

Hikvision Camera

Frequently Asked Questions

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Chapter 1 Image

1.1 The Camera Cannot Get A Clear Image

There are several problems that might cause a blurry image. Please refer to the following description to solve the problem.

Cause 1

The lens does not match the lens mount of the box camera. A box camera has C mount or CS mount. A CS-mount camera can be connected to a CS-mount lens directly. However, you need to use a lens adapter to connect a CS-mount camera with a C-mount lens.

Cause 2

The lens does not focus. You need to adjust the focal length or focus again. Network cameras have varifocal or fixed-focal lenses. Varifocal lenses focus manually or automatically.

- For fixed-focal cameras, the image blur may be caused by bumps during transportation. Please contact after-sales.
- For manual varifocal cameras, first adjust the zoom ring (W-T), and then adjust the focus ring (N-∞).
- For motorized varifocal cameras, access the device by web browser, go to **Configuration → Image → Display Settings → Focus**, and check the focus mode. If the image is not clear under auto or semi-auto mode, adjust to manual mode. Use **Zoom +** and **Zoom -** buttons to zoom in and out. Use **Focus +** and **Focus -** buttons to get a clear image.
- For box cameras, use Auto Back Focus (ABF) to focus.

Cause 3

The lens or transparent cover is smeared, or the lens is blocked by cobwebs, etc. You need to remove the smear or block.

Cause 4

The protective film on the lens or transparent cover is not removed. You should remove the protective film.

1.2 The Image Is Always Black and White

Cause 1

The saturation is 0.
Set the saturation to a value larger than 0.

Cause 2

Environment light problem.
The environment light is lower than the day/night switch threshold, so the camera switches to night mode automatically.

Cause 3

The day/night switch is under night mode.
Set the day/night switch as day.

1.3 Horizontal Lines on the Image

Cause 1

There is a strong electromagnetic radiation source near the camera, for example, high-voltage cables or high-power motors.
Protect the camera by effective grounding. Avoid the interference source when installing the camera. Use transmission cables with better shielding performance.

Cause 2

The analog camera is grounded nearby. The grounding electrical levels of camera and DVR are not the same.
Insulate the analog camera from the ground.

1.4 Vertical Lines on the Image

The input power voltage is lower than the required working voltage, so the camera cannot work normally.
Use the included power adapter. Refer to the datasheet of the camera for detailed power requirements. You are recommended to use one power adapter to supply the power for one camera.

1.5 The Image Is Reddish

Cause 1

The ICR is stuck.
Manually change the day/night switch mode and check if the ICR is switched with a "click". If the image does not turn normal, please contact after-sales.

Cause 2

A color cast in a large part of the scene results in malfunction of white balance calibration. You are recommended to adjust the white balance mode to fluorescent lamp.

1.6 The IR Image Is Cloudy (Bad Image Effect at Night)

Cause 1

Description: The image has white spots (e.g. light spots, white lines) at night.
Cause: The transparent cover is stained by handprints, water stains, or cobwebs.
Answer: Clean the transparent cover with a lens wipe or soft towel, or replace with a clean cover.

Note

DO NOT clean the transparent cover with alcohol.

Cause 2

Description: The image has white spots on the edges and in the center with a white band.
Cause: The foam ring in the device is loose or removed, so the light leaks in.
Answer: Contact after-sales and send the device to factory for repair.

Cause 3

Description: When the IR light of the indoor device is on, the image is cloudy.

- Cause A: There is another IR light on the opposite position.
- Cause B: The vertical installation angle is too high. The light is reflected by the ceiling.
- Cause C: The lens is blocked.

Answer: Remove the block, lower the lens, and adjust the installation angle.

Cause 4

Description: The image is dark overall.

- Cause A: The scene is empty and the shooting angle is too high, so the IR light is not reflected effectively.
  Answer A: Lower the lens and adjust the installation angle.
- Cause B: The IR camera has been used for over 2 years and the IR light declines, or the IR light is off.
  Answer B: Replace IR light board and turn the IR light on.

1.7 The Near Part of the Image Is Too Bright

Description

The near part of the image is too bright.

Cause

The installation position or angle is not ideal. The smart IR function is not enabled.

Answer

Adjust the installation position or angle and enable the smart IR function. The higher the level of smart IR is, the more obviously the overall image darkens.

1.8 "Snowflakes" at Night

Description

There are "snowflakes" on the image at night.

Cause

The using environment is dusty. The dust near the camera reflects the IR light and looks like snowflakes on the image.

Answer

- Adjust to a longer focal length.
- Enable smart IR function. Lower the IR light brightness.

1.9 The Image of the PTZ Camera Is Normal at Long Range But Blurry at Close Range

Access the device by web browser, go to **Configuration → Image → Focus**, and change the min. focus distance to the smallest possible value.

1.10 The Image Has White Spots (e.g. Light Spots, White Lines) at Night

Example



Figure 1-1 Light Spot

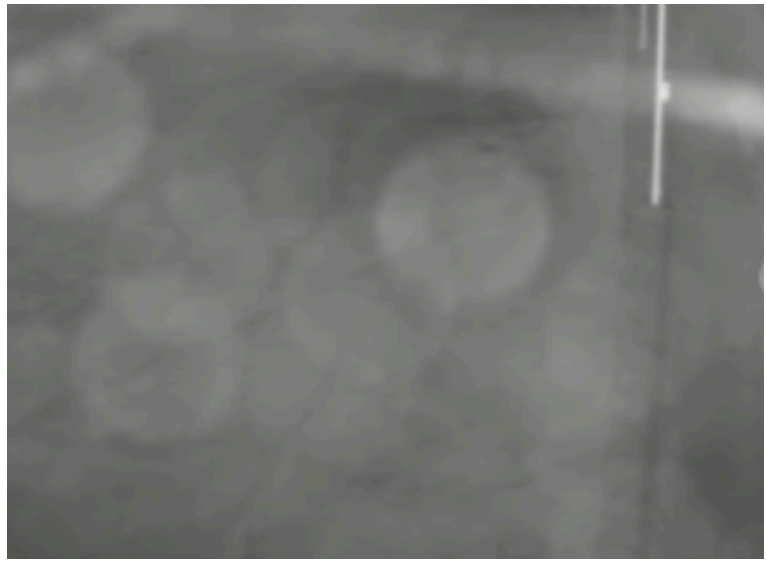


Figure 1-2 White Line

Cause

The transparent cover is stained by handprints, water stains, or cobwebs.

Answer

Replace with a clean transparent cover, or clean the cover with a lens wipe or soft towel.

1.11 The Image Has White Spots on the Edges and in the Center with a White Band

Example

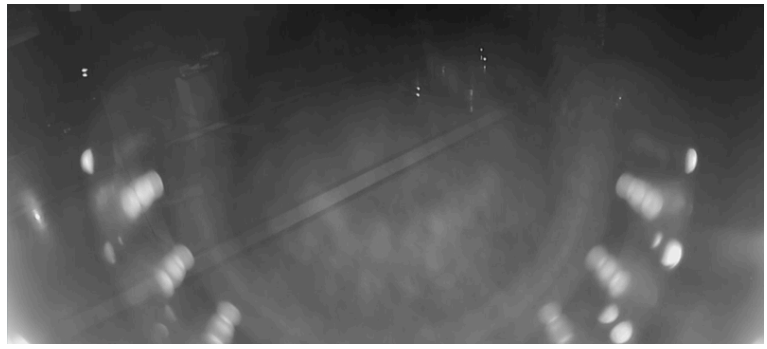


Figure 1-3 The Image Has White Spots on the Edges

Cause

The foam ring in the device is loose or removed, so the light leaks in.

Answer

Please contact after-sales.

1.12 The Object Near the Device Is Too Bright While the Rest Part of the Image is Dark and Not Clear

Example



Figure 1-4 The Object Near the Device Is Too Bright

Cause

The object near the device reflects IR light, so it cannot reach further places.

Answer

- Check reflecting objects and remove the objects from the view. Or adjust mounting position or angles to avoid the obstacle.
- Enable smart supplement light function.
- If a large part or all of the installation scene is blocked and reflects IR light, avoid installing the device in this scene.

1.13 The Night Image Is Dark and Not Clear

Cause

The IR light is too dim to give sufficient supplement light.

Answer

- Check if the power supply of the device is normal at night. Separate power source for each device is recommended.
- Check the IR light of the device. If it is broken or the brightness is low, please contact after-sales.
- Check if the IR distance and IR light angle are suitable for the scene. If not, the IR brightness at a distance may be insufficient.

1.14 The Image Is Blurry When the Device Is Against the Wind in Snowy Weather

Cause

The rain and snow are blown to the transparent cover and blur the image.

Answer

The image usually becomes clear when the rain and snow stop.

1.15 The Image is Partially Blurred in Normal Weather or Rainy Day

Cause 1

It may be caused by condensation inside the device. The cables are not properly waterproofed and moisture goes into the device through the cables, accumulates, and forms dews inside the lens which is hard to remove in a short time.

Answer

- Use a waterproof network connector cap and waterproof tapes to seal the cables.
- Contact after-sales and send the device to factory for repair.

Cause 2

The transparent cover is dirty.

Answer

Replace with a clean transparent cover, or clean the cover with a lens wipe or soft towel.

Chapter 2 Audio

2.1 How to Connect a Terminal Block Audio Interface?

2.1.1 Interface Definition

AUDIO refers to audio interface. As shown in the figure, the 4 pins from bottom to top are for audio input (IN), ground (G), audio output (OUT), and ground (G). The two ground pins can connect to the same ground.



Figure 2-1 Terminal Block Audio Interface

2.1.2 Wiring

A pick-up usually has 3 wires: a signal wire, a 12 VDC positive wire, and a 12 VDC negative wire. The wiring method is shown in the figure.

- Signal input: Connect the signal wire from the pick-up to the AUDIO IN of the camera.
- Power negative: Connect the negative wire of the pick-up to the negative wire of the power adapter and the AUDIO G of the camera.
- Power positive: Connect the positive wire of the pick-up to the positive wire of the power adapter.

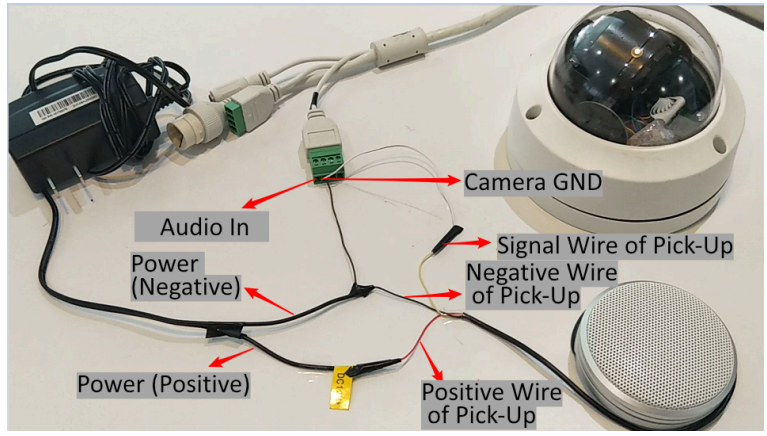


Figure 2-2 Example of Green Terminal Block Interface Wiring

2.2 How to Connect a 3.5 mm Audio Interface?

2.2.1 Interface Definition

The 3.5 mm round interface is shown in the figure. It is the audio input interface of the camera. You also need an audio adapter cable (3.5 mm to two wire).



Figure 2-3 3.5 mm Round Interface



Figure 2-4 Audio Adapter Cable

2.2.2 Wiring

A pick-up usually has 3 wires: a signal wire, a 12 VDC positive wire, and a 12 VDC negative wire.

- Signal input: Connect the signal wire from the pick-up to the signal wire of the audio adapter cable.
- Power negative: Connect the negative wire of the pick-up to the negative wire of the power adapter and the ground wire of the audio adapter cable.
- Power positive: Connect the positive wire of the pick-up to the positive wire of the power adapter.

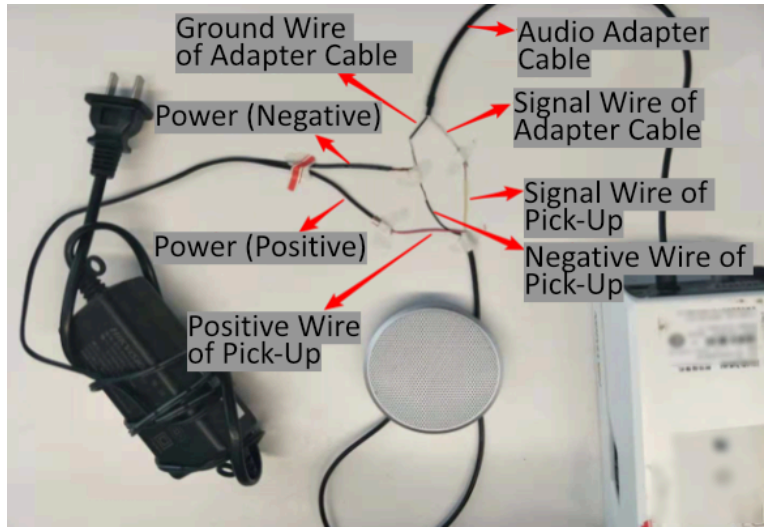


Figure 2-5 Example of 3.5 mm Interface Wiring

2.3 How to Connect a DIY Audio Interface?

2.3.1 Interface Definition

This section introduces how to make a standard 3.5 mm connector for a non-3.5 mm pick-up. A 3.5 mm audio connector usually used for security camera is shown in the figure. It is separated into 3 parts by two rings of insulation material. It is usually made of copper, some plated with silver. The stability and electronic engineering quality of silver is better than copper, using silver plated copper can improve user experience.



Figure 2-6 3.5 mm Connector Exterior

The interior of the connector is shown in the figure. The two short pins in the middle are for left and right channels. The longer one is to connect the ground wire.

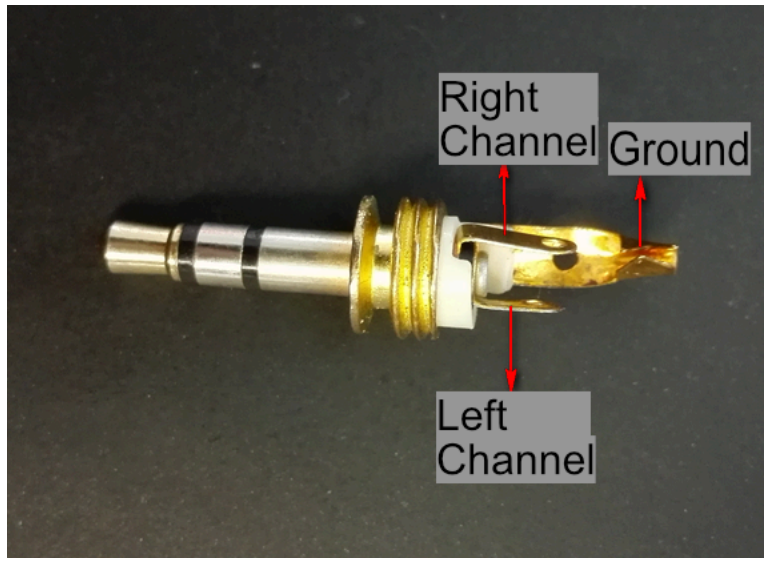


Figure 2-7 3. 5 mm Connector Interior

2.3.2 Wiring

The 3.5 mm connector can be connected to mono sound or two-channel source. Both methods are introduced in this section.

Mono Sound Wiring

Mono sound wiring is the most common wiring. You only need to connect the signal wire of the pick-up to the left or right channel of the connector, connect the negative wire of the pick-up to the ground of the connector, and power the pick-up.

You need to insulate the wires after connection. Use heat-shrink tubing if possible. You can also wrap the wires with insulating tapes.



Figure 2-8 Insulation

The longer pin is for grounding. The shorter pin is for signal.

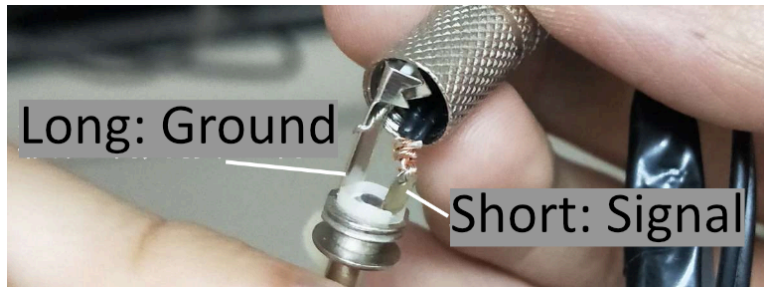


Figure 2-9 Wiring



Figure 2-10 Completed

Two-Channel (Left and Right Channels) Wiring

Two channels can connect to two pick-ups. Connect two pick-ups to left and right channels respectively to input audio simultaneously through both channels.

Note

In live view and playback, the sound of left and right channels are mixed. If you need to output the sound separately, make sure that the software of your device supports this function. The function may vary with device.

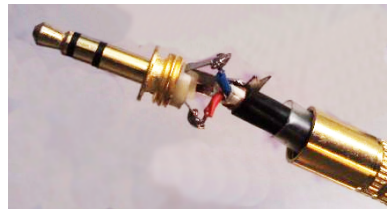


Figure 2-11 Two-Channel Wiring

You need to insulate the wires after connection. Use heat-shrink tubing if possible. You can also wrap the wires with insulating tapes.



Figure 2-12 Insulation



Figure 2-13 Completed

2.4 Live View Has No Sound Or the Volume Is Too Low

Check if the recording has sound.

- If the recording has sound, check if the volume button under the right side of the live view image is on. Or view on another computer. (Make sure that the audio output of the computer works and is on.)
- If the recording has no sound:
  1. Go to **Configuration → Video/Audio → Video** and check if the **Video Type** is **Video&Audio**.
  2. Go to **Configuration → Video/Audio → Audio** and check if the **Input Volume** is 0.
  3. Check if the audio cable is correctly connected. Connect AUDIO IN to the signal wire of pick-up; connect GND, negative wire of pick-up, and negative wire of power source; connect the positive wire of pick-up to that of the power source.

2.5 The Device Is Connected with a Pick-up, but There Is No Sound when Playing the Recording File

Cause 1

Camera settings.

- Go to **Configuration → Video/Audio → Video**, and check if the audio type is **Video&Audio**.
- Select audio input as **LineIn** for external active pick-up. Select **MicIn** for external passive pick-up or built-in pick-up.
- If there is sound when testing, you can connect the mobile phone to the device and play sound to check if the recording function of the camera is normal.

Cause 2

Cable connection. Check if the cables are connected correctly. Connect the AUDIO-IN of the camera to the signal cable of the pick-up. Connect the GND, negative pole, and the negative power pole together. Connect the positive pole of the pick-up and the positive power pole together.

Cause 3

Power supply for the pick-up. The power supply for the pick-up is +12 V normally. You can connect the device to a 12 VDC power adapter or normal power supply. Certain models are equipped with indicator, and the indicator shows the device status after powering up. Connect the earphone or speaker to the pick-up to test if the sound is output.

2.6 The Pick-up Recording Is of Poor Quality, with High Noise or Rustling Sound

Cause 1

The setting type of Audio Input and the actual device do not match. The pick-up should be plugged in the Line in interface. Meanwhile, go to **Configuration → Video/Audio → Audio**, and select the Audio Input as **LineIn**.

Cause 2

Power selection. It is not recommended that the pick-up shares one power adapter with the camera, or uses the switching power supply. It is recommended to use a linear regulated power supply for the pick-up independently.

Cause 3

Wire and soldering. Check the wire selection for the pick-up and the connector soldering. You should use shielded cable as the connecting cable, such as 0.5 mm 2RVVP 3-core shielded cable. Connector soldering should be up to standard.

Cause 4

The pick-up has the functional defects. Check if the device supports noise suppression. If so, enable the function and check again.

Cause 5

The filter and shielding of the pick-up wire are with poor performance.
Follow the steps below to adjust and check the recording sound again.

- Connect the device shell to the ground via wire.
- Use the wire with good shielding performance.
- Keep the pick-up far away from the interference source, such as the signal amplifier.

Cause 6

The pick-up is interfered by the external signal. Follow the steps below to adjust and check the recording sound again.

- Avoid the mobile phone interference: keep the mobile phone away from the pick-up when recording.
- Avoid the display interference: keep the pick-up away from the display.
- Avoid display horizontal scanning frequency interference: keep the working display away from the pick-up, or turn off the display when recording.
- Avoid the host computer interference: hardware of the host computer, such as the power supply, main board, CPU, expansion slot, etc. produce electromagnetic radiation noise at working, which may disturb the pick-up. If these kinds of problems occur, it is recommended to change the hardware, such as power and main board, and check the recording again.

2.7 Exception Occurs When Playing the Downloaded Audio and Video Files

Question

How to solve the exception when playing the downloaded audio and video files?

Answer

Visit Hikvision official website ***http://www.hikvision.com/*** . Go to **Support → HiTools → Desktop Tools** to download VSPlayer.

2.8 The Audio Stutters in Live View

Question

How to solve the problem when the audio stutters in live-view?

Answer

It is caused by the problems in network speed or web browser.

- Please check your network connection.

If the sound in the audio stops, please check the connection of the pick-up; if the sound in the audio is normal, please check the network connection and the network speed.

- Change the web browser and try again.
  The audio played on web page may be stuck due to the performance of some web browsers. Change the web browser and try again.

Chapter 3 Storage

3.1 Abnormal Display of SD Card Capacity

Question

The SD card capacity is displayed as 128 GB normally on the camera, but the card reader can only recognize 32 GB on the computer?

Answer

- The SD card of FAT32 format: The device will set partitions for the SD card in formatting. Every single partition is 32 GB, and the Microsoft system can only recognize 1 partition, so the SD card capacity is displayed as 32 GB.
- The SD card of NTFS format: The device will not set partitions for the SD card in formatting, and the original SD card capacity can be displayed normally.

3.2 The Camera Cannot Read the SD Card When Using It for Storage

Question

Why cannot the camera read the SD card when using it for storage?

Answer

- Check if the SD card is normal. Insert the SD card to a computer to check if it can be read.
- Check if the SD card is well plugged in, and then reboot the device.

3.3 The Relationship Between Resolution and Stream Bitrate

Question

What is the relationship between resolution and stream bitrate?

Answer

When the frame rate is set as 25 fps, recommended bitrates for common resolutions are as follows.

	4 CIF	1 MP	2 MP	3 MP	5 MP	8 MP	12 MP
H.265	1 Mbps	1 Mbps	2 Mbps	3 Mbps	4 Mbps	6 Mbps	8 Mbps
H.265+	0.8 Mbps	0.8 Mbps	1.4 Mbps	1.8 Mbps	2 Mbps	2.86 Mbps	3.6 Mbps

	4 CIF	1 MP	2 MP	3 MP	5 MP	8 MP	12 MP
H.264	1 Mbps	2 Mbps	4 Mbps	6 Mbps	8 Mbps	12 Mbps	16 Mbps
H.264+	0.8 Mbps	1.4 Mbps	2 Mbps	2.86 Mbps	3.6 Mbps	5.1 Mbps	6.4 Mbps

Chapter 4 PTZ Control

4.1 The Speed Dome or Positioning System Cannot Zoom In/Out, Pan, or Tilt

Cause 1

The power output of the adapter and the device requirement does not match. It may be related with power supply voltage. Make sure the power supply voltage is matched with the device power supply requirement; it is recommended to use near power supply, and one power adapter is only for one camera to avoid concatenation with other powers.

Cause 2

The power wire diameter does not conform to the standards, which cause the power supply voltage at the end of the cable cannot match the device's requirement. It is recommended to select the proper wire diameter in reference to the transmission distance. Refer to ***Correspondence Between Diameter and Transmission Distance*** for the detailed relation of the diameter and transmission distance.

Cause 3

RS-485 parameter settings error.
For analog speed dome, if the live view shows RS-485 error:

- Check if the positive and negative poles of the RS-485 are connected correctly.
- Check if the RS-485 control parameters, such as the baud rate, protocol, and address of the device and those of the control end are the same.

4.2 The Speed Dome or Positioning System Can Zoom In/Out, But Cannot Pan or Tilt

Cause 1

- For the device with the bubble, the protective sticker and protective foam are not removed. Open the bubble, and remove the protective sticker and the foam. Install the bubble back and power on the device.
- For the device without the bubble, the protective sticker is not removed. Take out the device and remove the protective sticker, and power on the device.

Cause 2

The power output of the adapter and the device requirement do not match. It may be related with the power supply voltage. Make sure the power supply voltage is matched with the device power

supply requirement; it is recommended to use near power supply, and one power adapter is only for one camera to avoid connecting powers in series.

Cause 3

The power wire diameter does not conform to the standards, which causes the power supply voltage at the end of the cable not matching the device's requirement. It is recommended to select the proper wire diameter in reference to the transmission distance. Refer to ***Correspondence Between Diameter and Transmission Distance*** for the detailed relation of the diameter and transmission distance.

4.3 When the Video Recorder Controls One Analog Speed Dome, Other Devices Spin at the Same Time

Make sure you set the different address for the different speed domes. After setting the address, reboot the device to take effect.
Make sure that the address of the video recorder is set as 0, which stands for the broadcast address.

4.4 How to Set Patrol and Park Action for the Speed Dome?

You can set the functions via web, or connect the device to a DVR/NVR, client, and server, such as platform, to finish the settings. We take the web configuration as an example in this section.

Steps

1. Set preset.
   1) Click to show the preset setting panel. The preset without predefined information is gray.

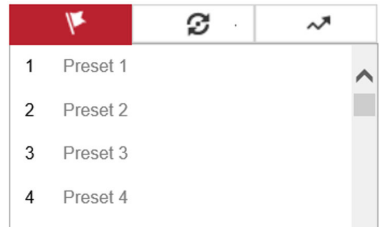


Figure 4-1 Preset Interface

   2) Click the PTZ control buttons to move the device to the desired position.
   3) Select a preset number from the preset list, and click to finish the setting.

Note

Some presets are predefined with special command. You can only call them but not configure them.

   4) Repeat the steps above to set multiple presets.
2. Set patrol scan.

1) Click to enter patrol setting interface.

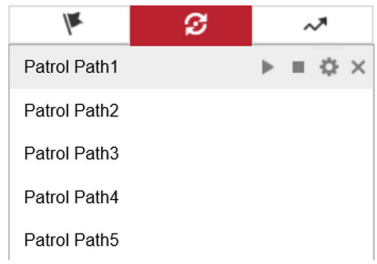


Figure 4-2 Patrol Setting Interface

2) Select a patrol number, and click to pop up the setting interface. We take **Patrol Path1** as an example.

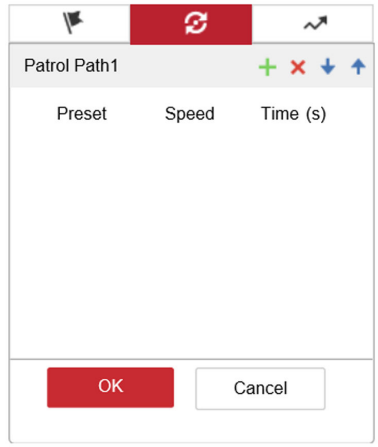


Figure 4-3 Add Patrol Point

3) Click to set patrol point information, which contains preset, the duration staying on this patrol point, and patrol speed. Repeat the step above to add other patrol points to the patrol path. A patrol path can be configured with 32 patrol points at most.

- Select the added patrol point, and click to delete the patrol point.
- Select the added patrol point, and click to adjust the patrol point order.

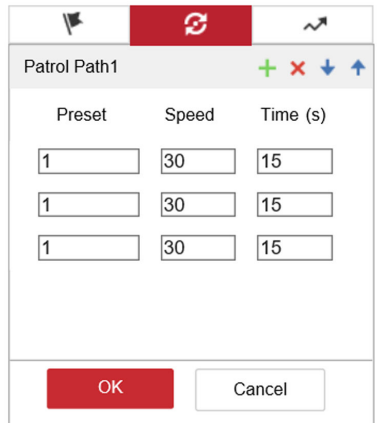


Figure 4-4 Set Patrol Point

4) After setting all the patrol points, click **OK** to finish a patrol path setting.
5) Repeat the steps above to configure multiple patrol paths.

3. **Optional:** Set pattern scan.
   1) Click to enter pattern setting interface.
   2) Select one pattern scan path that needs to be set. We take **Pattern1** as an example.

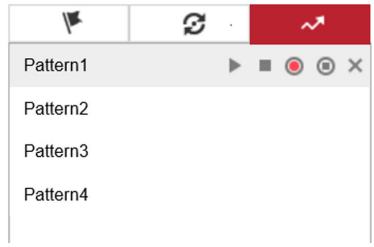


Figure 4-5 Pattern Scan Interface

   3) Click , to start recording pattern scan. Click PTZ control buttons to control the device as demand. The free space for the pattern scan will be showed on the monitoring image.
   4) Click to complete one pattern path settings.
4. Click **Configuration → PTZ → Park Action**, and check **Enable Park Action**.
5. Set **Park Time** for the inactive time before the device starts park action.
6. Select **Action Type** as **Patrol** as demand.

Chapter 5 Activate Device

5.1 How to Activate the Camera

A new camera should be activated first, that is, set a password for the camera. The password should contain 8 to 16 characters, including at least two of the following categories: upper case letters lower case letters, digits and special characters. The password cannot include the user name (admin).

5.1.1 Activate the Device via SADP

Steps

1. Install SADP software from Hikvision official website. Run SADP, and it will automatically detect all online devices, the list will show information including device type, IP address, activation status and device serial number.

Note

- The initial IP address of the network camera is 192.168.1.64.
- SADP download address: Visit Hikvision official website. Go to **Support → HiTools → Desktop Tools** to download SADP. Or directly visit ***https://www.hikvision.com/en/support/tools/desktop-tools/*** to download SADP.

2. Check the device to be activated, set device password at **Device Active**, and click**Activate** to finish.

Note

To increase the security of your product, the password set should contain 8 to 16 characters, including at least 2 of the following types: uppercase letters, lowercase letters, digits, and special characters. Password can not include the user name.

3. After activation, the activation status in the list will be updated to Active.

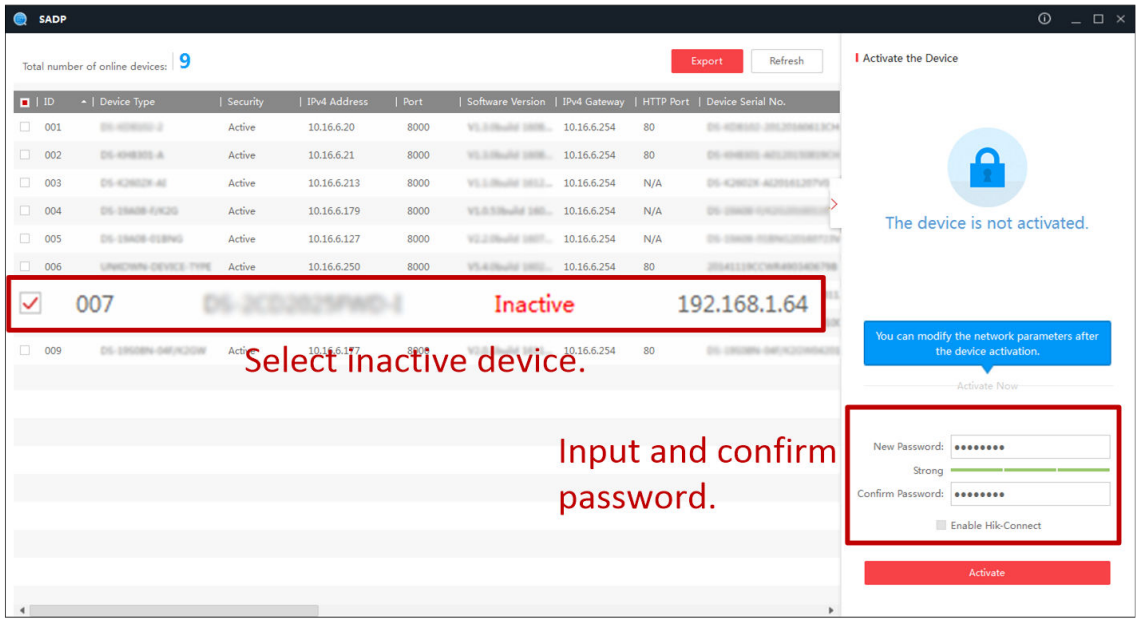


Figure 5-1 Activate the Camera

4. Modify the device IP address.
5. Check the activated device, and enter IP address, subnet mask code, gateway, and device password in **Modify Network Parameters**, and click **Modify** . You can check whether the activation is successful on the popup window.

Note

When setting the IP address of the network camera, make sure the device IP address and the computer IP address are in the same network segment.

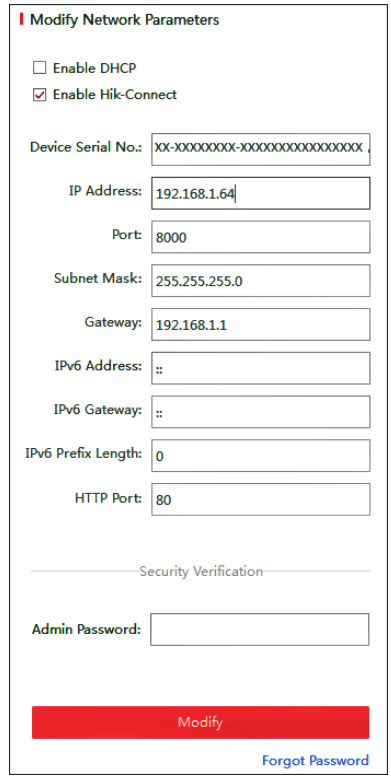


Figure 5-2 Modify Camera Information

5.1.2 Activate the Device via Web Browser in LAN

Steps

1. Enter the default IP address: 192.168.1.64.
2. Click **Activate**.
3. Enter user name (admin by default), set the device password, and click **OK** to finish.

Note

To increase the security of your product, the password set should contain 8 to 16 characters, including at least 2 of the following types: uppercase letters, lowercase letters, digits, and special characters. Password can not include the user name.

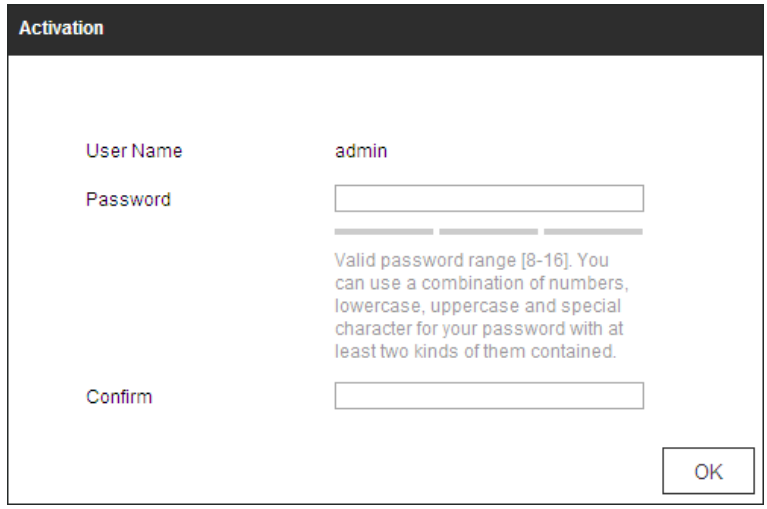


Figure 5-3 Activate the Device via Web Browser in LAN

5.2 Error Codes Occur When Activating the Device via SADP

Cause 1

Error codes 2015 and 2016: There are errors in sending and receiving.
When error codes 2015 and 2016 occur: Disable the firewall and antivirus software on the computer, restart SADP, and reactivate the camera.

Cause 2

Error code 2011: Device timed out.
When error code 2011 occurs: Check the network connection between the computer and the camera, or Ping the IP address of the camera to check the network environment.

Cause 3

Error code 2020: Risky password.
When error code 2020 occurs: Check if the set password contains user name (admin by default), and if the activation password consists of 8 to 16 characters including at least 2 of the following types: digits, lower-case letters, upper-case letters, and special characters. You can change the password for test.

5.3 The Web Page Access Is Normal but the Activation via Internet Explorer Failed

Cause 1

Risky password.

Check if the password contains user name (admin by default), and test after changing the password.

Cause 2

The antivirus software and firewall are not disabled.

- Check the antivirus software and firewall. Log in the IP address again after disabling the antivirus software and firewall.
- Download iVMS-4200 Client Software from Hikvision official website for activation test.
- Activate the camera with DVR or SADP.

Cause 3

The browser plug-in is not installed.

- Change the browser to Chrome or Firefox for test.
- Download iVMS-4200 Client Software from Hikvision official website for activation test.
- Activate the camera with DVR or SADP.

Chapter 6 Access Device

6.1 How to Access the Device in a LAN via Web Browser

Question

How to Access the Device in a LAN via Web Browser?

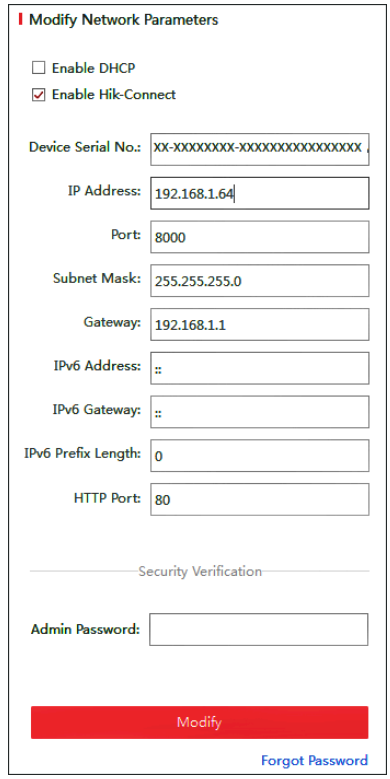
Answer

Set the network segment of the computer IP address same as that of the camera, and then input http://+ IP address into the address bar of Internet Explorer to access the camera. For example, if the IP address of the camera is 192.168.1.64, input http://192.168.1.64 into the address bar of Internet Explorer, and then enter the user name (admin) and the password to log in.

6.2 How to Modify Camera IP Address?

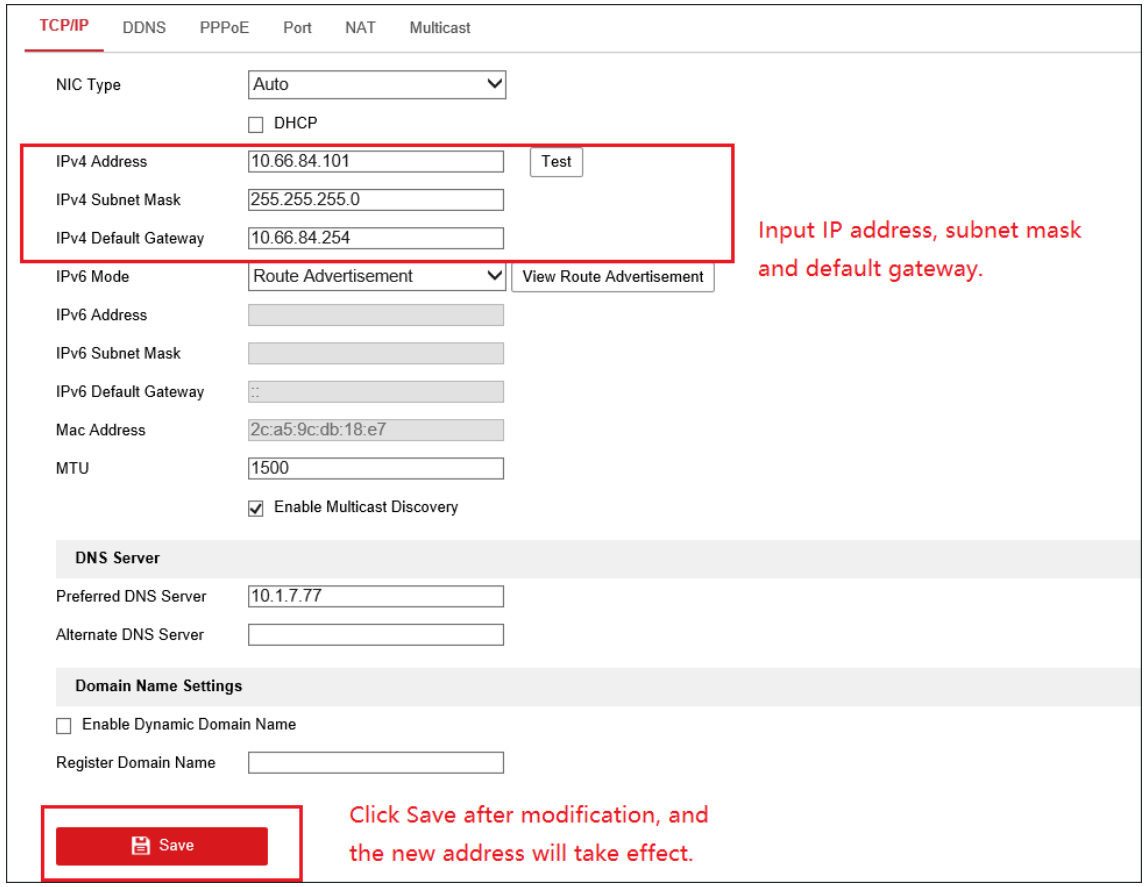
Modify Camera IP Address via SADP

Download SADP software on the computer in LAN (download link: ***https://www.hikvision.com/en/support/tools/desktop-tools/***), search the device and check the IP address. Check one or more devices to be edited. Modify the corresponding information in **Modify Network Parameters**, and enter the admin password. As shown below:



Modify Camera IP Address via Web Browser

After accessing the camera via web browser, you can go to **Configuration → Network → Basic Settings → TCP/IP** to modify the camera IP address.



6.3 Live View of the Speed Dome Failed

Cause 1

Network exception.

Cause 2

Live view plug-in of your web browser is not installed.
Some security software will block the download of the plug-in. Change the blocking range of software.

Cause 3

Parameters for cross-router visit are not set.
When the speed dome and your PC belong to two LANs, go to **Configuration → Network → Basic Settings → NAT** to enable UPnP; or map HTTP port, SDK port and RTSP port manually on the router, and the default values are 80, 8000, and 554 respectively. Refer to router user manual for configuration.

Cause 4

The number of live view channels reaches the limit.

- Answer 1: In network speed domes, the live view channels cannot be added if the number of live view channels reaches limit. Go to **Configuration → Maintenance → System Service** to check if the number of live view channels reaches the limit.
- Answer 2: If it is an analog speed dome, please check:
  - If there is interference in video cable transmission, and if the wire diameter meets the requirements of the transmission distance.
  - If live view of the channel is enabled at DVR.

Chapter 7 Device Maintenance

7.1 How to Solve Upgrade Failure Issue?

Question

How to solve upgrade failure issue?

Answer

- Make sure that the network is in good condition if you upgrade the device remotely.
- Or, you can obtain local upgrade program from our service center or technical support, and try to upgrade the device locally (Go to **Configuration → System → Maintenance → Upgrade & Maintenance** to update the device locally).



Figure 7-1 Upgrade Interface

Note

- Upgrade takes 1 to 10 minutes. Please do not turn off the power. The device will restart automatically after the upgrade.
- Mismatch between the upgrade program and the device will cause upgrade failure. Please consult our service center or technical support to obtain the right upgrade package before upgrading the device.

7.2 How to Correct the Time of Hikvision Network Camera (the Name of Which Starts with DS)?

When access the device via a browser, you can choose Manual Time Sync., NTP and Satellite Time Sync.. When access the devices via iVMS-4200, you can correct the time of multiple devices.

Correct the Time of a Single Device via Web Browser

Use a computer in the local area network to access the IP address via a browser. Go to **Configuration → System → System Settings → Time Settings**.

- Manual Synchronization: Select **Manual Time Sync.** and enter the device time manually. Check **Sync. with computer time**, the device time will be consistent with the local computer.
- NTP Synchronization: Select **NTP** and set **Server Address**, **NTP Port** and **Interval**.

  - If the device is connected to the external network, correct the time via national time synchronization server (Server Address: ntp.ntsc.ac.cn) and the NTP address is 123, or via Shanghai Jiaotong University server (Server Address: 202.120.2.101).
  - If the device does not connect to the external network, you need to set up the synchronization server by yourself.
  - Set the time interval according to need, which ranges from 1 to 10800 minutes. The device will correct its time according to the setting.
- Satellite Time Synchronization: Select **Satellite Time Sync.** and set **Interval**. The device will correct its time via GPS/BeiDou module according to the setting. Satellite time synchronization vary with the models. Refer to the actual device for details.

Correct the Time of Multiple Devices via iVMS-4200

Add devices in the iVMS-4200, and go to **Tool → Batch Time Sync.**. Select the devices which need time synchronization, and click **Synchronization**. After time synchronization, the device time will be consistent with the computer time.

Chapter 8 ColorVu Camera Frequent Asked Questions

8.1 How Far Is the Supplement Light Range of ColorVu Camera?

Supplement light range varies with models. Refer to camera specifications (obtained on the official websites) for details. The brightness of the supplement light can be adjusted, and the supplement light range will change accordingly. You can adjust it according to actual requirements.
For the brightness adjustment of the supplement light, refer to the user manual (obtained from ***https://www.hikvision.com/en/***).

8.2 Can We Turn off Supplement Light in a Special Case?

Question

Can we turn off supplement light in a special case?

Answer

Yes.
Supplement light has multiple modes. Usually, the supplement light can be set to **NC**, **NO**, **Scheduled** and **Auto**. Modes vary with different models. Refer to the actual device.
For most cameras, the supplement lights are set to **Auto** as default, i.e., the supplement light automatically turns on/off according to the brightness of the actual environment. The supplement light will not be turned on under normal circumstances, such as the environment with traffic lights on. Only when in a dimly lit environment, the supplement light will be turned on automatically.
To turn off or change the mode of the supplement light, refer to the user manual (obtained from ***https://www.hikvision.com/en/***).

8.3 The Supplement Light Does Not Work

Steps

1. Check whether the supplement light is turned on. Refer to the user manual (obtained from ***https://www.hikvision.com/en/***) to enable the supplement light and turn it on to see if the supplement light works. For example, you can set supplement light mode as **Scheduled** and include the current time in-between the start time and end time.
2. If the supplement light is set to on but still not working, you can restore it to the default settings and repeat the step 1 to see if the light is on.
3. If the light still does not work after you tried step 2, please contact the nearest service center for further test. You can visit ***https://www.hikvision.com/en/*** for contact details of each service center.

Chapter 9 Transmission Distance and Description of Various Transmission Wires

9.1 Power Cord

At present, the specifications of power cords used in the security industry are generally: RVV2 × 0.5, RVV2 × 0.75, RV2 × 1.0. Among them, the number following RVV represents the number of cores and the other number represents the cross-sectional area of the cores. For example, in RVV2 × 1.5, 2 means that there are 2 cores and 1.5 means the core-sectional area of each core is 1.5 mm^2.

When a centralized power supply is used, the more the loads, with the pressure drop considered, the higher the requirements of the power and wire should be. Generally, when more than eight cameras are connected, the selection of the power cord is as follows: 0 m < monitoring distance ≤ 20 m: choose RV2 × 0.75 power cord 20 < monitoring distance ≤ 40 m: choose RV2 × 1.0 power cord Monitoring distance ≥ 40 m: centralized power supply is not recommended.

Note

- National standards stipulates that when the voltage is less than or equal to 30 V, the total power cannot be greater than 100 W. For example, the total current should be less than 8 A at 12 VDC.
- The load voltage should be higher or equal to the voltage requirement of the electrical equipment. When power supply cannot meet the rated voltage of the equipment due to the long distance, the power supply distance should be shortened.

9.1.1 How to Choose Power Supply?

- Choose power supply with corresponding voltage and current based on the specification.
- The outdoor power supply should be lighting-proof and leakage-proof, and safely grounded.
- To avoid unstable power supply voltage caused by voltage attenuation, do not connect multiple devices to the same power adapter. If the number of the devices exceeds the load capacity of the adapter, a fire maybe caused due to the excessive heat generation.

9.1.2 How to Solve Startup Exceptions?

Question

Exceptions occurred when the device started. For example, the device cannot be started after power-on, or restarts repeatedly, or powers off and restarts when controlling the PTZ or calling presets, or the infrared device restarts after turning on the infrared light, and etc.

Answer

- Check whether the power supply voltage of the device meets its power supply requirements; it is recommended to use nearby power supply.
- Check whether the wire diameter of the power supply meets the requirements. For details, refer to "Table of Relationship between Wire Diameter and Transmission Distance".

9.2 Video Cable

It is recommended to use SYV75 ohm series coaxial cable. In SYV75-3/7, 75 means that the impedance is 75 ohms, and -3 means the external diameter of the insulation is 3 mm.

The selection of the video cable is as follows:

- 0 m < distance ≤ 200 m: choose SYV-75-5 (96-foot) coaxial cable.
- 200 m< distance ≤ 350 m: choose SYV-75-5 (128-foot) coaxial cable.
- 350 m <distance ≤ 500 m: choose SYV-75-7 coaxial cable.

Note

SYV stands for solid polyethylene-insulated radio frequency coaxial cable. S refers to coaxial radio frequency cable. Y refers to polyethylene and V refers to PVC (polyvinyl chloride).

9.3 Network Cable

According to the electrical performance, network cables include Cat-5e, Cat-6, and Cat-6a. The larger the category number, the newer the version, the more advanced the technology, and the wider the supported bandwidth.

It is recommended to use Cat-5e and Cat-6 unshielded twisted pair network cable dedicated for 100 Mbps/1000 Mbps Ethernet.

If the network camera is installed in the environment with high interference, such as power plant, transformer substation, or near the large electronic device, induction cooker, or microwave oven, it is recommended to use the shielded network cable. If the camera is installed in the elevator, it is recommended to use the dedicated network cable with steel wire.

Note

- If you want to build the gigabit Ethernet, elements such as network cable, crystal head, and switch should meet the requirements of gigabit Ethernet.
- If the cable routing distance exceeds 100 m (328.1 ft.), it may cause packet loss, intermittent video signal, or connection exception. For transmission distance longer than 100 m (328.1 ft.), you can use a switch to extend the distance. Make sure that the switch is not more than three in each route. For the complicated installation environment and environment with interference, a shielded network cable is recommended.

9.3.1 Can I use the Four Cores of the Network Cable for Data Transmission?

Question

Can I use the four cores of the network cable for data transmission?

Answer

It is not recommended to use four cores of the network cable for transmission. Please connect the device with eight cores of the network cable. Using only four cores of the network cable will reduce the anti-interference performance of the network cable and may cause severe data loss which leads to camera disconnection.

9.3.2 What is the Correspondence Between Cable Order of Hikvision Device Network Interface and Class B Network Cable?

Question

What is the correspondence between cable order of Hikvision device network interface and Class B network cable?

Answer

Round Network Interface 1 Cable Order	Black	Brown	Green	Orange	Red	Yellow	Purple	Blue
Round Network Interface 2 Cable Order	Orange	Yellow	Green	Gray	Purple	Blue	Brown	White
Corresponding Class B Network Cable	Orange -White	Orange	White-Green	Blue	Blue-White	Green	Brown-White	Brown

9.3.3 How to Choose Network Cable and Length Based on the Network Bandwidth Needs?

Question

How to choose network cable and length based on the network bandwidth needs?

Answer

According to the electrical performance, network cables include Cat-5e, Cat-6, and Cat-6a. The larger the category number, the newer the version, the more advanced the technology, and the wider the supported bandwidth.

For network cameras, it is recommended to use Cat-5e and Cat-6 twisted pair network cable for data transmission.
If the network camera is installed in the environment with high interference, such as power plant, transformer substation, or near the large electronic device, induction cooker, or microwave oven, it is recommended to use the shielded network cable.
If the camera is installed in the elevator, it is recommended to use the dedicated network cable with steel wire.
The correspondence of network cable type, bandwidth, and transmission distance is listed in the table below.

Type \ Bandwidth	Mbps	100 Mbps	1000 Mbps
Cat-5e	≤ 250 m (820.2 ft.)	≤ 100 m (328.1 ft.)	≤ 50 m (164.0 ft.)
Cat-6	–	–	≤ 100 m (328.1 ft.)

Note

- If you want to build the gigabit Ethernet, elements such as network cable, crystal head, and switch should meet the requirements of gigabit Ethernet.
- If the cable routing distance exceeds the max. transmission distance, it may cause packet loss, intermittent video signal, or connection exception. If the transmission distance is longer than 100 m (328.1 ft.), you can use a switch to extend the distance. Make sure that switch is not more than three in each route.

9.4 Optical Fiber Cable

It is recommended to use the optical fiber cable for long-distance transmission.

Optical fiber cable transmits signals in the form of light pulses and its fiber core material is mainly glass or plexiglass. Optical fiber cable consists of fiber core, cladding and protective sleeve.

It is divided into single-mode optical fiber cable and multi-mode optical fiber cable. In the security devices, single-moder optical fiber cables are widely used and can realize signal transmission with the help of photoelectric converter. Such combination can achieve dozens-of-kilometers transmission with stable performance and convenient cable routing.

9.5 Other Cables

RS-485 Cable

It is recommended to use two-core shielded communication cable (RVVP) or Cat-3 unshielded digital communication cable (UTP).

Alarm-In Cable

Twisted pair cable is recommended. Twisted pair cable consists of two insulated copper cables from No.22 to 26 entwined with each other.

Alarm-Out Cable

ZR-RVS-2*1.5 twisted pair cable is recommended.

Audio Cable

It is recommended to use four-core shielded communication cable (RVVP) or Cat-3 unshielded digital communication cable (UTP).

Grounding Cable

Grounding cable must be bare copper cord with the cross-sectional area more than 25 mm^2.

9.6 Cable Routing

9.6.1 Outdoor Cable Routing

For outdoor cable routing, you can use overhead or buried routing. For either method, it is recommended to use threading tube for cable protection.

9.6.2 Indoor Cable Routing

You can use cable tray or trunking for indoor cable routing. For the special environment, you can use the galvanized steel pipe or explosion-proof hose. For the ceiling or suspended ceiling cable routing, you can use metal hose or PVC casing with flame-retardant material.

Note

You can choose the cable tray and trunking based on the total cable cross-sectional area (including casing) which should be less than 70% of the tray or trunking cross-sectional area. For the normal domestic security camera, you can use Ø16 or Ø20 mm pipe.

9.7 Correspondence Between Diameter and Transmission Distance

9.7.1 Relationship Between 24 VAC Power Cable and Transmission Distance

This table describes the longest transmission distance when the power cable diameter is the fixed and the 24 VAC voltage loss rate is lower than 10%. As for the device with AC power, the largest allowable voltage loss rate is 10%.

For example, one device whose rated power is 80 VA is installed on the site 35 feet (10 m) away from the transformer, and then it needs power cable with diameter no less than 0.8000 mm.

Transmission Distance: Feet (m) / Diameter (mm) / Transmission Power (VA)	0.8000	1.000	1.250	2.000
10	283 (86)	451 (137)	716 (218)	1811 (551)
20	141 (42)	225 (68)	358 (109)	905 (275)
30	94 (28)	150 (45)	238 (72)	603 (183)
40	70 (21)	112 (34)	179 (54)	452 (137)
50	56 (17)	90 (27)	143 (43)	362 (110)
60	47 (14)	75 (22)	119 (36)	301 (91)
70	40 (12)	64 (19)	102 (31)	258 (78)
80	35 (10)	56 (17)	89 (27)	226 (68)
90	31 (9)	50 (15)	79 (24)	201 (61)
100	28 (8)	45 (13)	71 (21)	181 (55)
110	25 (7)	41 (12)	65 (19)	164 (49)
120	23 (7)	37 (11)	59 (17)	150 (45)
130	21 (6)	34 (10)	55 (16)	139 (42)
140	20 (6)	32 (9)	51 (15)	129 (39)
150	18 (5)	30 (9)	47 (14)	120 (36)
160	17 (5)	28 (8)	44 (13)	113 (34)
170	16 (4)	26 (7)	42 (12)	106 (32)
180	15 (4)	25 (7)	39 (11)	100 (30)
190	14 (4)	23 (7)	37 (11)	95 (28)
200	14 (4)	22 (6)	35 (10)	90 (27)

9.7.2 Relationship Between 12 VDC Power Cable and Transmission Distance

This table describes the longest transmission distance when the power cable diameter is the fixed and the 12 VDC voltage loss rate is lower than 15%.

Transmission Distance: Feet (m) / Diameter (mm) / Transmission Power (VA)	0.800 (20)	1.000 (18)	1.250 (16)	2.000 (12)
10	97 (28)	153 (44)	234 (67)	617 (176)
20	49 (14)	77 (22)	117 (33)	308 (88)
24	41 (12)	64 (18)	98 (28)	257 (73)
30	32 (9)	51 (15)	78 (22)	206 (59)
40	24 (7)	38 (11)	59 (17)	154 (44)
48	20 (6)	32 (9)	49 (14)	128 (37)
50	19 (6)	31 (9)	47 (13)	123 (35)
60	16 (5)	26 (7)	39 (11)	103 (29)
70	14 (4)	22 (6)	33 (10)	88 (25)
80	12 (3)	19 (5)	29 (8)	77 (22)
90	10.8 (3.1)	17 (5)	26 (7)	69 (20)
100	9.7 (2.8)	15 (4)	23 (7)	62 (18)
110	8.9 (2.5)	14 (4)	21 (6)	56 (16)
120	8.1 (2.3)	13 (4)	20 (6)	51 (15)
130	7.5 (2.1)	11.8 (3.4)	18 (5)	47 (14)
140	7 (2)	11 (3.1)	17 (5)	44 (13)
150	6.5 (1.9)	10.2 (2.9)	16 (4)	41 (12)
160	6.1 (1.7)	9.6 (2.7)	15 (4)	39 (11)
170	5.7 (1.6)	9 (2.6)	14 (4)	36 (10)
180	5.4 (1.5)	8.5 (2.4)	13 (4)	34 (10)
190	5.1 (1.5)	8.1 (2.3)	12 (4)	32 (9)
200	4.9 (1.4)	7.7 (2.2)	11.7 (3.3)	31 (9)

Note

Cable requirements can be applied to the single, solid, and round copper cable. The AWG value of stranded wire is determined by the total cross-sectional area of all the twisted cables.


See Far, Go Further