponding to on and off. Clicking it will toggle between the two states; the current state of the icon reflects the audio switch status of the corresponding channel.
- The audio switch icon must be displayed correctly. By default, all audio channels are off. Only one channel can be on at a time; multiple channels cannot be on simultaneously. If one channel is on, the other channels must be off.

- Once audio is enabled, the status icon bar should display that audio is enabled for the current channel; users should be able to clearly see which channel has audio enabled; channels that are not enabled do not need to be displayed.
- Audio channels that are enabled can play sound normally, while channels that are not enabled cannot play sound; only channels with enabled audio channels can play sound.
- When enabling audio, if the camera's audio encoding is disabled, you must also enable the camera's audio input and encoding functions (to avoid having no sound even after enabling audio).
- When turning off the audio, do not turn off the camera's audio input and encoding functions.

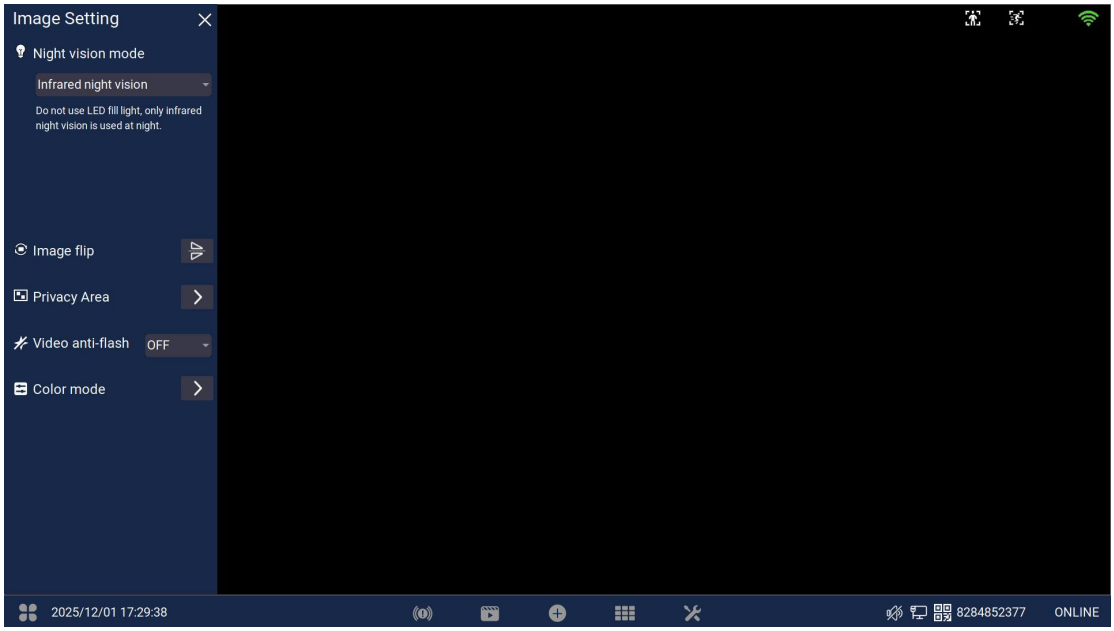
1.8.3.2. Channel Full Screen Magnification

For NVRs, the default startup view is usually multi-channel display. If you want to view a specific channel in full-screen mode, you can use the shortcut key (full-screen zoom) in the channel toolbar to zoom in on that channel.

- The full-screen magnification icon should be displayed in both single-view and multi-view scenarios.
- The full-screen zoom icon has two states: full-screen zoom icon (the icon expands outward) and zoom-out icon (the icon shrinks inward).
- The zoom status icons should be displayed correctly: in multi-view mode, an outward zoom-in icon should be displayed; in single-view mode, an inward zoom-out icon should be displayed.

1.8.3.3. Image Adjustment

Used for quickly setting image-related parameters of the camera.



Requirement description:

- Access the image adjustment interface via the image adjustment buttons on the Channels toolbar.
- The image adjustment interface is transparent.
- Supports camera night vision mode adjustment (infrared mode, daytime, nighttime, full-color mode, intelligent mode).
  - ❖ Infrared mode (also known as automatic mode)

    For hard-light-sensitive cameras, the system detects changes in ambient brightness using its photosensitive element. When the brightness reaches a certain level, it switches to daytime color mode; when the brightness falls below a certain level, it switches to nighttime black-and-white mode.
  - ❖ Daytime mode

    Regardless of whether it's day or night, the camera image is fixed in daytime color mode.
  - ❖ Night mode

    Regardless of whether it's day or night, the camera image is fixed in nighttime black and white mode.
  - ❖ Full color mode

    In automatic mode, when the brightness is detected to be below a certain level, the white light will be activated (this mode requires the camera hardware to have a built-in white light), and the image will be adjusted to color mode.
  - ❖ Smart mode

In automatic mode, when the brightness is detected to be below a certain level and movement is detected, the white light will be activated (this mode requires the camera hardware to have a built-in white light), and the image will be adjusted to color mode; after a period of time, it will revert to nighttime black and white mode.

- Supports image flip settings

  Clicking "Flip Image" will flip the original image horizontally and vertically once.

- The interface displays normally, with no abnormalities.
- Click the close button in this window to exit the image adjustment interface.
- The image settings do not change the camera's soft light sensitivity; the hard light sensitivity settings (retain the original configuration)
- When the image is flipped or night vision mode is set, the original image color parameters and soft and hard photosensitive parameters cannot be modified.

3-12 (V3.5.2.0 Requirements Change)

- The display should be based on the lighting control modes supported by the camera:
- For cameras that operate on constant power, it is necessary to obtain their capability sets (white light capability set, infrared light capability set) for display:
  - Dual light source equipment:
    - Smart Night Vision: The camera defaults to infrared black and white night vision at night. When someone appears, the camera automatically turns on the LED fill light, and the image turns into color.
    - Full-color night vision (light): When there is insufficient light at night, the LED fill light will be turned on automatically, and the picture will always be in color.
    - Infrared night vision (IR): No LED fill light is used; only infrared black and white night vision is used at night.
    - Night vision off (daylight): Night vision is disabled.
    - Infrared always on (night): Infrared night vision is always on, and the image is black and white.
  - Single infrared:
    - Automatic night vision: The infrared night vision function is automatically activated when there is insufficient light at night.
    - Night vision off: Night vision function is disabled.
    - Always on night vision: Infrared night vision is always on, and the image is black and white.
- For battery-powered cameras, it is necessary to obtain their capability sets (white light capability set, infrared light capability set) for display. **Battery-powered cameras with dual light sources do not support intelligent mode. In addition,**

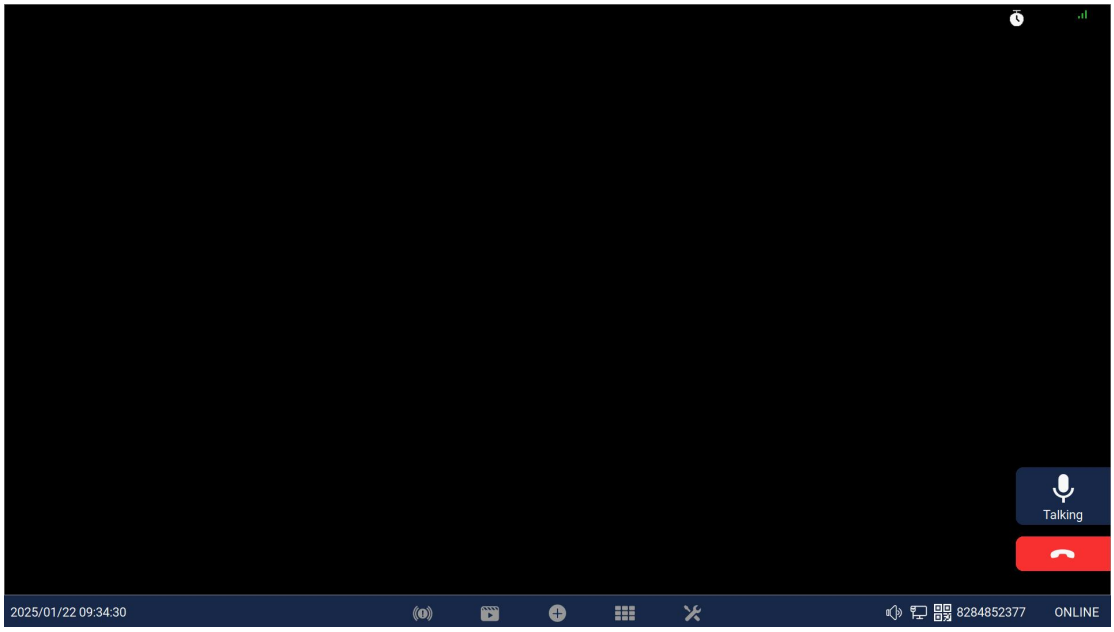
the dual light source options of battery-powered cameras are not displayed (night vision off and infrared always on options).

- Dual light sources:
  - Full-color night vision (light): When there is insufficient light at night, the LED fill light will be turned on automatically, and the picture will always be in color.
  - Infrared night vision (IR): No LED fill light is used; only infrared black and white night vision is used at night.
- Single infrared:
  - Automatic night vision: The infrared night vision function is automatically activated when there is insufficient light at night.
  - Night vision off: Night vision function is disabled.
  - Always on night vision: Infrared night vision is always on, and the image is black and white.

- For ONVIF devices, lighting control settings are not supported; this option is disabled.
- Anti-flicker settings, supports anti-flicker settings for cameras.
  - Cameras that do not support this feature will not display this setting.
  - The options are [Off, 50Hz, 60Hz]
  - If the retrieval fails, the default setting is "Closed".

1.8.3.4. Intercom

The recording host and the camera need to communicate via intercom. The corresponding channel needs to be enlarged to full screen to support intercom.



Requirement description:

- The recording host and the camera can communicate via intercom, but only one channel can be used at a time.
- You need to enlarge the corresponding channel to full screen before you can use the intercom function.
- The host device needs to support an audio input interface to support intercom. If the hardware of this model does not support it, the intercom button should not be displayed in the channel toolbar.
- Devices that support intercom will display an intercom button on the channel toolbar; clicking it will activate the intercom function. This icon is only displayed in full-screen mode; it is not displayed in multi-screen mode.
- When entering intercom mode, the audio output of the current channel is turned on by default (users can turn off the camera's sound via the channel toolbar if needed).
- When you enter intercom mode, it defaults to full-duplex intercom, and there are icons for "intercom in progress" and "hang up".

In full-duplex mode, two-way communication is possible without pressing the intercom button (note that the recording host and the camera should be kept at a certain distance and not in the same room, otherwise it will cause feedback).

- Double-clicking to switch between split screens is not possible during intercom.
- When you enter another interface via the taskbar or channel toolbar during an intercom session, the intercom will be automatically disconnected.
- In a task scenario, the game will automatically disconnect when entering other interfaces (excluding the access toolbar and taskbar), and there will be no situation where the game does not disconnect when entering other interfaces.

List of some models that support intercom:

K8508-W (miniNVR motherboard)

List of models that do not support intercom: G4H-2

1.8.3.5. Gimbal

Requirement description:
Features supported by version 3.5.0

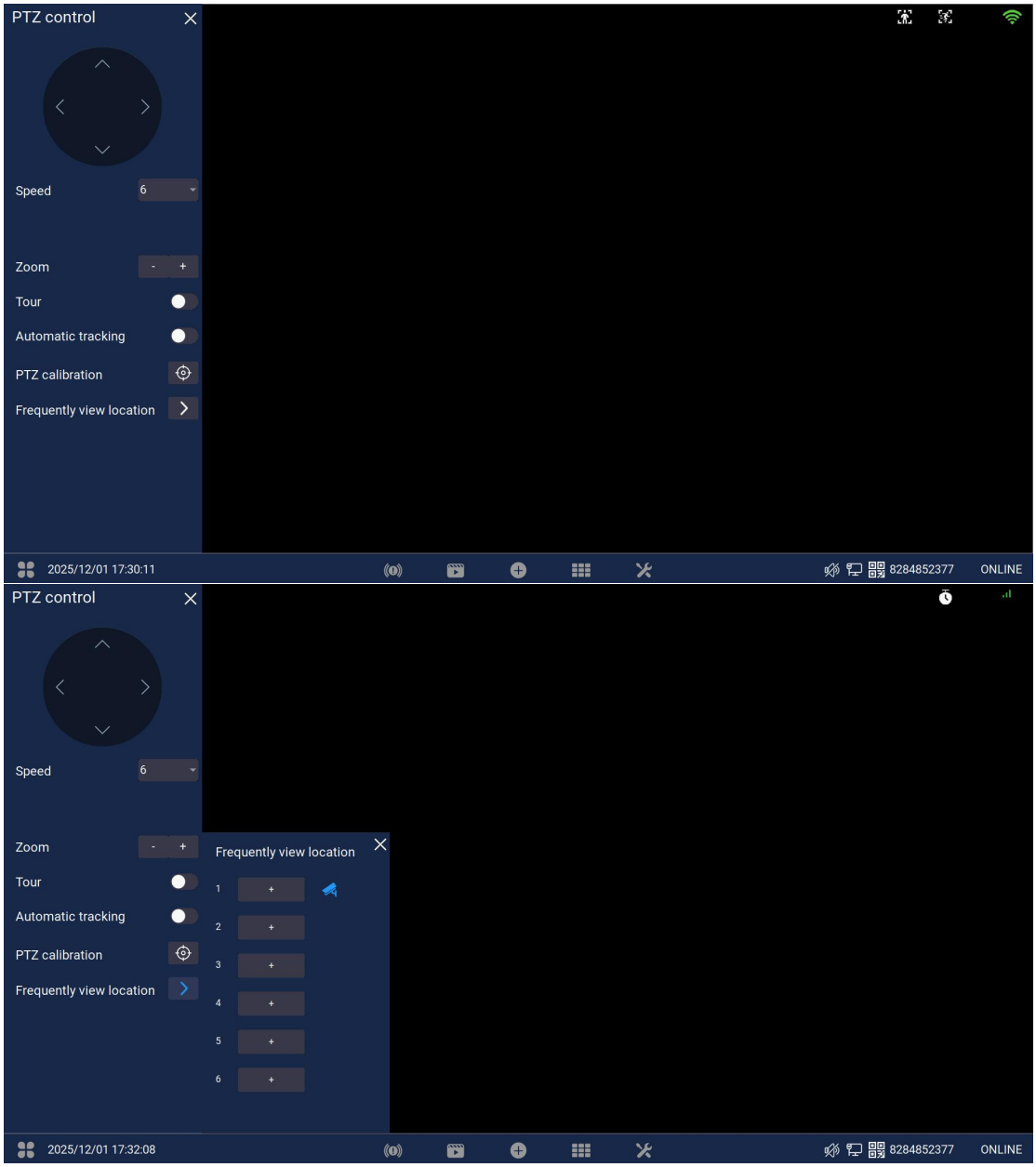
- Click the "PTZ" icon in the channel toolbar to enter the PTZ control interface, as shown in the image below.
- The PTZ control interface should be transparent, allowing the underlying video layer to be displayed transparently.
- The PTZ control interface can control the device's direction, including horizontal and vertical control.

3.5.2 Supported Functions

- For channels of devices that support PTZ (or for which it is impossible to determine whether a device supports PTZ), the channel toolbar should display a "PTZ" button icon.
- The PTZ control supports speed adjustment.
- The gimbal supports zoom and focus adjustment.
- Supports cruise operation (panoramic cruise), the PTZ camera automatically surveys all angles and directions.
  - When cruise control is activated, a message should appear stating, "Cruise control will automatically turn off after 4 hours of cruise control."
- Supports gimbal calibration function
- Supports automatic gimbal tracking function
  - When automatic tracking is enabled, the PTZ camera will track the movement of objects in the frame.
- It supports setting frequently viewed positions, with a maximum of 6 positions that can be set.
  - Frequently viewed locations support one-click addition, deletion, and retrieval.
  - "Frequently Watched Position 1" is the default position for guard. When "Frequently Watched Position 1" is added, it will be automatically set as the guard position.
  - When "Frequently Viewed Position 1" is deleted, the guard position function will be automatically turned off.
  - After restarting the NVR, the frequently viewed locations should be retained as set before the restart.
  - The location displayed on the mobile app is different from the location displayed on the phone (currently not supported).
  - After restoring factory settings, all frequently viewed locations were cleared.

- After deleting and re-adding the channel, the frequently viewed section was cleared.
- **After switching channels, frequently viewed positions should be retained in the original channel.**

- Supports shortcut mode (manually setting preset points).
  - Supports setting, calling, and deleting preset points by inputting preset points.
  - The preset point input range is **1~255** (the actual range depends on the preset point range supported by the camera). Different cameras support different preset point ranges.
- N1 should support all of the above functions;
- The N1_S (battery-powered) should only support direction control and speed; other functions (including zoom, cruise control, preset points, monitoring positions, automatic tracking, and gimbal calibration) are not supported, and the relevant interfaces are hidden.
- ONVIF only supports direction control, zoom, speed, cruise control, and preset points (but does not support watchdog position, automatic tracking, or gimbal calibration; unsupported items should be hidden).
- **Ability Sets: Based on the ability sets in the horizontal and vertical directions, and the ability sets of AF, show or hide the corresponding icons (+).**
  - **For devices that explicitly do not support horizontal control, the horizontal control function keys should be hidden.**
  - **For devices that explicitly do not support vertical control, the function keys for horizontal control should be hidden.**
  - **For devices that explicitly do not support autofocus, the zoom control buttons should be hidden.**


PTZ control
Speed
6
Zoom
-
+
Tour
Automatic tracking
PTZ calibration
Frequently view location
2025/12/01 17:30:11
8284852377
ONLINE
PTZ control
Speed
6
Zoom
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Automatic tracking
PTZ calibration
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1
2
3
4
5
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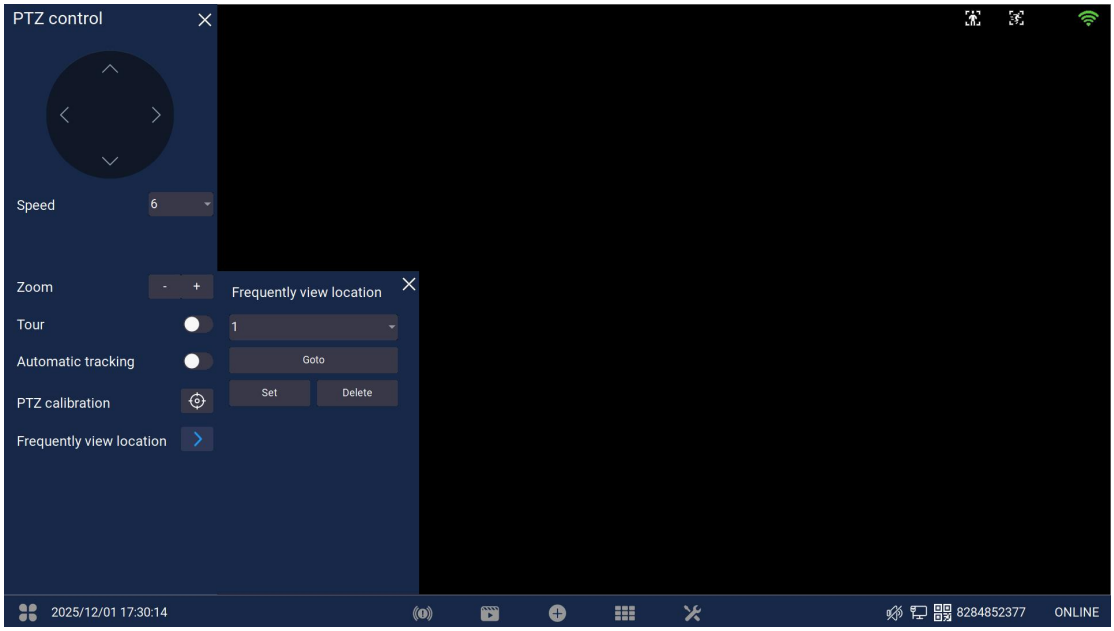
ONLINE



1.8.3.6. Electronic Magnification (Digital Zoom)

- Supports electronic magnification and reduction of magnified areas.
- Electronic zoom supports displaying the panoramic preview area in the lower right corner.
  - The panoramic preview area supports displaying the currently zoomed-in area and updates in real time.
  - When you hover the mouse over the zoom-in selection box in the panoramic preview area, you can hold down the left mouse button and drag the current zoom-in area. The zoom-in area will change in real time according to the dragged selection area.
  - When moving the selection area, the actual zoomed-in area is the same as the selection box in the panoramic preview.
- The zoom area can be moved by dragging the main screen. When the main screen is dragged, the zoom selection box in the panoramic preview also changes in real time.
- The zoom level can be adjusted by scrolling the mouse. As the mouse scrolls, the zoom selection box in the panoramic preview changes in real time.
- Click the Channel toolbar to bring up the operation instructions dialog box.

Use the middle mouse button to zoom.

When you hover your mouse over the panoramic area in the lower right corner, you can press the left mouse button to move the zoomed-in area.

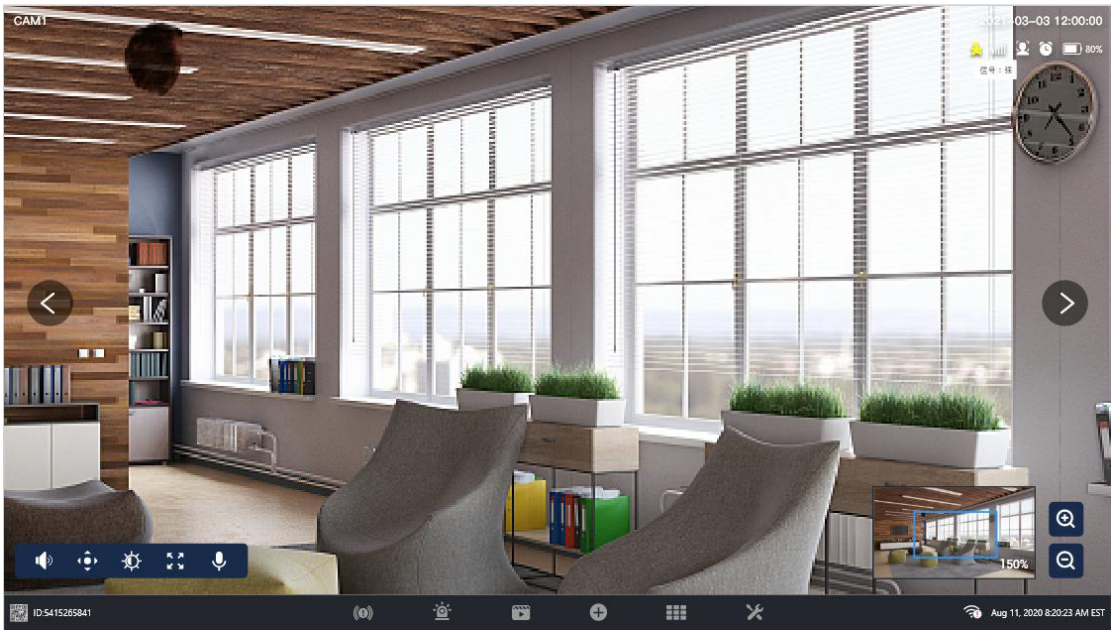
【】 Do not show this message again

【Sure】

- Do not show this message again (it is not selected by default); if it is not selected, this message will still pop up next time; if it is selected, this message will not pop

up next time.

- When entering electronic zoom, a screenshot is captured from the current channel and displayed in the panoramic area in the lower right corner; currently, real-time updates of the panoramic area are not supported when rotating the camera.



1.8.4. Channel Status Icons

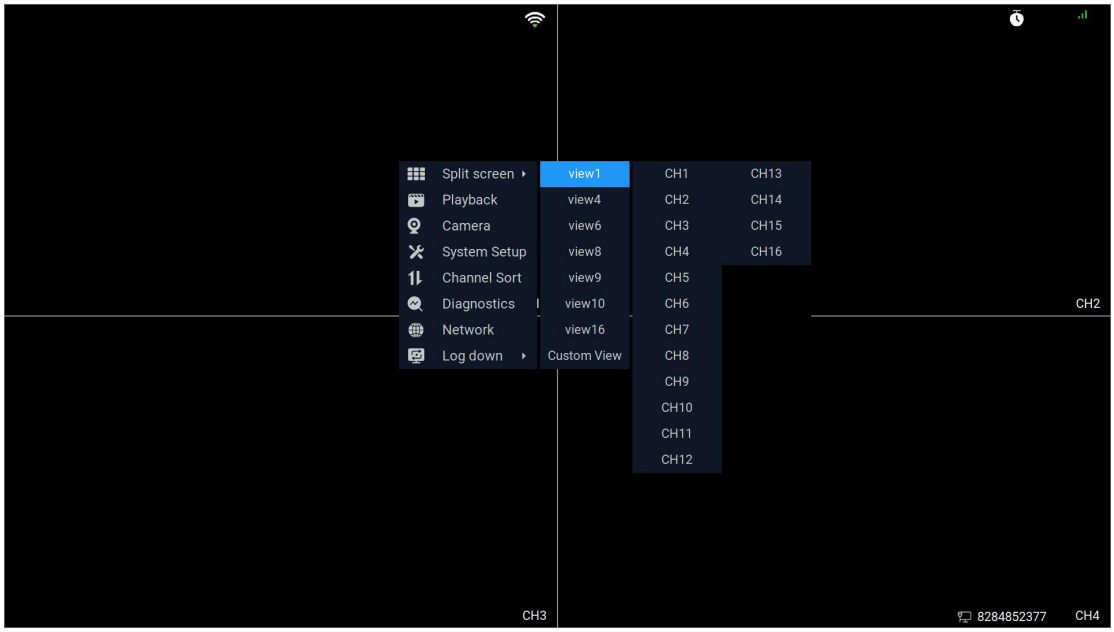
Used to display the current key status of the channel (such as recording status, motion detection events, human detection, vehicle detection, sound on/off, WIFI signal icon, etc.).

- The channel status is neutral and is displayed in the upper right corner by default.
- Channel status can be updated normally.
- The recording status needs to be displayed, including the current recording activity and the recording type. The recording icon should appear at the start of recording and disappear when recording ends.
  - ❖ Timed recording type
  - ❖ Mobile (Event) Recording Type
- The system needs to display currently detected events, and the supported events include: Event icons should be displayed at the start of the event and then turned off after a 10-second delay.
  - ❖ PIR incident

- ❖ Humanoid detection incident
- ❖ Vehicle shape detection incident

- The status icon can update even when the channel is not on the current page. For example, if a human or moving recording is triggered while in the settings interface, the current channel status icon will be displayed correctly after closing the settings interface and entering the preview interface.
- When an event is triggered outside the preview screen, the event icon does not update until the preview screen is re-entered (e.g., refreshing while in the settings screen will cause the settings screen to display abnormally).
- By default, the battery level of the camera is not displayed (the battery level is displayed overlaid on the camera's own OSD). See the camera OSD module for details.
- When audio is enabled on this channel, an audio status icon should be displayed; it should not be displayed when audio is disabled.
- The channel status icons are clearly visible and display normally without any abnormalities.
- The wireless connection should display a Wi-Fi signal icon by default, with a maximum of 4 bars. The corresponding signal icon levels are shown below:
  - ❖ Connection disconnected
  - ❖ 1 grid > 0
  - ❖ 2 grids > 18
  - ❖ 3 grids > 26
  - ❖ 4 grids > 45

1.8.5. Right-click shortcut menu



Right-clicking in the preview window will bring up a "Right-click Shortcut Menu". The right-click shortcut menu contains function keys for some commonly used system settings, such as playback, split-screen selection, and system settings.

- Right-clicking in the preview window should bring up a context menu.
- This includes ensuring that when the preview taskbar and channel toolbar appear, right-clicking should also bring up a context menu.
- When the preview taskbar and channel toolbar appear when you move the mouse, right-clicking should make the preview taskbar and channel toolbar disappear, and a right-click menu should appear.
- Right-click anywhere on the monitor (such as the top left, top right, bottom left, or bottom right corner), and the right-click menu should be displayed in its entirety.
- The right-click context menu displays correctly, the font is clear, and there are no abnormalities.
- The right-click menu should at least include split-screen selection, playback, system settings, and an exit system function key.
- The right-click menu should support split-screen switching.
    - When you move to the split-screen selection, the second-level and third-level split-screen buttons should be displayed.
    - The second level is for split-screen selection (1 screen, 4 screens , 6 screens, 8 screens, 9 screens, 10 screens ...), displayed according to the actual maximum number of channels.
    - The third level is channel selection (e.g., screen 1 is CH1~CH4).

- When moving to the second-level screen, the third-level content is updated promptly when other split-screen windows are accessed.
- Clicking the corresponding split screen or button will switch to the corresponding split screen.
- When the mouse hovers over the split-screen selection menu button, the second-level and third-level split-screen menus disappear.
- Right-click anywhere on the monitor (e.g., top left, top right, bottom left, bottom right), and the secondary/in-secondary split-screen buttons will display completely and normally.
- When you move to the corresponding button, the button is highlighted.

- When you move to the corresponding button, the button is highlighted.
- Exiting the system should include functions such as logout, restart, and shutdown.
- Except for split-screen selection, which does not require login, all other buttons in the right-click menu should require login to access their respective interfaces. For example, if you are not logged in, clicking "System Settings" in the right-click menu should first take you to the login screen, and only after successfully logging in can you access the system settings interface. If you are already logged in, you will be directly taken to the system settings interface.

1.8.6. System Prompt

A system prompt is a message window that pops up when the system detects a certain status or event during operation, in order to provide the user with some necessary information.
The system requires the following system support prompts:

1.8.6.1. USB flash drive connection prompt (USB flash drive contains upgrade files)

When the system detects that a user has connected a USB drive and a mouse, and that the USB drive contains the upgrade files for the current device, the system will proactively pop up a message box prompting the user whether they want to upgrade the device. The user can click "Upgrade" or "Cancel". If they click "Upgrade", they will directly enter the upgrade interface to begin the upgrade process.

In other cases, for example:

1）The USB drive contains upgrade files, but no mouse is connected, and no notification pops up.

2）If the USB drive contains upgrade files, but they are not for the current NVR model, but for another NVR model, then no upgrade prompt will appear.

1.8.6.2. Online Upgrade - New Version (Force Upgrade Notice)

When a firmware is uploaded to the OTA server and forced upgrade prompts are enabled, the system will detect that the OTA service has a version that can be forcibly upgraded and will display a message box to notify the user that a new version is available.

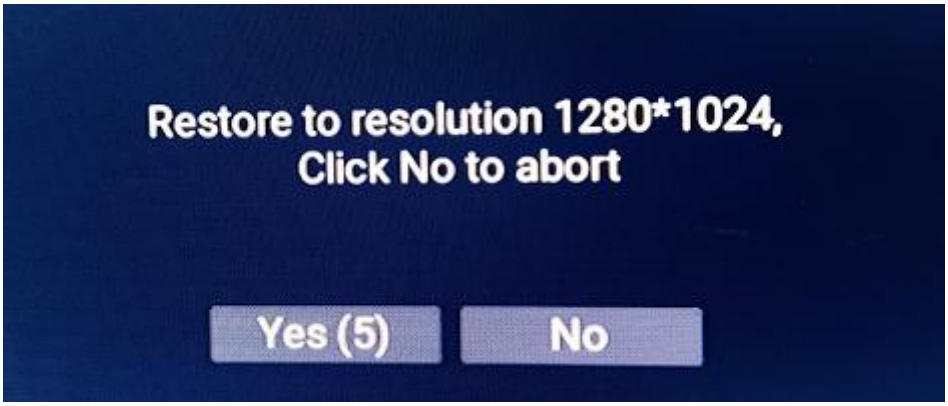
A prompt will appear when the following conditions are met:

- An over-the-air (OTA) server was found to contain a forced upgrade version.
- The current user is operating the device, meaning there is a mouse event.

- ❖ Furthermore, this version did not provide any notification, or more than 24 hours have passed since the last notification.

When the pop-up prompt appears, the user is given two options: "Upgrade" or "Remind me next time". If the user clicks "Upgrade", they will be taken to the upgrade interface to begin the online upgrade; if they click "Remind me next time", they will be reminded 24 hours later.

1.8.6.3. Restore Default Resolution Prompt



When a user connects to an unsupported monitor (output resolution exceeding the monitor's supported range), the user cannot operate the device. A method needs to be provided to allow the user to switch to a lower resolution for display.

When the user presses and holds the left mouse button for 12 seconds , a message box automatically pops up, prompting the user that the system will revert to the lowest resolution of 1280x1024; an 8-second countdown will then appear, which the user can click to cancel. If the user clicks cancel, the device will retain its current resolution; if the user does not click cancel, the device will automatically revert to the 1280*1024 resolution after the 8-second countdown ends.

(Note: 1. Holding down the left mouse button in the gimbal interface and image adjustment interface will not display the prompt to restore resolution; 2. Holding down the left mouse button in the login interface will display the prompt to restore resolution; 3. Holding down the left mouse button in the first page of the wizard will display the prompt to restore resolution.)

1.8.6.4. help_up.rom background recovery upgrade

When upgrading using help_up.rom, a "firmware upgrade progress bar" should pop up regardless of whether you are in the preview interface or not.

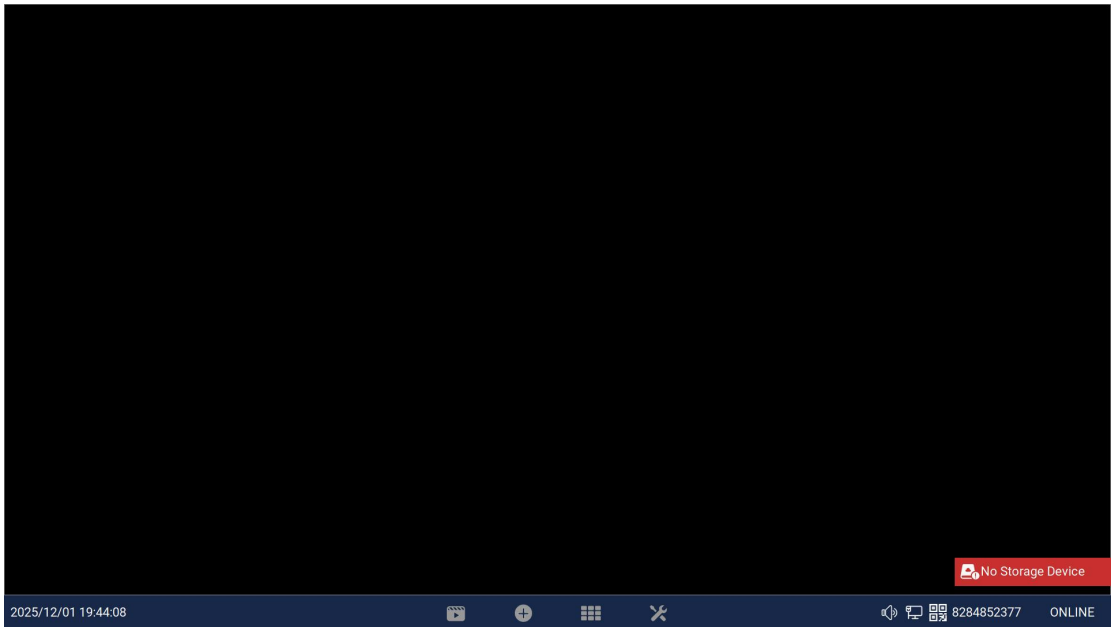
1.8.6.5. Local prompts when remotely triggering upgrades via web pages, etc.

Regardless of whether it's in the preview interface or not, a "firmware upgrade progress bar" should pop up.

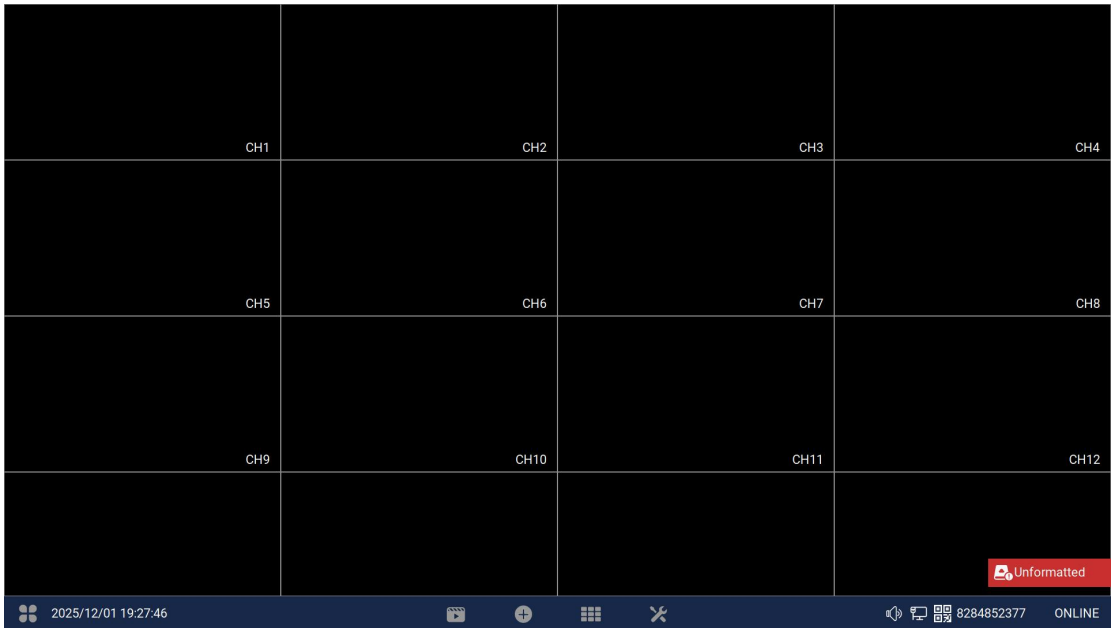
1.8.6.6. No hard drive notification

When the system boots up and detects that no hard drive or TF card device is connected, it prompts the user that no storage device, such as a hard drive, is connected, and the device cannot start recording.

Can be customized to not display



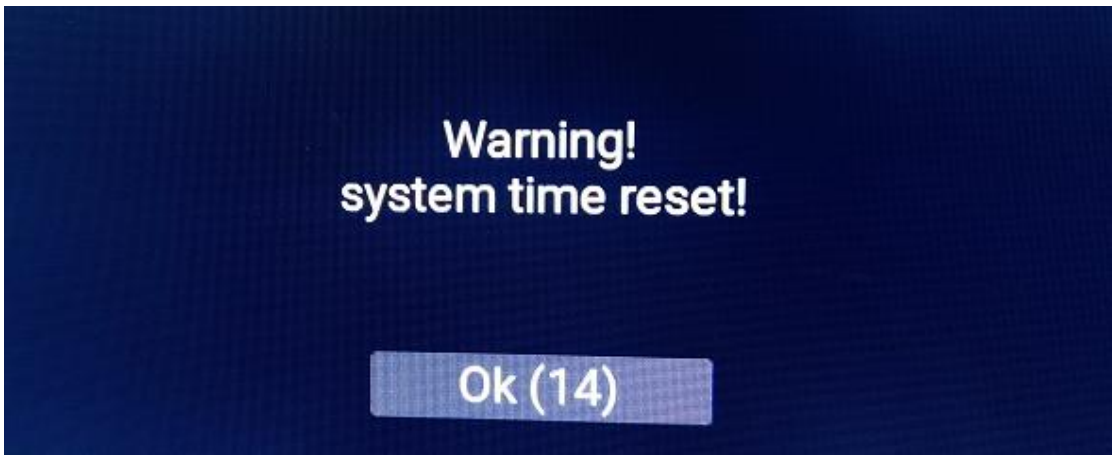
1.8.6.7. Hard drive not formatted prompt



When the system detects that the hard drive or TF card is not formatted during startup, it prompts the user that the storage device is not formatted.

1.8.6.8. Time Anomaly Warning

If the system detects that its time is earlier than 2020 during initial startup, the user should be notified that the system time is abnormal. In case of an abnormal system time, **the time should be automatically restored to the build time.**



1.8.6.9. Remote App Upgrade

When the host upgrade is triggered remotely via a mobile app, an upgrade interface prompt will pop up locally.

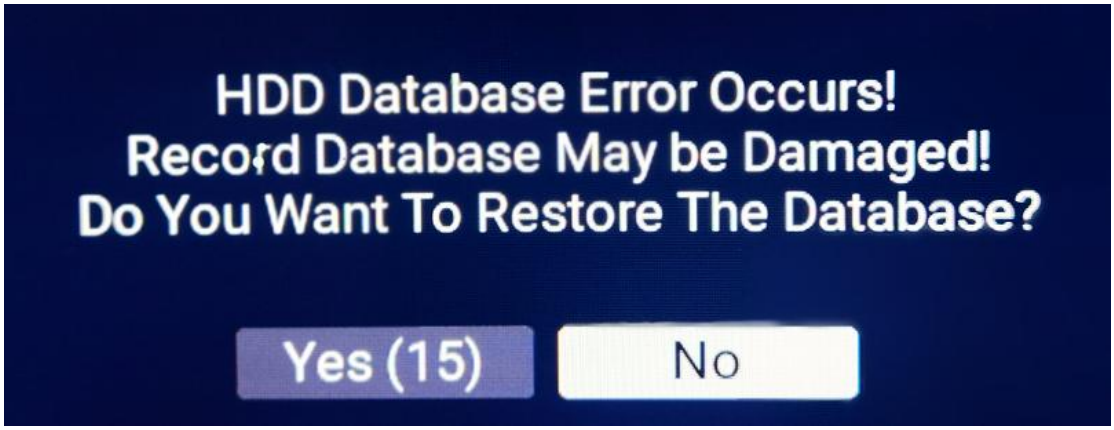
1.8.6.10. Hard drive or TF card switching prompt

During system startup and initialization, if the system detects an inconsistency between the connected storage device and the current configuration, it will automatically switch to

the new storage device type. For example, if the current recording is on a TFcard, but the system detects a hard drive during startup, a prompt will appear (this prompt disappears automatically after 5 seconds, and only an OK button is available):
"Hard drive detected"
"The current recording is a TFcard recording."
"Switch to hard drive recording **; the hard drive is set to continuous recording mode by default** ."

Conversely, if the current recording is from a hard drive, but the startup process detects a TFcard, a prompt will appear (this prompt disappears automatically after 5 seconds, and only an OK button is available):
"Tfcard detected"
"The current recording is a hard drive recording."
"Switch to TFcard recording **. TFcard defaults to event recording mode** ."

1.8.6.11. Disk Database Error Message



During system startup initialization, if a hard disk database error is detected, a message indicating a hard disk database abnormality should be displayed. After a countdown, database recovery will automatically begin. Users can choose to cancel; clicking cancel will prevent recovery from proceeding. Clicking "Yes" or attempting database recovery after a 30-second countdown will also be possible.
"Disk database corrupted"
"Video database corrupted"
"Is database recovery necessary?"

1.8.6.12. Resolution settings

When the resolution is changed, the temporary changes will be saved to the context. The user will be prompted upon the next startup:
"Do you want to save the current display resolution? It will automatically revert to the previous settings in 10 seconds."
The previous output resolution will be automatically restored after the countdown ends or after clicking "No". Clicking "Yes" will save the current display resolution.

1.8.7. Channel Border

Channel borders are used to distinguish the display position, size, and boundaries of different channels.

1.8.8. Camera OSD

Camera OSD refers to the information superimposed on the camera video, which mainly includes time and device name.

For battery-powered devices, there are also battery level icons and charging status icons.

For NVR4.0 cameras, the OSD should be set in the upper left corner.

1.8.9. Preview Desktop ID Display

- To ensure that the device's cloud ID and online status can be viewed even when the system is inactive, the cloud ID and online status icon will be permanently displayed in the lower right corner of the preview desktop.
- The online status icon has two states: online and offline. The online status icon displays accurately. When online, you can remotely view the user by adding an ID via the mobile app; when offline, the app cannot remotely view the user.
- When the mouse moves, the preview taskbar can cover the ID display (because the ID is also displayed on the preview taskbar).

1.9. Replay

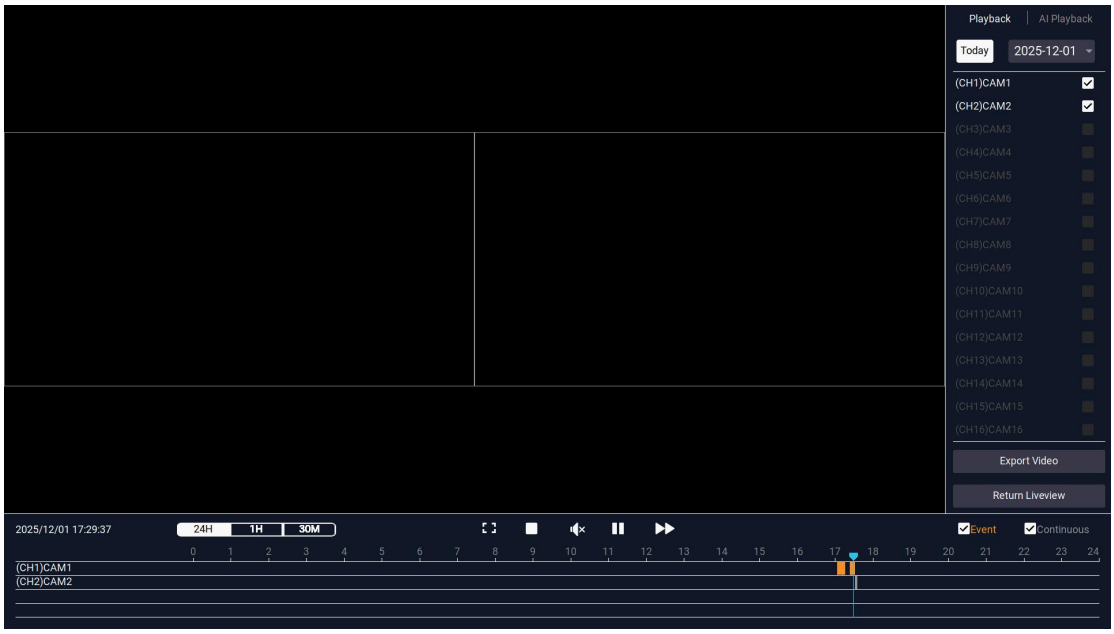
Playback is used to retrieve and play recorded data (audio and video data) within a specified historical time period. The data can be stored on a TF card or hard drive. There are two playback modes: normal playback and smart playback.

- Normal playback uses the traditional timeline method for searching and playing.
- Intelligent playback retrieves and plays images based on events (such as human detection), focusing more on events of interest. The screenshot is similar to a silhouette of a video, allowing for a preliminary judgment on whether the video is the one needed, thus speeding up the filtering efficiency of videos in specific scenarios.
- When recording using the hard disk file system, both normal playback and smart playback modes are supported simultaneously. Recording using TFcard only supports normal playback mode.
- When recording using the hard disk file system, fast-forward playback is supported in normal playback mode; however, fast-forward playback is not supported when recording using TFcard.
- If the system has no hard drive or TF card device, clicking "Playback" should display "No storage device" and will not take you to the playback interface.

1.9.1. Normal Playback

Normal playback uses the traditional timeline method for searching and playing.

1) Hard drive /TF card normal playback interface



Requirement description:

- Video retrieval

- ❖ When entering the playback interface, it defaults to searching for recorded dates within the current month and displaying them on the calendar; and for recordings of that day, displaying them on the timeline.
- ❖ After entering the playback interface, the system will automatically complete the search and start playing from the earliest time point found that day.
- ❖ It supports searching by channel. By default, the first PB_MAX_CNT channels are selected for playback, where PB_MAX_CNT is the maximum number of playback channels supported by the device.
- ❖ When selecting channels, you can only select a maximum of PB_MAX_CNT channels. You cannot select more than that number of channels. (For example, if the maximum playback is 4 channels and channels 1 to 4 have already been selected, when selecting the 5th channel, the smallest of the previous channels will be automatically deselected, that is, the 1st channel will be deselected.)
- ❖ **When selecting a channel, the timeline is updated in real time.**
- ❖ Calendar search is supported. Dates with recorded videos are marked with a small blue dot below them, while dates without recorded videos are not marked.
- ❖ Date search allows you to select year, month, day, and **today** . **After selecting a specific date, the timeline updates and displays the video search results for that date in real time.**
- ❖ Supports searching by recording type (supports scheduled recording and event recording), with scheduled + event recording selected by default.
- ❖ **The timeline updates in real time when one of the recording types is selected or deselected.**
- ❖ If you reselect (including channel, date, and recording type) during playback, the most recent recording from 5 minutes ago will be played automatically (e.g., if there is a recording from 0 to 12:00, it will automatically start playing from 11:55:00).
- ❖ When there is no recording on a given day, the message "No recordings are being made in the current time period" appears? (No design draft)
- ❖ Search performance metrics
  - ■ The timeline refresh time for a database of 100 million plans is less than 1 second (including all the above operations).
  - ■ Clicking anywhere on the timeline should result in a playback time of less than 1 second.

- Timeline
  - ❖ The timeline displays the currently retrieved video segments as color bars. A color bar indicates that a video was recorded at that time; no color bar indicates that no video was recorded at that time.
  - ❖ The timeline displays a 24-hour time range by default.

- ❖ The timeline can be switched to 1-hour or 30-minute mode. After switching, the timeline range will be adjusted based on the current playback time. For example, if the current playback time is 11:30:00, and you click to switch to 1 hour, the timeline range will be 11:00:00 to 12:00:00; if you switch to 30 minutes, the timeline range will be 11:30:00 to 12:00:00.
- ❖ When the timeline reaches its end, it should automatically switch to the next time segment; for example, a 1-hour timeline from 11:00 to 12:00 should automatically switch to 12:00 to 13:00 when it reaches its end.
- ❖ The timeline should display the current playback time and be dynamically displayed as a floating cursor.
- ❖ The playback time and the marker on the timeline should be dynamically updated in real time as playback progresses, along with the marker's position on the timeline.
- ❖ When the mouse moves over the timeline, the time at the current mouse position should be displayed.
- ❖ When you click on a recording location on the timeline, the playback should immediately switch to the moment the mouse hovers over it.
- ❖ When the mouse clicks on a location on the timeline where there is no recording, the playback should immediately switch to the moment the mouse hovers over the location and begin calculating the next location with recording.
- ❖ Different types of video recordings on the timeline should be distinguished and displayed using different colors, and the colors used to represent timed and motion recordings should be clearly marked.
- ❖

- Basic playback controls
  - ❖ Play
    After clicking, the playback begins the moment the mouse hovers over it.
  - ❖ pause
    Click to pause video playback.
  - ❖ fast forward

    Supports 2x, 4x, and 8x fast forward (currently only keyframe fast forward is supported).

    When fast-forwarding, the current fast-forward status and fast-forward speed should be clearly displayed.
  - ❖ full screen

    In multi-playback mode, the full-screen button is disabled and cannot be operated; in single-screen playback mode, the full-screen button is operable and clickable.

    The right and bottom control areas are hidden when in full-screen mode.

In full-screen mode, moving the mouse over the bottom control area will bring up the bottom timeline and playback control interface, where all functions can be operated normally; moving the mouse away will hide the bottom control area.

The bottom control area should include a timeline and basic playback control functions.

Clicking the full-screen button again will exit full-screen playback mode, and the playback interface will return to normal.

❖ Audio switch

By default, playback is silent; when enabled, playback will have sound.

When playback is enabled, the audio from the current playback channel will be played back during single-channel playback.

When playback is enabled, if it is in multi-channel playback mode, the sound from the currently selected channel will be played. By default, the first channel in the current playback channel will be selected.

❖ Split-screen selection

Double-clicking the playback video channel zooms in to a single-screen display; double-clicking again returns to multi-screen display.

- Exit replay

Click the "Return to Preview" button to exit playback and return to the preview interface.

Right-click to exit playback and return to the preview screen.

When returning to the preview screen from the playback, all functions of the preview screen are restored normally (see Chapter 5, Preview Screen, for details on the functions of the preview screen).

- Enter Smart Playback
  If it's a hard drive recording, the "Smart Playback" option should be displayed in the upper right corner. If it's a TF Card recording, the " Smart Playback" option will not be displayed in the upper right corner. Click "Smart Playback" to enter the Smart Playback interface.
- Backup video recording

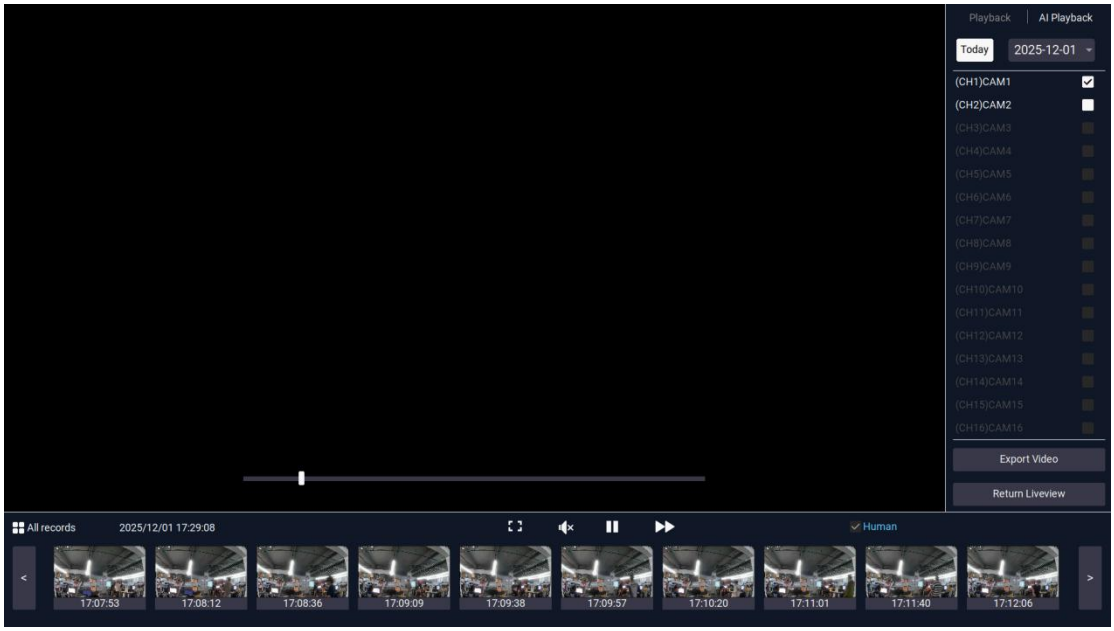
❖ Upon first entering playback, the first channel is selected by default. During multi-screen playback, if the selected channel is not recording, the backup button will not be displayed; if the selected channel is recording, the backup button will appear, and clicking it will back up the recording segment playing in the currently selected channel.

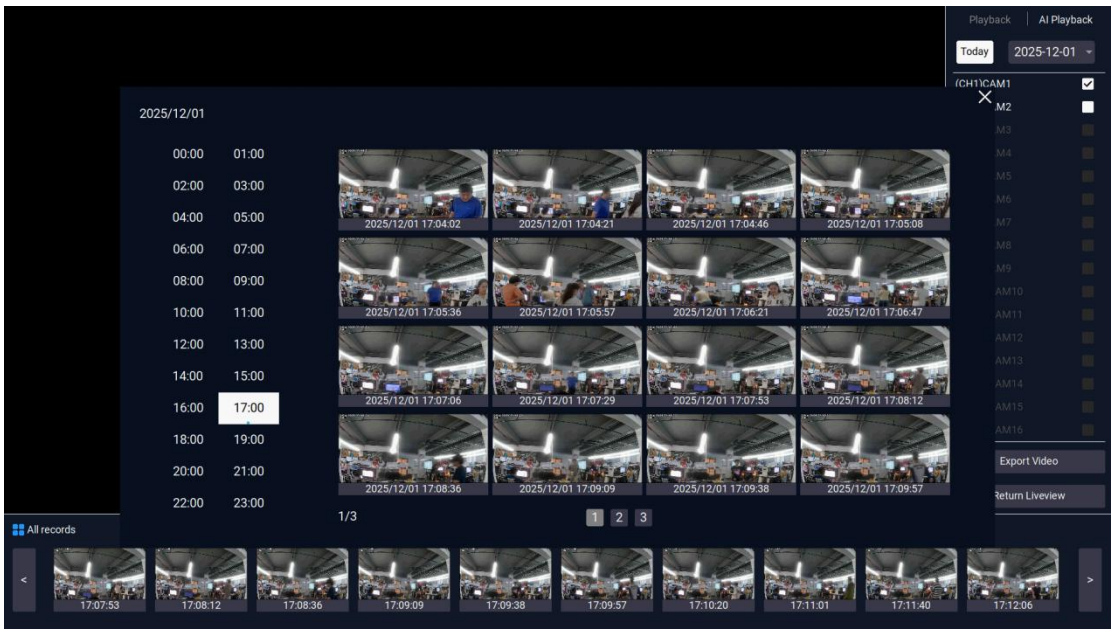
❖ Back up the currently playing video to a USB drive.

❖ Supports single USB interface backup (i.e., first connect the mouse and click backup, then unplug the mouse and plug the USB drive back in to start automatic backup).

- ❖ Supports dual USB backup. Connect a mouse and a USB flash drive simultaneously; after clicking backup, the current recording will be automatically backed up to the USB flash drive.
- ❖ The default setting displays a "Backup Recording" button. If no recordings are being made for the selected channel and time period, a pop-up window will display the message "No recordings are being made for the current time period."

1.9.2. Intelligent Playback





Requirement description:

- When entering the intelligent playback interface, the default search function retrieves the human detection recordings from channel 1 on the same day.
- Smart playback defaults to searching for recordings within the current month. If a recording exists, the corresponding date is marked with a small blue dot; otherwise, it remains unmarked.
- If no video recordings are found, a pop-up message will appear stating "No video recordings were found within the current time period".
- After entering smart playback, the last page is displayed by default, and the last recording is played by default.
- Event video recording retrieval (and corresponding event screenshots)
  - ❖ When entering the playback interface, the system defaults to searching for recorded dates within the current month and displaying them on the calendar; it also displays the recorded episodes for that day in the "Image Gallery" section at the bottom (all channels, all event types).
  - ❖ Upon entering playback, the last page is displayed by default, and the last recording segment is played by default.
  - ❖ Supports searching by channel; intelligent playback only supports simultaneous playback of one channel at a time, with the first channel selected by default.
  - ❖ Only one channel can be selected at a time; more than one channel cannot be selected. (If one channel has already been selected, when selecting the second channel, the first channel will be automatically deselected.)
  - ❖ **When selecting a channel, the timeline is updated in real time.**
  - ❖ Calendar search is supported. Dates with recorded videos are marked with a small blue dot below them, while dates without recorded videos are not marked.
  - ❖ Date search allows you to select year, month, day, and **today** . **After selecting a specific date, the timeline updates and displays the video search results for that date in real time.**
  - ❖ Supports searching by video recording type (human detection is supported). (Other detection types, such as face detection and vehicle detection, are not yet supported in the first version.)
  - ❖ **The timeline updates in real time when one of the recording types is selected or deselected.**
  - ❖ If you reselect (including channel, date, and recording type) during playback, the last page will be displayed by default, and the last recording segment will be played by default.
  - ❖ Search performance metrics

- The timeline refresh time for a database of 100 million plans is less than 1 second (including all the above operations).
- Clicking anywhere on the timeline should result in a playback time of less than 1 second.

- After entering intelligent playback, the retrieved images need to be decoded and displayed in the bottom area (called the "bottom image gallery area"). All images are decoded and displayed normally, and the corresponding time is marked on the images.
  - Click the page-turning icon on the right or left to turn to the "next page" or "previous page".
  - Clicking "Next Page" will switch to the next page for decoding and display, starting from the next undecoded image.
  - When you turn to the last page, if the last page is not full, the rest of the page will be blank.
  - When you turn to the last page, the "Next Page " button is not clickable.
  - When turning to the first page, the "Previous Page" button is not working.
  - When the mouse hovers over an image, the currently hovering image is highlighted.
  - Clicking on the image will immediately start playing the video corresponding to that image, and the currently playing image will be highlighted.
- After playback ends, it automatically moves to the next video segment, and the image gallery at the bottom updates the current playback position in real time.
- Clicking on the video playback will automatically switch to the normal playback recording corresponding to the current playback time.
- Exit Smart Playback

Click the "Return to Preview" button to exit playback and return to the preview interface.

Right-click to exit playback and return to the preview screen.

When returning to the preview screen from the playback, all functions of the preview screen are restored normally (see Chapter 5, Preview Screen, for details on the functions of the preview screen).

- View all recordings
  - Clicking "All Recordings" will display all "Event Recording Screenshots" for the current day, the currently selected channel, and the current event type. The left area is distributed from "0" to "23". Time periods with recordings are marked with

a small blue dot at the bottom; time periods without recordings are not marked with a small blue dot. The right area displays all "Event Recording Screenshots" within the currently selected time period, defaulting to page 1.

- ❖ Clicking on a time period on the left will immediately update the right area with screenshots of event alerts for that time period.
- ❖ All screenshots in the right-hand area are displayed correctly, and the time corresponding to the current image is shown below.
- ❖ The bottom right area should display complete page number information and page turning buttons, supporting "First Page <<", "Previous Page <", "> Next Page", ">> Last Page" operations. Users can also directly click on adjacent page numbers "1, 2, 3,..." to quickly turn pages, and the current page number and total number of pages will be displayed.
- ❖ Clicking on one of the images will immediately play the corresponding video. The image and video are correctly associated.

- Playback progress bar
  - ❖ After clicking play, the playback progress bar displays normally and updates its position in real time.
  - ❖ After the video finishes playing, the playback progress bar will be displayed at the end of the progress bar.
  - ❖ Clicking the playback progress bar will jump to the corresponding progress position for playback.
- Basic playback controls
  - ❖ Play

    After clicking, the playback begins the moment the mouse hovers over it.
  - ❖ pause

    Click to pause video playback.
  - ❖ Fast forward (Smart playback does not support fast forward)
  - ❖ full screen

    The right and bottom control areas are hidden when in full-screen mode.

    In full-screen mode, moving the mouse over the bottom control area will bring up the bottom timeline and playback control interface, where all functions can be operated normally; moving the mouse away will hide the bottom control area.

    The bottom control area should include a timeline and basic playback control functions.

    Clicking the full-screen button again will exit full-screen playback mode, and the playback interface will return to normal.
  - ❖ Audio switch

    By default, playback is silent; when enabled, playback will have sound.

    When playback is enabled, the audio from the current playback channel will be played back during single-channel playback.

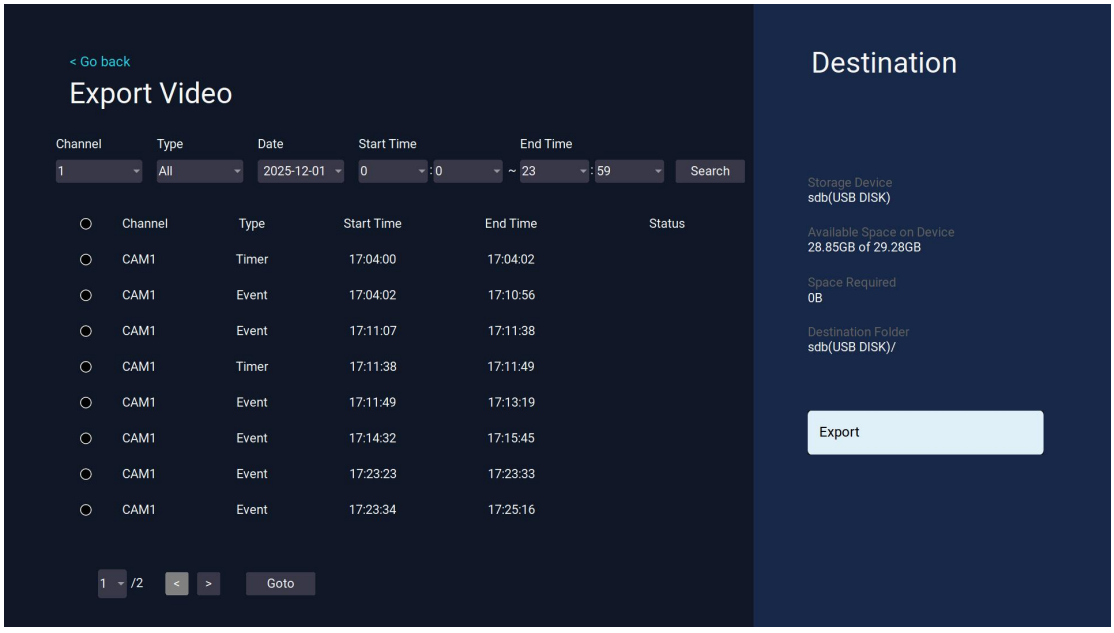
- ❖ During playback, the current playback time will be updated and displayed in real time.

- Backup video recording
  - ❖ Back up the currently playing video to a USB drive.
  - ❖ Supports single USB interface backup (i.e., first connect the mouse and click backup, then unplug the mouse and plug the USB drive back in to start automatic backup).
  - ❖ Supports dual USB backup. Connect a mouse and a USB flash drive simultaneously; after clicking backup, the current recording will be automatically backed up to the USB flash drive.

1.9.3. Backup

Back up the currently playing video to a USB drive. Backup is only supported during single-screen playback.

Supports single USB interface backup (i.e., first connect the mouse and click backup, then unplug the mouse and plug the USB drive back in to start automatic backup).



Requirement description:

• Back up the currently playing video to a USB drive.

- Supports dual USB backup. Connect a mouse and a USB flash drive simultaneously; after clicking backup, the current recording will be automatically backed up to the USB flash drive.
- Supports single USB interface backup (i.e., after connecting the mouse and clicking backup, if no USB flash drive is detected, a message box will pop up prompting the user to connect the USB flash drive; the backup will start automatically after the user unplugs the mouse and connects the USB flash drive).
- The left side of the video backup interface correctly displays the channel, date, recording type, time period, and size of the recordings to be backed up.
- The right-hand area correctly displays information about the connected USB flash drive, including the storage device, remaining space, space required for backup files, and the backup directory.
- Clicking "Backup" will start the automatic backup process, and the backup progress will be displayed in a window, allowing users to check the backup progress and whether the backup was successful.
- Supports all mainstream USB flash drive devices.
- Backup USB drives support FAT32 or exFAT formats, but do not support NTFS or other formats.
- The backup process should check the file system type of the USB drive. If it is an unsupported format, an incompatibility message should pop up.
- It needs to support formatting USB drives, specifically formatting them to FAT32.

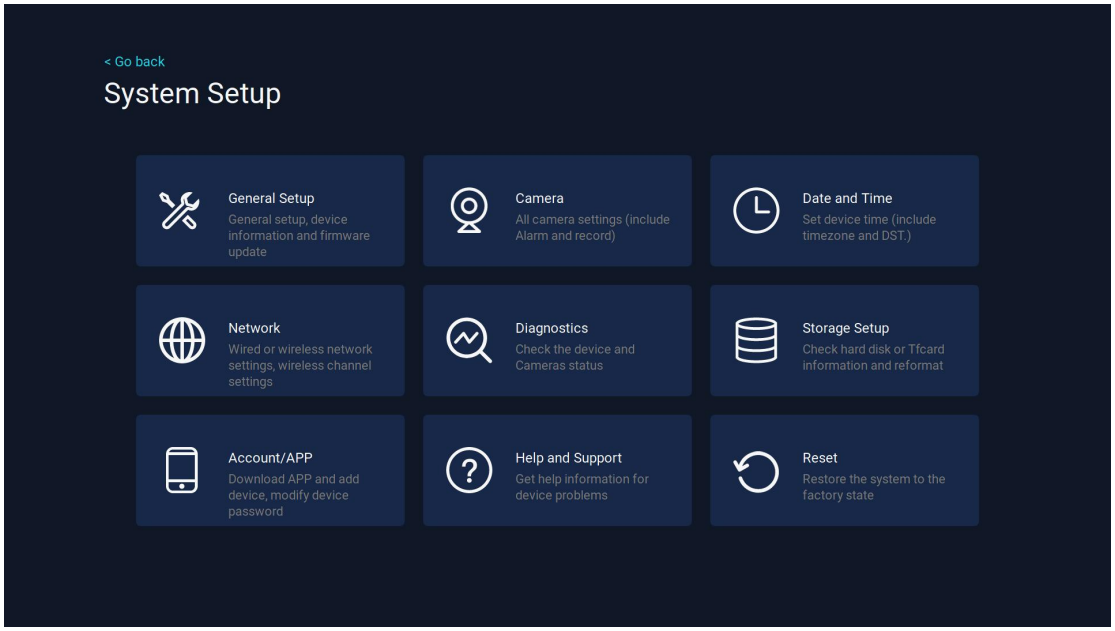
1.10. Settings

Access it via the "Settings" button icon in the preview toolbar.

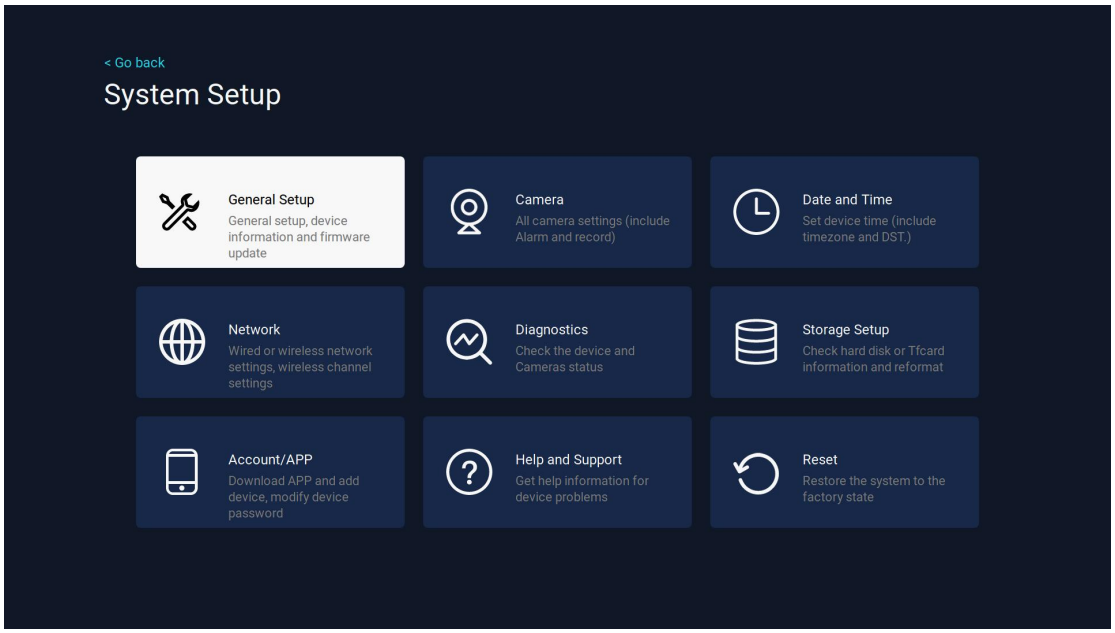
Access via the right-click menu "System Settings"

1.10.1. Setting the Main Interface

Mouse not hovering:

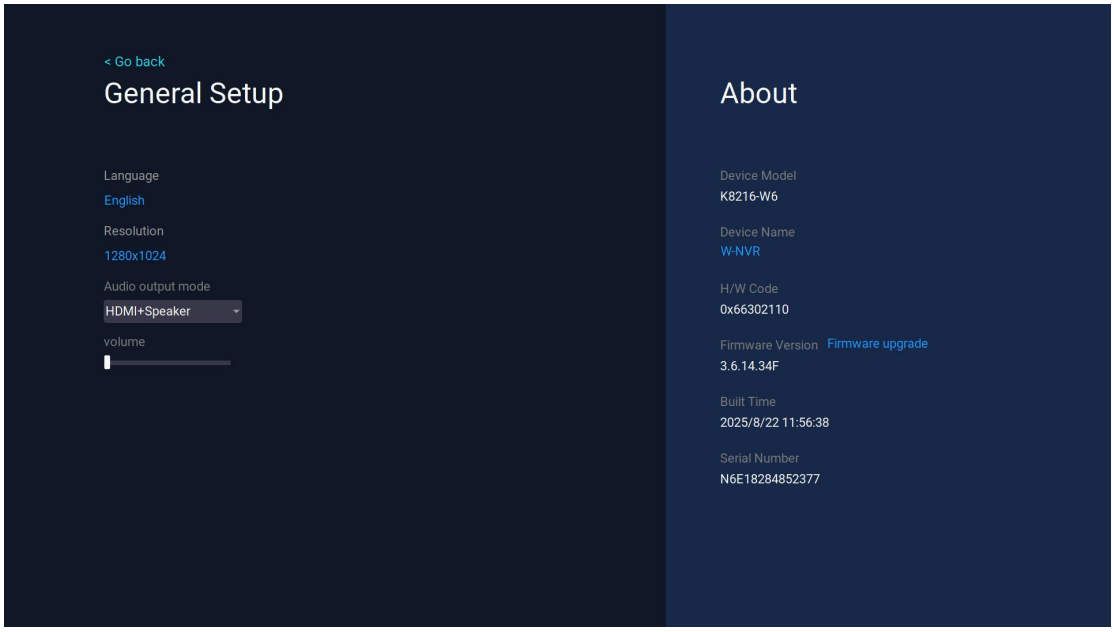


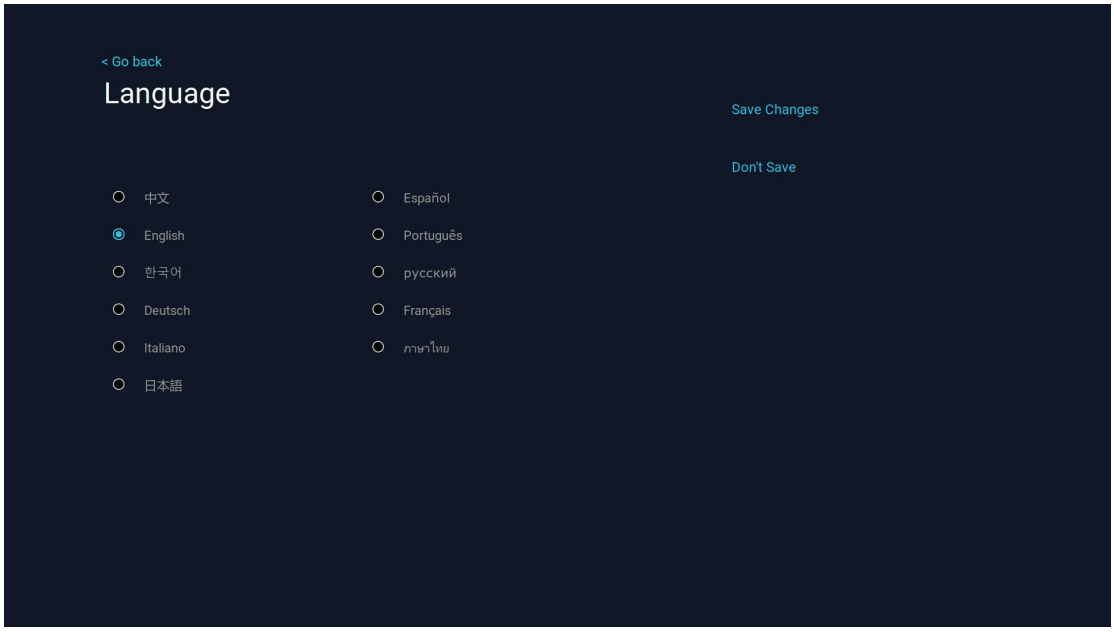
Mouse hover state:

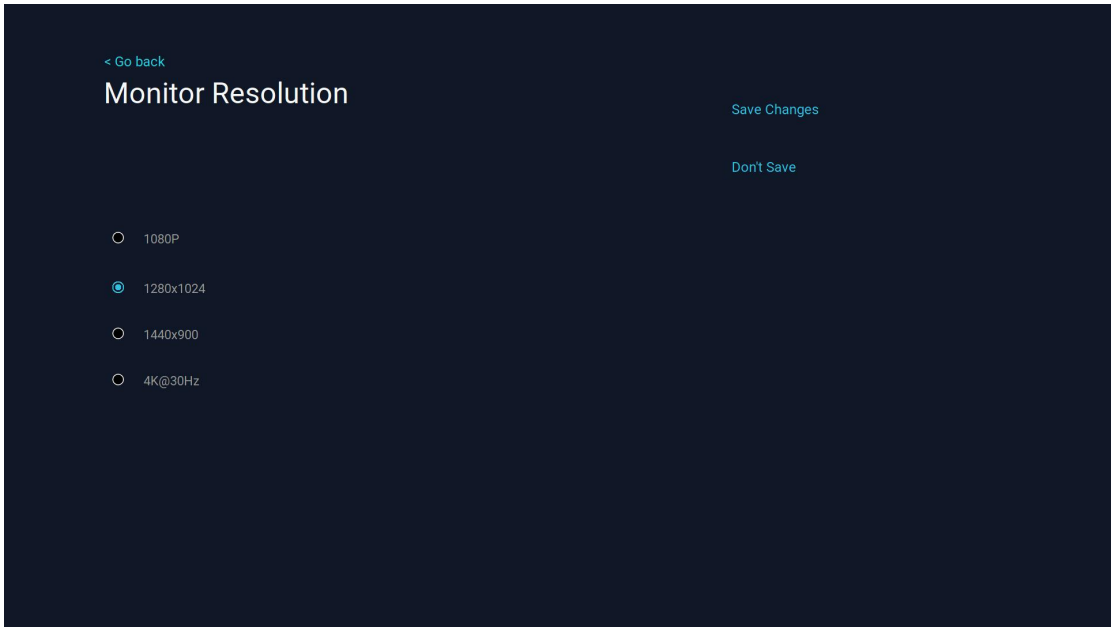


1.10.2. General Settings

General settings, device information, firmware upgrade, language settings, resolution settings, etc.


< Go back
General Setup
Language
English
Resolution
1280x1024
Audio output mode
HDMI+Speaker
volume
About
Device Model
K8216-W6
Device Name
W-NVR
H/W Code
0x66302110
Firmware Version
Firmware upgrade
3.6.14.34F
Built Time
2025/8/22 11:56:38
Serial Number
N6E18284852377


< Go back
Language
Save Changes
Don't Save
中文
English
한국어
Deutsch
Italiano
日本語
Español
Português
русский
Français
ภาษาไทย



Requirement description:

- Displays the current language and supports setting the current language.
  - After changing the language, the user only needs to restart the device for the changes to take effect.
- Displays the current resolution and supports setting the resolution.
  - Supports 4K, 1080P, 1280x1024, and 1440x900 resolution output.
  - After switching resolutions, all interfaces display normally . However, it's necessary to verify the display of all operations correctly after switching to each resolution.
    - Right-click shortcut menu window
    - Settings interface
    - Camera Add Interface
    - Replay interface
    - Smart playback interface
    - Preview taskbar
    - Channel toolbar
    - The channel logo is displaying correctly (no image added, image showing disconnection added).
  - After switching resolutions, the UI operation is smooth and lag-free.
  - When switching resolutions, similar to Windows settings, first switch to the desired resolution and display "Do you want to save the current resolution setting?". The resolution is saved only after the user

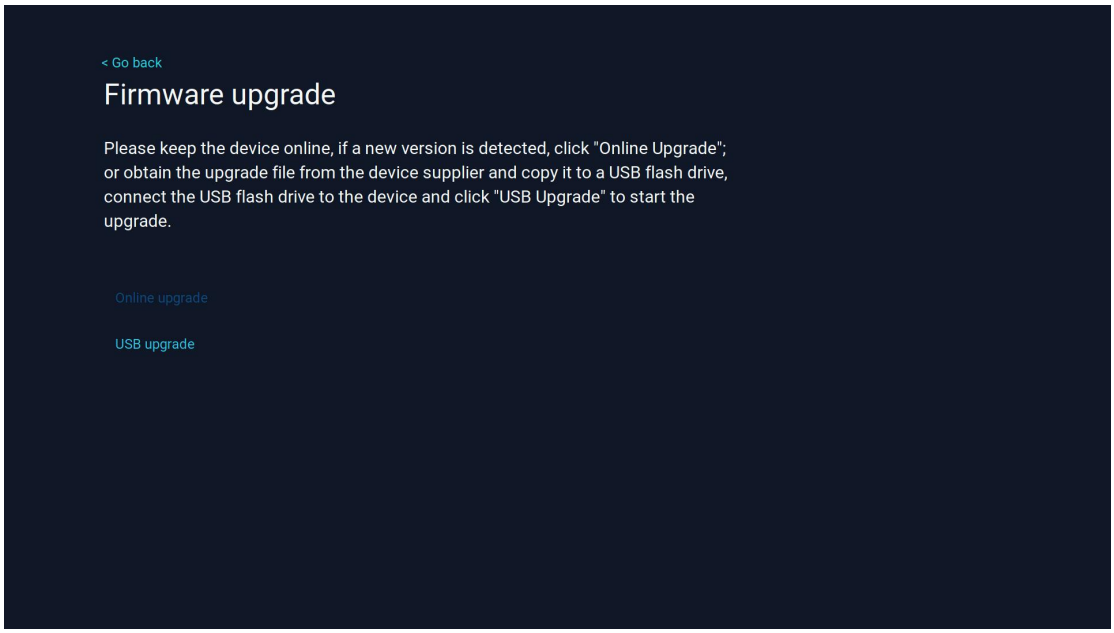
confirms; otherwise, it automatically reverts to the previous resolution after the user cancels or the countdown ends.

- Left-click the button to switch to the default 1280*1024 resolution.

- Supports audio output mode settings (HDMI only, HDMI + speaker, speaker only, disabled).
- Volume adjustment is supported, but only the speaker volume is affected. HDMI volume is not affected; it is adjusted via the monitor or manually.
  - The default volume meets the sound quality standards.
- The device information to be displayed must include the device model, hardware identifier, version number, build time, and device UID.
- Support firmware updates
- When upgrading to the Test version, the word "Test " will appear after the version number ; upgrading to the Release version will not include the word "Test". When upgrading to the Debug version, the preview interface will display test version information in the lower left corner, along with CPU, memory, and network bandwidth data. " Debug " allows Telnet access to the backend; other versions do not support Telnet.

1.10.2.1. Firmware update

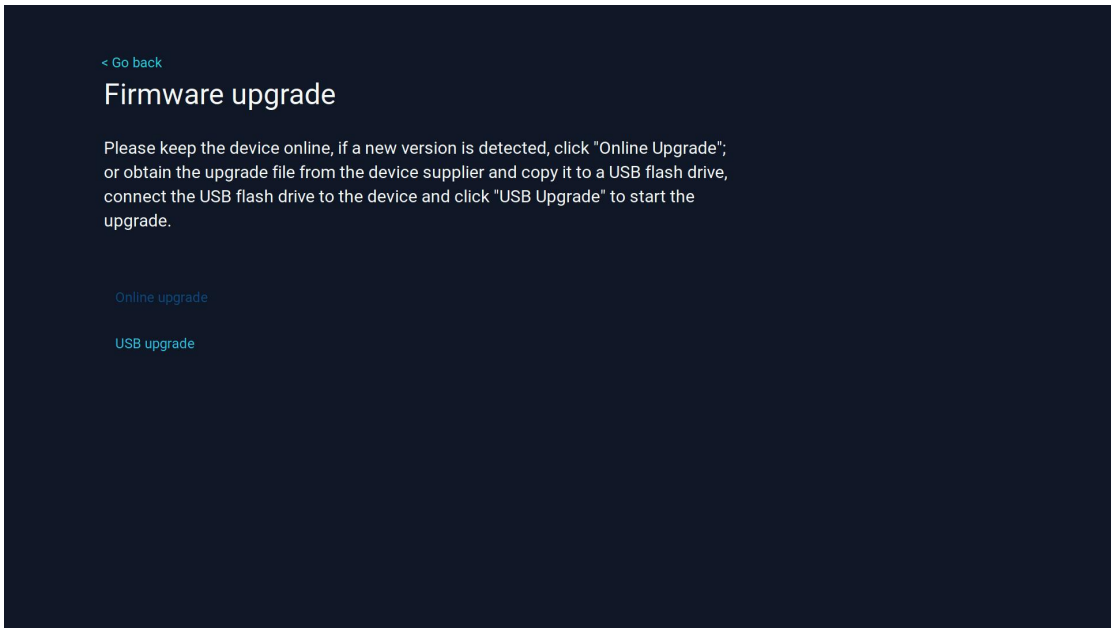
Upgrade the device's software (i.e., update the firmware), including upgrades via USB flash drive and over-the-air (OTA) upgrades via the internet.



Requirement description:

- Supports upgrade via local USB
  - Supports single USB upgrade (first connect the mouse and click USB upgrade; then connect the USB flash drive as prompted to start the automatic upgrade).
  - Supports dual USB upgrades (simultaneous connection of USB flash drive and mouse).
- Supports upgrading via TFcard
  - When connecting a hard drive, upgrades via TFcard are supported.
  - Upgrading via TFcard is also supported when no hard drive is connected.
  - Regardless of whether a hard drive is connected, if a TF card is connected and the TF card does not contain suitable firmware, a prompt will appear to connect a USB drive if no USB drive is connected. After the user connects the USB drive, the upgrade will be performed again.
- Supports online upgrades via the network
- After entering the interface, it will automatically detect whether the device has an online upgrade version.
- If there is no new version, the "Online Upgrade" button is disabled and cannot be used.
- If a new version is detected, the "Online Upgrade" button will change to "Online Upgrade (New Version Detected)" and become clickable.
- An upgrade progress bar needs to be displayed during the upgrade process.
- During the upgrade, users should be prompted not to disconnect the equipment.
- During the upgrade, users should be notified that the system will automatically restart upon completion.
- Online upgrades should include a download progress bar.
- The upgrade should display a message indicating whether the upgrade was successful or failed.
- After the upgrade, the device runs normally after updating to the new version, and the version number is updated correctly.

1.10.2.2. USB Upgrade



Requirement description:

- Supports upgrade via local USB
  - Supports single USB upgrade (first connect the mouse and click USB upgrade; then connect the USB flash drive as prompted to start the automatic upgrade).
  - Supports dual USB upgrades (simultaneous connection of USB flash drive and mouse).
- An upgrade prompt will automatically pop up after the USB drive is connected (if the USB drive contains the upgrade firmware).
  - The prompt only appears when the user has both a USB drive and a mouse connected at the same time, and there are upgrade files.
  - If the user connects only the USB drive and not the mouse, the USB upgrade prompt will not appear.
  - Users can choose to upgrade or not.
  - After selecting upgrade, the upgrade will begin automatically.
  - The USB drive does not contain the upgrade files compatible with this device model, and no upgrade prompt is given.
- The upgrade progress bar should be displayed during the upgrade process.

- During the upgrade, users should be prompted not to disconnect the equipment.
- During the upgrade, users should be notified that the system will automatically restart upon completion.
- The upgrade should display a message indicating whether the upgrade was successful or failed.
- The upgrade process cannot be canceled.
- Upgrades will still work even after filename changes, as long as the ".rom " suffix remains the same.
- USB drive upgrades only support upgrades to the root directory of the USB drive. Upgrade files located in other directories on the USB drive will likely not be supported.
- Error prompts will alert the user to the cause of the error in the following situations.
  - No USB drive connected
  - I connected the USB drive, but couldn't find an upgrade file compatible with my device model.
  - The USB flash drive file system format is not supported; currently only FAT32 and exFAT are supported. Other formats (such as NFTS) are not supported.
  - Upgrade file corrupted (use a tool to modify one byte) -- upgrade not performed and prompt an error message.
- Abnormal recovery
  - Even if you kill app.out during the upgrade process (killall -9 app.out), the device will still upgrade in the background and the upgrade will succeed.
  - If the upgrade is interrupted, it can be restored via help.rom or help_up.rom.
- Upgrade success rate
  - 50 upgrades, 0 failures
- Upgrade time
  - Record the average upgrade time (upgrades require different versions), the average upgrade time should be less than 60 seconds, and the maximum should not exceed 90 seconds.
- After the upgrade, the device runs normally after updating to the new version, and the version number is updated correctly.

1.10.2.3. Online Upgrade

Requirement description:

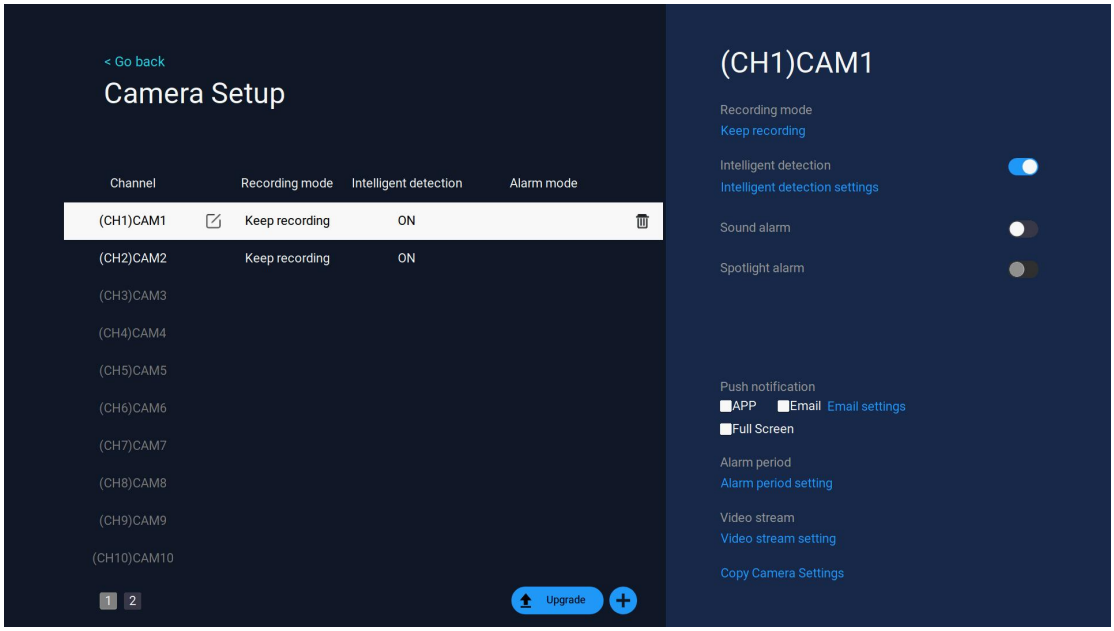
- Supports online upgrades via the network
- After entering the interface, it will automatically detect whether the device has an online upgrade version.
- If there is no new version, the "Online Upgrade" button is disabled and cannot be used.
- If a new version is detected, the "Online Upgrade" button will change to "Online Upgrade (New Version Detected)" and become clickable.
- An upgrade progress bar needs to be displayed during the upgrade process.
- During the upgrade, users should be prompted not to disconnect the equipment.
- During the upgrade, users should be notified that the system will automatically restart upon completion.
- Online upgrades should include a download progress bar.
- The upgrade should display a message indicating whether the upgrade was successful or failed.
- You can cancel during the download process.
- The upgrade process cannot be canceled.
- Download firmware with weak network support
  - It can download successfully even with a poor network connection; compare this to whether your computer can download under the same network conditions.

    (If the download is successful on the computer, it should also be successful on the device.)
  - Supports CDN downloads
- After enabling debug mode, online upgrades should be performed on the test version.
- When debug mode is not enabled, online upgrades should check for release versions.
- Online upgrade prompt
  - After enabling the forced upgrade prompt on the upgrade server, when the device starts up, a prompt should appear indicating that a new version upgrade is available on the server.

    - When forced upgrade prompts are not enabled, a "new version upgrade prompt" should not appear when the device starts up, even if a new version is available on the server.
- Error prompts will alert the user to the cause of the error in the following situations.
    - Upgrade file corrupted (use a tool to modify one byte) -- upgrade not performed and prompt an error message.
- Abnormal recovery
    - Even if you kill app.out during the upgrade process (killall -9 app.out), the device will still upgrade in the background and the upgrade will succeed.
    - If the upgrade is interrupted, it can be restored via help.rom or help_up.rom.
- Upgrade success rate
    - 50 upgrades, 0 failures
- Upgrade time
    - Record the average upgrade time (upgrades require using different versions), and the average upgrade time should be less than ??
- After the upgrade, the device runs normally after updating to the new version, and the version number is updated correctly.

1.10.3. Camera Settings

Settings related to battery-powered cameras (i.e., channels) (such as recording settings, smart detection alarm settings, adding, deleting, and renaming cameras).



- Intelligent detection alarm allows users to set the detection area, sensitivity, detection period, detection type, and alarm method (audio alarm, APP notification, white light alarm, etc.).
- Cameras can be named.
- It allows you to add or delete cameras.
- The camera can be upgraded.
- Supports configuration copying between cameras

When you click "Copy," the entire operation area on the right is disabled, and you can select which channels to copy to. The copying process checks whether a channel is copyable before copying it; channels that are not copyable will not be copied.

- When smart detection is off, all options on the right, except for recording mode, are disabled and cannot be edited.
  - This switch controls all video output functions of the local device and the camera, including APP alarm, sound alarm, and light alarm.
  - Smart detection switch is on by default.
  - Disabling smart detection will not affect camera events, nor will it affect the NVR's event recording and cloud storage recording functions.
  - After the intelligent detection alarm is turned off, the alarm functions on the camera (such as sound alarm and white light alarm) must also be turned off.
  - After enabling smart detection alarm, do not manually activate the alarm function on the camera or the local device; only modify the configuration and update the local alarm linkage action.

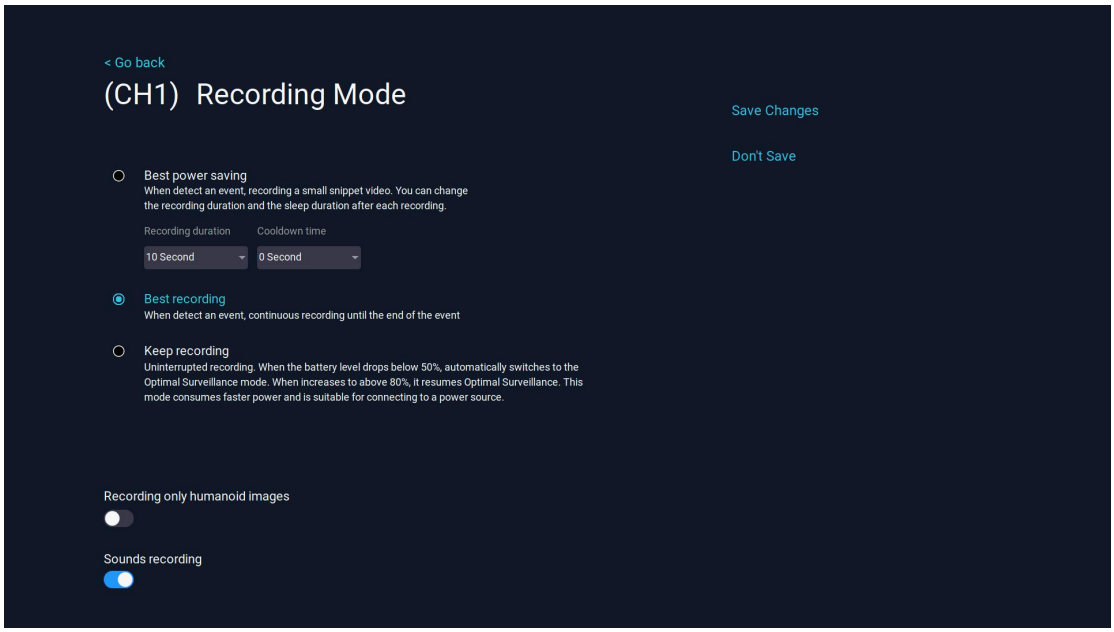
- Upon entering this interface, channel 1 is selected by default.
- Selecting another channel on the left will instantly switch the display of the corresponding channel in the right area.
- Click on the right side of the page to enter "Recording Mode," "Smart Detection Settings," etc., and then exit and return to this interface; the previously selected channel should still be displayed.
- When you hover the mouse over the upgrade and add buttons, a tooltip will appear indicating the function of that button.

1.10.3.1. Video Recording Type

- Recording mode is used to set the recording method of the camera.
- For battery-powered recorders, the recording method and working mode are consistent; the recording method is the same as the working mode.
- The recording mode interface differs between battery-powered and non-battery-powered cameras, depending on the camera type.
- The battery-powered camera supports three recording modes: "Best Power Saving", "Best Recording", and "Continuous Recording". The "Best Power Saving" and "Best Recording" modes of the battery-powered camera require recording as an "Event Recording" type.
- two working modes: "Event Recording" and "Continuous Recording". **"Continuous Recording" requires recording as a combination of "Scheduled Recording" and "Event Recording".**
- **When switching from hard drive to TFcard, the default setting is "Event Recording"; when switching from TFcard to hard drive, the default setting is "Continuous Recording".**
    - Battery-powered and non-battery-powered phones use the same method.
    - The factory default setting is hard drive recording.
    - The recording mode will not be changed if the video storage method remains unchanged.
    - When switching between hard drives and TF cards, a prompt will appear indicating a change in the recording storage method.
- TFCard supports setting "record continuously" when recording, but only supports a maximum of 4 channels (the number of channels can be customized).

- A notification will be displayed when more than 4 channels are continuously recording.
- There is no such limitation when recording from a hard drive.

1.10.3.1.1. Battery-Powered Recorder -- Video Recording Type



1.10.3.1.1.1. Requirements Description:

- The battery-powered operating mode can be set.
- You can set the indoor/outdoor mode for the battery-powered camera (corresponding to the "Record Humanoid Only" option).
- **Battery sleep time can be set**
- When adding a battery to an NVR, you must force it to be set to the best power-saving mode, with a sleep time of 10 seconds as the default.
- Different recording modes for battery-powered cameras should have corresponding instructions.
- To access this interface, you need to obtain the current configuration of the battery.
- When recording in battery-powered mode (working mode setting), you must also set the recording type (timed or event) for the corresponding channel.
- When setting the recording mode for the battery-powered device, a success/failure indicator should be added; a progress bar should also be added.

The battery-powered camera supports three recording modes: "Best Power Saving", "Best Recording", and "Continuous Recording".

For battery-powered devices, the "Best Power Saving" and "Best Recording" modes need to be recorded as "Event Recording" type; **"Continuous Recording" needs to be recorded as "Timed Recording" + "Event Recording" type** .

- Best energy saving

  Record a short video clip when a moving object is detected ; the recording duration can be selected.

  The recording duration can be set to 5 seconds, 10 seconds, 20 seconds, or 30 seconds (the factory default for battery-powered devices is 10 seconds).

  The sleep duration is adjustable, with selectable values of 0 seconds, 10 seconds, 30 seconds, 1 minute, 5 minutes, and 10 minutes (the factory default value for battery-powered devices is 0).

- Best video

  Record continuously when a moving object is detected until the movement ends .

  The sleep duration setting is not displayed; it will be set to the original configuration of the battery-operated device.

- Recording continuously

  The device continuously records video. When the battery level drops below min, it automatically switches to optimal recording mode. When the battery level rises above max, it resumes continuous recording (this mode consumes power quickly and **is suitable for use with an external power supply) .**

  The sleep duration setting is not displayed; it will be set to the original configuration of the battery-operated device.

  If the min/max values cannot be obtained, the following message will appear: "When the battery is fully charged, the device will continuously record. When the battery is low, it will automatically switch to the optimal recording mode. This mode consumes power more quickly and is suitable for use with an external power supply."

When using a TFcard storage device, if continuous recording is enabled and the number of channels exceeds the set limit (default is 4), the following message will be displayed, and the selection will be reversed.

"Due to the small capacity and limited read/write speed of the TFcard, it can only support a maximum of 4 channels recording simultaneously."

1.10.3.1.1.2. Records only humanoid characters:

- Enabling this option activates the outdoor mode for the battery-powered unit; deactivating this option activates the indoor mode for the battery-powered unit.
- **The battery-powered device no longer has a "human detection switch" setting in the smart detection settings interface (so the human detection switch for the battery-powered device should be enabled by default), and the battery-powered device should support pushing human events.**

1.10.3.1.1.3. Explanation regarding indoor/outdoor modes:

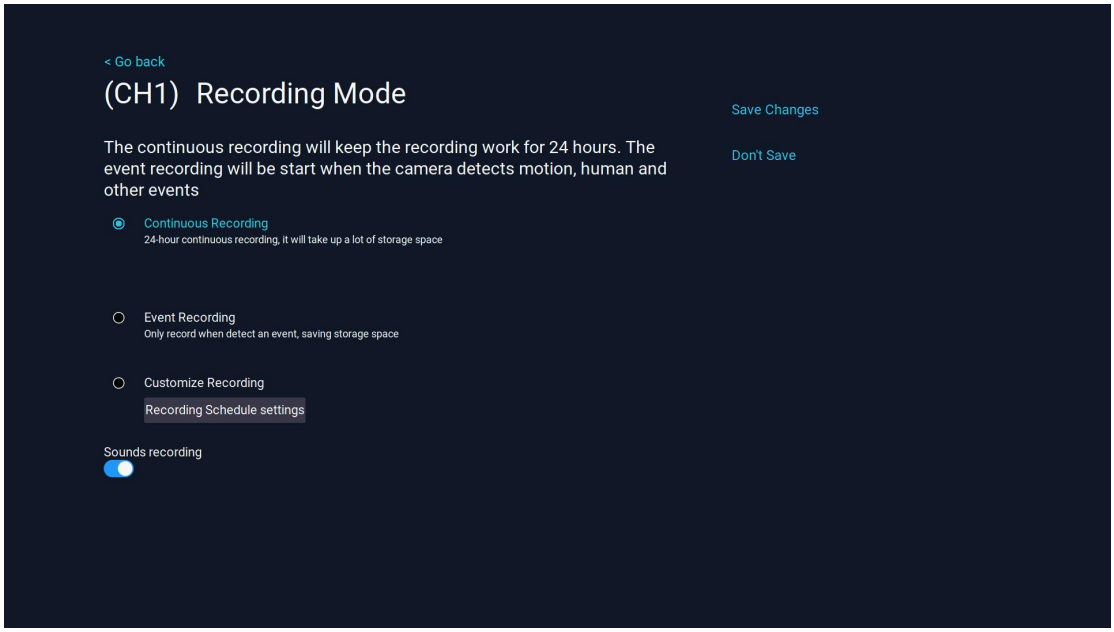
Indoor/outdoor modes, i.e., further detection logic after the battery-powered PIR wake-up (one type is MD or humanoid, the other is humanoid only):

- Indoor mode: After PIR wake-up, if an MD or humanoid figure is detected, the battery-powered unit will continue to operate; otherwise, the battery-powered unit will enter sleep mode.
- Outdoor Mode: Due to the greater number of factors that can cause false wake-ups of the PIR system outdoors, human detection is needed to filter out such scenarios. After PIR wake-up, if a human is detected, the battery-powered device will remain operational; otherwise, it will enter sleep mode.

Video audio:

Whether to include audio recording during video recording. Off by default. Enabling this option includes audio in the recording. **Preview audio is unaffected by this switch.**

1.10.3.1.2. Non-battery-powered recorders -- Recording type



Non-battery-powered cameras support two working modes: "Event Recording" and "Continuous Recording".

- Event video

Recording only occurs after an event is detected to save storage space. Supported event types include MD (Material Data) and human detection.

MD is a basic type, so it is supported by default by both cameras and hosts;

Different cameras and NVR hosts support different event types; for cameras that support human figures, once human detection is enabled, the NVR's recordings will be tagged with human figures, and a "human detection" event will be pushed to the app; for cameras that do not support human figure detection, human figure detection cannot be enabled.

When the camera supports PIR and the PIR function is enabled, the camera will only trigger a motion event after detecting both PIR and MD simultaneously.

Currently, none of the front-end cameras support vehicle detection. Only the back-end of the MC6630/MC6830 supports vehicle detection.

- Recording continuously

The device records continuously without interruption unless the connection between the camera and the NVR host drops. **"Continuous recording" needs to be recorded as a combination of "scheduled recording" and "event recording".**

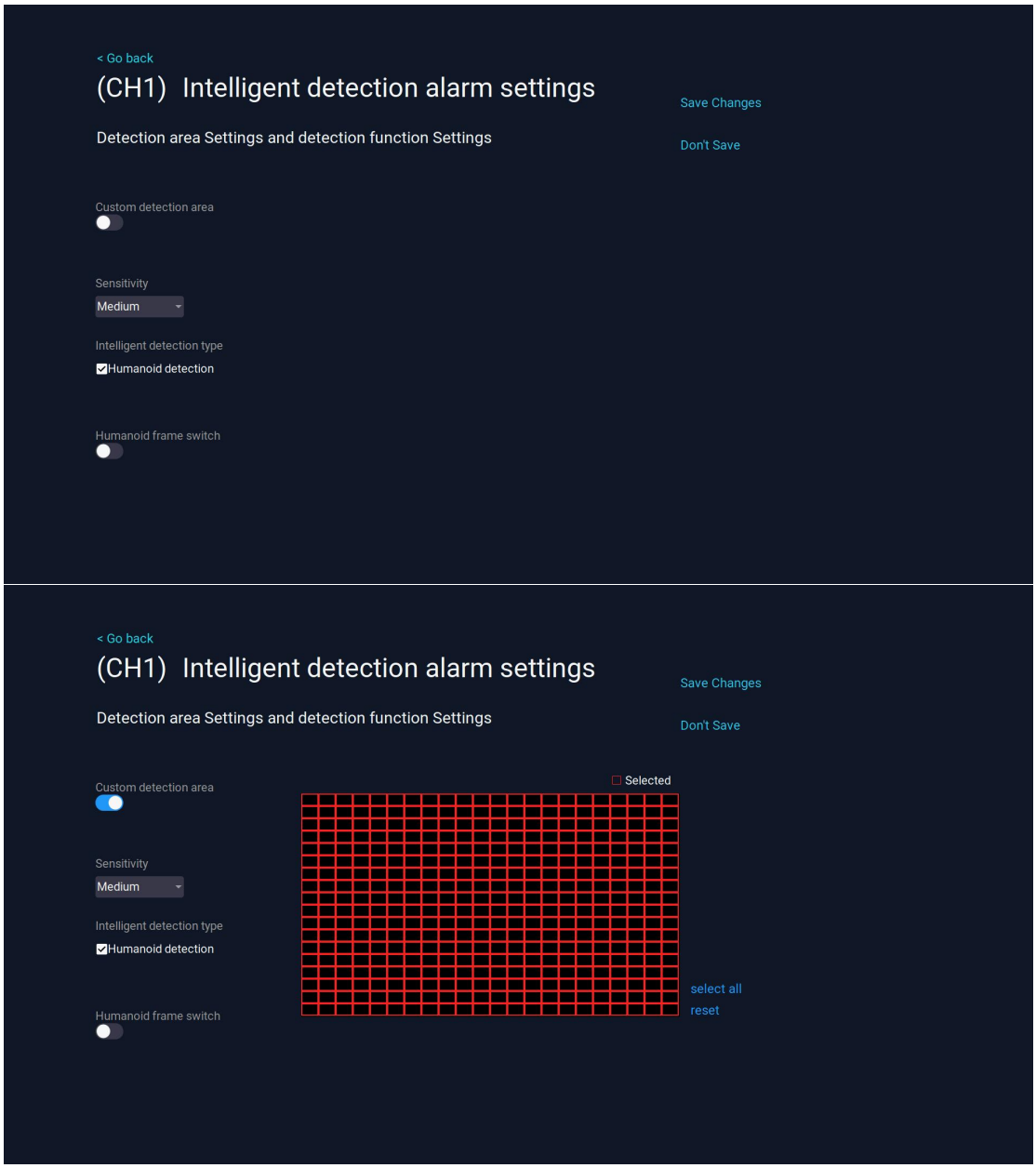
When using a TFcard storage device, if continuous recording is enabled and the number of channels exceeds the set limit (default is 4), the following message will be displayed, and the selection will be reversed.

"Due to the small capacity and limited read/write speed of the TFcard, it can only support a maximum of 4 channels recording simultaneously."

Video audio:

Whether to include audio recording during video recording. Off by default. Enabling this option includes audio in the recording. **Preview audio is unaffected by this switch.**

1.10.3.2. Intelligent Detection Alarm Settings



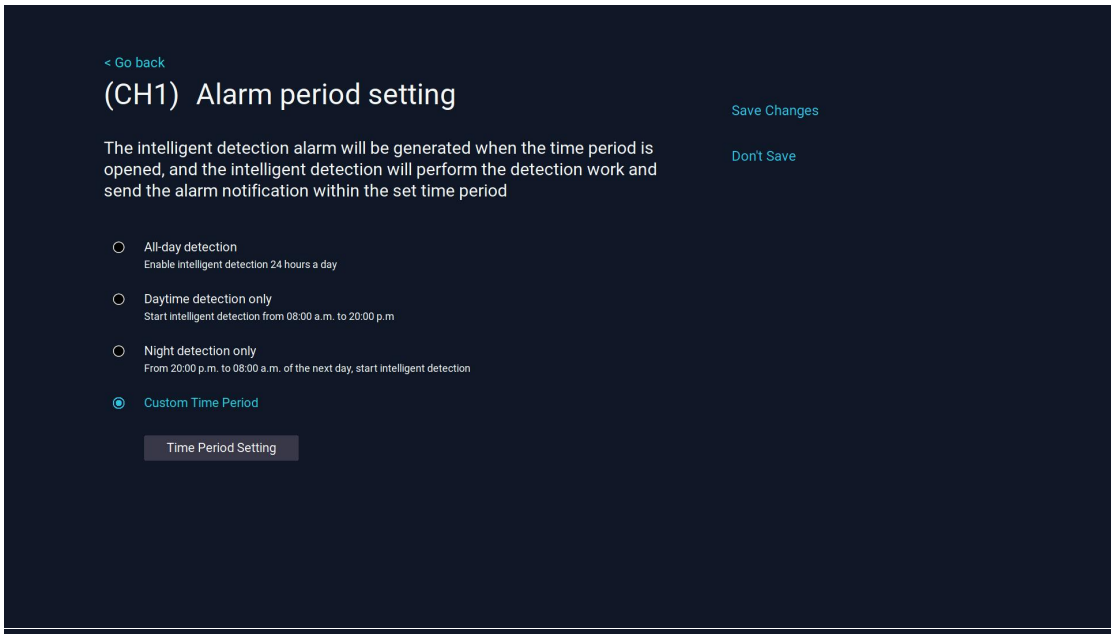
- Supports region settings; the default is all regions. If a custom region is not selected, the entire region will be tested.
- After selecting the custom detection area, an entry point for "Detection Area Settings" will appear. Clicking it will take you to the detection area settings; when the custom area is disabled, the "Detection Area Settings" entry point will not allow you to set the detection area.
- After enabling the custom region, the detection region will not be modified.

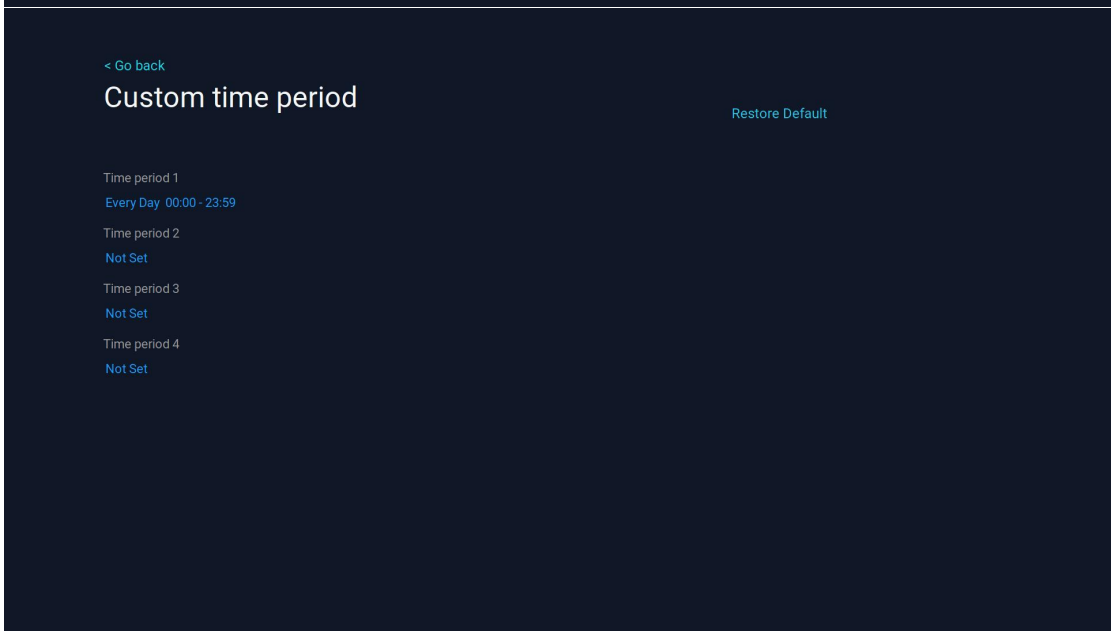
- Disabling custom regions will set the detection region to the entire region.
- Motion detection sensitivity can be adjusted; there are 5 levels of motion detection sensitivity: "Highest", "High", and so on.
- This setting is not automatically configured when the NVR connects to the camera; it is only configured during user interaction.
- **The camera needs to support settings for a human detection switch and a human frame (this setting will only be displayed on cameras that support human detection).**

3.5.2 The implementation of the motion detection area has been modified so that the area can now be set within the alarm settings window, instead of in a separate interface.

- By default, custom detection areas are not enabled, and the detection area settings are not displayed on the interface.
- After opening "Custom Detection Area", the interface displays the "Detection Area Settings" and shows the current channel view.
- Supports shortcut keys for selecting all and deselecting all.
- The detection area is a 22x18 cell.
- Drag the mouse to draw a frame (a non-filled rectangle) within the detection area; the frame will not extend outside the screen.
- Cannot click to select or deselect cells
- If you drag the animation box again within a selected area, the previously selected portion will be cleared.
- Dragging the selected area will select the entire area if some parts of the area are selected and others are not.

1.10.3.3. Intelligent Detection Period Settings





1.10.3.4. Intelligent Detection Alarm

Supports the following alarm methods

- APP notification
- Sound alarm (requires camera support and hardware with speaker)

In addition to setting a switch, you also need to set the corresponding alarm time period when using an audible alarm.

Once activated, the camera's speaker will broadcast a sound when movement or a human figure is detected, serving as a deterrent.

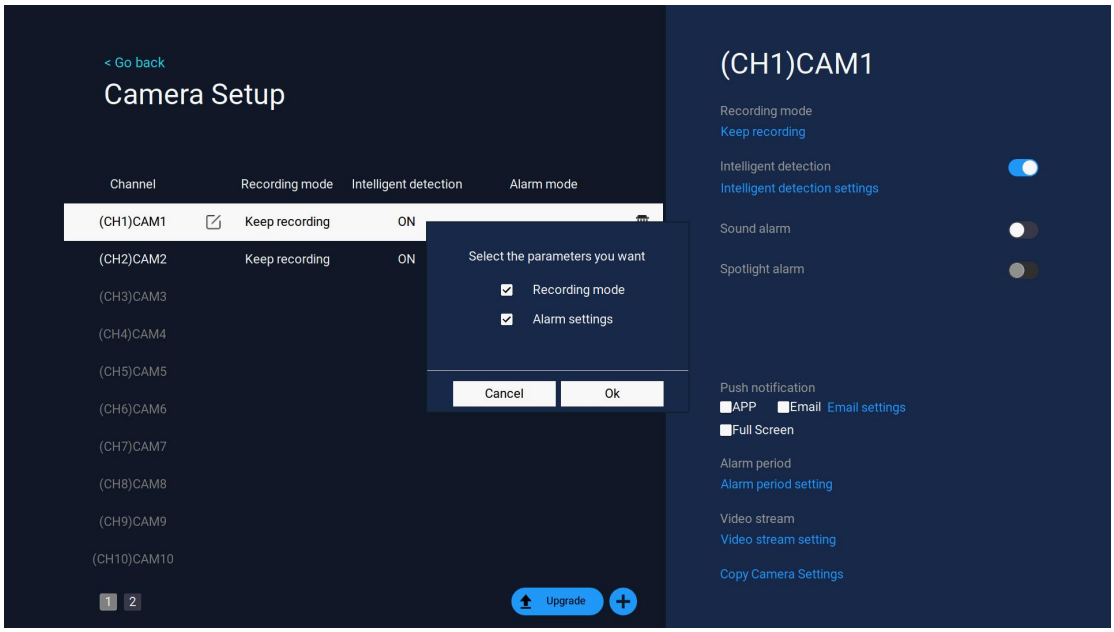
Once an alarm detection period is set, this function is only effective during that period.

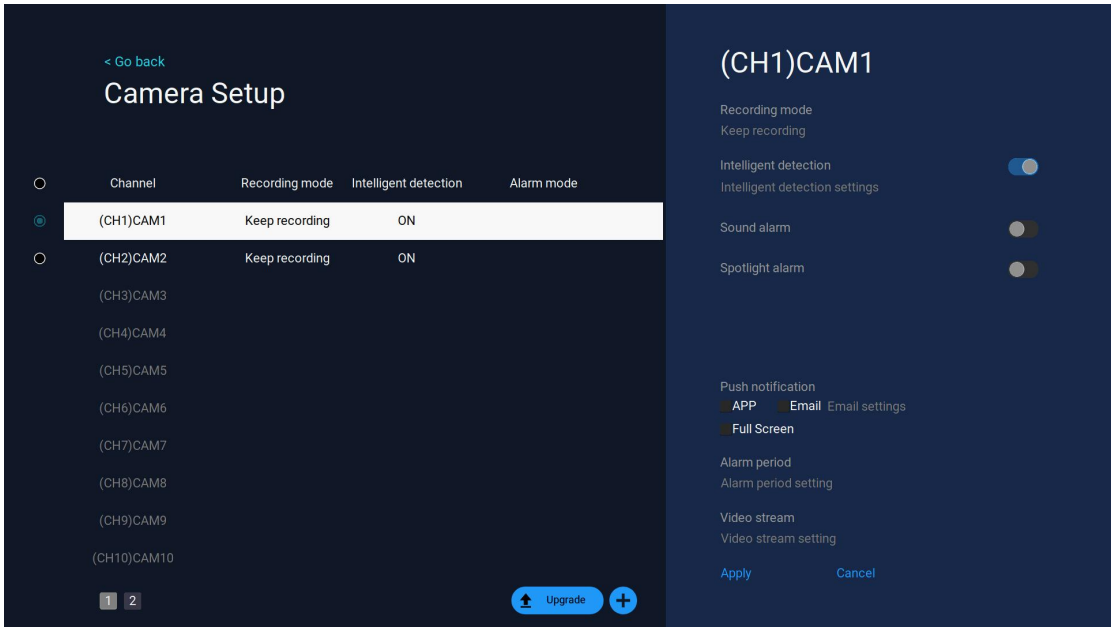
- White light alarm (requires camera support and hardware with white light capability)

  Once activated, the camera's white light will remain constantly lit when movement or human figures are detected, serving as a deterrent.

  After setting the alarm detection period, this function is only effective during the alarm detection period.

1.10.3.5. Copy to





- Supports copy operation
- When you click "Copy," the entire operation area on the right is disabled, and you can select the channels to copy to; **the configuration items for the current channel are also displayed.**
- Before exiting the camera settings interface, you need to restore the copied state to the non-copied state so that it will not be in the copied state by default the next time you enter.
- When copying, it's necessary to determine which items can be copied and then copy them; items that cannot be copied should not be copied.

  Copyable items:

  - APP alarm settings
  - Sound alarm settings
  - Detection time period settings
  - Intelligent detection alarm area (and custom area switch), sensitivity settings
  - Setting the recording mode between non-battery-powered devices
  - Setting the recording mode between battery-powered devices

  Non-copyable items:

  - Recording mode for battery-powered devices cannot be copied to non-battery-powered devices.
  - Recording modes from non-battery-powered cameras cannot be copied to battery-powered cameras.

- The human detection switch and human figure frame need to determine the ability set and copy it.

  Only supported cameras can be copied; supported cameras cannot be copied to unsupported devices.

  The PIR settings require determining the capability set for replication.

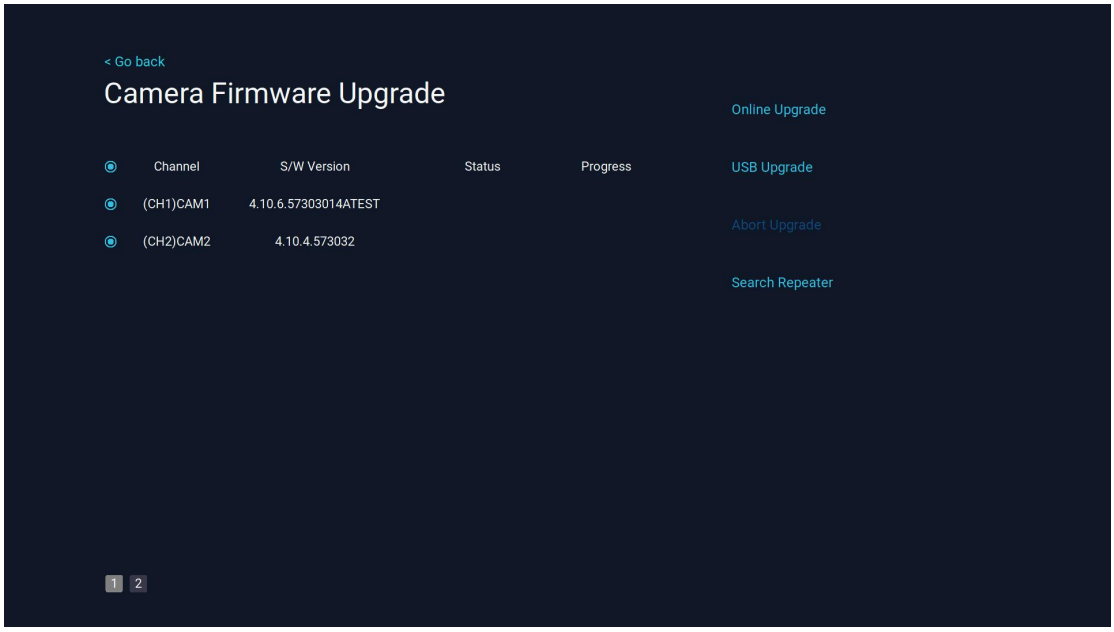
  Only supported cameras can be copied; supported cameras cannot be copied to unsupported devices.

- White light alarm settings require determining the capability set for replication.

  Only supported cameras can be copied; supported cameras cannot be copied to unsupported devices.

1.10.3.6. Camera upgrade

In the camera settings interface, click the "Camera Firmware Update" button to enter the camera upgrade interface, which supports online and USB upgrades for added cameras, and also supports upgrades for searched repeaters.



Requirement description:

- Upgrades are supported for already added cameras. Upon entering the interface, the channel information of the already added cameras will be displayed by default.
- It supports upgrading the found repeaters. After entering, it will search for repeaters on the local area network by default and display them below the added channels.
- Upgrades are supported for devices selected in the list (single selection, multiple selections, or all selections).
- The upgrade progress and status are displayed in the table.
- Supports upgrades for all Jiuan cameras.
    - Includes wired, always-powered cameras, always-powered Wi-Fi cameras, and Wi-Fi battery-powered cameras.

1.10.3.6.1. Camera -- USB Upgrade Requirement Description:

- Supports upgrade via local USB
    - Supports single USB upgrade (first connect the mouse and click USB upgrade; then connect the USB flash drive as prompted to start the automatic upgrade).
    - Supports dual USB upgrades (simultaneous connection of USB flash drive and mouse).
- The upgrade progress bar should be displayed during the upgrade process.
- The upgrade should display a message indicating whether the upgrade was successful or failed.
- The upgrade process cannot be canceled.
- Upgrades will still work even after filename changes, as long as the ".rom " suffix remains the same.
- USB drive upgrades only support upgrades to the root directory of the USB drive. Upgrade files located in other directories on the USB drive will likely not be supported.
- Error prompts will alert the user to the cause of the error in the following situations.
    - No USB drive connected
    - I connected the USB drive, but couldn't find an upgrade file compatible with my device model.

- The USB flash drive file system format is not supported; currently only FAT32 and exFAT are supported. Other formats (such as NFTS) are not supported.
- Firmware upload failed (failed to upload firmware to failed device) -- No upgrade and prompt.

- Upgrade success rate
  - 20 upgrades, 0 failures
- Upgrade time
  - Record the average upgrade time (upgrades need to be performed using different versions), and the average upgrade time should not exceed 90 seconds.
- After the upgrade, the camera runs normally, connects and outputs images correctly, and the version number is updated correctly.

1.10.3.6.2. Camera - Online Upgrade Requirement Description:

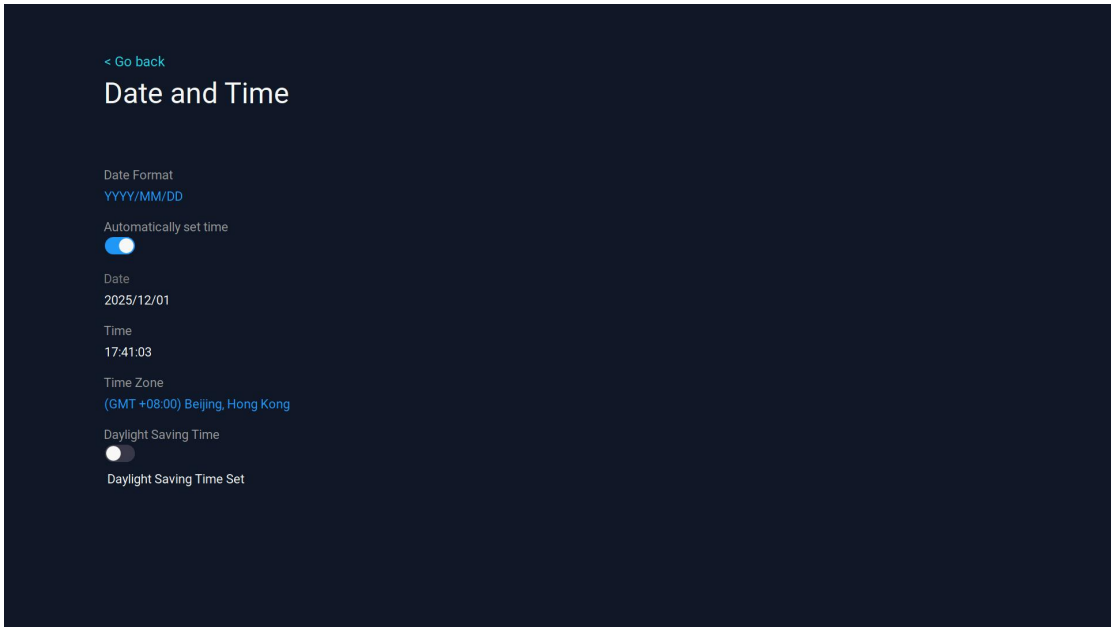
- Supports online upgrades via the network
- After entering the interface, it will automatically detect whether the device has an online upgrade version.
- An upgrade progress bar needs to be displayed during the upgrade process.
- Online upgrades should include a download progress bar.
- The upgrade should display a message indicating whether the upgrade was successful or failed.
- You can cancel during the download process.
- The upgrade process cannot be canceled.
- Download firmware with weak network support
  - It can download successfully even with a poor network connection; compare this to whether your computer can download under the same network conditions.

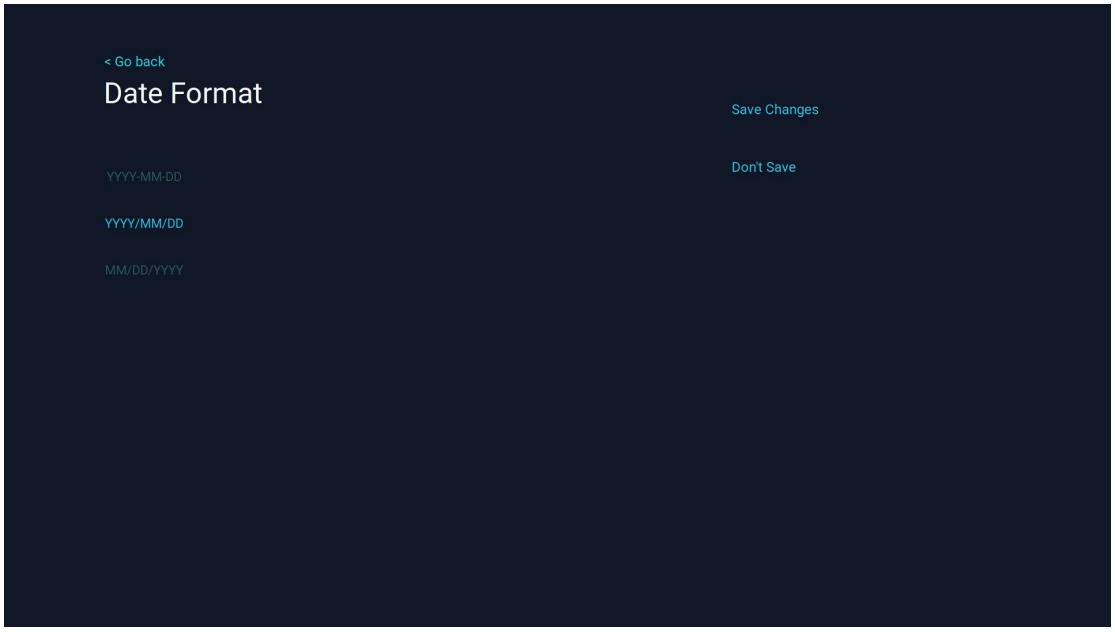
    (If the computer can download successfully, the device should also be able to download successfully) **-- Standards and testing methods are pending.**

    - Supports CDN downloads
- After enabling debug mode, online upgrades should be performed on the test version.
- When debug mode is not enabled, online upgrades should check for release versions.
- Online upgrade prompt
    - After enabling the forced upgrade prompt on the upgrade server, when the device starts up, a prompt should appear indicating that a new version upgrade is available on the server.
    - When forced upgrade prompts are not enabled, a "new version upgrade prompt" should not appear when the device starts up, even if a new version is available on the server.
- Error prompts will alert the user to the cause of the error in the following situations.
    - Upgrade file corrupted (use a tool to modify one byte) -- upgrade not performed and prompt an error message.
- Upgrade success rate
    - 20 upgrades, 0 failures
- Upgrade time
- After the upgrade, the camera runs normally, connects and outputs images correctly, and the version number is updated correctly.

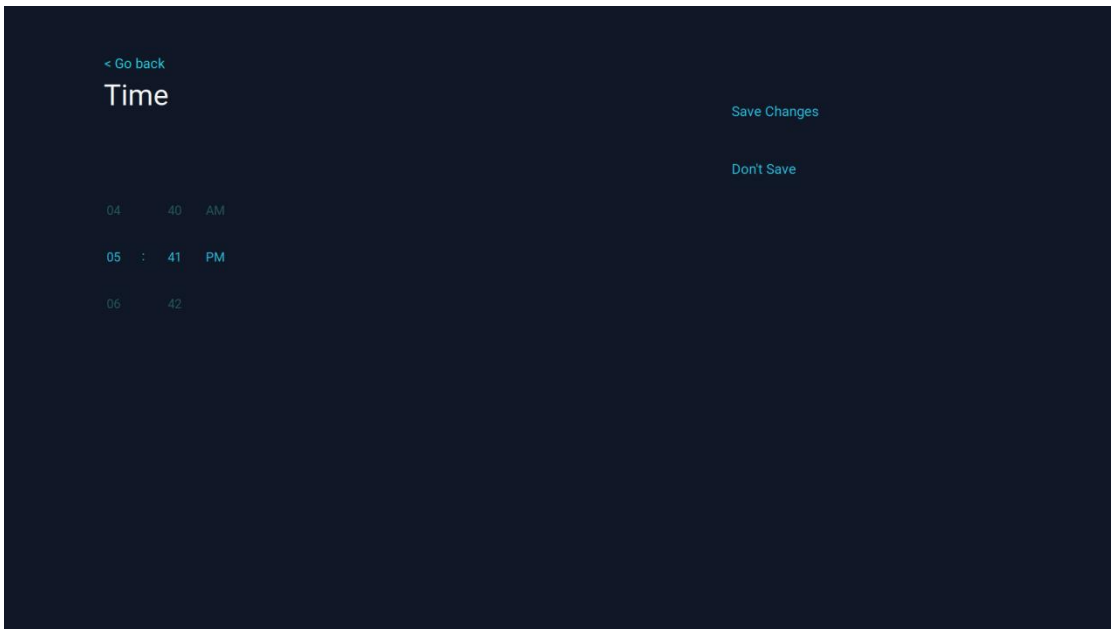
1.10.4. Date and Time

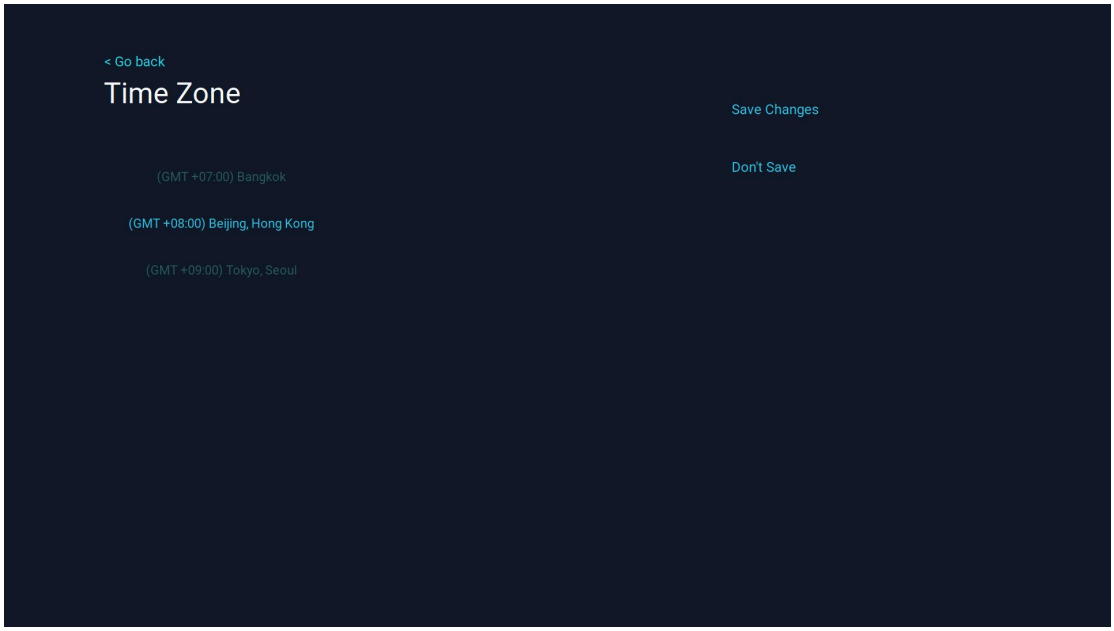
Configure the device's date, time, time zone, and daylight saving time; supports NTP network time synchronization.

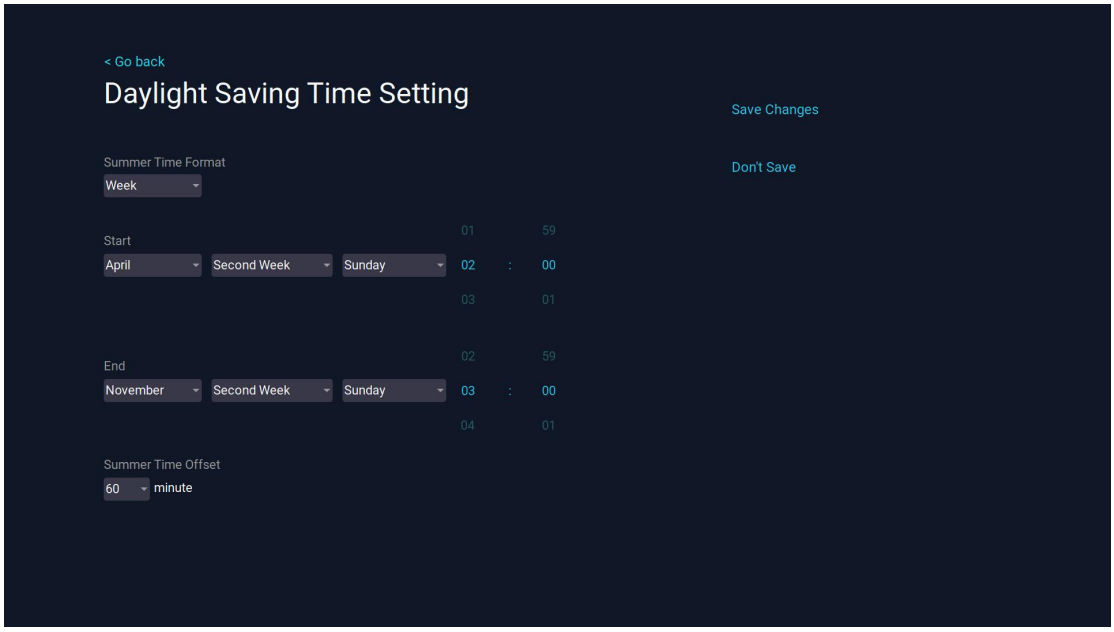

< Go back
Date and Time
Date Format
YYYY/MM/DD
Automatically set time
Date
2025/12/01
Time
17:41:03
Time Zone
(GMT +08:00) Beijing, Hong Kong
Daylight Saving Time
Daylight Saving Time Set


< Go back
Date Format
YYYY-MM-DD
YYYY/MM/DD
MM/DD/YYYY
Save Changes
Don't Save


< Go back
Date
Save Changes
Don't Save
2024 NOV 31
2025 / DEC / 01
2026 JAN 02


< Go back
Time
Save Changes
Don't Save
04 40 AM
05 : 41 PM
06 42





Requirement description:

- Supports NTP "Automatic Time Setting"
- The device is enabled by default at the factory and will automatically set the time after successful network configuration.
  - The device was not connected to the network when it was first turned on (no network cable was connected), but after being powered on and configured to the network, the time could be automatically synchronized successfully (within 1 minute).
  - The device was not connected to the network when it was first turned on (the network cable was connected, but the network was not working), but after

reconnecting to the network, the time could be automatically synchronized successfully (within 1 minute).

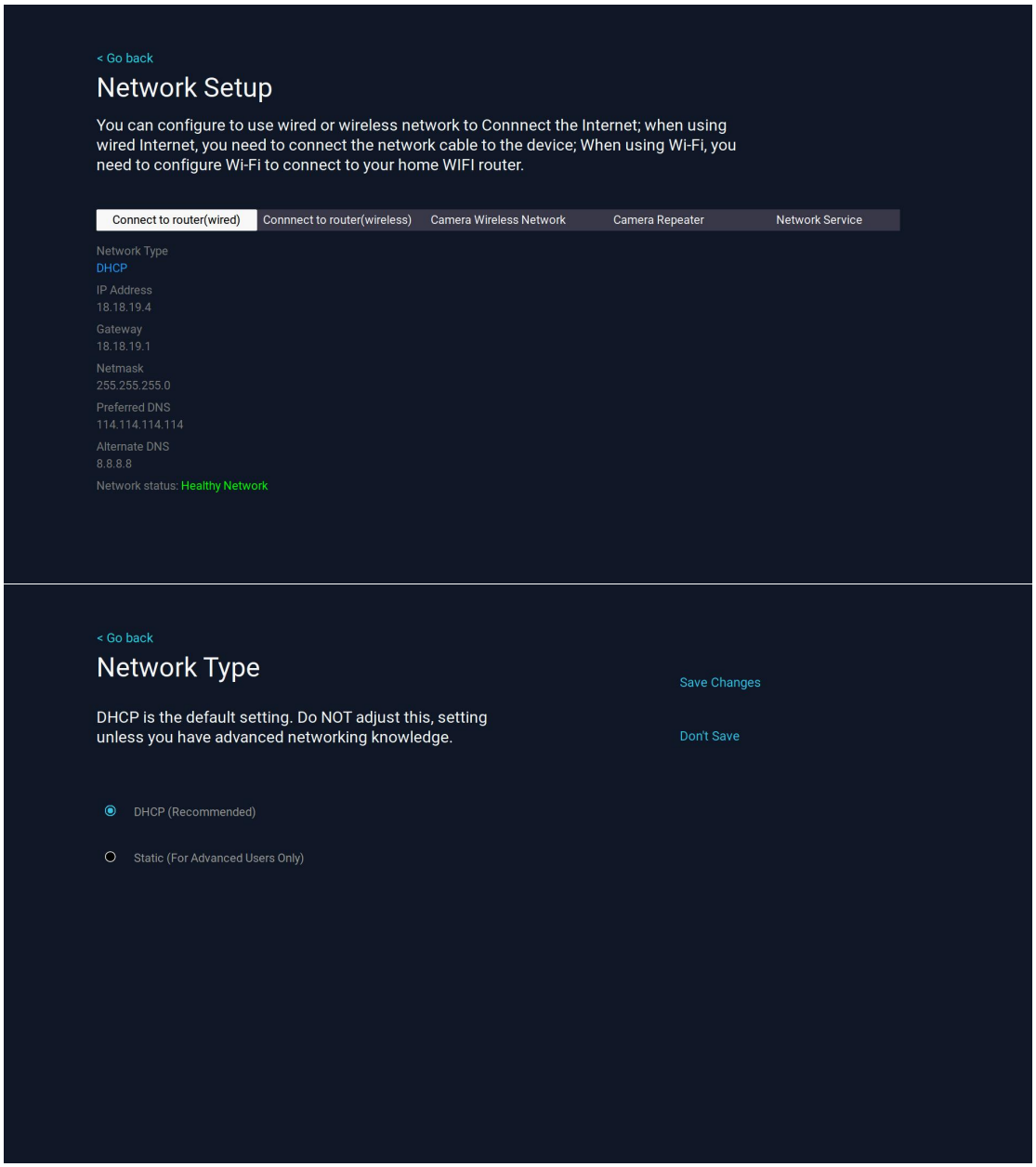
- The device automatically synchronizes its time every 24 hours (after enabling automatic time setting).
- With "Automatic Time Setting" enabled, users cannot manually change the date and time; however, they can change the time zone and daylight saving time.
- After turning off "Automatic Time Setting," users can manually modify the date and time, as well as the time zone and daylight saving time.
- The "Automatic Time Setting" function should support time synchronization across different networks and regions, such as China Telecom, China Unicom, China Mobile, and Great Wall networks. It should support both domestic and international regions and ensure successful synchronization even with poor network conditions.
- Supports setting time zone
  - After changing the time zone, the system's current time will be adjusted to the corresponding time zone value. For example, if the current time is 2022-01-01 12:00:00 (+8:00 time zone), after changing to +9 time zone, the system time should display as 2022-01-01 13:00:00.
  - Show all time zones
- Support setting daylight saving time
  - Daylight Saving Time can be set by date.
  - Daylight Saving Time can be set on a weekly basis.
  - Daylight Saving Time supports setting the time offset.
- Date format settings are supported. The following four date formats are supported: YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY, and YYYY-MM-DD.

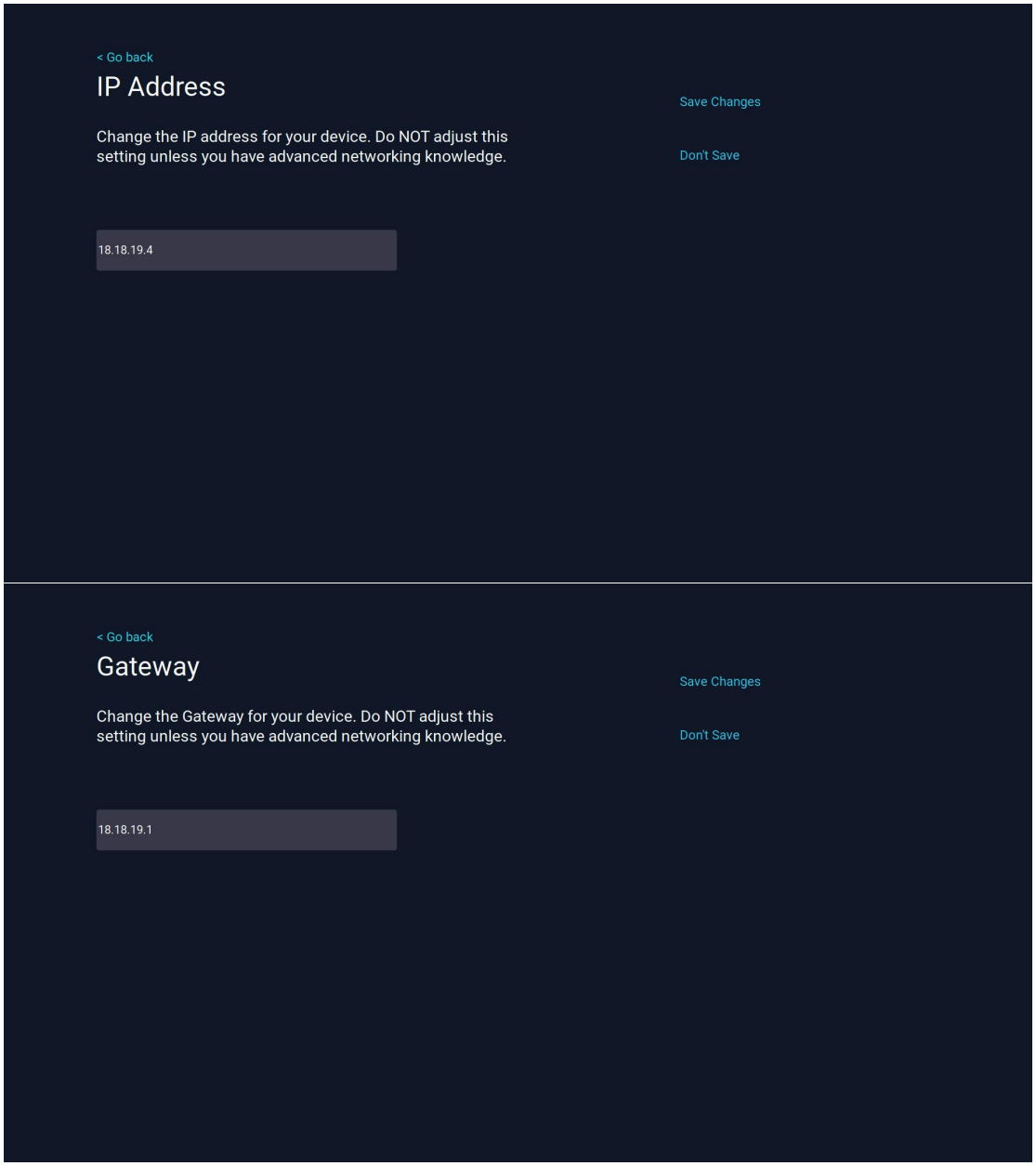
1.10.5. Network Settings

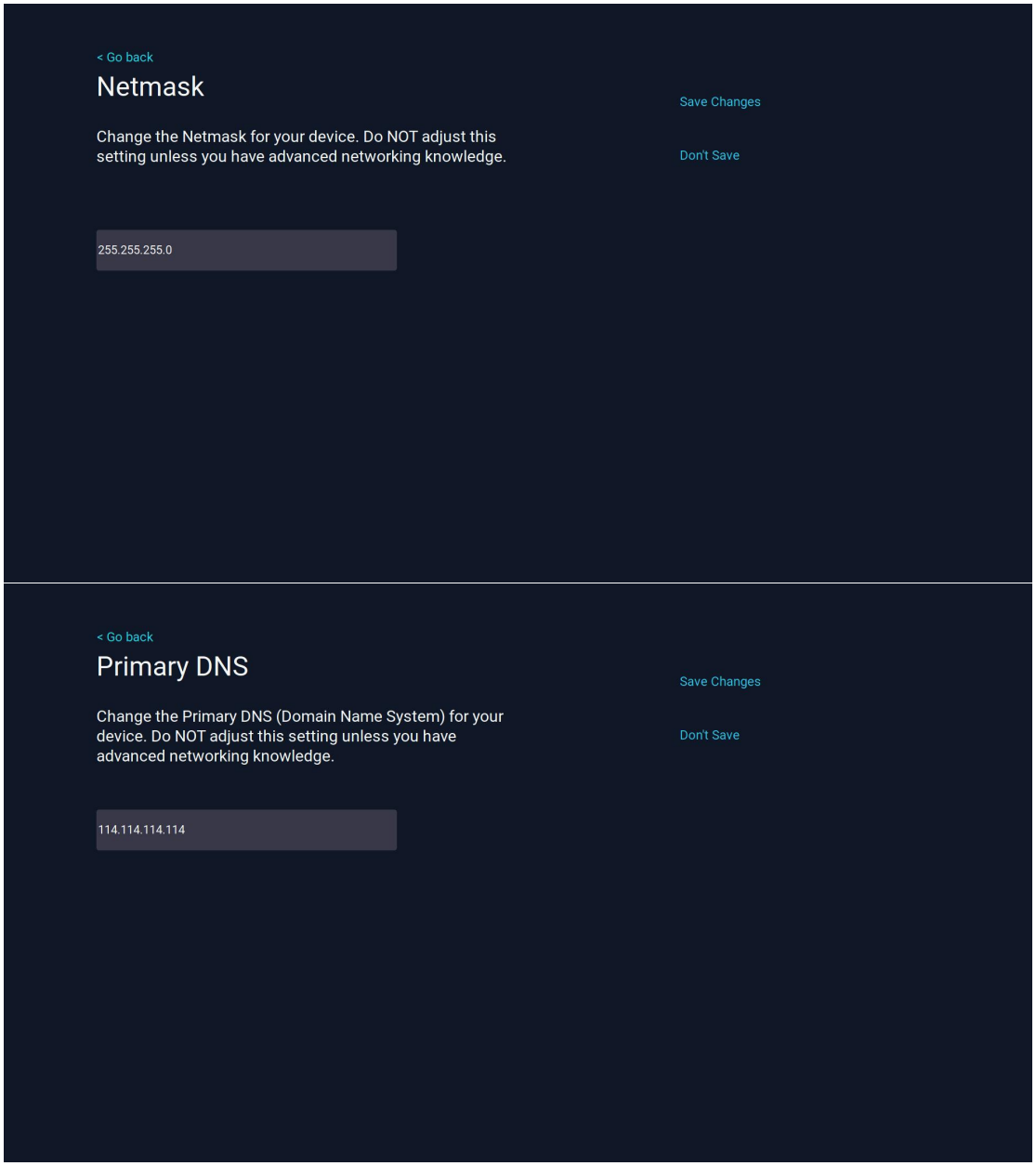
Wired network setup, or wireless internet configuration (configuring a connection to a wireless router for internet access).
Or camera WIFT network configuration (such as channel settings).

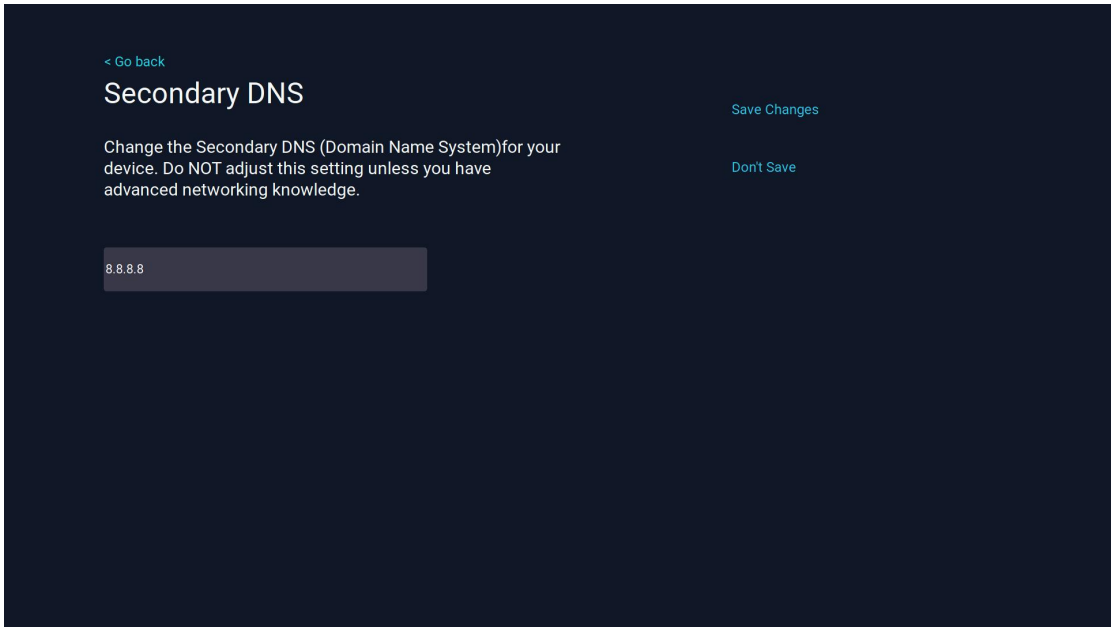
When both a wired network and wireless internet access are enabled on the device, the wired network will be used preferentially when connected. If no wired network is connected and wireless internet access is enabled, wireless internet access will be used.

1.10.5.1. Wired Network Settings




< Go back
IP Address
Change the IP address for your device. Do NOT adjust this setting unless you have advanced networking knowledge.
18.18.19.4
Save Changes
Don't Save
< Go back
Gateway
Change the Gateway for your device. Do NOT adjust this setting unless you have advanced networking knowledge.
18.18.19.1
Save Changes
Don't Save


< Go back
Netmask
Change the Netmask for your device. Do NOT adjust this setting unless you have advanced networking knowledge.
255.255.255.0
Save Changes
Don't Save
< Go back
Primary DNS
Change the Primary DNS (Domain Name System) for your device. Do NOT adjust this setting unless you have advanced networking knowledge.
114.114.114.114
Save Changes
Don't Save



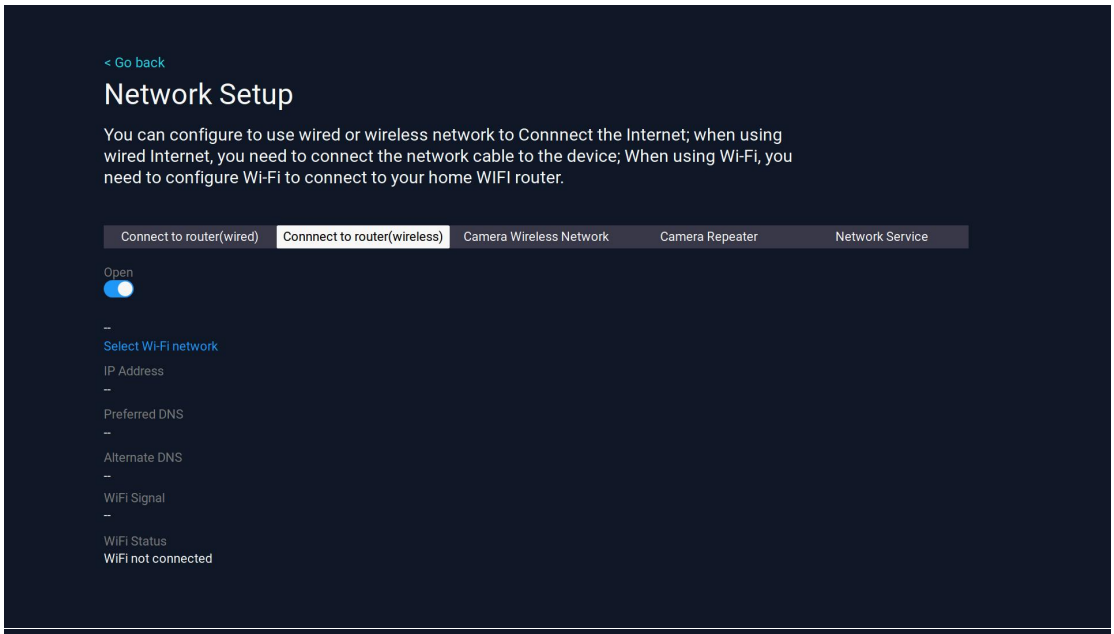
Requirement description:

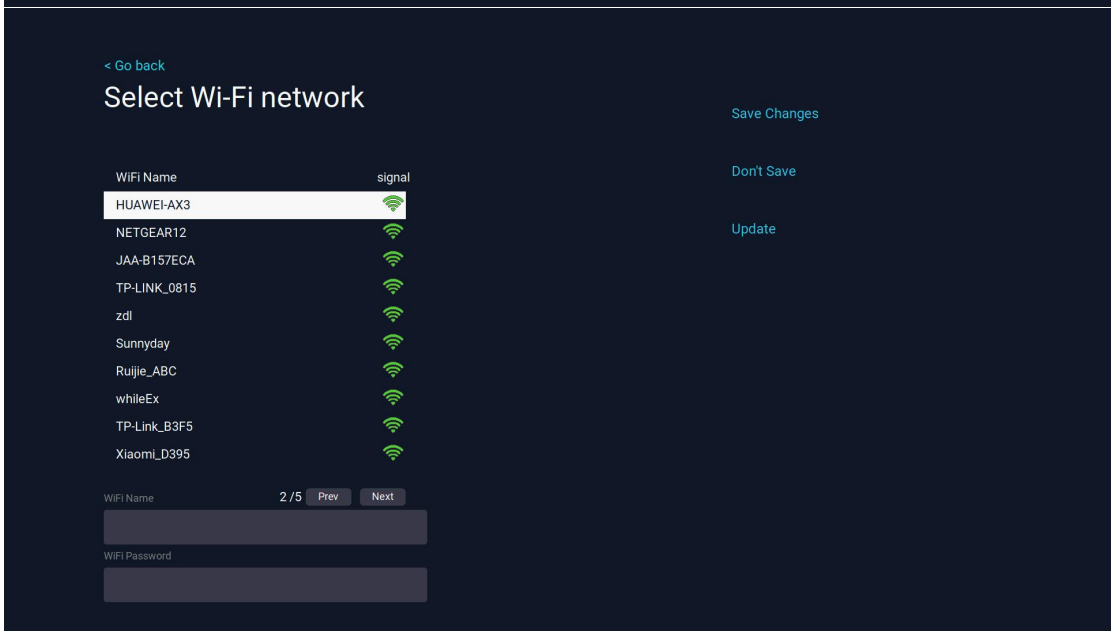
- The default network type is DHCP when the computer is set to factory default.
- The device will automatically complete the time setting after successful network configuration.
  - The device does not connect to the network (not connected to the router) when powered on, but after being powered on and configured for the network, it can successfully obtain an IP address (within 1 minute).
  - The device was not connected to the network when it was first turned on (the network cable was connected, but it was not connected to the router), but after reconnecting to the network, it was able to successfully obtain an IP address (within 1 minute).
- When using DHCP, all configurations cannot be manually edited.
- After successfully obtaining an IP address via DHCP, the system automatically updates the obtained IP address and the network status.
- After changing the network type to "Static", you can manually modify the IP address, gateway, subnet mask, and DNS, and the network status will be automatically updated after setting.
- After manually editing the IP address, gateway, subnet mask, and DNS to invalid values, do not save the changes; continue using the original configuration.
  - If you change it to 1.2.3; 1.2; 0.0.0.0; 255.255.255.255; 1.a.3.4, these invalid data will not be saved when you click save.
  - Invalid IP addresses, such as 0.0.0.0 or 255.255.255.255, will not be saved.
- When setting an IP address, if the configured IP address and gateway are on the same network segment, the gateway will remain unchanged.

- When setting the IP address, if the set IP address and gateway are not on the same network segment, the gateway will be automatically updated. The updated gateway will be: ([IP] & [mask]) + 1
  - For example, if the original IP address, subnet mask, and gateway were (192.168.1.2, 255.255.255.0, 192.168.1.1), and you change the IP address to 192.168.2.2, the gateway will automatically become 192.168.2.1.
  - For example, if the original IP address, subnet mask, and gateway were (192.168.1.2, 255.255.254.0, 192.168.1.1), and you change the IP address to 192.168.2.2, the gateway will automatically become 192.168.2.1.
  - For example, if the original IP address, subnet mask, and gateway were (192.168.1.2, 255.255.0.0, 192.168.1.1), and you change the IP address to 192.168.2.2, the gateway will automatically become 192.168.0.1.
- When configuring the gateway, if the gateway and the dial-up code are not on the same network segment, this invalid data will not be saved when you click save.
- If the mask is invalid when setting it, it will not be saved after clicking.
  - Examples include 255.255.253.0, 255.0.255.0, 255.255.255.255, and 255.255.255.254.
  - The maximum value of the mask is 255.255.255.252.
- If modifying the subnet mask results in the IP address and gateway being on different network segments, update the gateway address according to the rules for modifying the IP address.
- Error message
  - IP conflict warning
  - Gateway not working prompt
  - DNS resolution error message

If the network card currently in use is a wired network card, this status will be displayed accordingly.
• When currently using Wi-Fi, the status displays '".

1.10.5.2. Wireless Network Setup





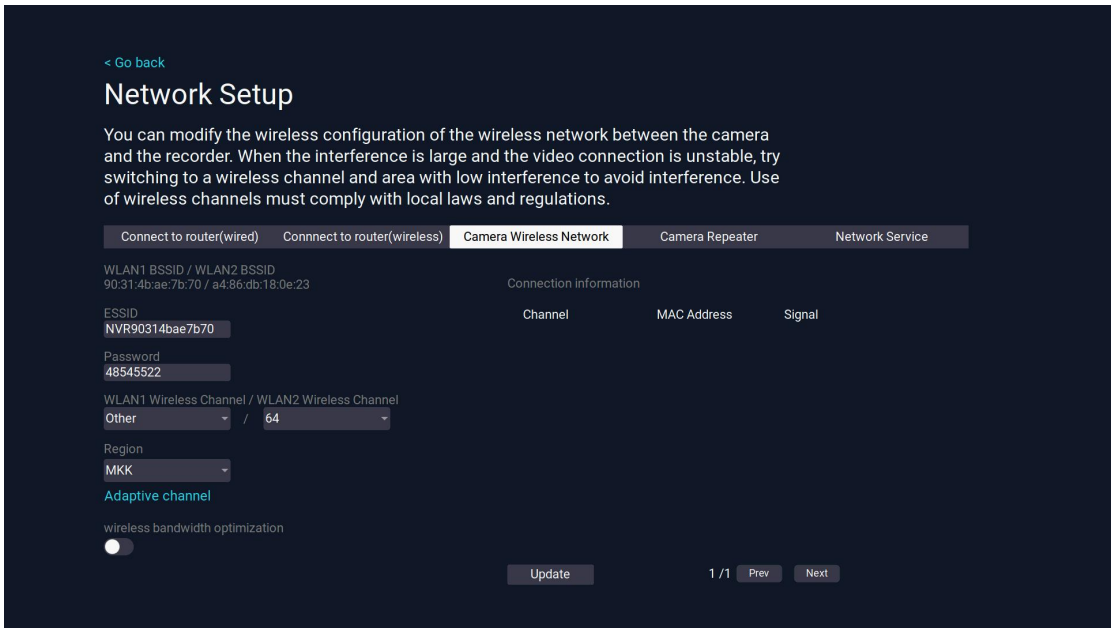
Requirement description:

- Off by default
- After enabling, click "Select Wi-Fi Network" to enter the Wi-Fi hotspot selection and settings interface.
- Entering "Select Wi-Fi Network" will bring up a progress bar for searching for hotspots. After the search is complete, the found hotspots will be displayed.
- The hotspot list displays the currently found hotspots and their signal values.
  - Signal strength standard
    - 0~20 1 grid
    - > 20 2 grids
    - >30 3 grids

- >60 4 grids

- When the hot topics list exceeds one page, it will display paginated content, supporting "previous page" and "next page" navigation, and showing the total number of pages and the current page number.
- The hotspot list supports displaying ASCII characters (uppercase and lowercase letters, symbols, and numbers), and also supports displaying Chinese characters.
- Supports entering Wi-Fi passwords; you can enter letters (uppercase and lowercase, symbols, and numbers).
- When WIFI is off, and there is no hotspot connection when it is turned on, the IP address, DNS, and signal strength are displayed as empty, but the WIFI status is displayed normally.
- After turning on Wi-Fi and setting up a hotspot, the "Select Wi-Fi network" option will change to the name of the currently connected hotspot.
- After a successful Wi-Fi connection, the system displays the currently assigned IP address, DNS, signal strength, and Wi-Fi connection status.
- The Wi-Fi connection was successful regardless of the hotspot name or length.
- Entering an incorrect password will prompt an error message.
- After the device is connected to the network cable, it should prioritize using the wired network for internet access.
- The device only uses Wi-Fi to access the internet when it is not connected to a network.
- The maximum length of a WiFi password is 31 characters.
- Routers that support different ESSID and password encoding formats (UTF8, GBK)
- WiFi 6 supported routers
- Routers that support different encryption methods (WPA2, WPA3, WEP, no encryption)

1.10.5.3. Camera Wi-Fi Network Settings



Requirement description:

- The default channel is 14. Chinese characters are displayed as "other" and English characters are displayed as "other".
- Supports channel settings; after setting, all cameras can reconnect and output images. Supports wireless area settings.
  - The wireless zone supports four types by default: FCC/EU/MKK/T-MODE. The supported wireless zone types can be customized.
  - After selecting different areas, the range of the wireless channel will be automatically adjusted.
    - FCC, channels 1-11. Selecting this area will default to channel 11.
    - EU, channels 1-13. Selecting this area defaults to channel 13.
    - MKK, channels 1-14. Selecting this area will default to channel 14.
    - T-MODE, channels 1 to 3, default is channel 1.
  - After selecting a wireless zone, the wireless channel will automatically update to the maximum channel of the largest wireless zone currently available.
  - After setting the wireless area to T-MODE, **you can click "Retry" to** reset the T-MODE. Other modes do not have a "Retry" button.

- In addition to the T-MODE channel switching time being less than 30 seconds, the T-MODE setting time should be less than 90 seconds.
- The default channel is 14. In Chinese, it is displayed as "other"; in English, it is displayed as "other".

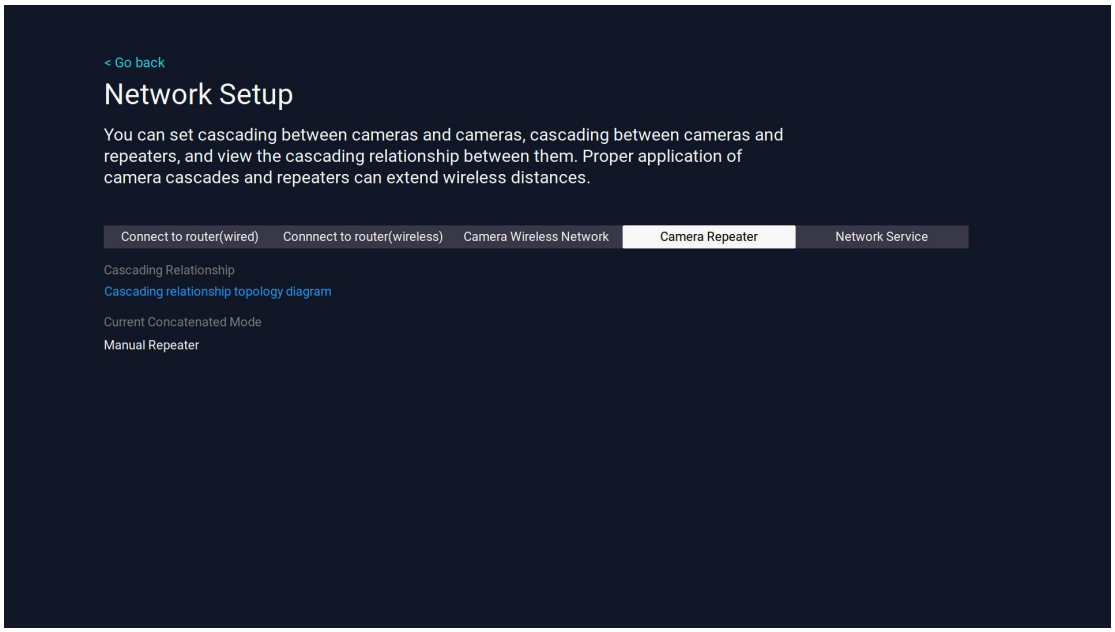
- Supports displaying the wireless version (for easy differentiation of the Wi-Fi module).
  - T8188S, RTL8192FC modules
  - T8188H , an enhanced version of the WIFI module, RTL8192EUS enhanced version.
  - T8192E , RTL8192EUS modules
  - T8188F , RTL8192FU
- Supports displaying BSSID
- Supports viewing ESSID and password
- The ESSID and password are not editable by default, but can be customized to be editable.
  - Add a hiding method to make the ESSID and password editable (click the ESSID edit box 10 times to make the ESSID and password input boxes editable).
  - This hidden setting method preserves the original ESSID and password settings after a reboot; a factory reset (without deleting channels) does not restore the ESSID and password; a factory reset (without deleting channels) restores the ESSID and password.
- It supports setting an adaptive channel. Clicking allows you to select a less congested channel from the surrounding area. The automatic channel setting time should be less than 60 seconds.
- Wireless bandwidth optimization
  - K8508-W (MSR621Q solution)
    - This feature is not supported in 4K resolution. Enabling it in 4K display will display the message: "Wireless bandwidth optimization is not supported at the current 4K resolution. If you confirm enabling this feature, the system will automatically adjust the display to 1080P output." [Yes] [No]
    - After enabling this feature, customers will be prompted to modify the encoding resolution. The prompt will look something like this: "Enable wireless bandwidth optimization. The system will automatically adjust the encoding parameters. Confirm whether to save this configuration."
    - For detailed specifications, please refer to the specification table.

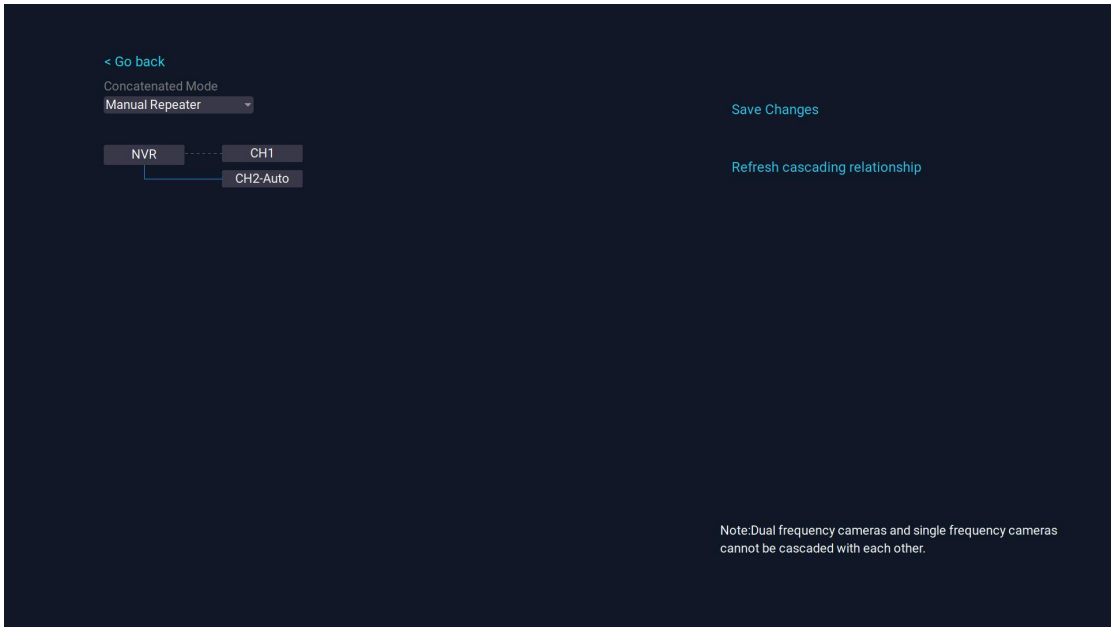
1.9.5.4 Camera Cascading Settings Interface

Camera cascading refers to expanding the existing network range using cameras themselves or repeaters. This enables smoother communication between the cameras and the wireless NVR host.

There are two ways to wirelessly cascade. One way is to use the camera itself as a relay, such as cascading camera A to camera B, that is, camera A is connected to the wireless NVR host through camera B as a bridge.

Another method is to use a wireless repeater (or IPC router) as a relay, such as cascading camera A to the repeater, that is, camera A is connected to the wireless NVR host through the repeater as a bridge.





Requirement description:

- Supports cascading between cameras
  - It supports a maximum of 2 levels of cascading, namely NVR-Cam1->Cam2->Cam3.
- Supports displaying the current network status using network topology.
  - The current network topology status is refreshed in real time after entering the interface.
  - Clicking refresh will update the current network topology status in real time.
  - Display the network topology (connection) status according to the actual connection method, rather than displaying it based on [other factors].
  - It can distinguish between wired and wireless connections; wired connections use a solid line, while wireless connections use a virtual line.
  - It can distinguish between normal connection and disconnection. A normal connection is indicated by a green line, and a disconnection is indicated by a red line.
  - It can distinguish whether cameras and repeaters support automatic cascading; supported devices are marked with "Auto " .
  - Only cameras that have been added will be displayed; cameras that have not yet been added will not be displayed.
  - Repeaters are displayed using the letter "RP".
  - It can search for and display repeater devices in the current local area network.
- Which devices support relay?
  - Jiuan's wireless cameras use the N1 protocol for connection.
  - Battery-powered devices are not permitted to function as repeaters, nor can they relay data to other devices.
- relay method
  - When used as a repeater, the repeater supports two repeating modes: wired repeating and wireless repeating; both modes can connect normally.
  - Wired repeater refers to a device that acts as a repeater and is connected to a

wireless host via a wired connection.

- Wireless repeater refers to a device that acts as a repeater and connects to a wireless host via a wireless connection.

- Manually configure cascading
  - Supports direct modification of network topology and manual setting of cascading relationships.
  - Click "Add" on the right to set up cascading and select which channels of devices to cascade (only devices that can be cascaded will be displayed).
  - Manual cascading supports a maximum of two levels: NVR-Cam1->Cam2->Cam3; more than two levels cannot be configured.
  - One device can support a maximum of two devices, such as NVR->Cam1->Cam2.

    |---->Cam3

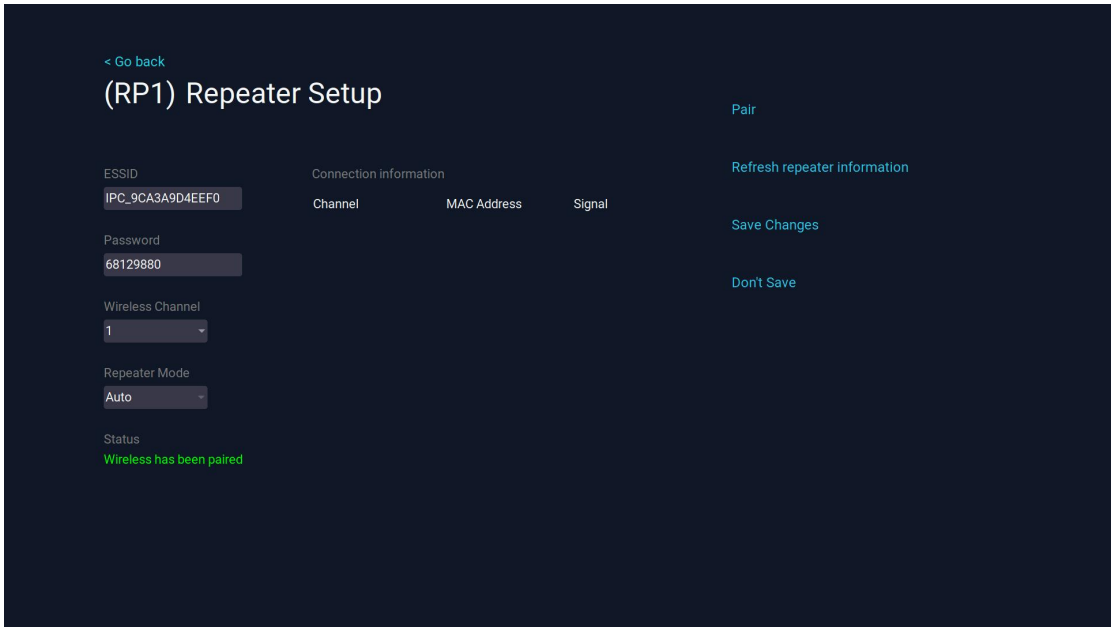
    (Cam2 and Cam3 are both directly relayed to Cam1)
  - No more than two devices (directly or indirectly cascaded) are allowed behind a single camera. The following configuration is not permitted: NVR->Cam1->Cam2->Cam3.

    |---->Cam4
  - The device acting as a repeater [when supporting two devices (i.e., a level 2 repeater)] should function normally, without exceeding its load capacity or experiencing any abnormalities (CPU load <75%), and should operate stably over a long period.
- Set the cascading order
  - When manually setting up cascading, the configuration should be performed in order from the host to the endpoint.
- Delete cascade
  - Supports deleting cascading relationships directly on the network topology.
  - Clicking on the last-level device will delete it directly. The deleted device will then reconnect to the wireless host (in non-relay mode).
  - The device is already connected to the wireless host; clicking on it will not offer a delete option and will not trigger any response.
- Configure automatic cascading
  - Automatic cascading is disabled by default at the factory.
  - Supports setting automatic cascading
  - Support disabling automatic cascading
  - A progress bar is displayed during setup; settings are automatically cascaded and take no more than 2 minutes.
  - In automatic cascading, when a device has a weak signal, it should be able to automatically find a nearby device with a stronger signal for cascading (standard?).
  - Here are some common scenarios for automatic cascading:
- Exception handling
  - When the relayed device malfunctions, the end camera, wirelessly connected to the relay device, should not lose connection and should actively reconnect to the

wireless NVR host (e.g., WNVR->Cam1->Cam2). After Cam1 is powered off, Cam2 should not lose connection and should automatically reconnect to WNVR.

- Upgrading cascaded devices
  - When upgrading cascaded devices, the upgrade should begin with the last cascaded device. This avoids situations where other devices connected to the same repeater experience temporary disconnections during the upgrade or restart of that repeater.

1.10.5.4. Repeater Settings



A repeater is a special wireless device used to extend the coverage of an existing wireless NVR network or to act as a wired relay. When a camera is installed at a certain location and the signal to the wireless host is poor due to too many obstacles, a repeater can be placed in the middle to enable communication between the camera and the wireless NVR host, and to smoothly connect to the wireless host through the repeater as a bridge.

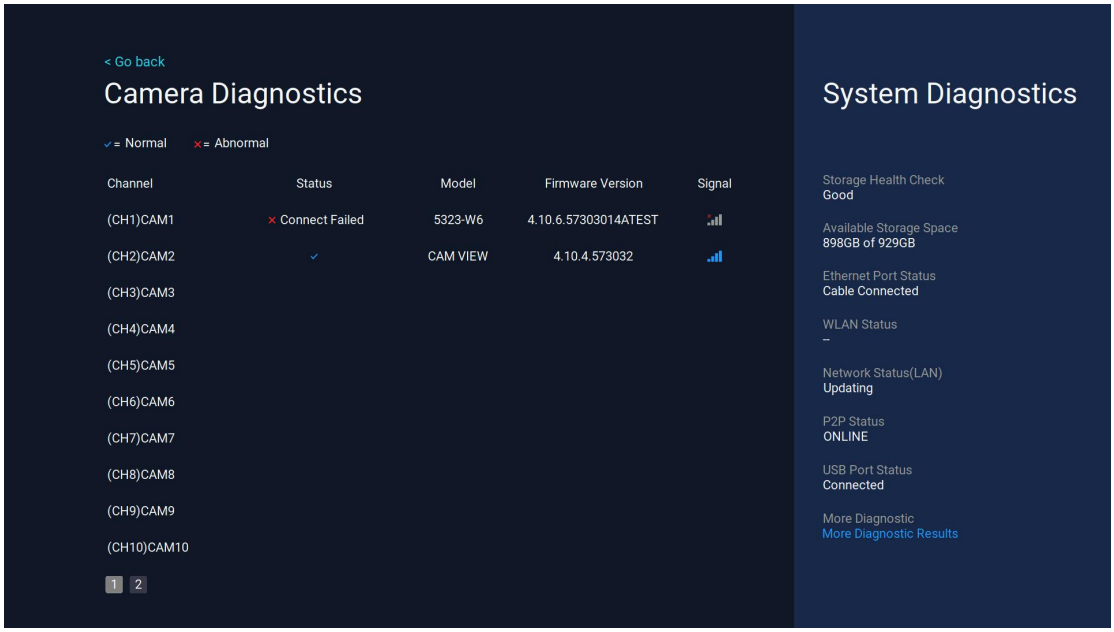
Requirement description:

- Repeater settings are supported in the wireless cascading interface.
- The wireless cascading interface supports displaying repeater devices in the current network.
- Double-clicking the repeater will take you to its settings interface.
- The repeater's settings interface supports pairing, allowing for one-click wireless pairing with the wireless host.
- The repeater's settings interface supports displaying information about cameras already connected to the current repeater (including channel, MAC address, IP address, and signal strength).
- The repeater supports wired repeater functionality and wireless repeater functionality.

- Supports adding cameras to repeaters in the cascading settings interface; one repeater.
  - A maximum of 4 cameras can be connected when using a wired repeater.
  - A maximum of two cameras can be connected when using wireless repeater.
- Repeaters that support automatic relaying will support automatic cascading once automatic cascading is enabled.

1.10.6. Equipment Diagnostics

The system provides diagnostics on the NVR host itself, as well as the status of added cameras.



1.10.6.1. NVR Device Diagnostics

Requirement description:

- Storage health status check
  - ❖ good

    The hard drive has been formatted and recording is proceeding normally.
  - ❖ Unformatted

    Hard drive already connected
  - ❖ Database error

Hard drive database corruption

- ❖ No storage device
- ❖ Slow device read/write speed

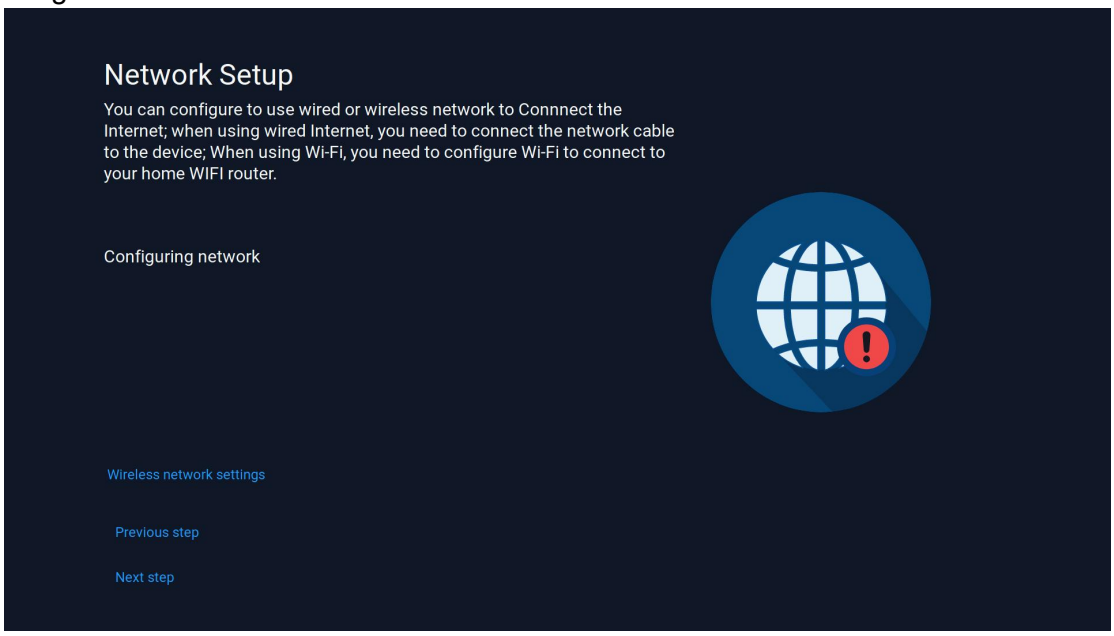
- Available storage space
  - ❖ Mark the currently available space and the total space size.
- Ethernet port status
  - ❖ The network cable has been connected.
  - ❖ Network cable not connected
- LAN/Server Status
  - ❖ Network card malfunction
  - ❖ Network configuration error
  - ❖ Gateway not working
  - ❖ DNS resolution error
  - ❖ Network is normal
- P2P status
  - ❖ Online
  - ❖ Offline
- USB port status
  - ❖ Already connected
  - ❖ Not connected

1.10.6.2. Network Diagnostics for Devices

Requirement description:

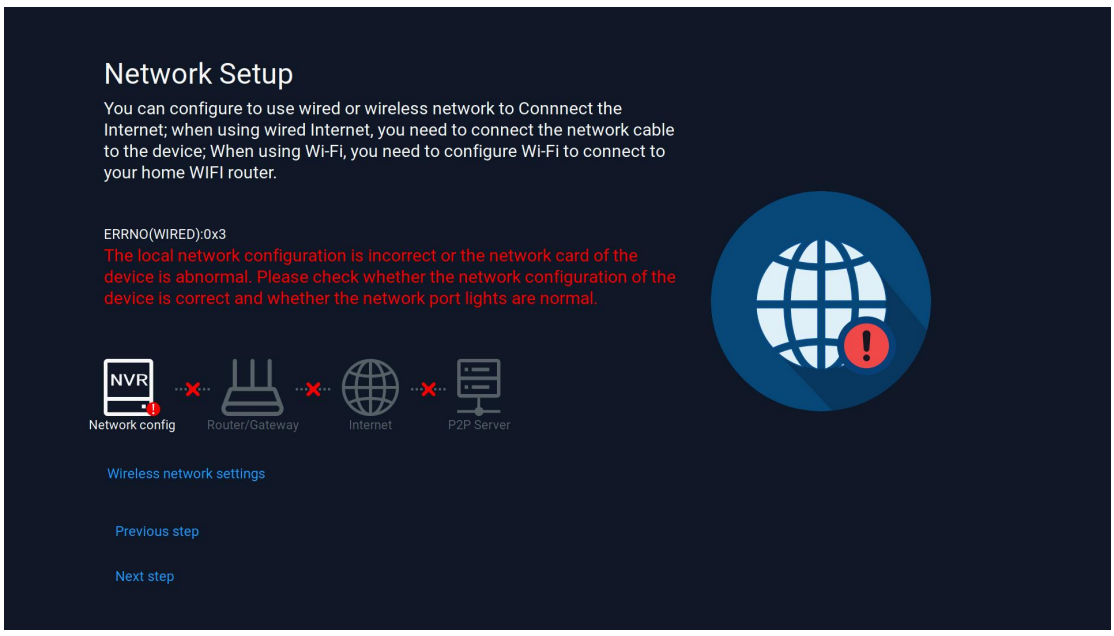
- When the local area network/server status is abnormal, click to enter the network diagnostic interface.
- When the local area network or server is functioning normally, you cannot access the network diagnostic interface.
- Add a network topology diagram (including NVR, gateway, server, P2P service) , and display a network diagnostic topology diagram based on detected network anomalies; anomaly locations should be marked with an anomaly status icon.

1) When you first enter the page, the status will show " Updating " ; as shown in the image below.

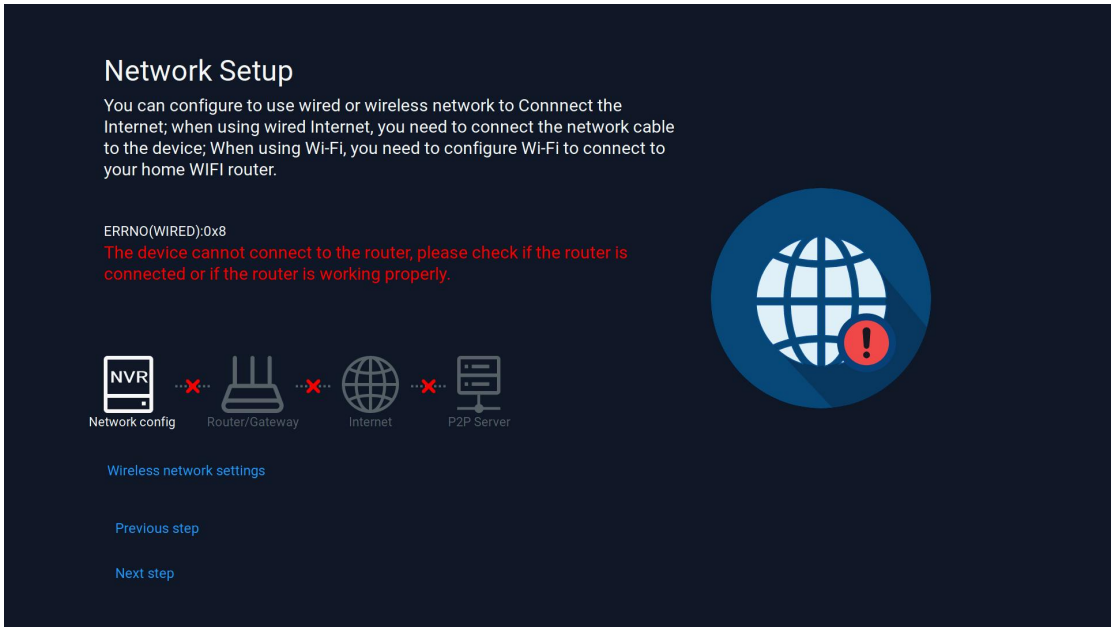


2) When the NVR cannot find the network card, the network cable is not plugged in, the network configuration is invalid , the subnet mask or gateway settings are abnormal , there is an IP conflict , or the DNS is not set ; as shown in the figure below.

- **(1) The network cable is connected or (2) The network cable is not connected and wireless internet access is not enabled; wired connection is used.**
- **Without a wired network connection, and with Wi-Fi enabled and configured, check the status of the wireless network adapter.**

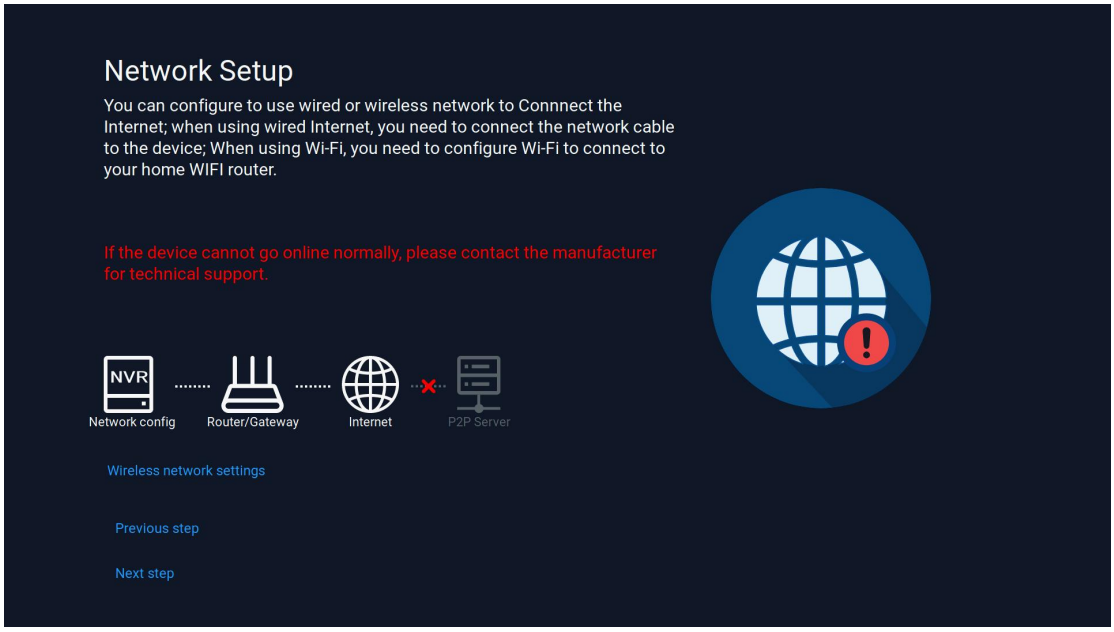


3) When the NVR is not connected to the router and cannot be pinged to the gateway route, as shown in the following figure.

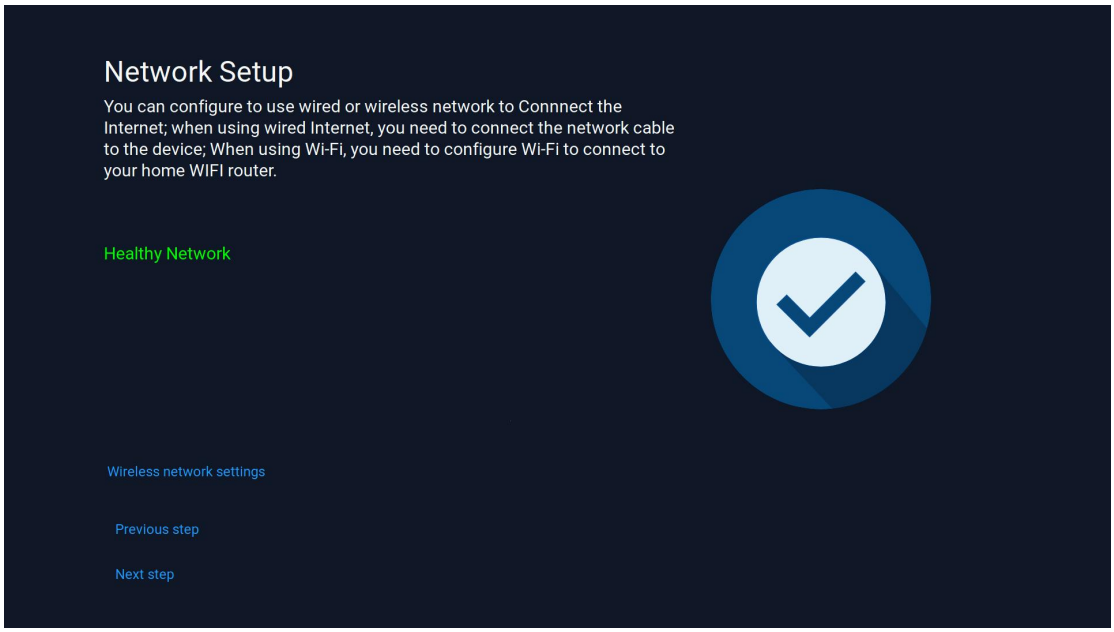


4) When the router connected to the NVR cannot access the internet , as shown in the following figure.

5) When the router can access the internet, but the device ID burned into the NVR is incorrect, as shown in the following figure:



6) When the network is detected to be normal and the device is online, it will appear as shown in the following figure:



1.10.6.3. Camera Diagnostics

Requirement description:

- Supports displaying the status, signal strength, model, and version number of added cameras.
- state

  A camera connected to outputting an image or in sleep mode indicates a normal status. Any other status indicates an abnormal status. Abnormal situations include:

  - ❖ Incorrect password
  - ❖ Too many connections

❖ The camera resolution is too high, exceeding the current NVR's permissible specifications.

❖ Connection failed

Clicking on the abnormal status will bring up a detailed diagnostic interface for camera malfunctions (no design draft available).

- signal strength

  Displayed using a WIFI icon; WIFI signal standard:

  ❖ X: WiFi disconnected

  ❖ 1 grid: > 0

  ❖ 2 slots: > 18

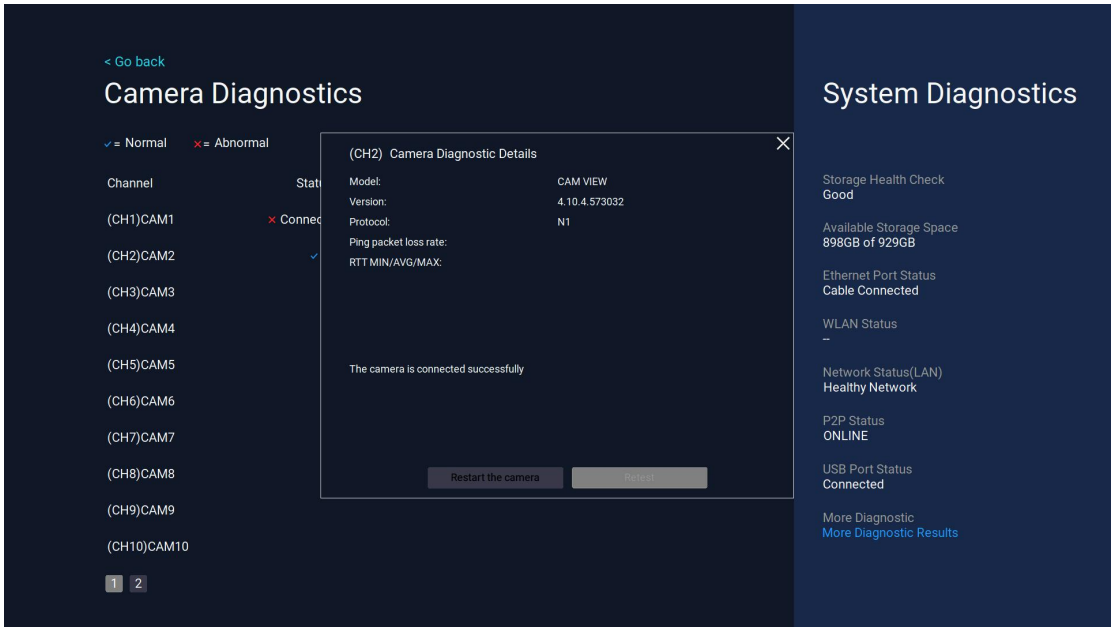
  ❖ 3 grids: > 26

  ❖ 4 grids: > 45

1.10.6.4. Detailed Camera Diagnosis

Requirement description:

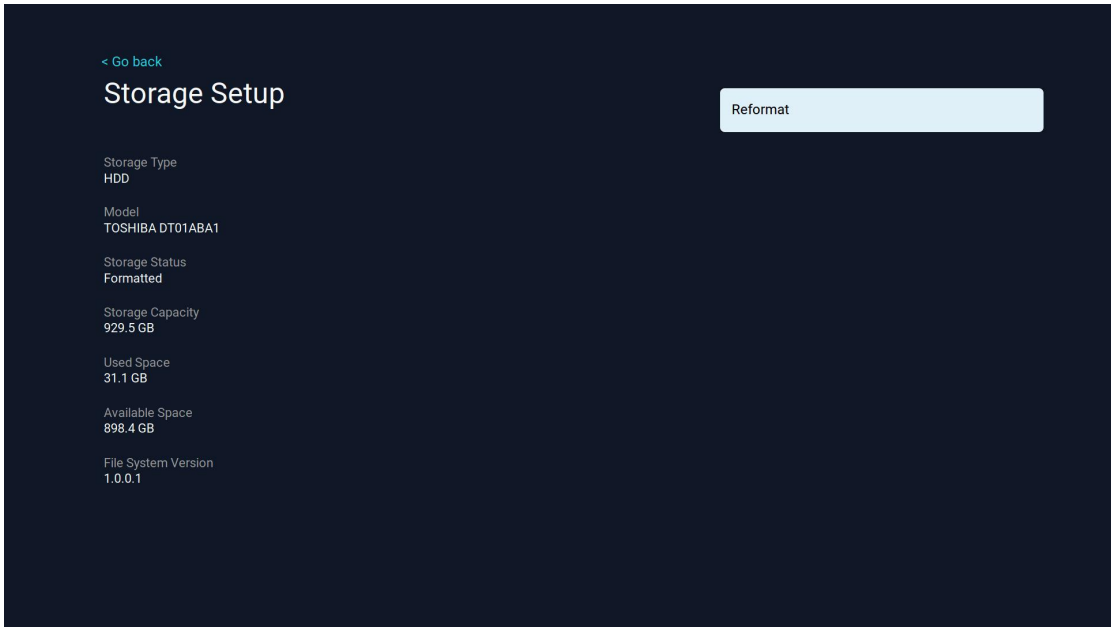
- For channels that have already been added (regardless of whether the connection was successful or not), click on the connection status to enter the camera's detailed diagnostic interface.
- If not added, you cannot jump to the camera connection diagnostic interface.
- Upon entering this interface, an asynchronous ping test (pinging 10 packets) will be automatically triggered and refreshed with a progress bar. After sending 10 packets, the test results will be displayed on the interface. The packet loss rate and round-trip time (minimum, average, and maximum) should be displayed.
- Click "Retest" to re-trigger the ping test. Do not attempt to test again until the test results are returned.
- Only wirelessly added channels will be displayed for Wi-Fi signals; wired channels will not be displayed.
- When the Wi-Fi connection drops, avoid pinging to prevent prolonged congestion.



1.10.7. Storage Settings

Information about the hard drive or TF card storage device, and reformatting.

Status when connecting a hard drive



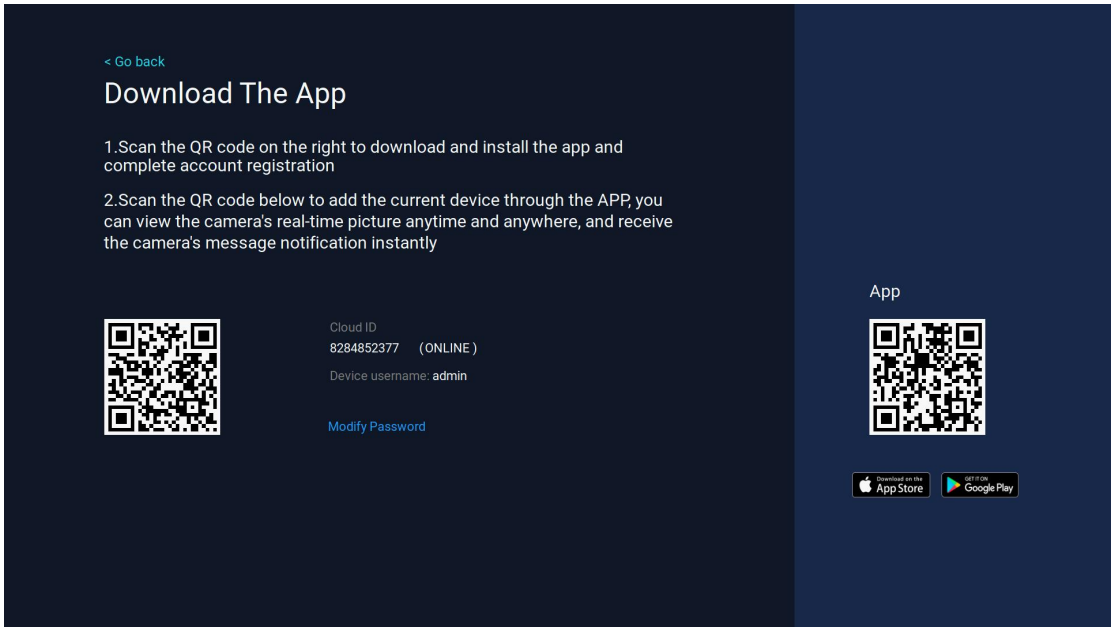
Requirement description:

- Describe storage device information
- Describe the type of storage device (hard drive or TFCARD).

- Display device model
- Displays device status, supporting the following statuses: "No storage device", "Unformatted", "Formatted", "Database corrupted".
- The display shows the storage capacity, used space, and available space. The capacity display is correct.
- Tfcard supports all mainstream Tfcards, with a maximum support of 256GB.
  - Display the read and write speeds of the TFcard when it is connected.
  - Rate testing was conducted at the following time points; no testing was performed at other times.
    - Test during power-on and connection.
    - Format for testing
    - Test when replacing the card
  - When the data rate is abnormal (below the set value, which can be customized), the default is 10MBps, and the following error message will be displayed: Warning: The current TF card read/write rate is too low, which may affect normal recording. It is recommended to replace it with a memory card with a read/write rate of 10MBps or higher (Class 10).
- The hard drive supports all mainstream hard drive devices, with a maximum capacity of 6TB.
- The formatting success rate should reach 50 times with zero errors, especially for hard drives of 4TB and below.
- All new hard drives (unpartitioned hard drives, hard drives in various states of partial formatting) must be able to be formatted successfully.
- **When formatting a hard drive, the user should be prompted and asked to confirm that formatting is truly necessary before formatting can proceed. This helps prevent accidental data formatting.**

1.10.8. Account/APP

Download the app and add your device through the app.

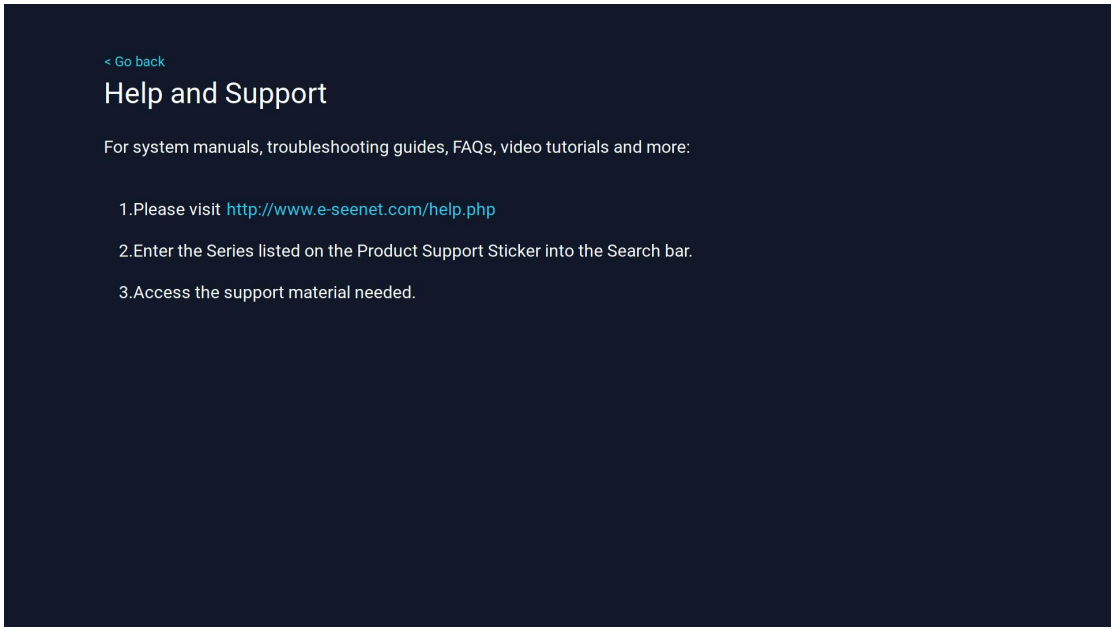


- The interface guides users on how to install the app and add devices.
- The interface needs to include the app's installation QR code (the QR code is shared by Android and iOS, and is valid both domestically and internationally).
- The device needs to provide a QR code with its device UID for the app to scan and add. After the user adds the device by scanning the code with the app, they can add the device.
- Supports changing device passwords, enhancing customer security and preventing unauthorized access.
- Device UID, used for adding via the app. The complete flashed UID is not displayed; only the last 10 digits are shown.
- The QR code for downloading the app should display this:

1.10.9. Help and Support

Get help information for device problems

1) English interface



Requirement description:

- Instruct users on where to get help and support.
- After scanning the QR code, users can log in to the corresponding website to obtain support or related product information (QR code scanning is not currently supported).
- For neutral devices, if the device language is Chinese, the default display will be http://www.dvr163.com/help.php
- For neutral devices, if the device language is not Chinese, the default display will be http://www.e-seenet.com/help.php
- Customers can customize their own technical support site, which will then display the user-defined website.

1.10.10. Factory Settings

Restore all device configurations to factory settings.

Requirement description:

- After entering the factory settings interface, the factory reset button is displayed correctly.
- Users can choose whether to restore already added cameras (by default, already added cameras are restored), or they can delete already added cameras after making this choice.
- If the user chooses to delete the added camera, then when restoring factory settings, all configurations (including user password, added cameras, network configuration, etc.) will be restored.
- If the user does not choose to delete the added cameras, all configurations will be cleared except for those of the added cameras.
- When performing a factory reset, the user should be prompted to prevent accidental deletion of configuration settings. The factory reset should only proceed when the user confirms their confirmation.

2.1 Recording Mode Description

- Event video
  Record continuously when a moving object is detected until the movement ends.
- Recording continuously
  One type is MD or humanoid, and the other is only humanoid.

3.1 Platform Software Functions

Supports preview, playback, download, and settings functions for APP/ CMS/WEB; The device supports adding the SN to the APP and CMS.

Warranty Information

Our product is guaranteed to be free from manufacturing defects for a period of 3 Years.
If your product becomes defective during this period, Electus Distribution will repair, replace, or refund where a product is faulty; or not fit for intended purpose.
This warranty will not cover modified product; misuse or abuse of the product contrary to user instructions or packaging label; change of mind and normal wear and tear.
Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and failure does not amount to a major failure.
To claim warranty, please contact the place of purchase. You will need to show receipt or other proof of purchase. Additional information may be required to process your claim.
Any expenses relating to the return of your product to the store will normally have to be paid by you.
The benefits to the customer given by this warranty are in addition to other rights and remedies of the Australian Consumer Law in relation to the goods or services to which this warranty relates.

This warranty is provided by:
Electus Distribution
Address 46 Eastern Creek Drive, Eastern Creek NSW 2766
Ph. 1300 738 555