Night Hawk H10+

Automotive Infrared Advanced Driving Assistance System User Manual

H10+

Welcome

This user manual provides you with a comprehensive understanding of this product, including detailed information on product-related functions, frequently asked questions (FAQs) regarding usage, and after-sales service. Therefore, before using this product, please read this manual carefully to ensure you can install and use the product correctly.

IRVision

Users can download the app by Google Play Store，search for "IRVision" in the App Store to download.

★ **Note:** For iOS systems, search for "IR VISION " in the App Store to download.

Copyright

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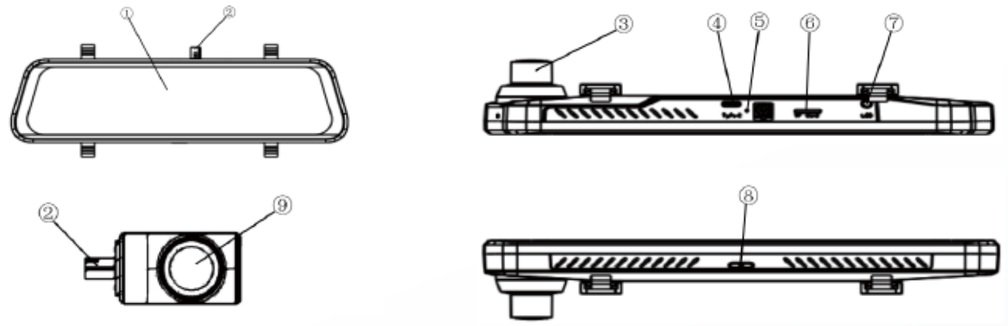
This manual has been prepared to assist users in understanding and operating the Company's products. Therefore, the Company reserves the right to make changes to this manual at any time without notice.

Version History

Version	Date	Remarks
V1.0	November 12, 2024	First Edition Compiled

Product Appearance



① High-Definition Display Screen	② Fakra Interface	③ Visible Light Camera
④ Type-C Power Port	⑤ Reset Button	⑥ TF Card Slot
⑦ Smart Light Strip Interface	⑧ Power Button	⑨ Infrared Lens

Performance Parameter Indicators

Hardware Parameters

Item		Specification
Resolution		Infrared 384×288; Visible Light 1920×1080
Aperture		Infrared F1.0; Visible Light F1.8
Field of View (FOV)		Infrared 42°×32°; Visible Light 120°×60°
CPU		High-Performance 4-Core CPU
AI Computing Power		2TOPS
Photo Format		JPG
Video Format		MP4 (H.264/H.265 Lossless Compression)
Frame Rate		Infrared ⩾25 FPS; Visible Light ⩾25 FPS
Operating Temperature		-20°C~+80°C
Storage Temperature		-40°C~+85°C
Waterproof Rating		Infrared Camera IP67; AI Unit IP5X
Operating Voltage	Cigarette Lighter	DC9V~32V
	Unit	12V (PD Protocol)
Rated Current Consumption		⩽1.2A
Dimensions		Infrared Camera ⩽27×31×43mm; AI Unit ⩽256×72×24mm
Weight		Infrared Camera ⩽60g; AI Unit ⩽480g
Storage Card		Includes 32GB TF Card, System Supports up to 512GB

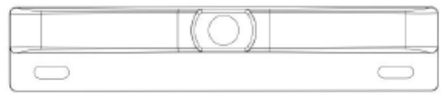
System Functions

Functions Implemented	Pedestrian, Vehicle, Animal Detection & Recognition; Pedestrian, Vehicle Collision Warning Function
Maximum Detection Distance	Pedestrian >150m, Vehicle >350m, Animal >150m (Depending on size)
Detection Accuracy	Pedestrian >96%, Vehicle >98%, Animal >96%

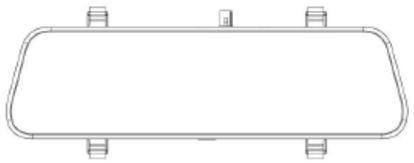
Note: Detection distance refers to the distance at which the human eye can identify the target object on the infrared image.

Product Accessories List

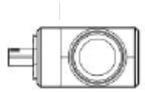
Name	Quantity	Name	Quantity
Infrared AI ADAS Unit	1	License Plate Anti-Theft Screws	4
Infrared Camera	1	Certificate of Conformity	1
License Plate Mounting Bracket	1	Warranty Card	1
Cigarette Lighter Power Adapter	1	User Welcome Card	1
Type-C Power Cable	1	32GB Micro SD Card	1
Fakra Coaxial Cable	1		



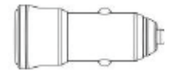
License Plate



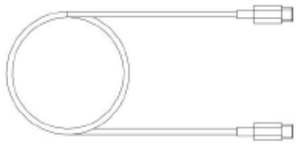
Infrared Unit



Infrared Camera



Cigarette Lighter



Type-C Power

Fakra Coaxial

Product Installation

To ensure optimal performance of this product, please confirm the following usage requirements:

■ Power Requirements

The AI ADAS Unit requires a 12V Type-C port power supply (PD Protocol). The infrared camera is powered by connecting to the unit via the coaxial cable.

■ Operating Temperature

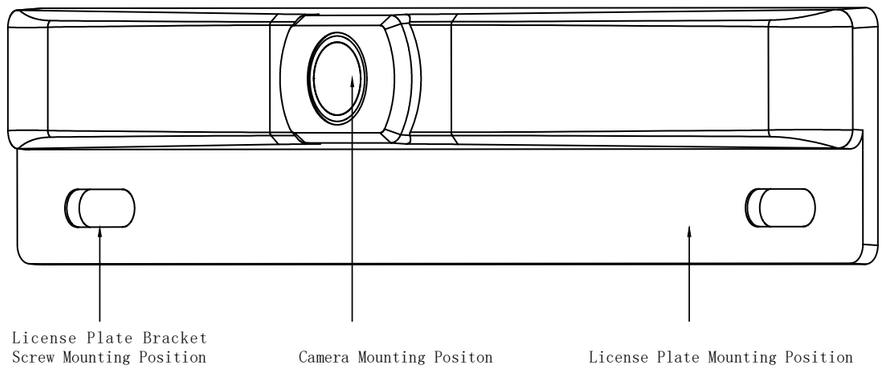
Operating Temperature: -20°C to 80°C. Environmental temperatures outside this range may cause the device to operate abnormally. The device will function normally once the temperature returns to within the normal range.

■ Installation Steps

(Contact customer service to request a real vehicle installation video for detailed steps):

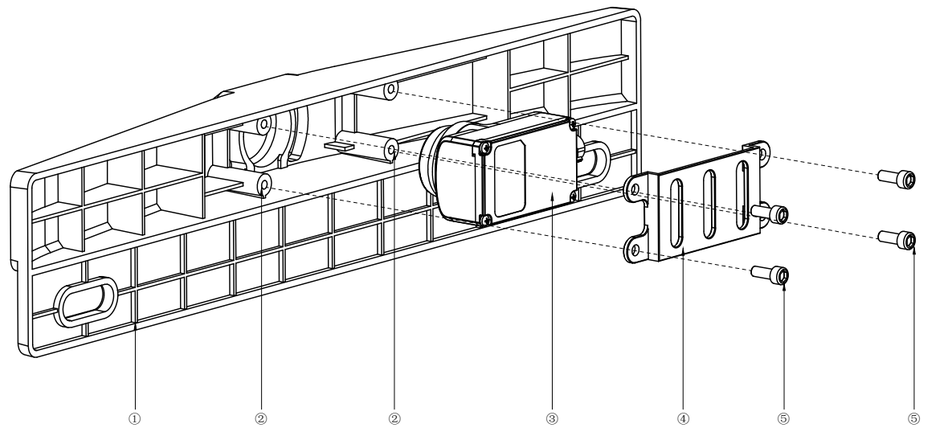
Step 01 Check the installation parts. The complete set of parts includes: Infrared Thermal Imaging Unit (including 2 silicone straps), Infrared Camera, FAKRA Coaxial Cable, Cigarette Lighter Power Adapter, TYPE-C Charging Cable, License Plate Bracket, Camera Pressure Plate (including 4 mounting screws), one set of License Plate Anti-Theft Bolts, totaling 8 types of parts.

The infrared camera comes with a dedicated license plate bracket, compatible with the installation on most gasoline and new energy vehicles on the market. The bracket is shown in the figure below.



Step 02 Mount the infrared camera onto the license plate bracket. After connecting the straight end of the coaxial cable to the infrared camera, install the camera into the positioning slot of the license plate bracket. Install the camera pressure plate and tighten the 4 screws. During installation, please be careful to protect the camera lens and avoid collisions and abrasions, etc.

The installation diagram for the camera and camera pressure plate is shown below:



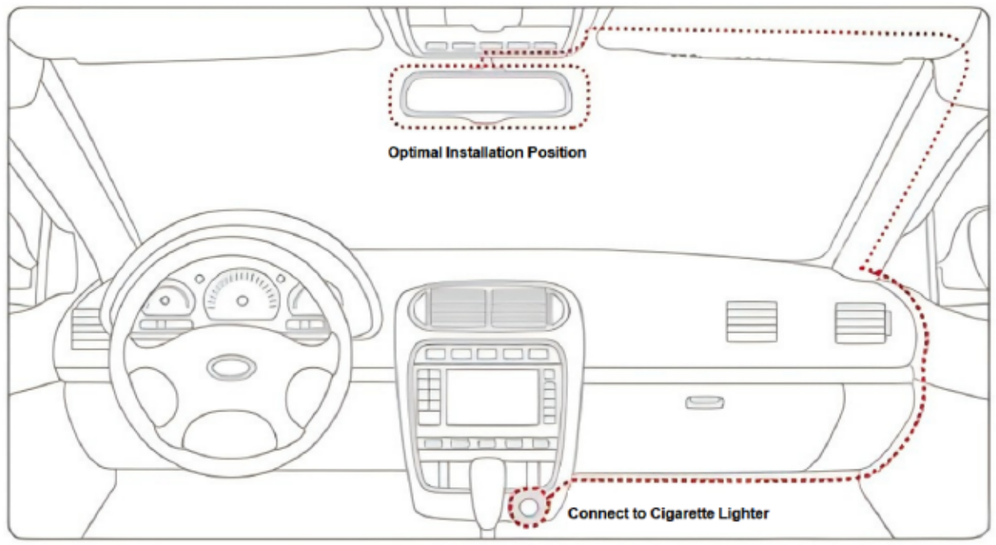
① License Plate Bracket ② License Plate Bracket Screw Hole ③ Camera ④ License Plate Bracket Cover ⑤ Locking Screws（M3 x 8）

Step 03 Pass the other end of the coaxial cable through the intake grille into the engine compartment, then route it through the right front fender and passenger door frame into the car interior.

Note: When routing the cable, avoid direct contact between the harness and high-temperature heat sources in the engine compartment. Ensure the coaxial cable is stable, using auxiliary tools like zip ties for fixation if necessary. For new energy vehicles with fully enclosed grilles, it is required to drill a hole above the license plate to route the cable into the engine compartment.

04 Step It is recommended to route the coaxial cable and power cable hidden along the A-pillar and across the roof to the upper end of the rearview mirror. Mount the AI ADAS Unit onto the original vehicle rearview mirror using the provided silicone straps, and connect the coaxial cable and power cable to the unit end to complete the installation.

The recommended installation routing inside the car is shown in the figure below:



★ **Note:** The infrared camera cannot be used inside the cabin (There must be no transparent or non-transparent objects obstructing the front of the infrared camera). If the surface of the infrared camera is dirty, it may affect imaging quality and warning accuracy. Users should inspect it regularly. If the lens surface is dirty with mud, etc., wipe it clean with a damp cloth.

When using the product, do not use the cigarette lighter's A port, as it may cause unstable power supply to the unit, leading to restarts!

Product Function Introduction

This product is a multi-functional infrared thermal imaging product newly developed by Idrive for the automotive consumer market. It mainly consists of two parts: the infrared camera and the AI ADAS unit, and utilizes built-in infrared algorithms for collision warning functions.

I. Infrared Function

1. All-Weather Operation, Enhanced Night Vision

The system's infrared image penetrates darkness, enabling all-weather use, increasing driver visibility, and solving the problem of limited vision during nighttime driving.

Visible Light

Far Infrared

2. Anti-Glare Function

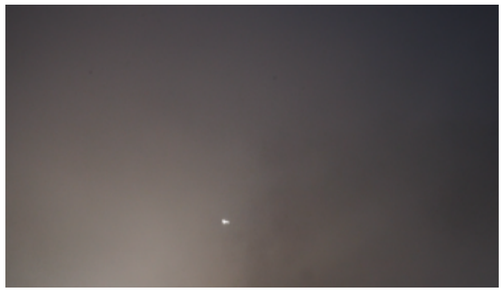
The system's infrared image is unaffected by changes in light, reducing the impact of glare and sudden light changes on the driver, addressing issues like glare from oncoming traffic at night and abrupt light changes when entering/exiting tunnels.

Visible Light

Far Infrared

3. Penetration of Fog, Haze, and Dust Function

The system's infrared image can still produce clear images in heavy fog, haze, and dusty weather, enhancing the driver's visibility in adverse weather conditions.



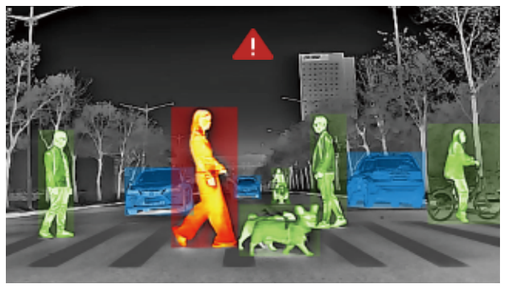
Visible Light

Far Infrared

4. Pedestrian Detection, Recognition, and Collision Warning Function

The system can normally detect and recognize pedestrian targets in complete darkness. When a pedestrian appears within the detection range of the vehicle's field of view, it can detect and recognize upright pedestrian targets in the image scene, indicated by a green rectangular box. Combined with infrared AI intelligent algorithm strategies, when a pedestrian appears in a dangerous area, the collision warning function can be triggered, marking the pedestrian's position with a red rectangular block, and a red triangular warning symbol pops up, while the AI unit's speaker simultaneously emits the voice alert "Caution Pedestrian," prompting the driver to pay attention to safety ahead.

Visible Light



Far Infrared

5. Vehicle Detection, Recognition, and Collision Warning Function

he system can normally detect and recognize vehicle targets in complete darkness. When other vehicles appear within the detection range of the vehicle's field of view, it can detect and recognize vehicle targets in the image scene, indicated by a yellow rectangular box. Combined with infrared AI intelligent algorithm strategies, when a vehicle appears in a dangerous area, the collision warning function can be triggered, marking the vehicle's position with a red rectangular block, and a red triangular warning symbol pops up, while the AI unit's speaker simultaneously emits the voice alert "Caution Vehicle Ahead," prompting the driver to pay attention to safety ahead.

Visible Light

Far Infrared

6. Infrared Warning and Extrinsic Parameter Calibration

After powering on, this product can perform infrared warnings using default extrinsic parameters. However, to further improve warning accuracy, the infrared camera's extrinsic parameters should be calibrated and written. You can also visit the official website to watch the video guide for extrinsic parameter calibration, or contact a service engineer for assistance and guidance.

To ensure warning accuracy, please complete the extrinsic parameter calibration steps promptly:

Step 1

please perform this in good weather conditions (no rain or snow). Poor weather conditions may affect the infrared camera's monitoring of lane lines, leading to calibration failure.

Step 2

tap Settings → Infrared Settings → Extrinsic Parameter Calibration on the unit. After following the on-screen prompts, the unit will announce "Calibrating," and "Calibrating" will be displayed on the infrared image.

Step 3

drive continuously on a road with clear lane lines. Try to avoid continuous lane changes. Calibration time will last 5-20 minutes depending on road conditions. Follow the unit's voice prompts to drive straight along the road with clear lane lines until the voice announces "Calibration Successful," and "Calibration Successful" is displayed on the infrared image.

If calibration fails, the voice will announce "Calibration Failed," and "Calibration Failed" will be displayed on the infrared image. The unit automatically returns to the default interface, and the system reverts to using default parameters for infrared warnings. To restart calibration, go to Settings and repeat the steps above.

★ **Note:** If the user has changed the camera's mounting position, please tap "Extrinsic Parameter Calibration" on the unit to recalibrate and improve accuracy.

Possible reasons for calibration failure:

- Poor weather conditions.
- The road has no lane lines or the lines are unclear.
- The infrared camera is not installed in the specified position.

II. Dual-Light Display Function

Starlight-level visible light + long-wave infrared dual perception, comprehensively safeguarding driving safety.

III. Recording Function

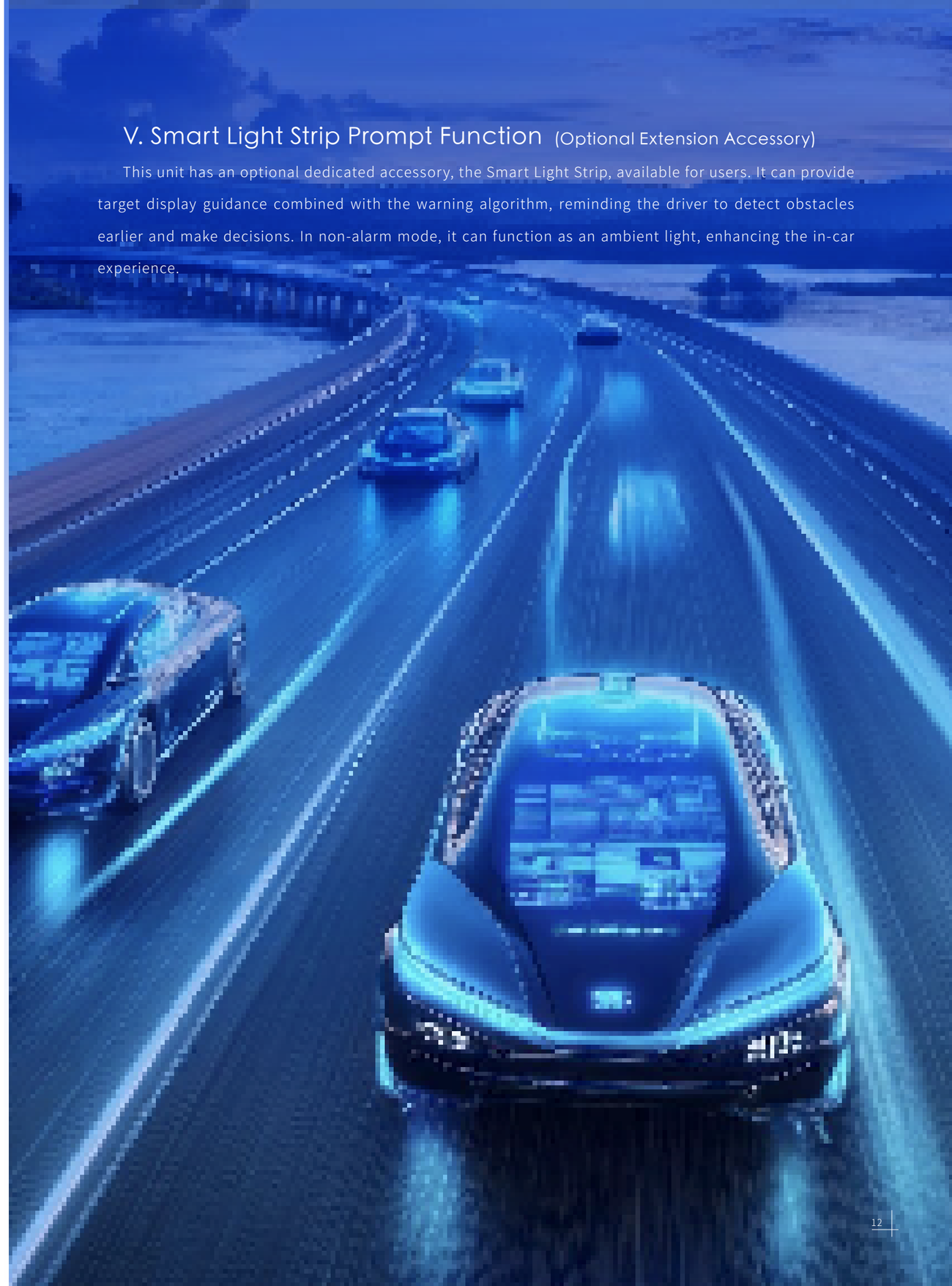
The unit has a Micro SD card slot; inserting an SD card enables automatic recording. Both infrared and visible light recordings can be saved to the SD card, which be used as a new type of dashcam.

IV. Mobile Phone Interconnection Function

Mobile APP "XY Vision" allows synchronized viewing of the infrared image on the phone and video playback. It also enables downloading videos and pictures stored on the unit to the phone for sharing on social media, etc.

V. Smart Light Strip Prompt Function (Optional Extension Accessory)

This unit has an optional dedicated accessory, the Smart Light Strip, available for users. It can provide target display guidance combined with the warning algorithm, reminding the driver to detect obstacles earlier and make decisions. In non-alarm mode, it can function as an ambient light, enhancing the in-car experience.



Please Note Before Use

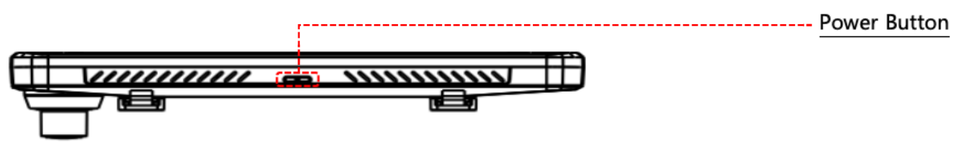
Before using the product, please remove the screen protector film. To ensure the user can normally use the product's physical rearview function to observe behind the vehicle, the product defaults to automatically turning off the screen 1 minute after startup. If the user needs the recording screen to remain continuously displayed, please enter the settings menu to disable the screen sleep function. Setting path: Settings → Recording Settings → Screen Sleep → Off. Screen sleep does not affect the normal use of the product, such as infrared AI warning or video recording functions.

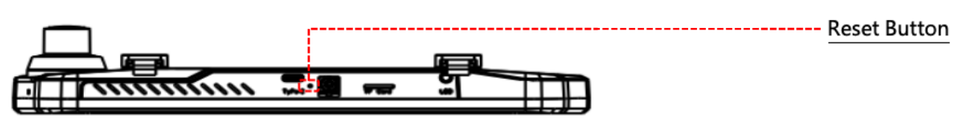
- Please operate the unit only when the vehicle is stationary and the surrounding environment is safe. Do not adjust the unit system while driving, as doing so may cause distractions leading to accidents!
- The unit has no built-in recording space. Please insert a Micro SD memory card before use to store recorded footage. Do not insert or remove the memory card while the system is on to avoid damaging the card.
- A branded 32GB memory card is included. If needed, users can choose to replace it with other memory cards, supporting up to 512GB.
- When inserting a memory card for the first time or after replacing it, the system may require formatting the card upon startup. Please enter the settings menu to perform the memory card formatting operation.
- Due to the wide variety and varying quality of memory cards on the market, some memory cards may be incompatible with this unit. It is recommended to purchase memory cards specifically designed for dashcams from reputable brands and confirm their compatibility yourself before use. The manufacturer and distributors are not responsible for device failures or data loss caused by memory cards purchased by the user.
- Avoid applying film to the front windshield if possible. If filming is necessary, choose a film with a low reflection coefficient to avoid reflections affecting the clarity of the visible light image. Do not place highly reflective objects on the center console dashboard to avoid reflections affecting image clarity.
- If the device behaves abnormally during use, please power it off and restart, or use a SIM card eject tool or similar object to press the reset button. The system will reset automatically.

★ Friendly Reminder: Our company's product serves only as a driving aid and support function; it does not constitute a complete or partial replacement or control over driving behavior. In extreme adverse weather conditions, the product's detection and warning range may decrease. Please be mindful of the impact of harsh driving environments.

Product Usage Instructions

I. Appearance and Button Definitions





Physical Buttons	Operation	Device Status	Function Executed	Description
Power Button		Power Off State	Power On	
		Power On State	Screen Off/Screen On	Any interface
		Power On State	Power Off	Any interface
Reset Button		Power On State	Device Restart	Any interface

II. Appearance and Button Definitions

1. Recording Interface Display Modes

This product has three display modes for users to choose from: ① Single Infrared Display ② Infrared and Visible Light Split Display ③ Single Visible Light Display.

After the first power-on, the system defaults to the Single Infrared Display interface. Users can tap the screen to switch display modes. The selected display mode can be remembered and saved.

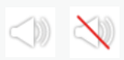
2. Introduction to AI Warning Icons on the Infrared Interface:

No.	Type	Description	Icon
1	Vehicle Detection	Identifies target vehicles and marks them with a blue block. Vehicle types include various cars, trucks, etc.	
2	Pedestrian/Animal Detection	Identifies target pedestrians and animals and marks them with a green block, including pedestrians, cyclists; animals include cows, horses, cats, dogs, etc.	
3	Target Warning	Utilizes the built-in infrared ADAS algorithm to mark targets (vehicles or pedestrians) with a collision risk using a red block. Simultaneously, the unit speaker emits the voice alerts "Caution Vehicle Ahead"/"Caution Pedestrian". A warning triangle icon appears in the upper right of the infrared screen.	

3. Recording Interface Button Function Description:

No.	Icon	Function	Description	Tap Location	Remarks
1		Warning Button	Tap the warning button to enable/disable infrared warning.	Bottom of the screen	
2		Microphone Button	Tap the microphone button to enable/disable audio recording.		During switching, the icon turns blue, indicating processing.
3		Snapshot Button	Tap the snapshot button to capture a picture.		
4		Hotspot Button	Tap the hotspot button to enable/disable the hotspot.		During switching, the icon turns blue, indicating processing.
5		Playback Button	Tap the playback button to enter playback mode.		
6		Settings Button	Tap the settings button to enter the settings interface.		
7		Up/Down Arrows	Tap the up/down arrows to switch the displayed image area, allowing vertical angle adjustment.	Far left side of the screen	Available in Single Infrared Display and Single Visible Light Display modes. Upon first use, please adjust to a suitable field of view based on the vehicle model.
8		Volume Slider	Slide up/down to adjust system volume.	Left side of screen	
9		Brightness Slider	Slide left/right to adjust screen brightness.	Top of the screen	Available in Single Infrared Display and Single Visible Light Display modes. Upon first use, please adjust to a suitable field of view based on the vehicle model.

4. Description of the Status Bar in the Upper Right Corner of the Recording Interface:

Icon	Meaning
	Recording indicator. Flashes continuously during recording, not displayed when recording stops.
	Smart Light Strip status indicator. Displayed when the Smart Light Strip is inserted, not displayed otherwise.
	Infrared camera abnormal status indicator. Not displayed when the infrared camera is connected normally; flashes to indicate not connected/faulty.
	Memory card status indicator. Corresponds to memory card inserted normally and not inserted (or card damaged), respectively.
	Speaker status indicator. Represents non-mute and mute states, respectively.

III. Voice Control

This product supports voice control functions. When using the voice control function, first say "Hello, Xuan Yuan". The unit will respond with "I am here" to wake up the system. Relevant voice control commands and descriptions are shown in the table below:

No.	English Command	Response
1	Hey, Nighthawk	I'm here
2	Display front recording	Front recording is now displaying
3	Turn on display screen	Display screen is on
4	Turn off display screen	Display screen is off
5	Turn on hotspot	Hotspot is turning on, please wait/Hotspot is on
6	Turn off hotspot	Hotspot is turning off, please wait/Hotspot is off
7	Take a photo	Photo taken/Please insert or replace a TF card
8	Start recording	Recording started
9	Stop recording	Recording stopped
10	Lock video	Video locked/Please insert or replace a TF card
11	View all	All are now displaying
12	Display infrared	Infrared is now displaying/Infrared camera not connected
13	Turn on alerts	Alerts are on
14	Turn off alerts	Alerts are off
15	Turn on light strip	Light strip is on/Light strip is not connected
16	Turn off light strip	Light strip is off
17	Start calibration	Calibration started/Calibration failed/Calibration succeeded
18	Alert sensitivity high	Alert sensitivity set to high
19	Alert sensitivity Medium	Alert sensitivity set to medium
20	Alert sensitivity low	Alert sensitivity set to low

IV. Settings Function

Entering the settings interface allows configuration for Infrared, Recording, System, and Smart Light Strip (displayed after inserting the light strip):

1. Infrared Settings:

① Infrared Warning: Enable/disable the infrared ADAS warning algorithm. Default: On.

② Warning Sensitivity: Allows setting the infrared collision warning sensitivity to High, Medium, or Low. Default: Medium.

③ Target Rendering: Enable/disable the vehicle/pedestrian/animal marking function on the infrared interface. Default: On.

④ Pseudo-Color Setting: Allows setting the infrared image to pseudo-color styles like White Hot, Black Hot, Iron Red, Arctic, etc. More pseudo-color styles will be available via future OTA updates. Default: White Hot.

★ **Note:** Changing pseudo-colors may reduce the performance metrics of the infrared AI algorithm in some scenarios. It is recommended to use these styles when parked or for observation purposes. It is advised to revert to White Hot mode during normal driving.

⑤ Image Rotation: Can be set to 0 or 180 degrees.

⑥ Extrinsic Parameter Calibration: Calibrates the extrinsic parameters of the infrared camera to improve the accuracy of infrared detection and warnings.

2. Recording Settings:

① Visible Light Resolution: Can be set to 720P or 1080P. Default: 1080P.

② Recording Switch: Allows manual control to enable/disable the recording function. Default: On.

③ Loop Recording Time: Sets the duration of recorded video segments to 1 minute, 3 minutes, or 5 minutes. Applies to both infrared and visible light videos simultaneously. Default: 3 minutes.

④ Recording Timestamp Watermark: Switch for the date and time watermark on recorded videos. Default: On.

⑤ Parking Monitoring: Enables parking monitoring. When the vehicle is turned off and experiences a severe vibration that reaches the set sensitivity threshold (e.g., being hit by another vehicle, towed for illegal parking), the unit will activate the parking monitoring function, record for 1 minute, and then automatically shut down. Note: This feature requires the use of the product's specific parking monitoring cable. Extended periods of vehicle inactivity while parking monitoring is enabled may result in battery depletion, potentially leading to starting difficulties.

⑥ Screen Sleep: Sets a countdown timer to turn off the screen backlight after a period of inactivity. Options available: Off, 1 minute, 10 minutes. A short press of the power button wakes the screen from sleep mode. To keep the screen always on, choose the “Off” setting instead of a sleep timer. By default, the screen automatically goes to sleep after 1 minute. This allows for normal use of your physical rearview mirror.

3. System Settings:

① Hotspot Settings: Allows modification of the hotspot name and password.

② Voice Assistant: Enable/disable the voice control function. Default: On.

③ About Device: Displays the device's system version information.

④ Update System: Connect to a mobile phone to check for the latest software version and perform system updates according to instructions.

⑤ Time Settings: Slide up/down to set the date and time, tap confirm to save the set date and time. Note: To effectively record the date and time for driving accident evidence, please set the correct date and time immediately before using the machine.

⑥ Memory Card Capacity: View used and total memory of the SD card.

⑦ Format Storage Card: Formatting the storage card will delete all files on it and cannot be recovered. Please operate with caution and make backups.

⑧ Language Setting: English, Simplified Chinese. Default: Simplified Chinese.

⑨ Restore Factory Settings: Resets system settings to their factory defaults.

4、Smart Light Strip Settings (Displayed after inserting the light strip)

① Light Strip Color: Can be set to Lunar Blue, Peacock Green, Misty Purple, Sunset Glow, Off. Default: Lunar Blue.

② Light Strip Warning: Displays the target's direction on the light strip when the unit alarms. Orange indicates tracking warning, Red indicates direct alarm. Default: On.

V. Album Playback

1.Tap the Album button on the screen's home page to enter the playback interface, where you can view Video, Emergency, and Pictures.

2.Under the Video menu, options for Front Camera Video and Infrared Video are available.

3.Slide up/down to preview file thumbnails. Tap a specific file to enter the playback interface.

Emergency Video Description:

In recording mode, the system is designed to automatically initiate emergency recording upon detecting either an infrared alarm or a signal from the integrated collision sensor. The device will then save the recorded infrared video and the visible light front camera video files to the designated emergency folder, labeled "urgent" on the TF card. In recording mode, after triggering emergency recording, it copies the video file from 15 seconds before the trigger + 15 seconds after the trigger to the emergency folder (protected backup area). When the protected backup area is full, newly generated emergency videos will overwrite the oldest emergency video files.

Mobile APP Application

A dedicated mobile application, "IR Vision," is available for this product. This app allows for real-time image preview, configuration of device settings, and the transfer of recorded videos from the device to your mobile phone, among other functionalities.

Compatibility

Android: All models with Android 10 and above systems.

iOS: All iPhone models with iOS 11 and above systems.

★ **Note:** Due to system differences, the APP interface and operation methods for Android and iOS may differ slightly. The images in this user manual are for reference only.

APP System Operation

1.Connect Mobile Phone

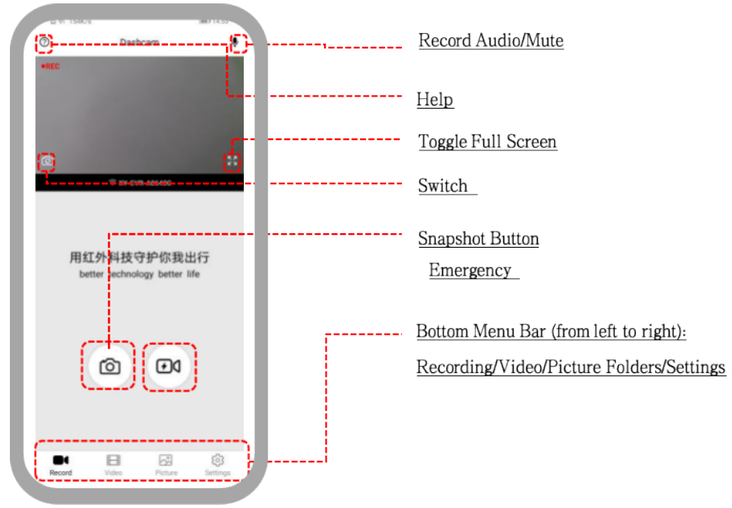
① Enable the product's Wi-Fi function.

② Open the phone's WLAN settings, find the wireless local area network (WLAN) starting with "XY-CVR-******".

③ Tap to connect, default password: 12345678. Once the network is connected, you can open the "XY Vision" application.

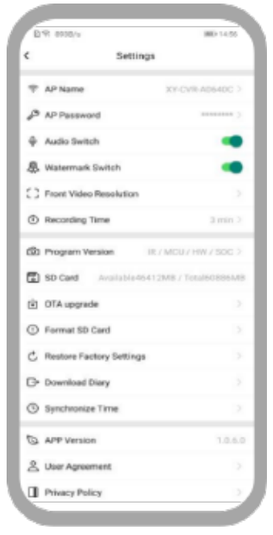
★ **Note:** If you forget the modified Wi-Fi name and password, please check the Wi-Fi settings in the product's system settings.

2. Main Interface Introduction



★ **Note:** During emergency recording, except for "Help," "Downloaded," and "Full Screen," other functions cannot be used. Please avoid entering other interfaces or closing the APP at this time to ensure normal recording.

3.Settings Interface Introduction

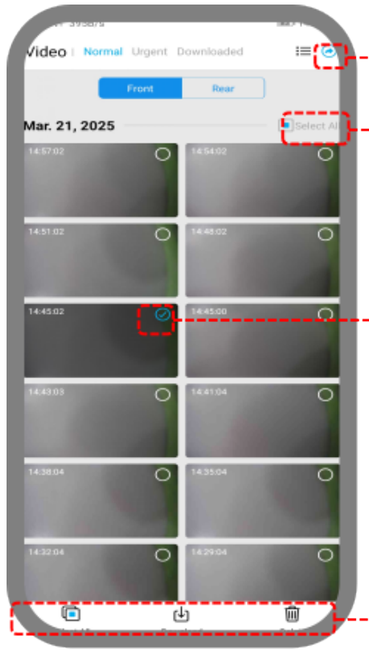


Settings Menu Function Introduction
WiFi_AP Name
WiFi_AP Password
Audio Recording Switch (Default: On)
Watermark Switch (Default: On)
Front View Video Resolution (Default: 1080P)
Loop Recording Time (Default: 3 minutes)
Program Version
SD Card Capacity
Format SD Card
Restore Factory Settings
Download Log
Sync Time (Default: Auto)
APP Version
OTA Upgrade
User Agreement
Privacy Policy

4. Video Playback Interface

Normal Mode Menu Function Introduction

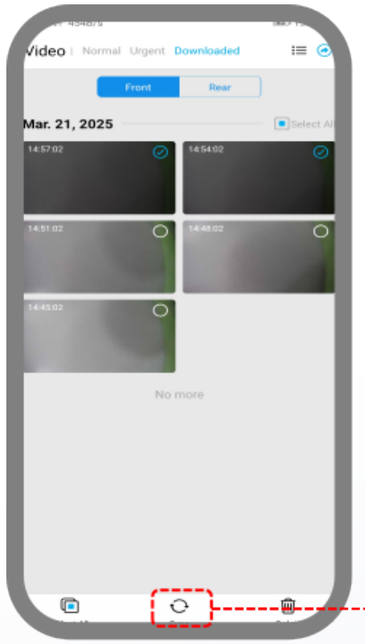
- Switch Folders (from left to right):
  Normal Video Folder
  Emergency Folder
  Downloaded Folder
- (Left) Toggle Display Arrangement
  (Right) Enter Edit Mode
- (Left) Front Video
  (Right) Infrared Video
- Video File Area
  Long press any file to enter edit mode



Edit Mode Menu Function Introduction

- Cancel Edit Mode
- Select/Deselect All
- Select File/Deselect File
- Bottom Function Buttons (from left to right)
  - Select All
  - Single/Batch Download
  - Single/Batch Delete

5. Video Download Interface



Edit Mode Menu Function Introduction

- Sync
  - Single/Batch sync to phone album

★ **Tip:** "Download" refers to transferring videos from the unit to the phone, allowing playback on the phone at any time. To further share videos, select the downloaded videos and tap "Sync" to the phone album.

APP OTA Upgrade

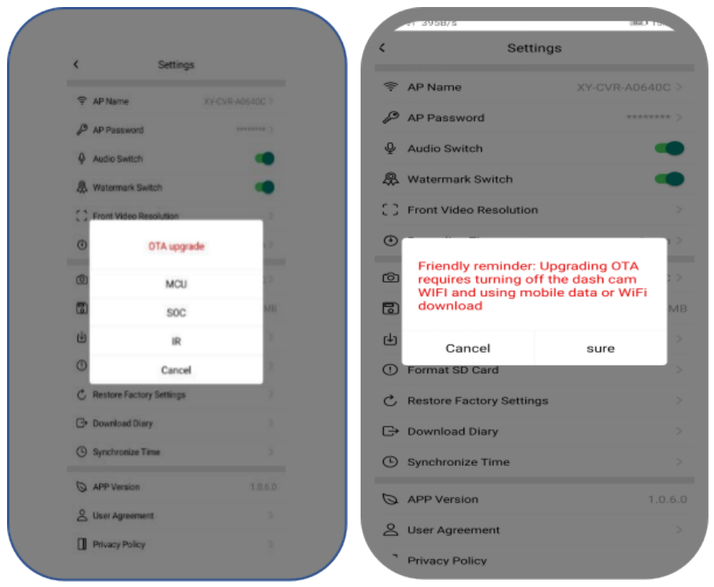
This product supports OTA updates. Upgradable modules include:

- MCU Upgrade — Power management chip, etc.
- SOC Upgrade — Unit system and functions, etc.
- Infrared Upgrade — Infrared image quality and infrared detection/warning algorithms, etc.

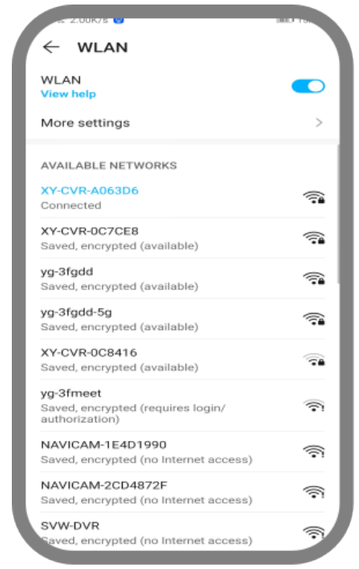
Upgrade Steps:

① Tap OTA Upgrade in the settings interface:

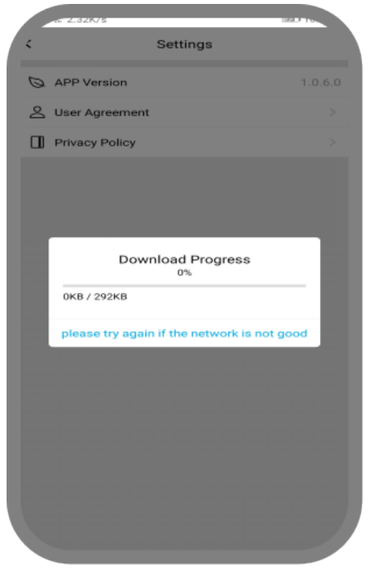
Tap MCU/SOC/Infrared, tap Confirm. As shown in Figures 1, 2.



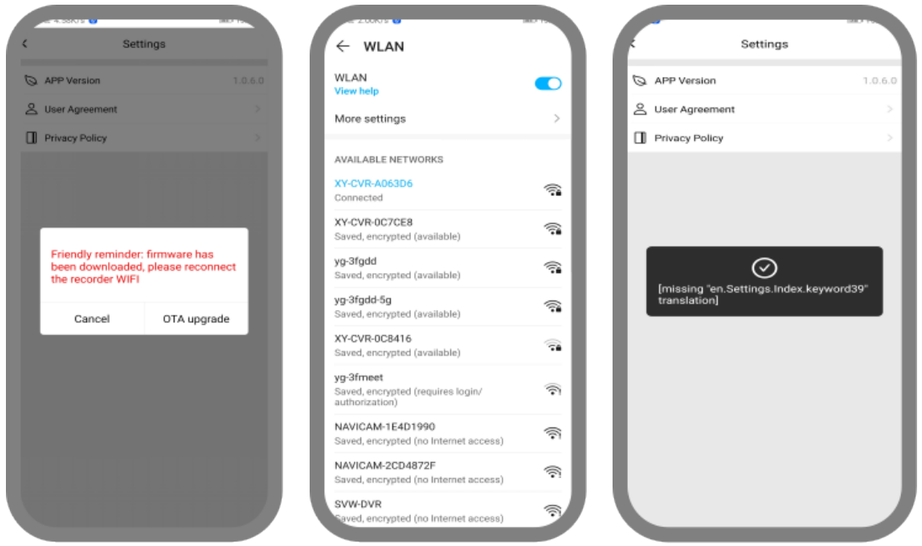
★ **Friendly Reminder**: OTA upgrades require turning off the unit's Wi-Fi. Use mobile data or switch Wi-Fi to download (automatically jumps to the Wi-Fi connection interface setting, connect to an internet-accessible Wi-Fi). If the phone has a mobile data card (SIM card) inserted and is functioning normally, simply disconnect the unit's Wi-Fi as shown in Figure



② Return to the settings interface. The interface will automatically download the installation package file. If it is expired, please retry! as shown in Figure 4.



③ After the firmware downloads successfully, select "OTA Upgrade," automatically jump to the Wi-Fi interface, re-select the unit's Wi-Fi to connect. After successful connection, return to the settings interface. The APP will automatically upload the file to the unit's memory card and perform the upgrade automatically. The upgrade time is about 60 seconds as shown in Figures 5, 6, 7.



★ **Friendly Reminder**: Do not power off the device during the upgrade process.

SD Card Local Upgrade

This product also supports downloading update firmware from the official website, copying it to the root directory of the memory card for upgrading. Upgrade steps are as follows:

①Insert the SD card containing the upgrade firmware (MCU firmware: xymcu_app_upgrade.bin, SOC firmware: xycvr.tar.gz). Note: The upgrade firmware must be placed in the root directory of the memory card. If the corresponding firmware is missing or placed in a subfolder, a reminder that no upgrade firmware is found will be displayed.

② On the streaming media rearview mirror main interface, tap the "Settings" menu to enter the settings interface.

③ Tap "System Settings" to enter the system settings interface.

④ Tap "Update System" to enter the interface, which displays three menus: MCU Firmware Update, SOC Firmware Update, and Infrared Firmware Update.

⑤ MCU Firmware Upgrade: Tap MCU Firmware Update. The screen displays "MCU preparing to restart...", and the MCU restarts into boot mode. After the first restart, a progress bar screen is displayed, showing "Please do not power off, MCU firmware is updating...". When it reaches 100%, it displays "MCU preparing to restart...". The MCU restarts into the application layer. After the second restart is complete, go to Device Information to check if the current MCU version is correct.

★ **Note:** The MCU version must be higher than the original version to upgrade. Do not perform other operations during the MCU upgrade.

⑥ SOC Firmware Upgrade: Tap SOC Firmware Update. The SOC firmware upgrade interface is disp layed, showing "During the upgrade process, please do not power off". When the update is complete, the progress bar will show 100% status and display the message "Update successful, preparing to restart device...". After the update is complete, tap Device Information to check if the firmware version corresponds to the version upgraded from the current SD card.

⑦ Infrared Firmware Upgrade: Tap Infrared Firmware Update. The infrared firmware upgrade interface is displayed. You can select the current update firmware as "Infrared Firmware" update or "Pseudo-Color Firmware Update". During the upgrade process, it displays "Please do not power off, Infrared camera firmware is updating...". When the update is complete, the progress bar will show 100% status and display the message "Update successful, preparing to restart device...". After the update is complete, tap Device Information to check if the infrared version corresponds to the version upgraded from the current SD card.

Common Troubleshooting and Analysis Methods Description

The following lists several common fault phenomena and their troubleshooting and analysis methods. This is intended for users to analyze and troubleshoot causes when the product is found not to be working normally, aiming to locate the cause of the fault and eliminate it.

Phenomenon	Cause or Solution
Infrared display image has patches or is blurry	Check if the infrared lens has mud or dirt, etc. Gently wipe off mud or dirt with a wet wipe or similar.
Visible light display is blurry	Check if the visible light lens has grease or dust. Wipe the lens with a clean, soft cloth (like an eyeglass cloth).

The screen is unresponsive to touch, or the display is frozen	Unplug the unit power and plug it back in to restart.
Unable to power on	Check if the interface/connector is loose.
Unable to record	Memory card fault or memory card cannot be recognized. Please format the memory card in the settings interface. If recording is still not possible, please replace the memory card.
Hotspot cannot be connected	Check if the phone/unit hotspot is enabled or if the unit is already connected to another phone.
Unable to display the current recording screen in real-time	Ensure the hotspot connection is normal. Try closing the APP from the background and reopening it.
APP settings error	Check if the hotspot connection is normal.
Incorrect time and date	1. Check if the phone's date and time are correct; If the phone's date and time are correct, please reopen the APP and connect the phone and device via WLAN for automatic synchronization.
Recorded videos cannot be played on phone/computer	2. Enter system settings to reset the time. Change the video player.

★ **Note:** If the above operations cannot resolve the product failure, please contact our professional customer service or call the after-sales service hotline at 027-81298772.

Certification information:

- These terms apply only to the products with corresponding markings or features.
- The information is intended to ensure that users use this product correctly to avoid danger or property damage.
- This product must be used in strict compliance with local electrical safety regulations.

EU statement

This product and its accessories (where applicable) are marked with "CE" and therefore conform to the European harmonized standards provided in applicable Directive 2014/30/EU (EMCD), Directive 2014/35/EU (LVD), and Directive 2011/65/EU (RoHS).

Directive 2012/19/EU (WEEE Directive): Products with this symbol should not be discarded as unsorted municipal waste in the EU. For proper recycling, you're requested to return this product to your local supplier when purchasing the same new equipment, or discard it at a designated recycling collection point. Details are presented on www.recyclethis.info for reference.

FCC WARNING

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliancecould void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception,
which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
1) Reorient or relocate the receiving antenna.
2) Increase the separation between the equipment and receiver.
3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4) Consult the dealer or an experienced radio/TV technician for help.

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

Usage environment:

1) It is prohibited to use this product in dangerous locations where fire, explosion or other hazards may exist to prevent serious harms.
2) Do not drop this product from height or subject it to impact.
3) Use or store the device at an ambient temperature that does not exceeds the permitted operating or storage temperature to prevent product damage.
4) Do not direct the product straight towards high-power infrared sources, such as the sun, lasers, spot welders, etc..
5) Do not block the openings of the product to avoid damage.
6) Keep the product and cables away from soluble or similar liquids to avoid damage.
7) Do not expose the product to high levels of EMF radiation.
8) Do not wobble, knock, throw or shake the product and accessories violently. Please do your best to keep it stable when using the product to prevent damage.

Maintenance:

1) If the product does not operate properly, please contact your dealer . In no event shall the Company be liable for malfunctions caused by unwarranted repairs or maintenance.
2) Please comply with the following measures when wiping this product:
Non-optic surfaces: wipe with a clean, soft cloth when necessary.
Optic surface: Do not stain the optic surface of the lens. Sweat from your hands can leave marks on the lens glass and may damage the optical coatings on the glass surface. So you should never touch the lens. When the surface of the optic lens is dirty, please use the lens tissue to wipe it carefully.

Transportation

1) When transporting the device, please put the device in its original or similar packaging.
2) Please retain all packaging for future use. If any malfunction occurs, the device shall be returned to the factory in its original packaging.
3) The Company will not be held liable for any damage of the product for not having used the original packaging during transportation.

Night Hawk H10+

Automotive Infrared ADAS for Collision Avoidance

AECQ Certified	350m	AI Independent NPU	IP67
Automotive -Grade Chip	Ultra-Long Sight Distance	Intelligent Early Warning	Dustproof And Rainproof

RoHS FC CE RECYCLABLE