

# F6N



## Product User Manual



## Preface

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The data provided in the user manual are theoretical values obtained from Streamax Technology's internal laboratory under specific test conditions (please refer to the specific instructions for each item). In actual use, there may be slight variations due to differences in product individuality, software versions, usage conditions, and environmental factors. Please refer to the actual usage scenario for accurate information.

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Please read this manual carefully to ensure the correct usage and proper functioning of the required features.



Warning: This manual may contain information that pertains to user safety or potential hazards to the device user.



Special Note: There may be situations that could potentially compromise data integrity, damage device firmware and hardware.



Note: Additional explanations, definitions of terms, etc.

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**List of Abbreviations:**

<b>Abbreviations</b>	<b>English Explanation</b>	<b>Chinese Explanation</b>
1080P	Resolution ratio 1920×1080	分辨率 1920×1080
DMS	Driver Monitoring System	驾驶员检测系统
VBR	Variable Bit Rate	动态比特率
CBR	Constants ·Bit Rate	固定比特率

## 1. Product Overview

The F6N is a multifunctional intelligent vehicle terminal composed of storage modules, encoding modules, communication, and power modules. It integrates onboard video monitoring, remote platform video monitoring, and driver behavior analysis.

The product boasts powerful video access and encoding capabilities, supporting up to 4 channels of coaxial analog AHD high-definition and 1 channel of digital IPC data access. Without AI functionality, it can support simultaneous recording of 5 channels of 1080P@30fps full HD real-time full-frame encoding, ensuring video quality and frame rate retention.

The product has built-in rich wireless communication capability, supporting 4G/3G high-speed network, WIFI wireless network, and GPS/BDS/GALILEO/GLONASS multi-band quad-constellation global GNSS positioning system at the same time.

The product is equipped with powerful NPU processing capabilities, supporting built-in intelligent computing operations, and can fully cover the driver behavior analysis system.

At the same time, F6N has a strong anti-interference ability of the vehicle environment, the product meets the ISO16750, ISO7637 vehicle test standards, to meet the use of different vehicle types installed.

### 1.1 Product Highlights

- Supports 4-channel analog HD AHD and 1-channel digital HD IPC access;
- Full HD pure recording with 5 channels of 1080P@30fps real-time full-frame encoding;
- Supports CVBS, VGA same-source high definition, and standard definition output;
- Supports extended digital SIM card technology (eSIM) for better temperature and vibration resistance;
- Supports GPS/BDS/GALILEO/GLONASS for more precise positioning; equipped with an external IP67 waterproof antenna;
- External interface uses automotive-grade high-precision quick-release connectors for easy

installation and maintenance;

- High-speed processor and powerful neural network inference engine with built-in intelligent algorithm applications;
- Supports 2 MicroSD cards for local storage, with a maximum support of 2\*512G;
- The entire system uses a combination of mechanical shock absorption, electronic vibration damping, and software vibration damping for comprehensive vibration reduction;

## 1.2 Main Uses and Scope of Application

The F6N series is primarily used in the field of automotive safety to assist drivers in reducing traffic accidents and helping fleet operators improve management efficiency.

## 1.3 Working Environment

- Power Input: DC 9V~36V
- Operating Temperature: -40°C ~+70°C (-40°F ~+158°F)
- Storage Temperature: -40°C ~+85°C (-40°F ~+185°F)
- Operating Humidity: 15% - 95% (non-condensing)
- Storage Humidity: 15% - 95% (non-condensing)
- Salt Spray: Compliant with GB/T 2423.17 standard
- Illumination: Not specified
- Altitude: Not specified
- Waterproof and Dustproof: IP30 (the main unit is not waterproof)



Warning: Streamax is not responsible for any damage or malfunctions of the device caused by using it in environments that do not meet the specified working conditions.

## 1.4 Environmental and Energy Impacts

- Bare machine power consumption <10W, typical working power consumption <35W



Special Note: The above data are all tested in specific laboratory environments. There

may be differences due to product individual differences, usage environment, and testing methods.

### 1.5 Safety

This product requires professional installation. Improper installation may result in electric shock, damage to vehicle wiring, impact on AI performance, and risk of device detachment.

When this product is in use, the surface temperature may exceed 60°C when exposed to direct sunlight. Do not touch the surface directly exposed to the sun to avoid burns.

## 2. System Components

This chapter introduces the system components as part of a complete system solution, not as standard shipping packaging. It aims to help users understand the product functions from a system perspective.

### 2.1 System Block Diagram



### 2.2 Introduction to Main Product Functions

F6N: An intelligent device that helps drivers reduce traffic accidents and assists fleets in improving management efficiency

Veyes: An app used for device operation, maintenance, and configuration

FTCloud: A professional SaaS video service platform

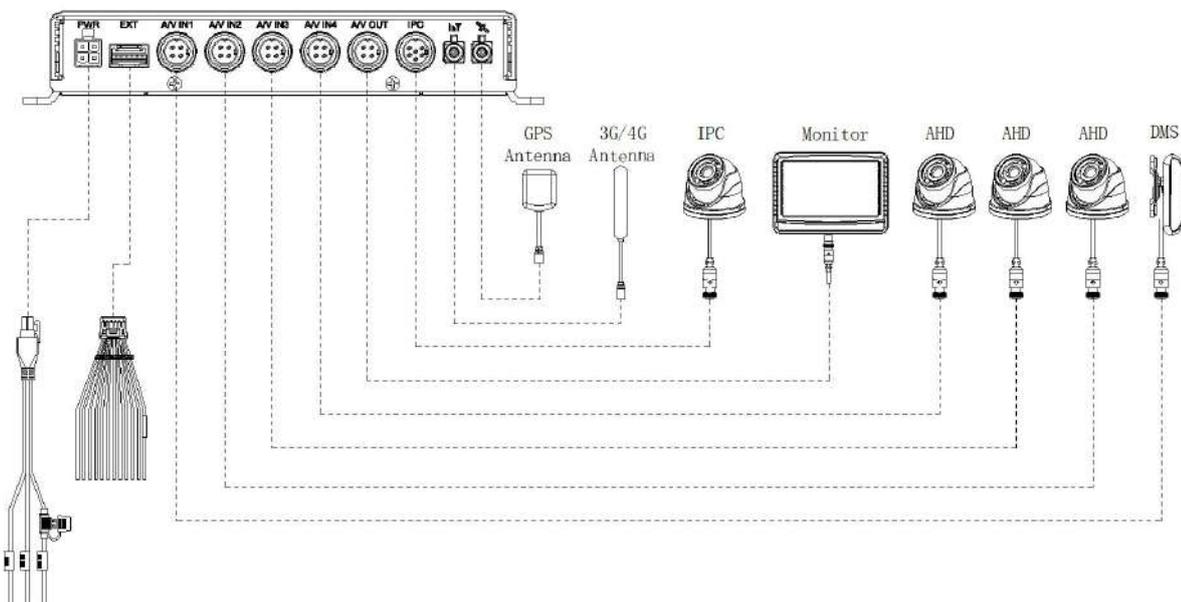
FTAPI: The business API interface provided by the FTCloud platform

FT Vision: A mobile app used in conjunction with FTCloud

## 2.3 System Connection Diagram

The standard shipping list includes a standard power cable that supports connection to the vehicle through the ACC power supply method.

### ACC Power Supply System Connection Diagram



## 3. Technical Characteristics

For detailed technical specifications, please refer to the "F6N 2.0 Product Specification Manual".

## 4. Installation and Debugging

### 4.1 Installation of Mobile Apps

- For Android phone users, please search for "Veyes" in the Google Play Store, download, and install it.

- For iOS phone users, please search for "Veyes" in the App Store, download, and install it.



Special Note: The mobile apps have system version requirements, requiring Android 5.0 or iOS 11 and above. Subsequent usage operations will use Android as an example, and the installation process will not be demonstrated separately here.

## 5. Operation Instructions

### 5.1 Panel Status Light Description

LED Status	
Status	Blue Light Steady ON: Indicates the device is powered on normally
Light	Red Light Steady ON: <ol style="list-style-type: none"> <li>1. Steady ON when there is a storage error (unrecognized or failed to acquire any storage);</li> <li>2. Steady ON when the camera stops recording (including privacy mode) or fails (recording enabled for both main stream and sub stream, but no recording is detected);</li> </ol>
	Upgrade: Blue and red lights flash alternately

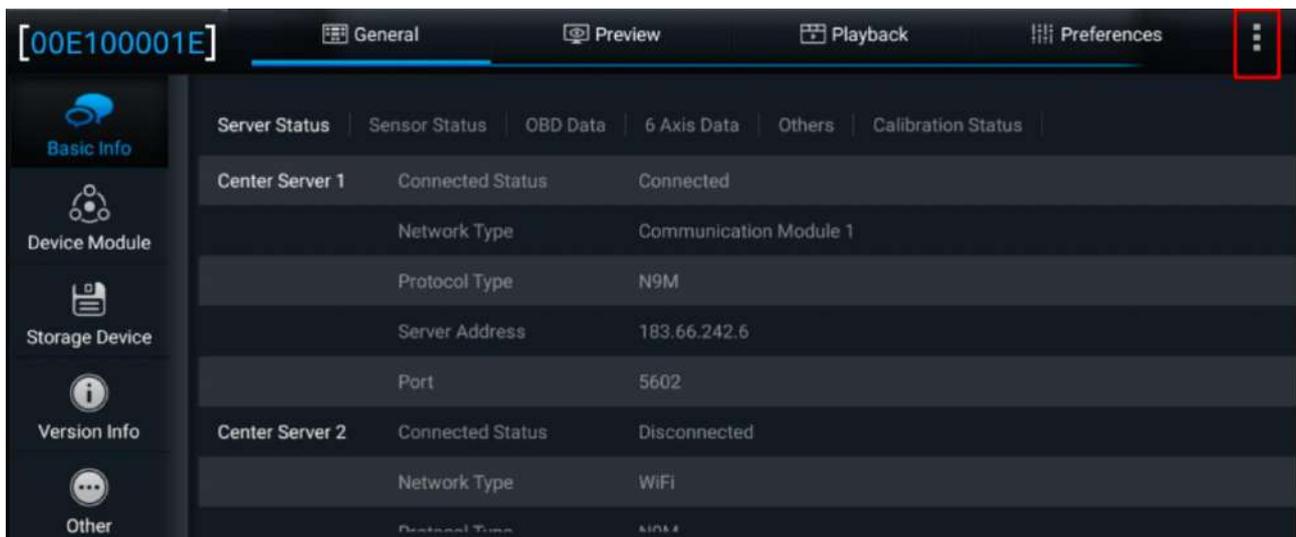
### 5.2 Device Login/Logout

1. Enable Device WiFi in AP Mode: Within 3 minutes of device startup, the WiFi will be in AP mode, or you can change to AP mode within 3 minutes after the device starts.
2. Open phone WIFI, launch Veyes, and click the [Search] button to enter the WIFI hotspot search interface and select the corresponding hotspot. For the first login, the WIFI hotspot name is named after the device's SerialNum (you can find SerialNum on the device label). If the license plate number is not empty, the hotspot name will be the license plate number.
3. Enter the corresponding username and password on the login interface, then click login to enter

the operation interface. The default username/password is: admin/admin.

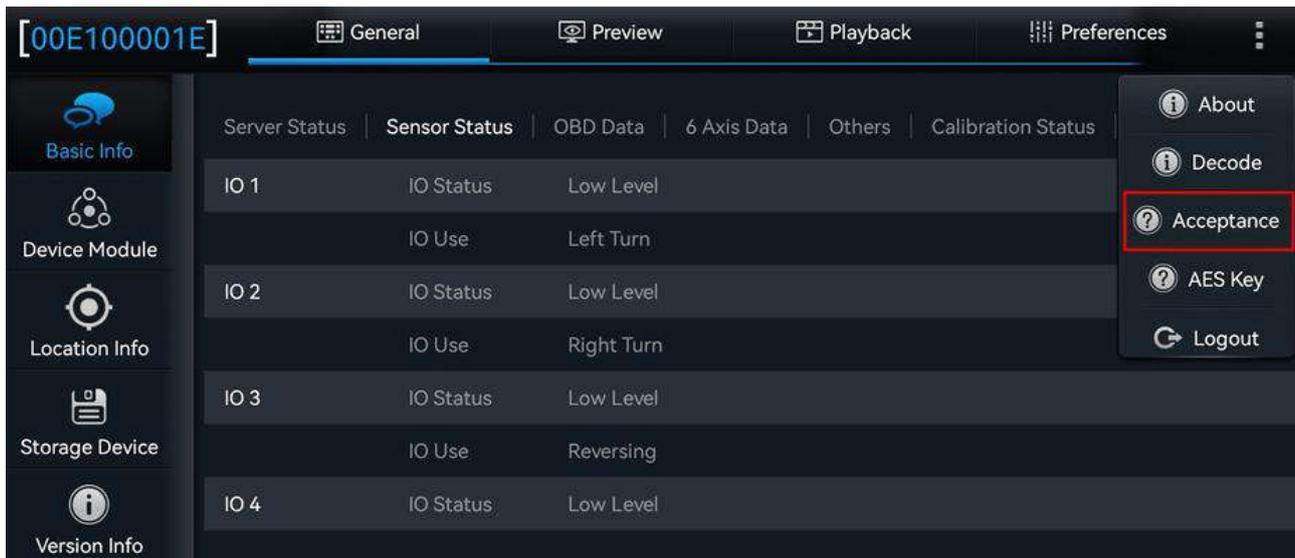


4. After clicking the [Login] button, you will enter the operation interface, as shown in the figure below:



Click the top right corner , you can choose to view the app version, or perform logout operations. Click [Logout] to disconnect from the device. Click [About] to view the Veyes app version information.

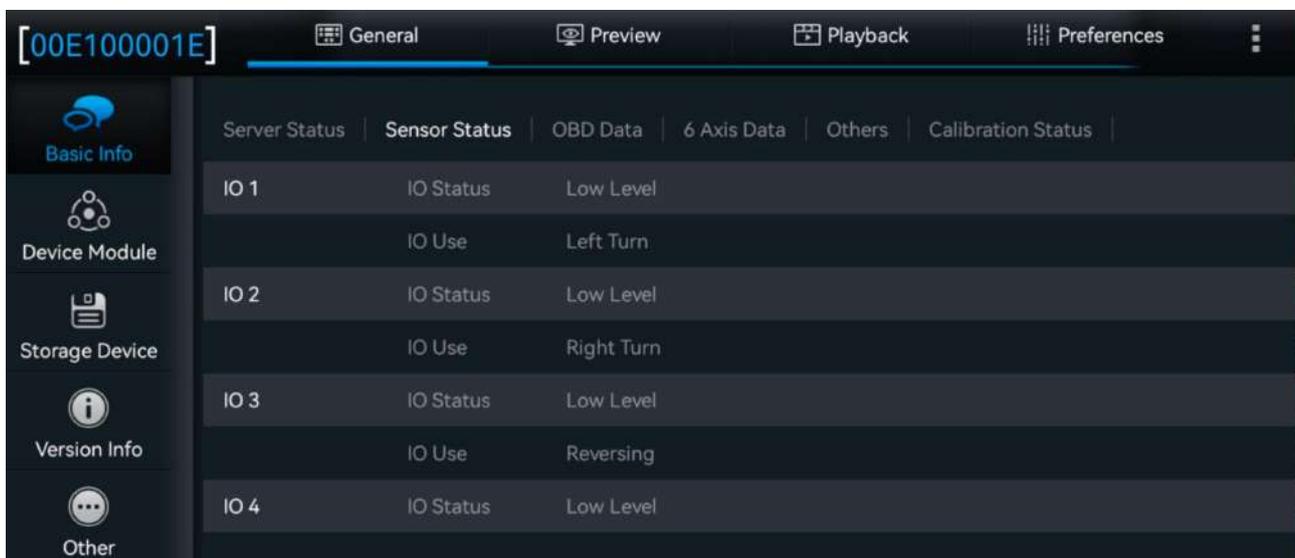
Acceptance: Acceptance mode allows the device to preset a speed when there is no movement and alarms cannot be triggered.



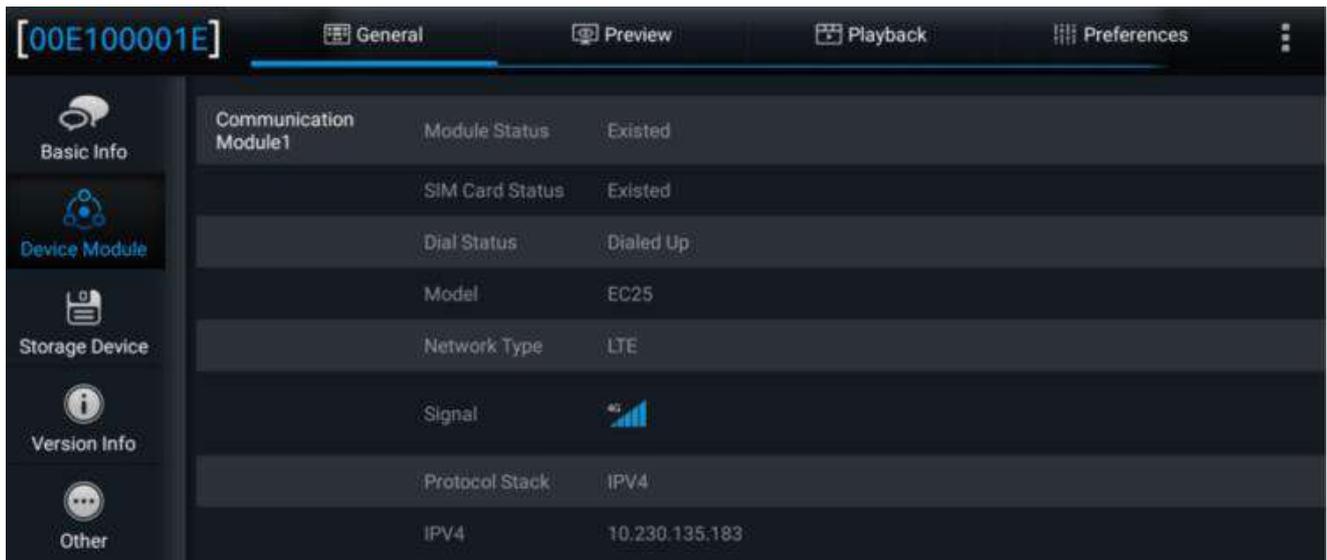
### 5.3 General Information Viewing

The general interface is mainly used to view the real-time status of the device, version information, import/export parameters and logs, and software upgrades, etc.

- Basic Info: Mainly used to view the device's server connection status, IO high and low level status and usage, OBD data, G-sensor data, ACC status, pulse status, device status, and algorithm channel calibration status.



- Device Module: Used to view the status of the device's WIFI, 3/4G, and satellite modules.



The screenshot shows the Streamax F6N interface with the following data:

Item	Value
Module Status	Existed
SIM Card Status	Existed
Dial Status	Dialed Up
Model	EC25
Network Type	LTE
Signal	4G
Protocol Stack	IPV4
IPV4	10.230.135.183

- Location Info: This is used to check the quality of satellite positioning signals for devices, helping installation and maintenance personnel evaluate the device's positioning capability and quality, allowing for appropriate maintenance actions. At the top of the interface, the first row indicates the number of effective satellites and the total number of satellites. The list below includes PRN, which represents the satellite number; GNSS, which indicates which Global Navigation Satellite System (GPS, GLONASS, GALILEO) the satellite belongs to; SNR, which stands for signal-to-noise ratio and reflects the quality of the satellite positioning signal; Direction angle, representing the satellite's azimuth angle; and Altitude angle, representing the satellite's elevation angle.



Note: This interface will only be displayed when the command to record GPS raw data is enabled. For specific operating instructions, please refer to the [Preferences] > [Collection] > [General] > [Location] section usage instructions.

PRN	GNSS	SNR	Direction angle	Altitude angle
14	GPS	30dB	155°	75°
50	GPS	28dB	148°	59°
195	GPS	37dB	43°	58°
194	GPS	28dB	142°	57°
6	GPS	24dB	273°	51°
17	GPS	19dB	2°	49°
19	GPS	18dB	328°	38°

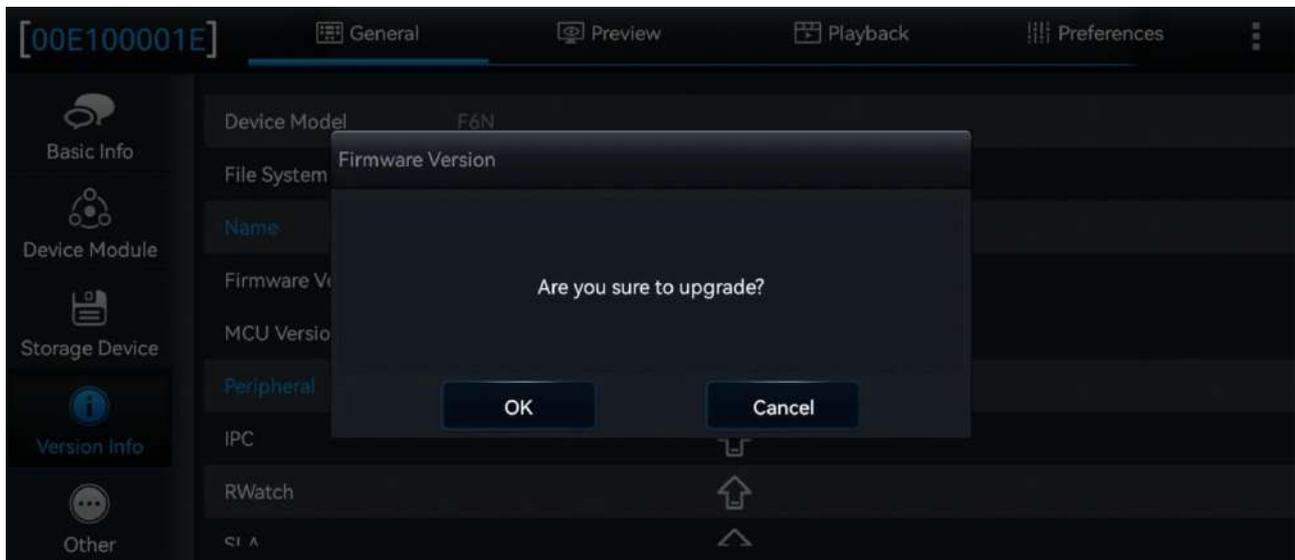
- Storage Device: View the device's storage status and format it if needed. After clicking the format button, a prompt will appear. Confirming the prompt will execute the formatting process.

Storage Name	Status	Remain/Total	Formatting
Internal SD Card 1	Normal	244.4 GB/250.3 GB	
Internal SD Card 2	Normal	58.5 GB/63.5 GB	

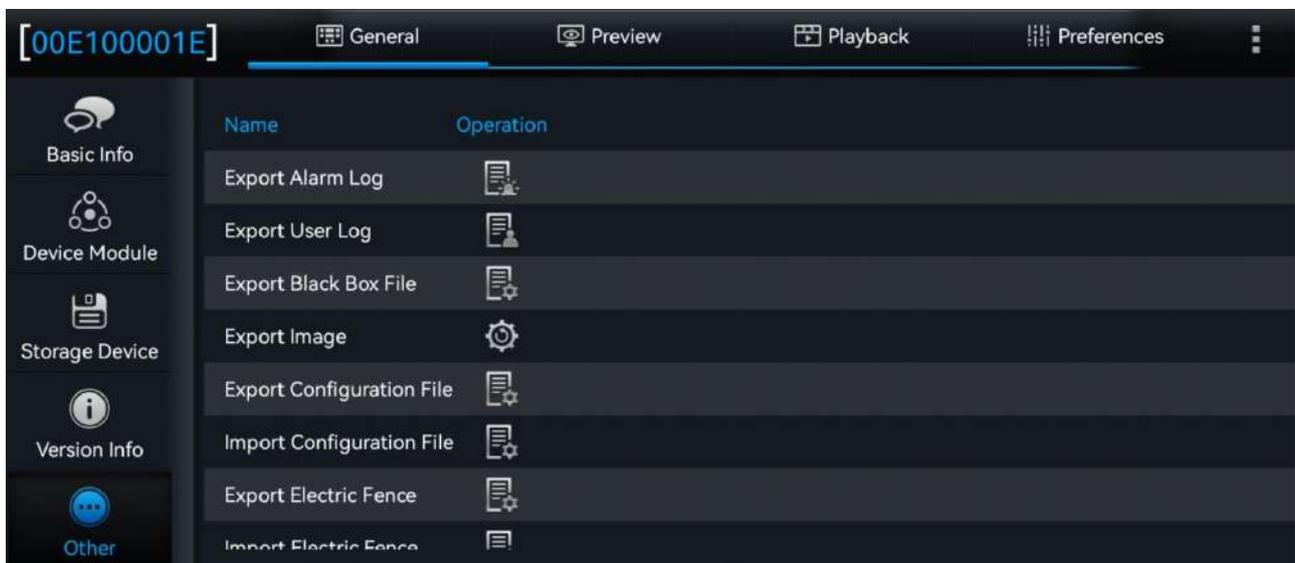
- Version Info: View software version information.

Device Model	F6N	
File System Version	5.0	
<b>Name</b>	<b>Current Version</b>	<b>Upgrade</b>
Firmware Version	B3.5.6_R23120401	
MCU Version	F6N-M01-GD32-MCU-T 23110701	
<b>Peripheral</b>		
IPC		
RWatch		
CSI A		

In the version information interface, local upgrades can be performed for the main unit version, communication module, and GPS version. The upgrade file must be placed in the root directory of a USB drive named "upgrade" and connected to the device. To upgrade, click the  button, a confirmation prompt will appear, and click [OK] to start the upgrade.



- Other: Import and export data and configurations, restore factory settings, and reboot the device. For import and export operations, an external USB drive needs to be connected to the device.



1. Alarm logs, user logs, and black box files can be exported.
2. Snapshots of alarms from selected time periods can be exported.
3. Electronic fence information can be imported/exported.
4. AI configuration files can be imported/exported.
5. Parameter configuration files can be imported/exported.

6. Factory reset operation can be performed.
7. Print data from optional time periods can be exported.
8. Device reboot operation can be performed.

## 5.4 Preview

In the preview interface, you can view the real-time screen and perform operations such as enabling/disabling sound, enabling/disabling grids, and performing AI calibration.

### 5.4.1 Preview

In the preview interface, you can view real-time recordings of each channel. Double-clicking on a channel preview enlarges the view of that channel; double-clicking again returns it to the original size. Channels without a connected camera or with a damaged camera will display "VIDEO LOSS."



### 5.4.2 AI Calibration

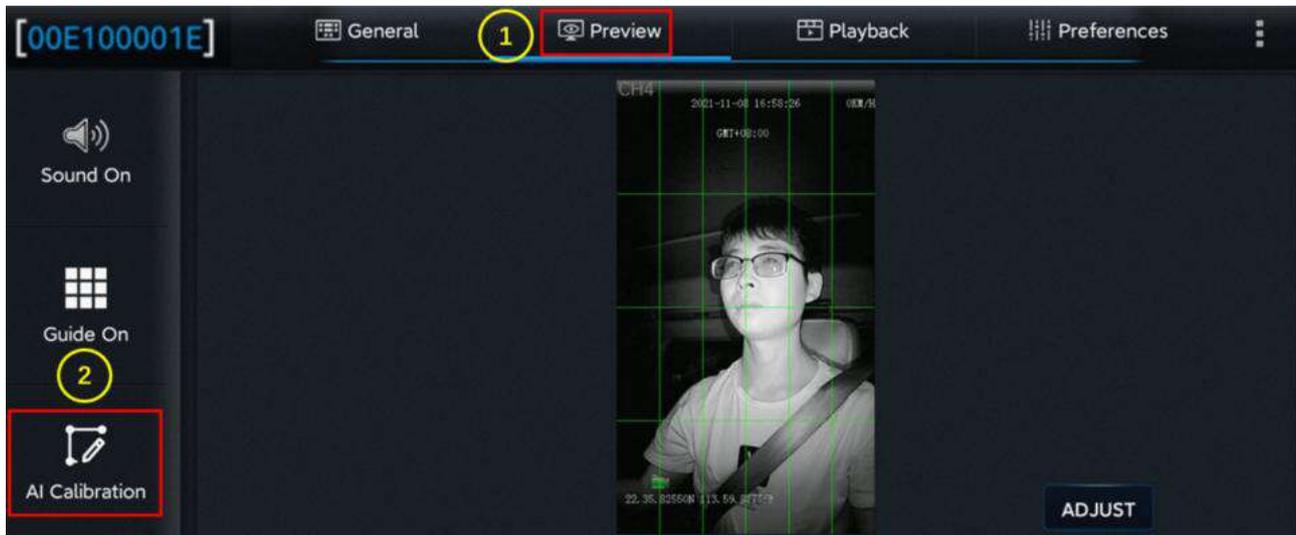
This section introduces the standard guided calibration method, including the DMS algorithm calibration from the preview interface.

#### 5.4.2.1 DMS Calibration

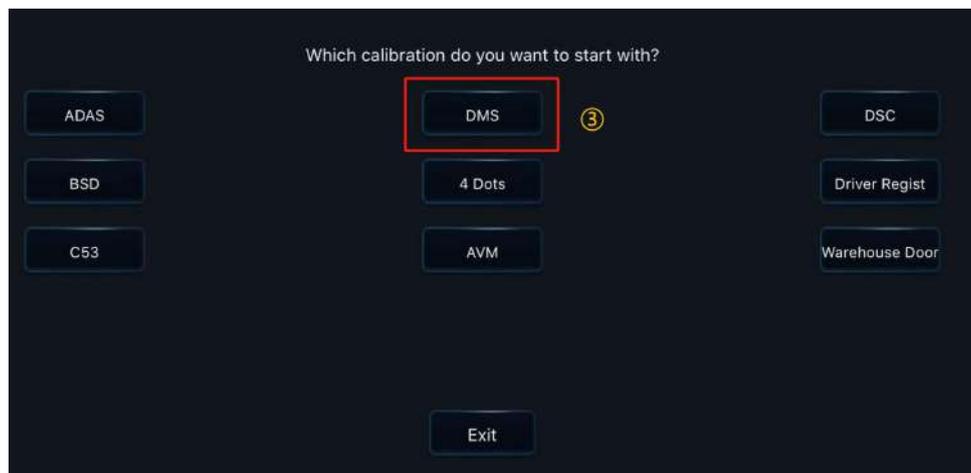
The F6N comes with a built-in DMS function. It is installed in a way that does not obstruct the driver's view, with a wide vertical field of view to accommodate drivers of different heights. The lens

angle can be adjusted to meet the installation requirements of various vehicle models. Adjust the lens angle according to the actual situation and install it correctly according to the specifications, then perform DMS calibration.

- ① Click [Preview] on the main page to enter the preview interface
- ② Click [AI Calibration] to enter the calibration selection

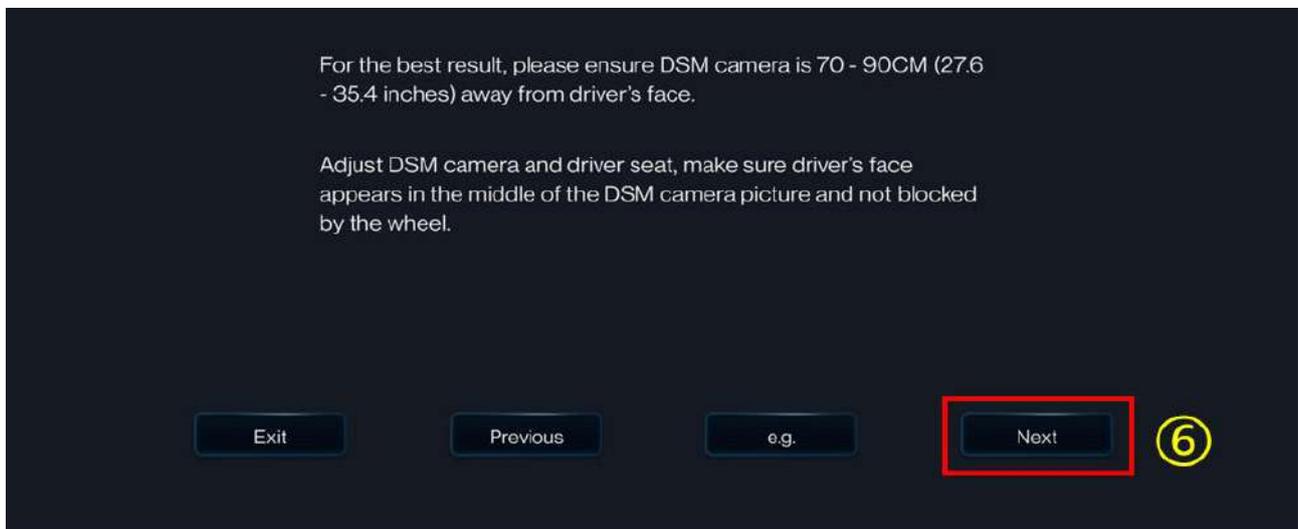


- ③ Select [DMS] for calibration
- ④ Choose the channel corresponding to the DMS camera, which is channel 2 on the device
- ⑤ Click [Calibration] to proceed to the next step





⑥ Confirm the prompt and click [Next] to proceed

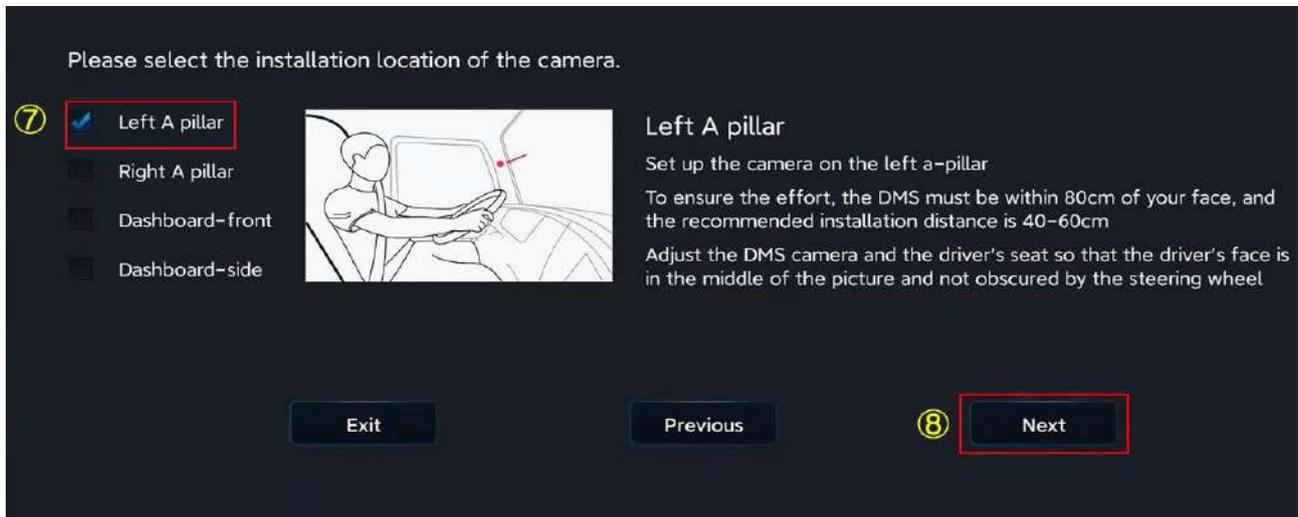


⑦ Select the installation position of the DMS camera: left A-pillar, right A-pillar, dashboard front, or dashboard side. If you have any questions, click on each option and refer to the illustrations and descriptions on the right.

After selecting the corresponding installation method, the software will automatically associate the calibration method with the installation method. No manual selection of the calibration method is needed (left A-pillar installation (attached to the glass), right A-pillar installation (attached to the glass), and dashboard side installation all use side calibration, while dashboard front installation uses front calibration).



Special Note: This step is crucial; ensure that the selected installation method matches the actual installation method.



Special Note: Before clicking [Next] to enter the official calibration, the driver should sit in their normal driving position and look straight ahead.

⑧ Click [Next] to proceed to the next step for automatic face calibration.

During the calibration process, make sure to maintain your normal driving posture and look straight ahead without moving.

The intelligent algorithm will automatically learn the driver's face rotation angles and facial feature data positions during side calibration. If the face moves during calibration, it will automatically restart the calibration process.



Special Note: For left A-pillar installation, right A-pillar installation, and dashboard side installation, the face must be at an angle to the camera to complete the calibration. For dashboard front installation, the face must be directly in front of the camera to complete the calibration.

Sit still and wait for the device to complete the automatic calibration. For side calibration, when the NUM value reaches 301 (or 51 for front calibration), the calibration frame will change from red to blue, indicating that the automatic calibration is complete.

During calibration:



Calibration completed:



Click the [Complete] button to complete the calibration and exit calibration mode.

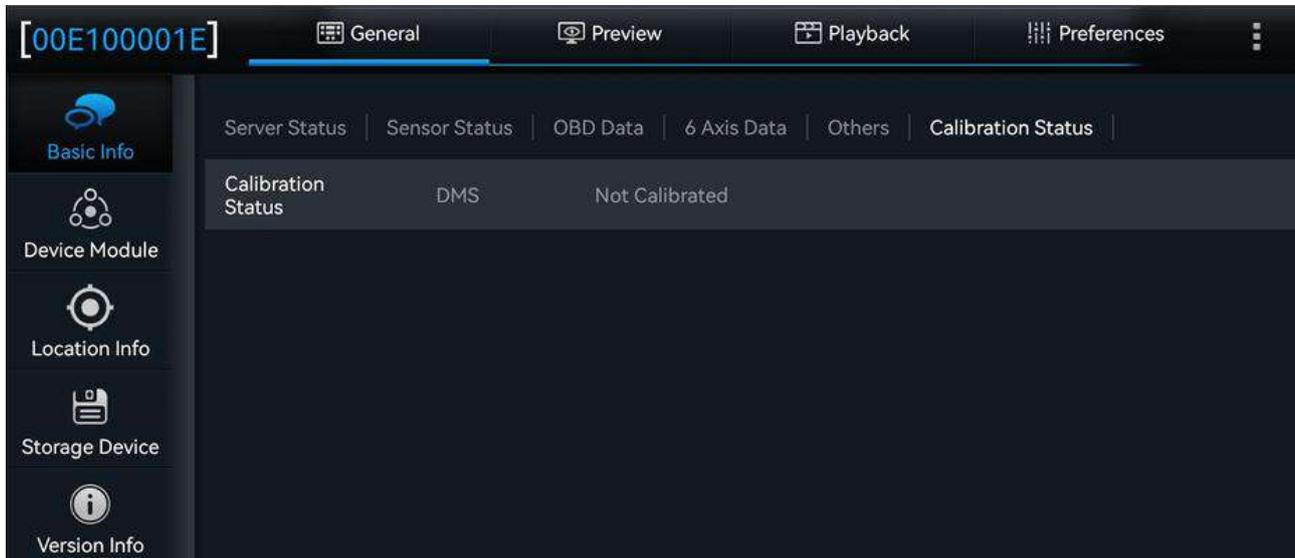
After the actual calibration of each algorithm channel is completed, you can check the success of the calibration through Veyes. Click [General] > [Basic info] > [Calibration Status] on the Veyes interface to see if each channel has been successfully calibrated.



Special Note:

1. Only channels with the algorithm enabled will display the calibration status. The calibration status can be either "Not Calibrated" or "Calibration Successful."

2. Since DMS calibration is automatic and requires the vehicle to drive for a certain period to complete, the "Calibration Successful" status will not appear immediately even if the parameters are configured correctly.



Warning: The installation and calibration of the DMS camera must strictly follow the requirements of the "F6N Series Installation Guide." The distance between the lens and the face should be 50-100cm, and the lens angle must fully display the face and driver's seat area. Otherwise, the DMS cannot effectively distinguish between the driver's closed-eye state and distracted driving, which may reduce the accuracy of related alarms. The company is not responsible for any false alarms caused by improper installation.

## 5.5 Playback

### 5.5.1 Playback

The playback interface can be used to search for main/sub storage recordings within a specific date. When selecting sub-stream recordings and using two MicroSD cards, the sub-stream will be stored in the sub-storage. You need to select sub-storage sub-stream recordings to search for sub-streams (see the appendix for main and sub-stream usage scenarios). The following example is for main-stream recordings:



In the playback interface, use the calendar to select the playback time. On the left side of the interface, you can select the year and month. Click on   to choose different years and months. In the calendar, the colored bar at the bottom of each date indicates the presence of recording records on that day. Specifically:

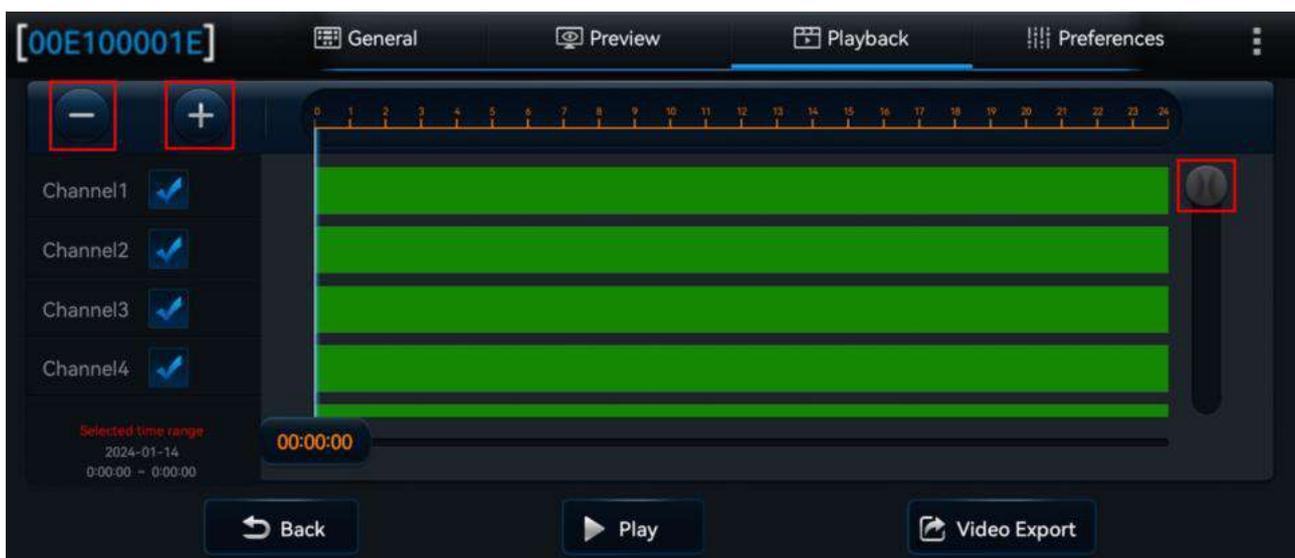
No color	No recordings for that day.
Green	Normal recordings for that day.
Red	Alarm recordings for that day.
Yellow	Alarm recordings for that day and some files have been automatically locked (locked videos).

Click on the date in the calendar to view the recordings, and you will enter the following interface. You can choose the channel to view the recordings, or you can re-select the date and type of recording to view. After completing the selection, click next.



After selecting the channel, you can drag the timeline to choose the playback time. Click [Play] to start playback of the recording. During playback, you can select playback controls, double-clicking on the screen to hide the control interface and enlarge the playback screen.

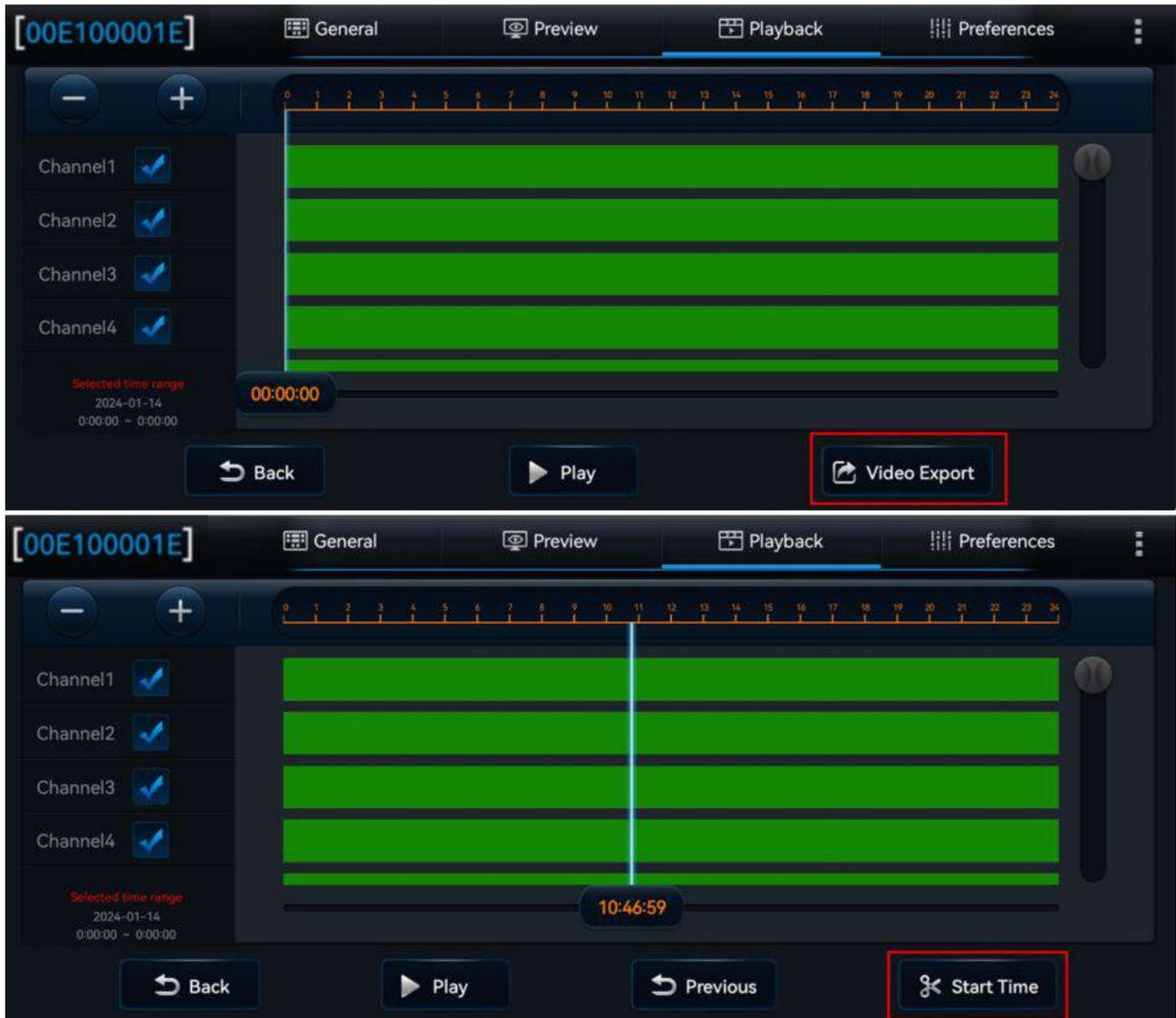
- Timeline:
  - ✧ The top timeline displays time in 1-hour intervals.
  - ✧ The bottom timeline can be dragged to any position by dragging .
  - ✧ Clicking  on the top left of the interface to zoom out the time interval; clicking  can increase the time interval unit. This feature helps quickly locate a specific time segment for playback/export when there are many recording segments;
- Channel Number: :
  - ✧ Each channel's color bar indicates the type of recording files available at different times.
  - ✧ If there are many recording channels, you can scroll up and down  on the right side of the interface to view the recording status of each channel.
  - ✧ Check a channel (multiple selections allowed), choose a time on the timeline, and you can play back/export recordings from the selected channels within the chosen time frame.

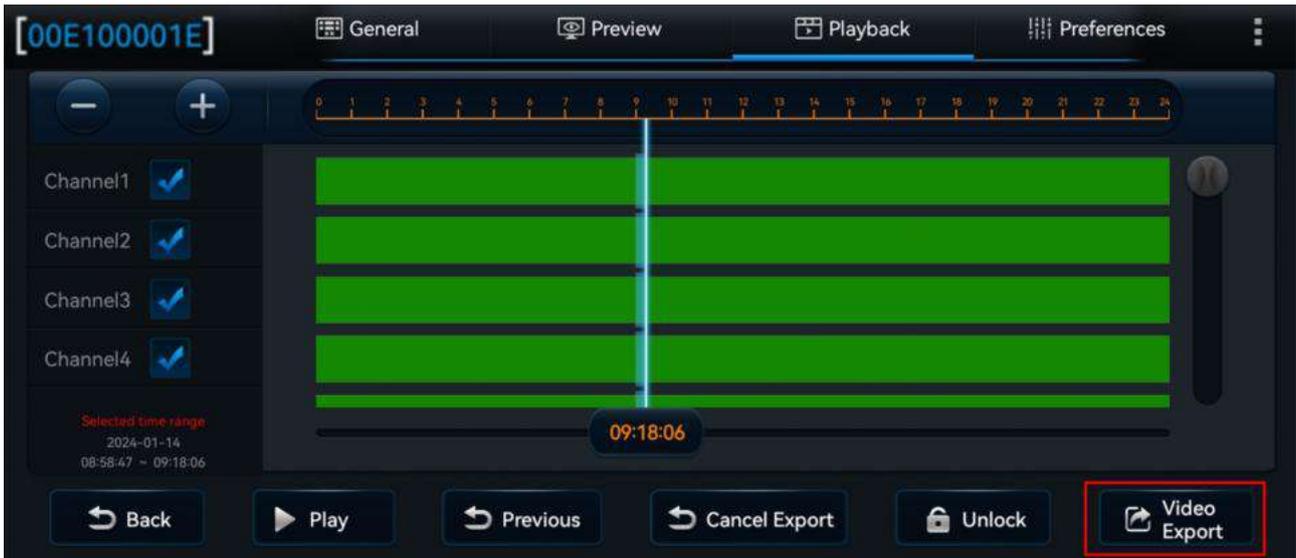


## 5.5.2 Video Export

You can also choose to export the video of the selected time period.

Click [Video Export] at the bottom of the playback interface, select the start time and end time, then click [Video Export] to export the video. Click [Unlock] will allow you to lock or unlock the recordings for the selected time period.

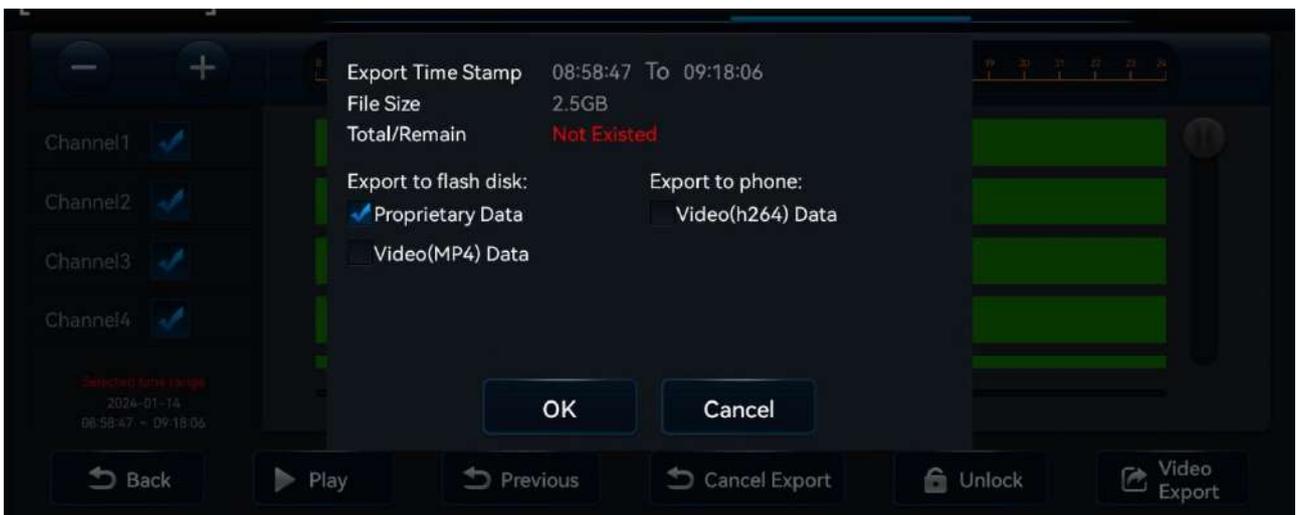




In the video export options, you can choose to export the trimmed video to an external USB flash drive or mobile phone, making it convenient for maintenance personnel to quickly access and share the video.



Special Note: Exporting in MP4 format allows playback using standard media players, while exporting in H264 format requires a proprietary player (CEIBA2 client) for playback. H264 format contains more original data, facilitating troubleshooting of video playback issues. If there are any problems requiring after-sales support, please choose to export in H264 format.



## 5.6 Basic Setup



Note: In all configuration parameter interfaces, after modifying the parameters, click the

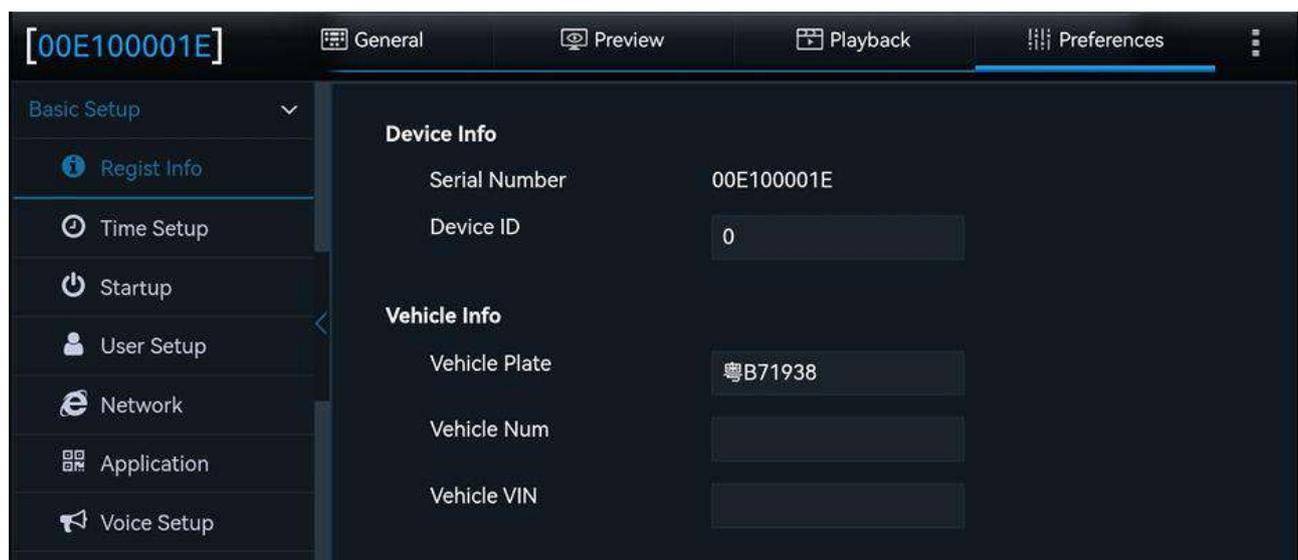
[Save] button to save the changes. To restore a specific parameter to its default value, click the [Default] button at the bottom of the interface to reset the parameters to their default values.

### 5.6.1 Regist Information

In this interface, you can set device information (device ID), vehicle information (vehicle plate number, driver's license number, vehicle VIN number), and driver information (driver ID, driver name), etc. After setting the license plate number here, when connecting to the device hotspot using Veyes, the WiFi hotspot name will be named after the license plate number.



Note: When the license plate number changes, the WiFi hotspot name will change as well, requiring you to reconnect and log in to Veyes again.



### 5.6.2 Time Setup

- Date and Time Format: In the Time Settings section, you can adjust the format of time display and the time zone.
  1. Date Format: Options include Year/Month/Day, Month/Day/Year, and Day/Month/Year. This format is only reflected in the pass-through and recording OSD.
  2. Time Format: Choose between 24-hour and 12-hour formats. This format is only reflected in the pass-through and recording OSD.

3. Cross Time Zone Enable: Control whether to use the cross-timezone scheme. If your vehicle and platform are in different time zones, to maintain normal communication between the device and the platform, you need to enable the cross-timezone scheme. Once enabled, the timezone parameter will be grayed out and cannot be set; only the local timezone can be set, which refers to the timezone where the vehicle is located. When the cross-timezone scheme is disabled, you can only set the timezone parameter, which should match the timezone of the vehicle's location.



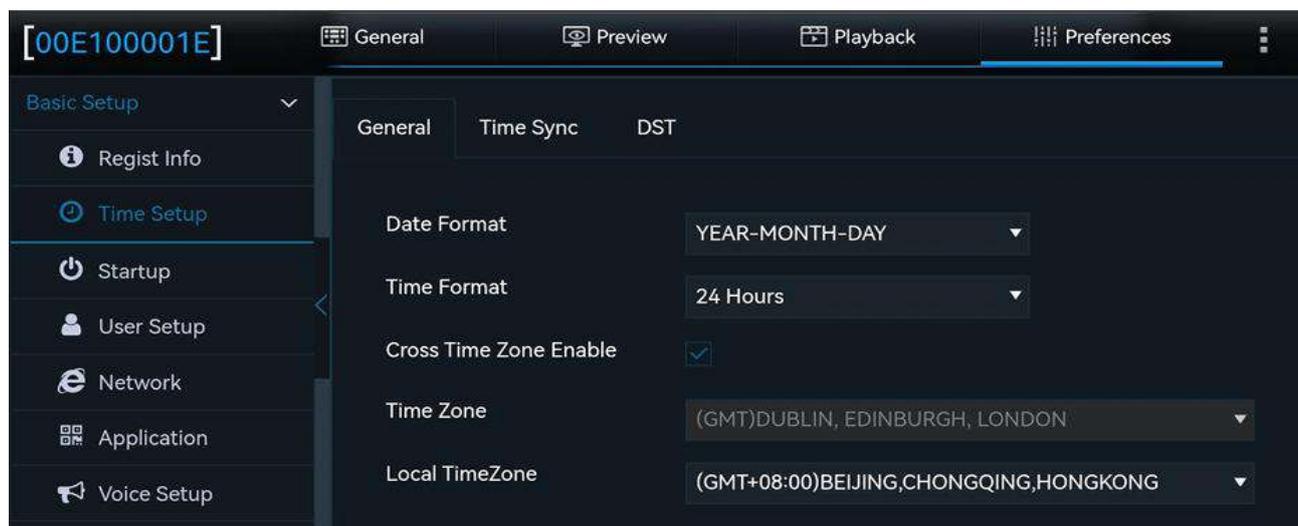
Warning: For devices using the CEIBA2 platform, the Cross Time Zone feature must be disabled. Users of the FT platform should enable the Cross Time Zone feature as needed.

4. Time Zone: Supports selection of time zones. This parameter can only be set when the Cross Time Zone feature is disabled; otherwise, it defaults to the zero time zone and cannot be adjusted.

5. Local TimeZone: Supports selection of the local time zone. This parameter will only be displayed for setting when the Cross Time Zone feature is enabled.



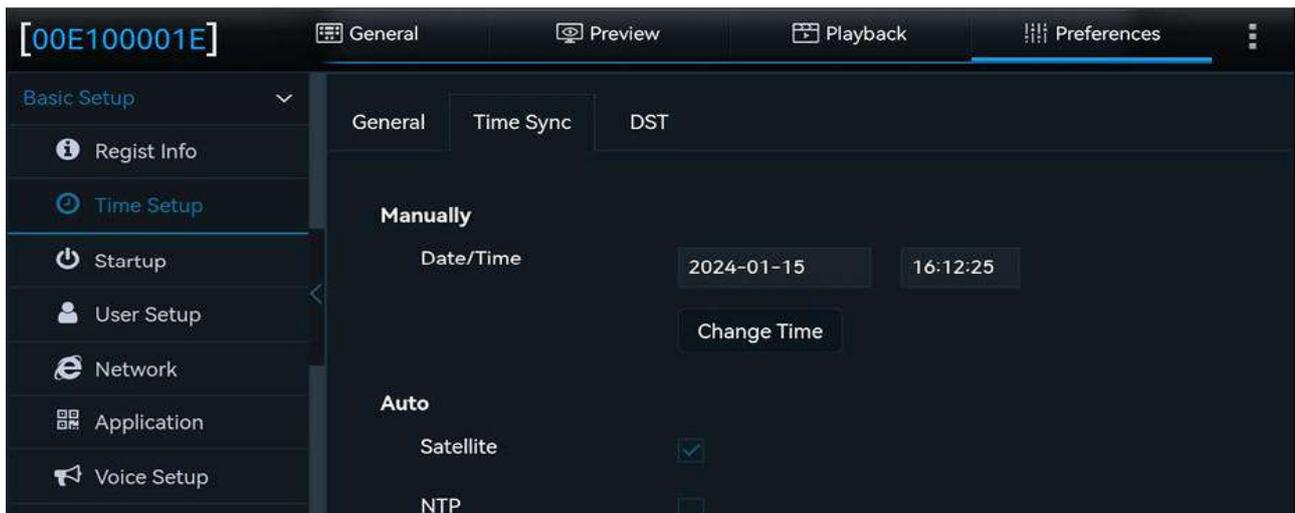
Special Note: When the Cross Time Zone feature is enabled, TimeZone is fixed at the zero time zone and cannot be adjusted. This means that data interaction between the device and the platform is conducted in the zero time zone. LocationTimeZone is used for video overlay time zone. When the Cross Time Zone feature is disabled, TimeZone can be set and is used for video overlay time zone.



#### ● Time Sync:

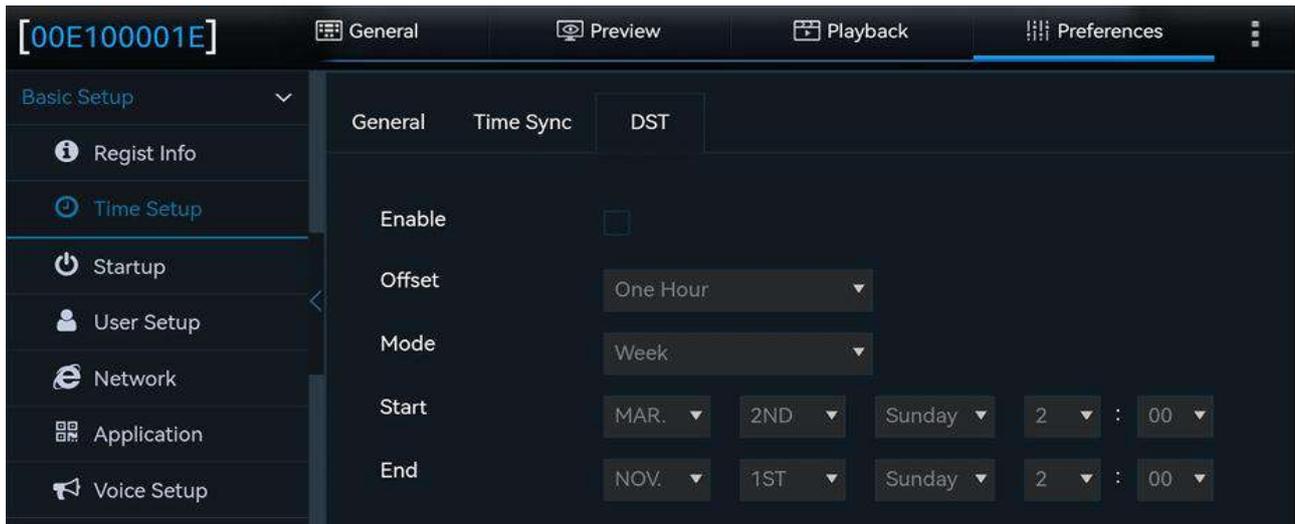
When there is a deviation between the system time and the actual time, the system will automatically calibrate the time. Automatic time calibration can be set either by manually inputting the date and time or by selecting a calibration method.

1. Manual Modification: Manually change the date and time by clicking [Change Time]
2. Satellite Calibration: Use GPS to correct the time.
3. NTP Calibration: Use Wide Area Network (WAN) time. You can select different WAN servers for the time.
4. Central Server Calibration: Use the reported platform time. When reporting to multiple platforms, you can select different platforms.
5. If multiple calibration methods are selected, the system will prioritize satellite calibration, followed by NTP calibration, and then central server calibration. Once the time is successfully calibrated using one method, the calibration process will stop.



- Daylight Saving Time (DST)

For certain regions, it is necessary to set daylight saving time (DST) due to timezone reasons. When DST is enabled, the device's displayed time will be advanced by 1 or 2 hours. Navigate to [Preferences] > [Basic Setup] > [Time Setup] > [DST] to access the following interface:

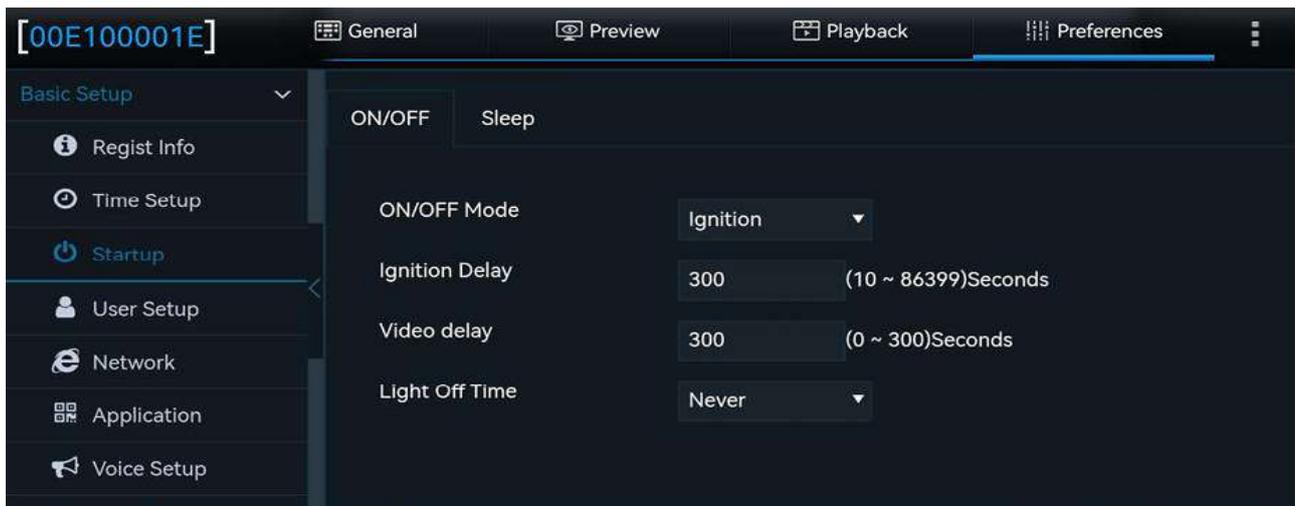


1. [Enable]: The DST function can be enabled or disabled by the user, with the default setting being disabled.
2. [Offset]: The time can be advanced by 1 hour or 2 hours.
3. [Mode]: Supports either week or date mode.
4. Week Mode: Set the start and end of DST based on the month, the specific week, day of the week, and the specific time (hour, minute, second).
5. Date Mode: Set the start and end of DST based on the date and the time (hour, minute, second).

### 5.6.3 Startup

- Startup

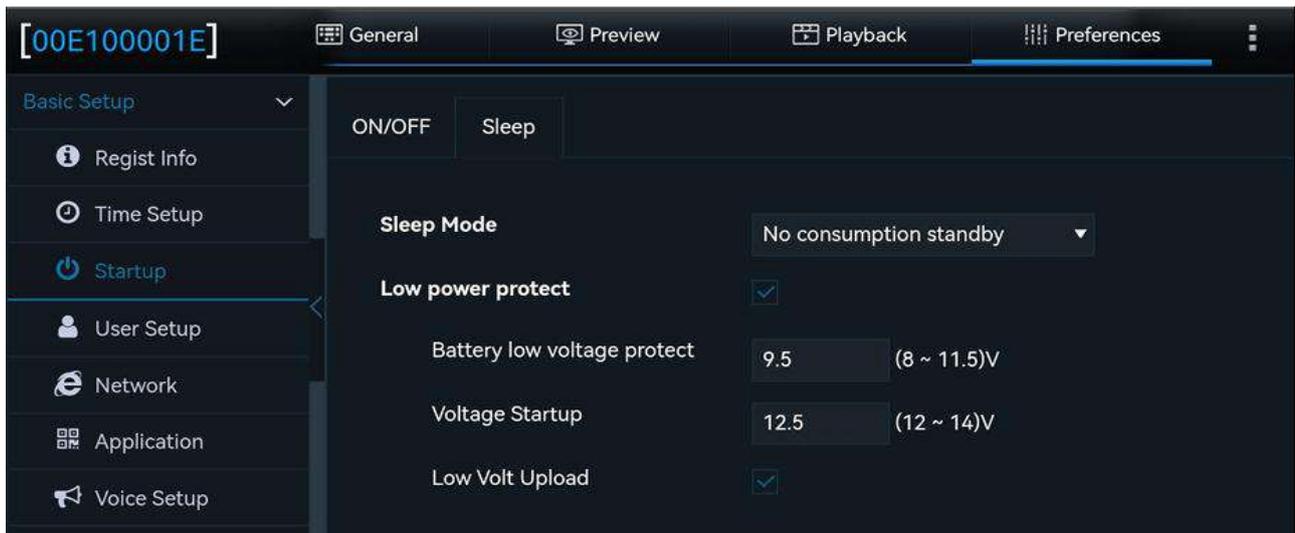
Click [Preference] > [Basic Setup] > [Time Setup] > [ON/OFF] to access the following interface:



1. ON/OFF Mode: Select [Ignition] to power on/off the device (i.e., turning the car key starts the device).
2. Ignition Delay: Set the delay time for the device to shut down after the car key is turned off. The range can be set from 10 to 86,399 seconds, with the default being 300 seconds..
3. Video Delay: Set the delay time for recording after ignition shutdown. The range for recording delay will be dependent on the ignition shutdown delay time. The maximum recording delay time is determined by the ignition shutdown delay time, meaning recording delay time  $\leq$  ignition shutdown delay time.
4. Light Off Time: When an external display screen is connected, you can configure the time for the screen backlight to turn off. Options include "Never" and "Custom". Selecting "Custom" allows you to choose a duration from 1 to 3600 seconds.

- Sleep

Click [Preferences] > [Basic Setup] > [Time Setup] > [Sleep] to access the following interface:



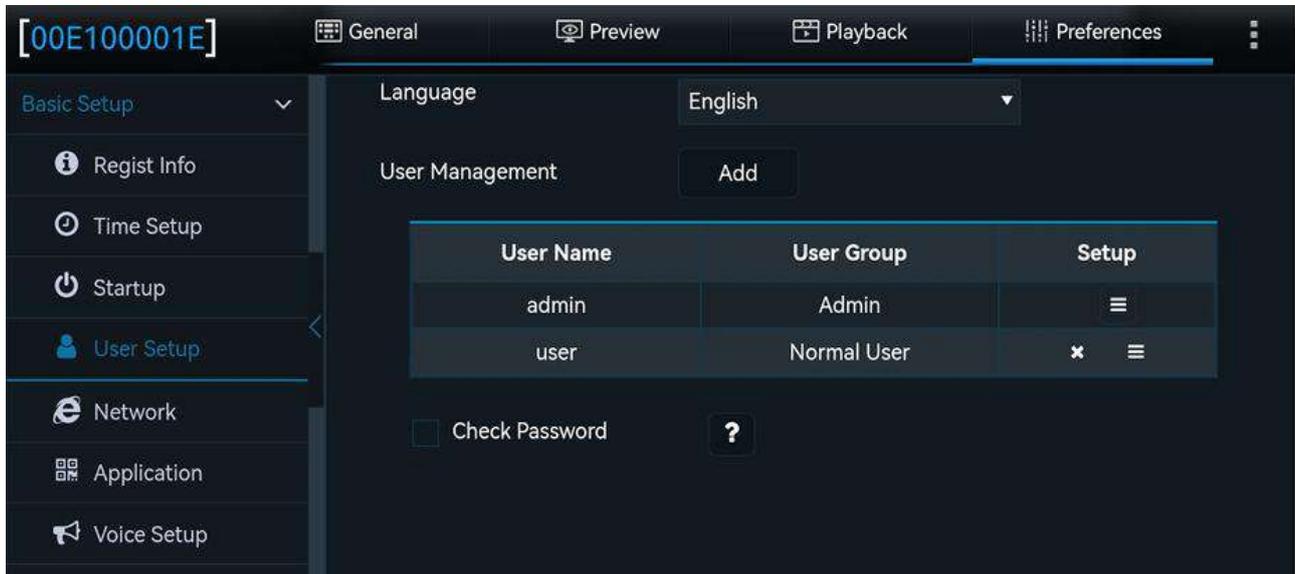
1. Sleep Mode: You can set it to no consumption standby.
    - [No consumption standby]: After the device is turned off either by ignition shutdown or timed shutdown, it will not wake up in this sleep mode.
  2. Sleep Time: Set the sleep time from 0 to 100 hours, with the default being 100 hours. Sleep time refers to how long the device remains in low-power standby without being woken up or started; after this period, the device will enter zero-power standby.
-  Note: The current device does not support sleep and related functions, such as sleep reporting and device wake-up. Therefore, the sleep function is not described in detail.
3. Low Voltage Protect: Check to enable low voltage protection.
  4. Battery Low Voltage Protect: To protect the car battery, when the battery voltage drops below the set value, the device will enter sleep mode if the car key is on, and shutdown mode if the car key is off.
  5. Voltage Startup: While in sleep mode, the device will return to normal boot-up status when the battery voltage exceeds the set value.
  6. Low Volt Upload: When enabled, low voltage protection will automatically report to the platform.



Special Note: If the low voltage protection function is not enabled, the default low voltage protection threshold is 7V.

## 5.6.4 User Setup

Click [Preferences] > [Basic Setup] > [User Setup] to access the following interface:



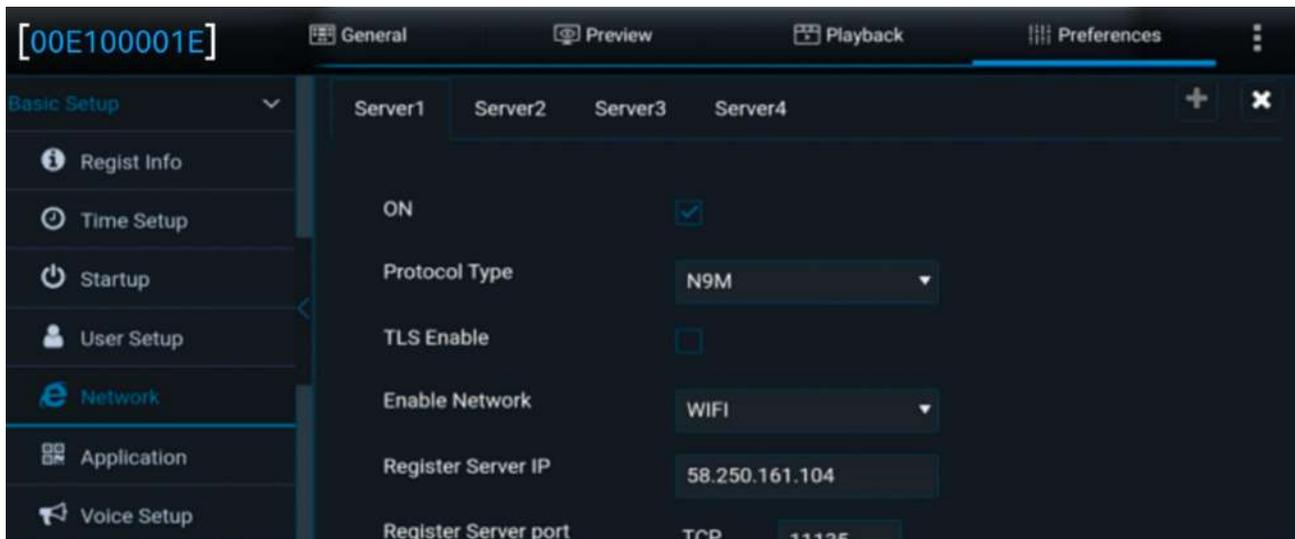
In the user setup interface, you can set the system language and login user account information. If you require a login password complexity, you can check the password complexity requirement below.

1. You can choose from seven languages and voice options: Chinese, English, Brazilian Portuguese, Latin American Spanish, French, Russian, and Japanese. In Veyes, users can only set the voice announcement; the interface language will automatically switch according to the phone's system language, and the interface text will not be affected by this setting. After setting it in Veyes and clicking save, the function will take effect.
2. Click the [Add] button to add a regular user and set the account password for the new regular user.
3. Click the button  in the user settings section to set the login account and password;
4. Admin: A default administrator account is provided. It has permissions to add/delete regular users, set parameters, and can add up to two regular users.
5. User: A default regular user account is provided, with query and setting permissions only.

### 5.6.5 Network

- Server Setup:

Click [Preferences] > [Basic Setup] > [Network] > [Server Setup] to access the following interface:



1. Clicking the button  on the right side of the interface to add a server. Click the button  to delete a server from the interface, but Server 1 cannot be deleted;
2. ON: Check to enable the server. Up to 4 servers can be enabled simultaneously. Uncheck to disable the server; the device will not report to that server, but the server parameters will be saved.
3. Protocol Type: Options include N9M and 808
  - [N9M]: Protocol type used for reporting to the CEIBA2 or FT Cloud video surveillance platform.
  - [808]: Protocol type used for reporting to the 808 platform (not used for overseas shipping).
4. Enable Network: The options available are Local, WiFi, Module, and Auto Adaptation. Auto Adaptation refers to the system automatically selecting an available network for platform connection. The adaptive priority is WiFi > Local > module.
5. Register Server IP: Enter the IP address or domain name of the registration server that

the device needs to report to.

6. Register Server Port: Enter the corresponding device end port for the platform that the device needs to report to.

7. TLS Enable: During the normal boot-up and operation of the device, the interaction data between the device and the platform is transmitted via TLS encryption, ensuring the security of the interaction data between the device and the platform. To use this feature, enable TLS and configure the encryption port number. Currently, only the FTCloud platform supports TLS encryption.



Warning: TLS encryption is not supported in the sleep mode.

8. Media Server IP: Enter the IP address of the media server where the device will report to the platform.

9. Media Server Port: Enter the IP address of the media server that the device needs to report to. **The default address and port for both the registration server and the media server are the same.**

10. Support for modifying server parameters via SMS: When the server address changes or experiences an issue, the device may disconnect from the server, causing all remote vehicle services to stop. To avoid this situation, you can modify the device's server IP address and port number via SMS.

Command Keyword: SMCM

Command Parameters: Server Index, Enable, N9M Registration Server, N9M Media Server, N9M Registration Server Port, N9M Media Server Port, Server Index, Enable, N9M Registration Server, N9M Media Server, N9M Registration Server Port, N9M Media Server Port, Server Index, Enable, N9M Registration Server, N9M Media Server, N9M Registration Server Port, N9M Media Server Port

Note: 113.14.232.88 -IP address 6605-Port

Enable: 0: OFF 1: ON

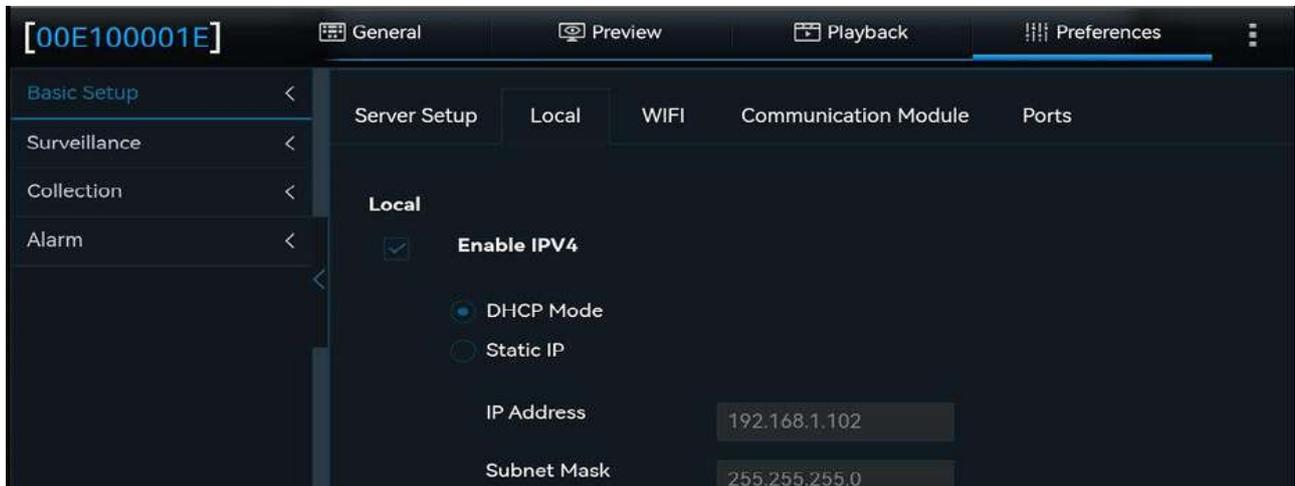
Example:

99admin,120223,SMCM1,1, 113.14.232.88, 113.14.232.88,6605,6606

(,1,1, 113.14.232.88, 113.14.232.88,6605,6606) (,1,1,113.14.232.88, 113.14.232.88,6605,6606)

- Local:

Click [Preferences] > [Basic Setup] > [Network] > [Local] to access the following interface:



In the local network settings interface, to avoid IP address conflicts and expand the address space, the IPV6 network protocol has been added in addition to IPV4. The IP address, default gateway, preferred DNS server, and alternate DNS server fields support up to 128 bytes. When recognized as an IPV6 address, there is no subnet mask, and it supports the input of letters, numbers, and symbols.

1. [Enable IPV4]: When IPV4 is enabled, the corresponding parameter setting interface is displayed.

[DHCP Mode]: Automatically obtain an IP address. When checked, the network automatically assigns a dynamic IP address. DNS can be dynamically assigned or statically specified.

[Static IP]: Use a static IP address, subnet mask, and default gateway. In this case, DNS must be statically specified.

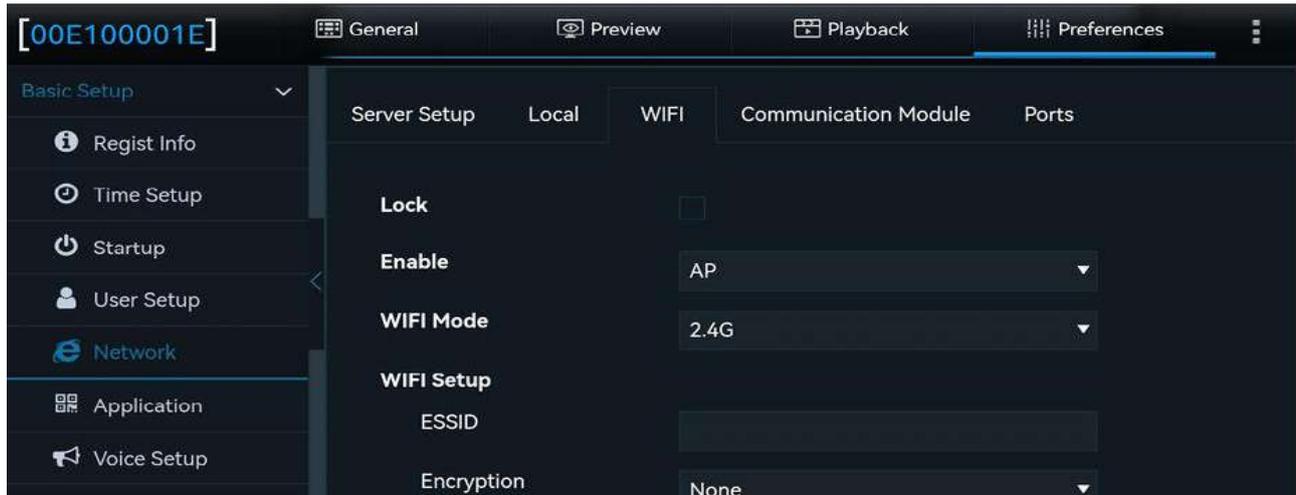
2. [Enable IPV6]: When IPV6 is enabled, the corresponding parameter setting interface is displayed. The parameter description is the same as for IPV4.



Note: Currently, only IPV4 network protocol is supported. The IPV6 network protocol is expected to be available in Q2 2024.

- **WIFI:**

Click on **【Preferences】 > 【Basic Setup】 > 【Network】 > 【WIFI】** , the interface is as shown in the following image:



1. [Lock]: WIFI hotspot parameter modification enable switch. When enabled, the WIFI hotspot parameters will not be modified when importing parameters.
2. [Enable]: WIFI connection mode, options include AP mode, Client mode, and Disable mode, with AP mode being the default.
  - AP: When configured in AP mode, the WIFI name automatically associates with the vehicle's license plate number. If related configurations are made in this interface, you will need to reconnect using the set parameters. The device always maintains hotspot status upon startup and during operation.
  - Client: When configured in Client mode and provided with the ESSID and password of nearby available WIFI, the device can automatically search for and connect to nearby WIFI hotspots. Once connected, it can use WIFI to report to the platform. When the vehicle re-enters this area, it will automatically reconnect. In Client mode, the device defaults to AP mode upon startup and switches to Client mode after 3 minutes (default value, configurable) if no Veyes connection is detected. To facilitate quick platform reporting upon startup, the duration of the AP mode after startup can be set. Depending on actual usage, set the appropriate AP mode duration after startup. If the startup AP mode duration is set to another value (0-180 seconds), the device will exit

AP mode and switch to Client mode for platform reporting if no Veyes connection is detected after this duration.

Note: The AP mode duration setting parameter is only displayed when WIFI mode is set to Client mode or Disable mode, and it only controls the AP mode entered after startup.

To switch to AP mode during normal device operation, use CP4 or an external maintenance device to set it to AP mode.

- Disable: When configured as Disable, the WIFI network is not enabled, and Client mode is ineffective. By default, the device operates in AP mode within the first 3 minutes after booting. After 3 minutes, it can be set to AP mode through CP4 or Veyes tool.

3. [WIFI Mode]: When the WiFi mode is set to AP mode, you can set the WiFi frequency band, with options including 2.4G, 5G, or Auto.

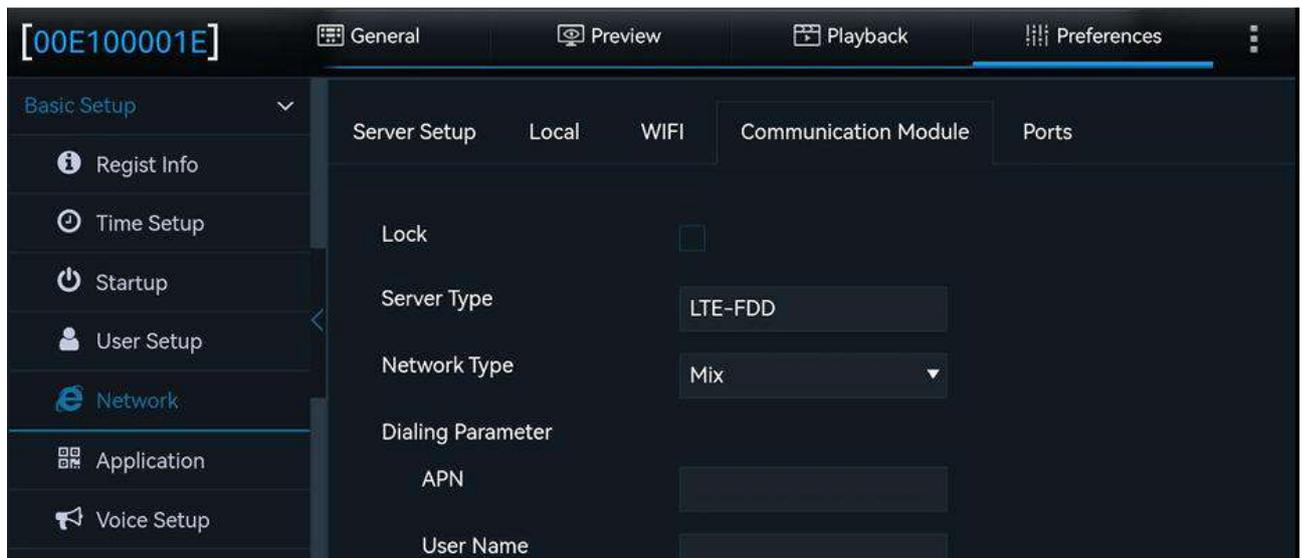
4. [ESSID]: In AP mode, this is the hotspot name when the device acts as a hotspot. It is the WIFI name used by mobile terminals to connect to the device (no longer the serial number). Once connected, Veyes can be accessed, and the mobile terminal can use the internet (hotspot enable needs to be turned on). In Client mode, this is the WIFI name the device uses to connect to an external WIFI.

5. [Encryption]: In AP mode, options include None, WEP, WPA. In Client mode, options include None, WEP, WPA/WPA2-PSK, WPA2.ENTERTPRISE.

6. [Password]: In AP mode, the password refers to the password required to connect to the device's hotspot. Users need to input the correct password to connect to the WiFi. If the hotspot name and password are not set, no password is required; users can connect directly by clicking on the serial number or license plate number. In Client mode, the password refers to the password used by the device to connect to external WiFi networks.

- Communication Module:

Click [Preferences] > [Basic Setup] > [Network] > [Communication Module] to access the following interface:



1. [Server Type]: After inserting the SIM card, the device will automatically detect and display the communication module type. If there is no module, it will display "No service".

2. [Network Type]: By default, the communication module is set to mix mode, which supports 2G/3G/4G.

3. [Dialing Parameters]: Include access point, username, password, data service number, and authentication method (None, PAP, CHAP, or Mixed). Enter the parameters provided by the SIM card manufacturer. The default is empty; if empty, the program's built-in parameters are used for dialing.

4. [Active mode]: The network module can be activated by external conditions. The dial-up activation modes include: Always and Phone/SMS.

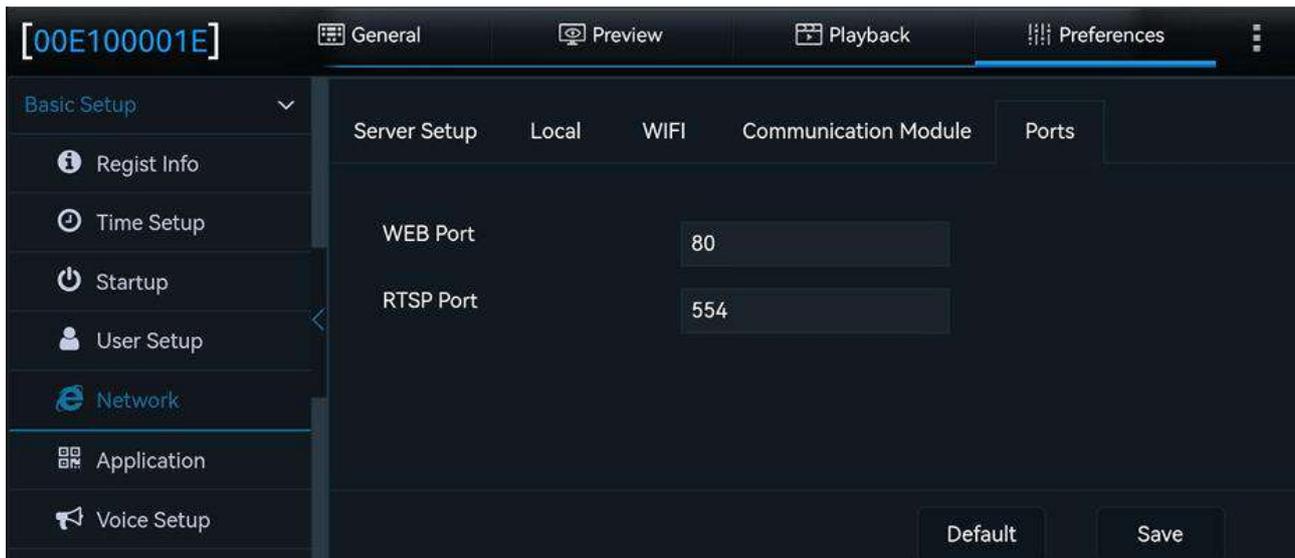
1) [Always]: After the device starts, the network module automatically begins dialing and connects to the server.

2) [Phone/SMS]: After the device starts, the network module does not work. It only activates and begins dialing to connect to the server when a phone call or SMS is sent to the device's phone number. Up to 3 phone numbers can be configured for activation.

#### ● Ports

WEB Port: Default is 80. This port is used for IE access.

RTSP Port: Default is 554. After logging in with the correct username and password, the host uses a fixed IP address for real-time video preview and playback via RTSP.



Warning: Each stream supports only one RTSP request at a time.

RTSP stream pulling format

a. Main streaming video: `rtsp://user:pwd@IP:554/mainstreamX`

b. Sub streaming video: `rtsp:// user:pwd@IP:554/substreamX`

X is Channel number, Start from zero

For Example:

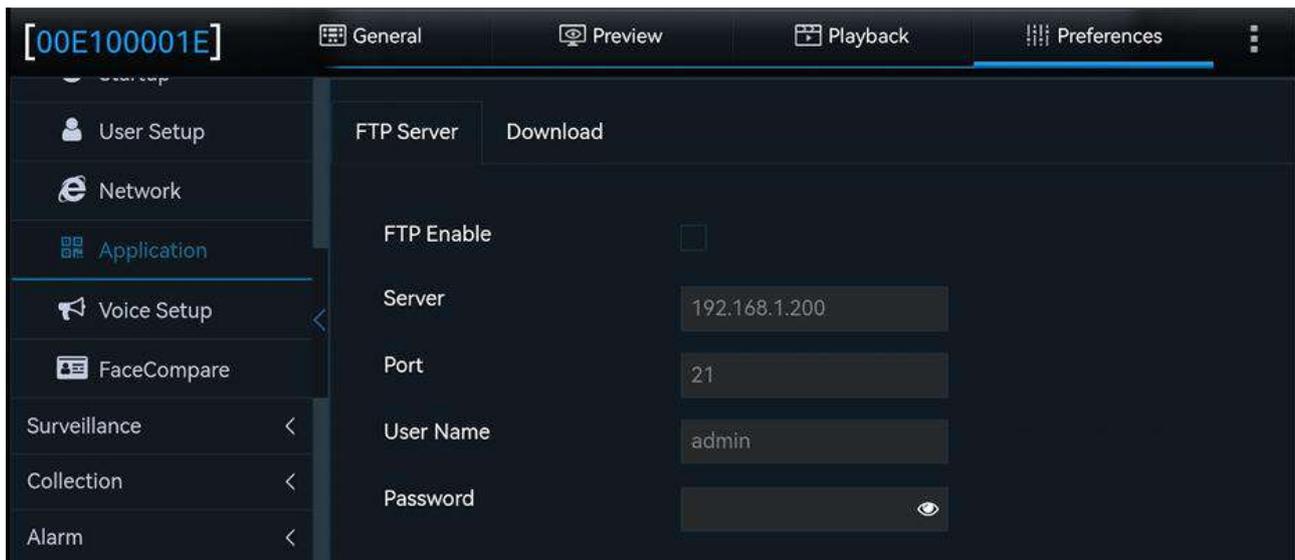
`rtsp://admin:admin@10.20.112.17:554/mainstream0`

`rtsp://admin:admin@10.20.112.17:554/substream1`

### 5.6.6 Application

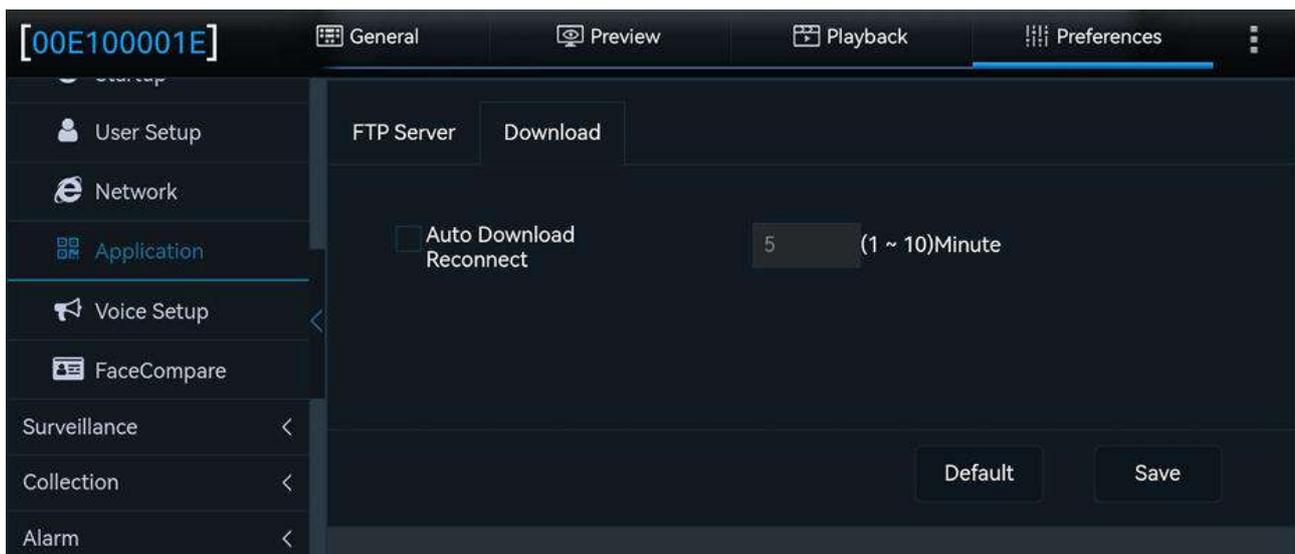
- FTP Server:

The device supports connecting to an FTP server. After configuring the IP, port, username, and password for an already established FTP service, the device can connect to the FTP server to upload images or download files. Navigate to [Preferences] > [Basic Setup] > [Application] > [Communication Module] > [FTP Server] to access the following interface:



- Auto Download:

Automatic download is currently not supported, so this feature will not be elaborated on.



### 5.6.7 Voice Setup

Click [Preferences] > [Basic Setup] > [Voice Setup] to manually set the TTS voice, CP4 amplifier volume, and preview volume. The selectable range is 0~63. The interface is shown below:

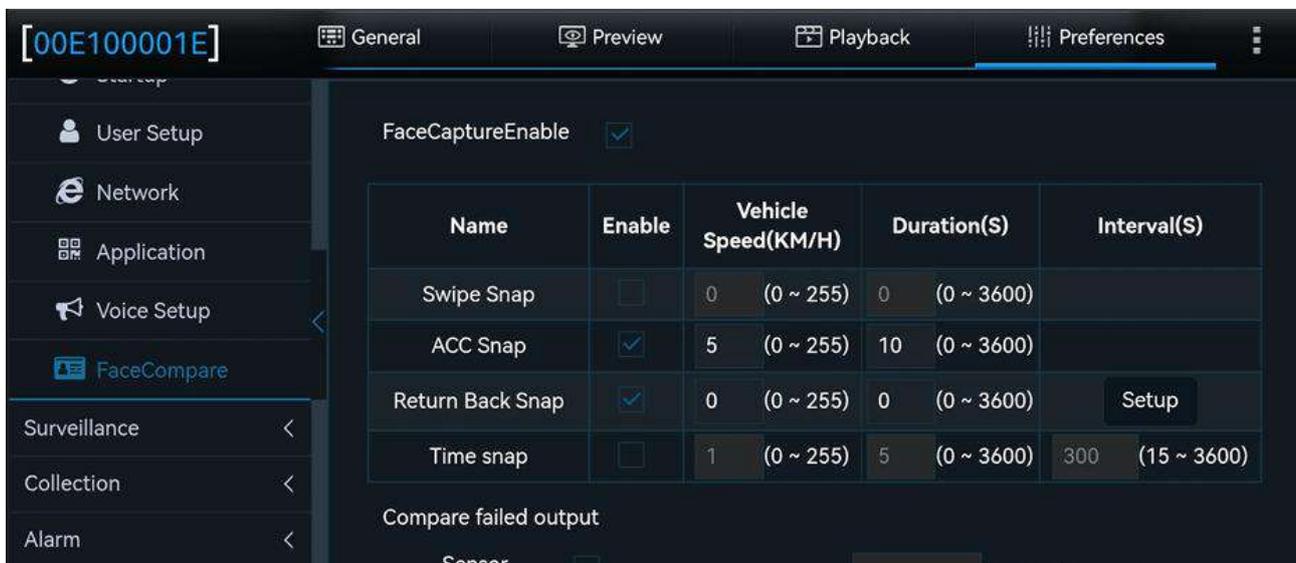


Warning: TTS currently only supports Chinese and English voices.

### 5.6.8 FaceCompare

Click [Preferences] > [Basic Setup] > [FaceCompare] to set driver face comparison parameters.

This feature needs to be used in conjunction with the FT Cloud platform. The interface is shown below:





1. [FaceCaptureEnable]: Face comparison enable switch. Check to enable the face comparison feature.
2. [DMS]: Set the face comparison similarity threshold. If the similarity is greater than or equal to the set threshold, it is considered the same driver.
3. Snap Methods:
  - Swipe Snap
  - ACC Snap: Requires ACC to go from off to on, and speed input, then the device captures.
  - Time Snap: Set the timer from 60 to 3600 seconds, with 300 seconds as the default.
  - Leave and Return Face Comparison: When the no-driver alarm is triggered and then cleared, the device captures.



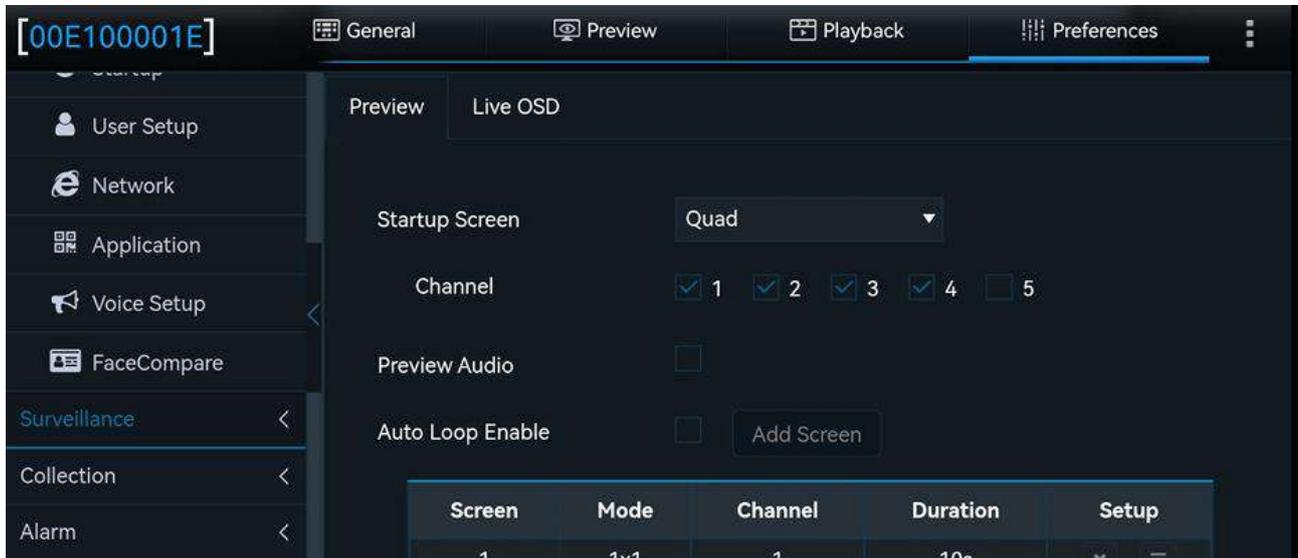
Warning: The card insertion capture method in the face comparison function is in the design stage and has not yet reached commercial release. If you need to use this feature, please contact your local distributor or technical support for confirmation.

## 5.7 Surveillance

### 5.7.1 Preview

The preview settings interface is primarily used for configuring the display format on an

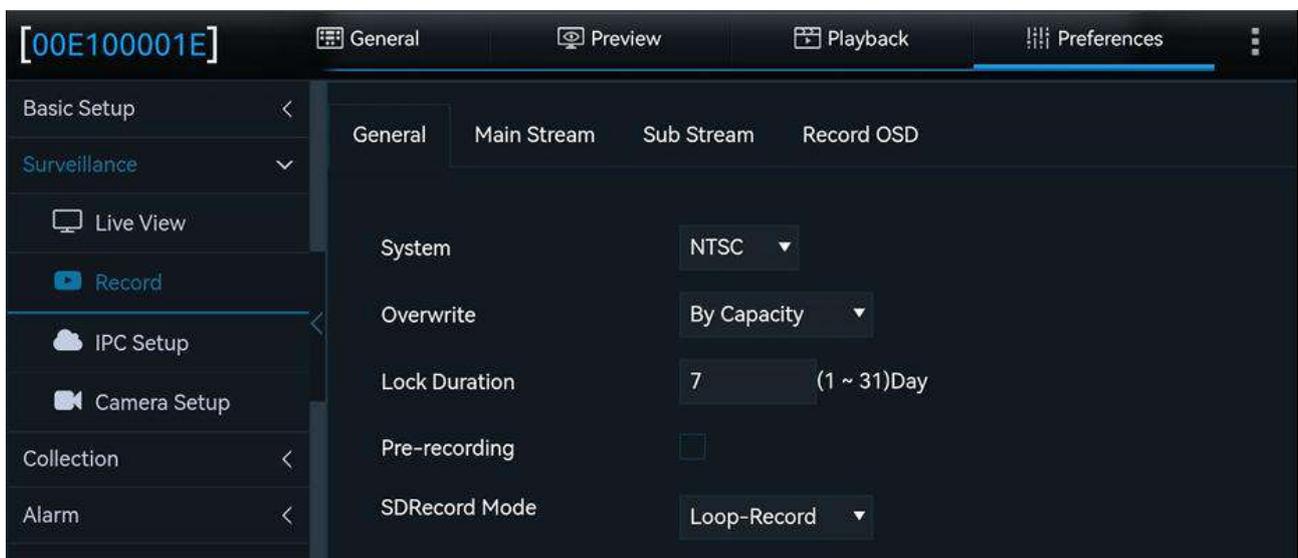
external screen, supporting single-screen and quad-screen display modes. When in single-screen display mode, you can select which channel to display. Navigate to [Preferences] > [Surveillance] > [Live View] to access the following interface:



## 5.7.2 Record

### 5.7.2.1 General Setting

This functionality includes selecting system standards, automatic overwrite function, recording lock days, pre-recording, SD card recording mode, and dual-stream recording mode for the hard drive. Click on **【Preferences】 > 【Surveillance】 > 【Record】 > 【General】** , The interface is as shown in the following image:



1. [System]: System standards include PAL and NTSC.



Warning: The system standard setting must match the video source (camera standard) to ensure device compatibility. Otherwise, the device may fail to recognize the camera.

2. [Overwrite]: Optional coverage by capacity, by days, by minutes, or never .



Special Note: Locked recordings can only be covered and deleted after the protection time is lifted or manually unlocked.

- Default coverage mode is by capacity:
  - 1) When the remaining storage space is insufficient, the system will automatically overwrite historical recordings to store new recordings, generally starting automatic overwrite when the remaining capacity is less than 1%. The overwrite process is based on storage blocks, which vary in size depending on the storage capacity. Users do not need to worry about the detailed specifics.
- Overwrite by capacity will always prioritize the earliest recordings. Locked recordings will be overwritten once the lock period expires or they are manually unlocked.
- Coverage by days:
  - 1) Coverage by day means overwriting based on the number of days set for storage. The configurable range for days is 1-31.
  - 2) If the configured number of days is 1, recordings are retained for only 1 day. If the configured number of days is 31, recordings are retained for 31 days before overwriting begins.
  - 3) Recording retention for 31 days occurs when there is sufficient space on the storage disk. For instance, if the set duration is 31 days but the actual recording can only be stored for 7 days due to limited space, the SD card will start overwriting once it's full.
- No coverage: The main stream recording, mirrored stream, sub-stream, and alarm stream do not activate the coverage function. Recording stops when the storage is full.
- Coverage by minutes:

Coverage by minute can be set between 30 to 1440 minutes, with a default of 30 minutes.

This means that when the recording duration reaches the set length, it will trigger recording coverage. The coverage accuracy is approximately 1 minute, implying that if set to 30 minutes, the maximum recording duration will not exceed 31 minutes.

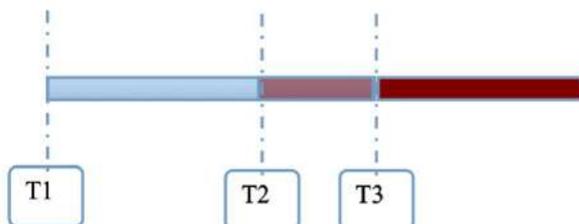
### 3. [Lock Duration]:

Recording Lock Duration: This is a time protection feature designed for locked recordings to prevent premature deletion. The default retention period is 7 days. To set recordings as locked, please refer to [Preferences] > [Alarm].

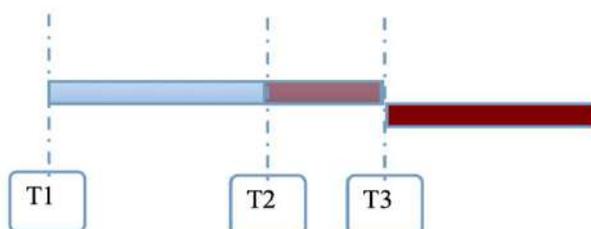
### 4. Pre-recording

When in alarm recording mode, it will extract recordings from a period preceding the triggered alarm event, facilitating event analysis. The default duration is 15 minutes, with options ranging from 1 to 60 minutes.

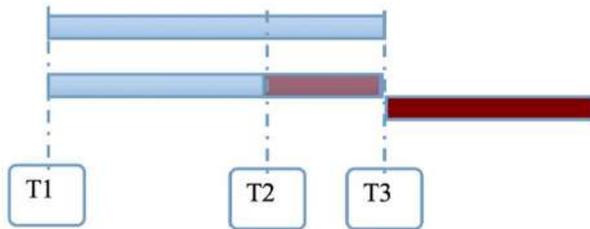
- 1 For regular recording, when an alarm occurs, a segment of the preceding regular recording is captured and marked as alarm recording based on the pre-alarm duration set in the alarm linkage. Let's denote T1 to T3 as regular recordings. When an alarm occurs at T3, the regular recording segment from T2 to T3 is marked as alarm recording, and subsequent segments are marked according to the alarm recording label.



- 2 In the absence of regular recordings and with the pre-recording switch turned on, the device will establish a pre-recording stream segment upon booting. When an alarm occurs at T3, the segment from T2 to T3 in the pre-recording stream is marked as alarm recording.



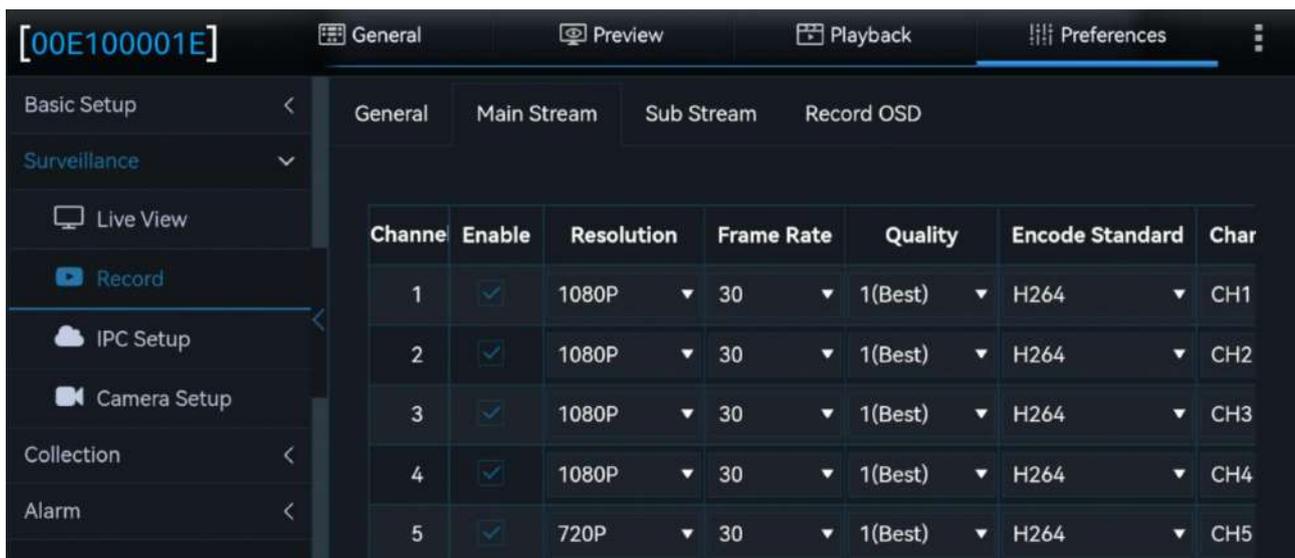
- 3 When there are non-alarm recordings that consist of I-frame recordings: Upon startup, two stream segments are established: one for I-frame recordings and one for pre-recording. When an alarm occurs, the segment from T2 to T3 in the pre-recording stream is marked as alarm recording.



5. [SDRecord Mode]: SD card recording modes include sub-stream recording, mirrored recording, alarm recording backup, loop recording.
- [Sub-Record]: Store sub-stream recordings on the SD card.
  - [Mirror Record]: Mirror recording parameters use all main-stream parameters. Mirror recording data includes video data, log information, and black box data. If the main-stream video channel is turned off, mirror recording for that channel will also be disabled.
  - [Alarm Backup]: Only store recordings when an alarm occurs.
  - [Loop-Record]: For dual MicroSD cards, this means loop recording.

### 5.7.2.2 Main Stream

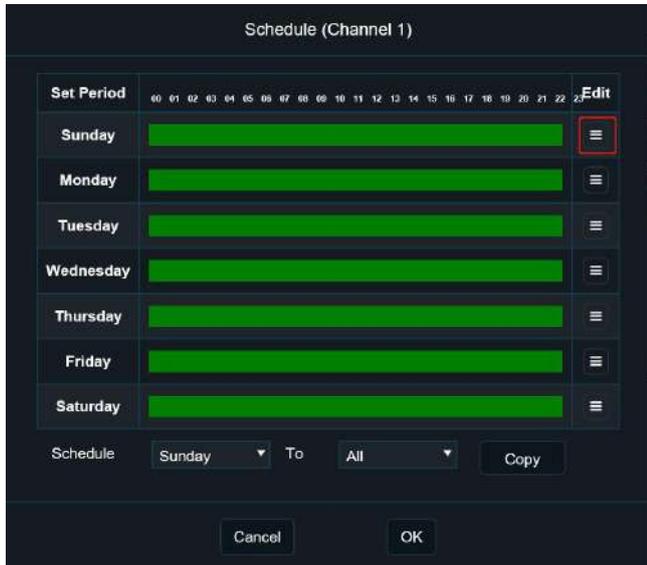
In this interface, you can set the recording mode, recording parameters, and audio recording parameters for each channel. Navigate to [Preferences] > [Surveillance] > [Record] > [Main Stream] to access the following interface:



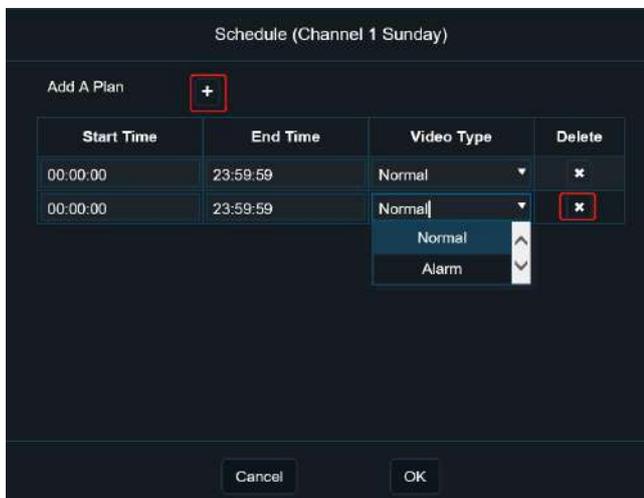
Note: Each channel can be individually set for recording mode. Once selected, the recording mode will apply to both sub-stream and mirror recording modes.

1. [Enable]: Checking this option will enable main stream recording functionality;
2. [Resolution]: If a digital camera is connected, the available options are typically 720P and 1080P (the selectable resolution is determined by the supported resolutions of the digital camera). If an analog camera is connected, the available options include CIF/WCIF/HD1/WHD1/D1/WD1/720P/960P/1080P;
3. [Frame Rate]: Recording frame rate refers to the number of frames displayed per second. For PAL cameras, the options range from 1 to 25 frames per second, while for NTSC cameras, the options range from 1 to 30 frames per second;
4. [Quality]: Recording quality can be selected from 1 to 8, with smaller numbers indicating better quality. Quality 1 represents the highest quality;
5. [Encode standard]: Options include H264 and H265, with H264 as the default;
6. [Channel Name]: Custom channel names are available;
7. [Record Mode]: Options include Power UP, Timer and Alarm;
  - Power UP: When there is a MicroSD card and recording is enabled, continuous recording means the device will always record while it is on;
  - Alarm: When the device triggers an alarm, recording begins. Alarm recording settings can be found in [Preferences] > [Alarm]. It's also possible to pre-record footage before the alarm triggers;
  - Timer: To schedule recordings based on set times, click on the  button next to

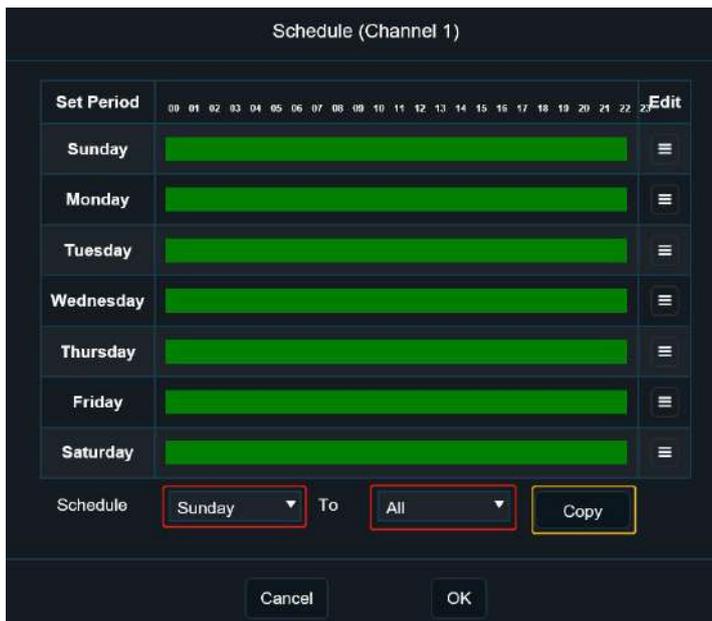
scheduled recording. This will take you to the following interface. Then, click on the  button next to the corresponding day on this interface to add a scheduled recording plan;



In the following interface, click  to add a scheduled recording time plan. Once added, you can click  on the right side of the plan to delete it. In this interface, you can specify whether the recording is a regular recording or an alarm recording.



After setting up the scheduled recording plan for a specific day, click the [OK] button to return to the previous step. Use the [Copy] button to copy the scheduled recording plan for that day to other dates, as shown below:



## 8. [Audio]

Note: Standalone audio recording function is not supported.

- Recording: Indicates whether audio recording is enabled during video recording. Options include “Always Audio” and “No Audio”, with “Always Audio” being the default choice.

1) Audio: Audio recording is enabled throughout the video recording.

2) No Audio: Audio recording is disabled throughout the video recording.

9. [Alarm Quality]: Configure the quality of the alarm recording. The smaller the number, the better the quality.

10. [Encode Mode]: Options include VBR (Variable Bit Rate) and CBR (Constant Bit Rate), with VBR as the default.

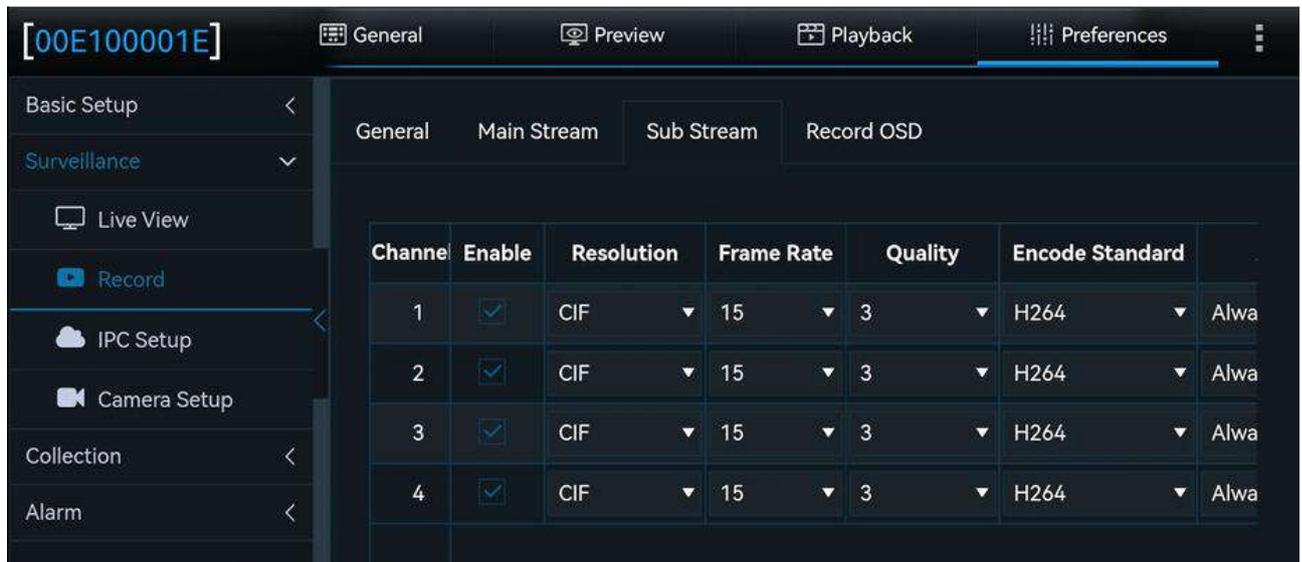
11. [Audio Coding Format]: Options include G711A, G711U, and ADPCM, with ADPCM as the default.

### 5.7.2.3 Sub Stream

In this interface, you can set the sub-stream recording parameters and audio recording parameters for each channel.

Note: Sub-stream recording is only possible if the recording mode is set to sub-stream recording and there is a MicroSD card in the second slot.

Click [Preferences] > [Surveillance] > [Record] > [Sub Stream] to access the following interface:



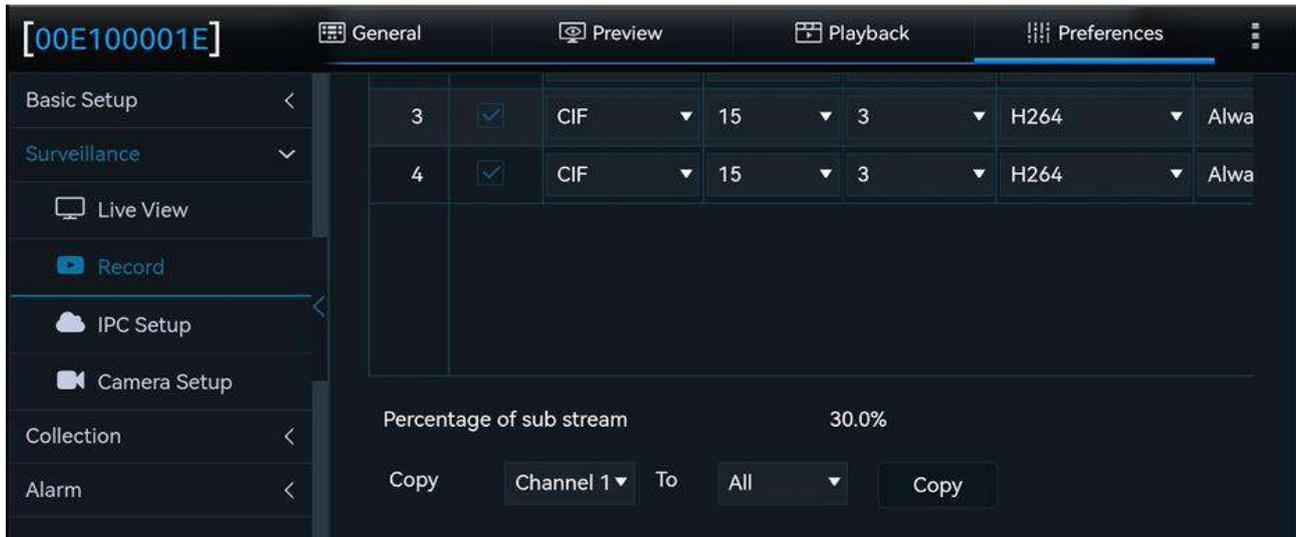
1. [Enable]: Check to enable the sub-stream recording function for the corresponding channel;



Special Note: The current device does not support sub-stream recording. If the main stream is disabled, the entire video input will be turned off.

2. [Resolution]: Options are CIF/HD1/D1;
3. [Frame Rate]: Recording frame rate, which is the number of frames displayed per second. For PAL cameras, the selectable range is 1-25 frames, and for NTSC cameras, it is 1-30 frames. The default sub-stream frame rate is 15 frames;
4. [Quality]: Recording quality can be selected from 1 to 8, with smaller numbers indicating better quality. Quality 1 represents the highest quality;
5. [Encode Standard]: H.264 and H.265 are available options, with H.264 being the default;
6. [Audio]: Indicates whether audio recording is enabled during video recording. Options include Always Audio and No Audio;

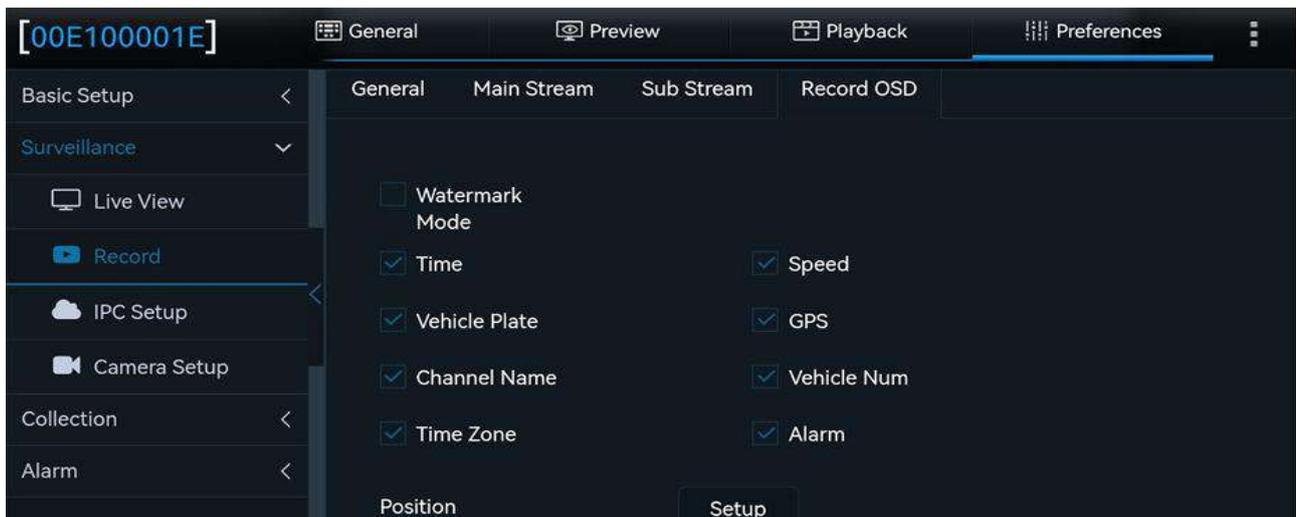
Clicking the [Copy] button below allows you to copy the sub-stream settings parameters of a particular channel to other channels. As shown in the image below:



Special Note: The documentation package includes a bitrate calculation tool, which can help calculate the required disk size based on the desired recording specifications. The capacity calculated by this tool is theoretical and is provided for reference purposes only.

### 5.7.2.4 Record OSD

Click [Preferences] > [Surveillance] > [Record] > [Record OSD] to enter the recording overlay settings interface, as shown below:



The OSD overlay function here is for recording, which can overlay selected information onto the recording display, distinguishing it from the OSD overlay information for direct preview. The recording OSD supports the enabling selection of 8 regions and also supports position setting.

Additionally, to better provide OSD overlay capability and effect on the platform side, especially to overlay AI processing information, the recording watermark mode function has been added in this interface. After enabling this function, watermark information can be overlaid on the video of analog channels.

### 5.7.3 IPC Setup

In the camera setup interface, you can perform operations such as flip, mirror, and rotate for each channel's camera. Navigate to [Preferences] > [Surveillance] > [Camera Setup] to access the following interface, as shown below:



In the lower left corner of the interface, select the channel for which you want to adjust the image. In the upper right corner of the interface, you can set the camera's rotation angle, whether to mirror the image, and whether to flip the image vertically.



Warning: Generally, the MDVR is set to the correct image angle by default when shipped. Please do not change the image angle or mirror settings arbitrarily, as this may cause abnormal images. The company is not responsible for any issues arising from such changes.

## 5.8 Collection

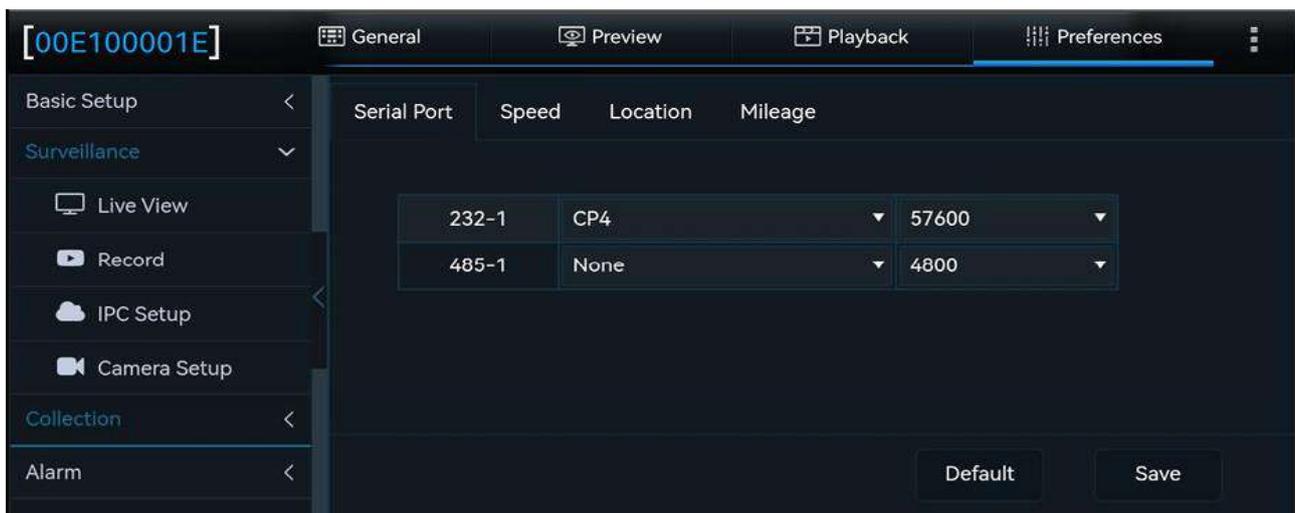
The data collection interface allows you to set parameters such as serial port, speed, location,

mileage, Snap.

### 5.8.1 General

The general settings interface is primarily used to set parameters such as serial port, speed, positioning, mileage.

- 1) Click [Preferences] > [Collection] > [General] > [Serial Port] to enter the serial port settings interface:

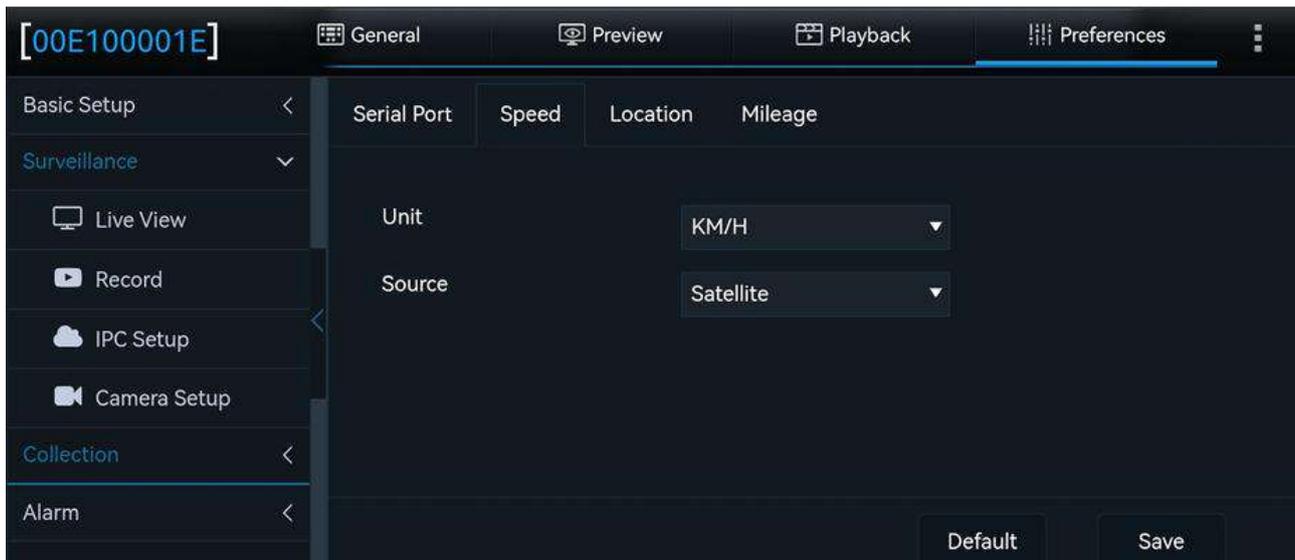


Serial Port: You can select the external device to be connected. The baud rate will automatically adjust to the corresponding value. If incorrect, it can also be adjusted manually.

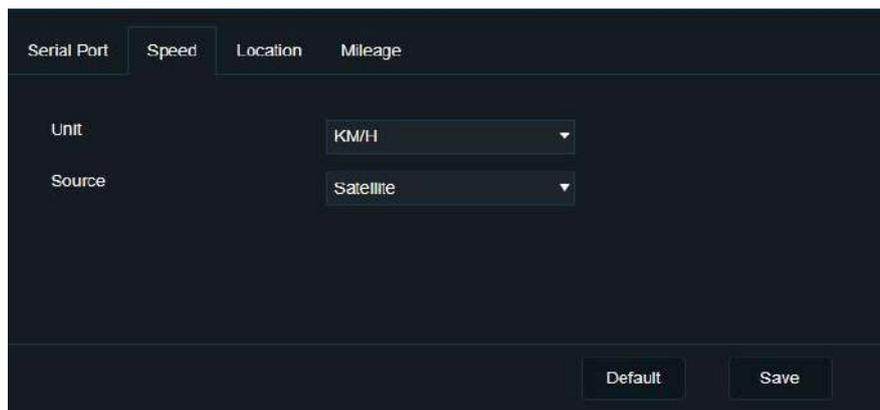


Note: The F6N supports external CP4 for display purposes. The default use of the 232-1 serial port in this configuration is for CP4.

- 2) Click [Preferences] > [Collection] > [General] > [Speed] to enter the following interface:



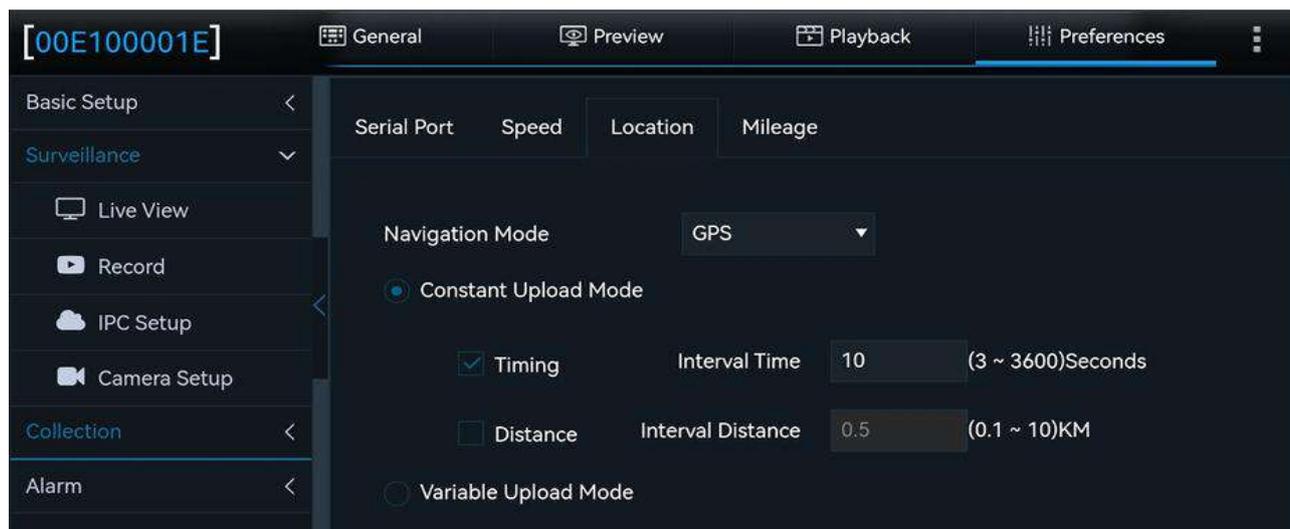
1. [Unit]: Set the unit for vehicle speed: KM/H and MPH
  2. [Source]: You can select Satellite
- When the speed source is selected as Satellite, the interface is as shown as below:



- 3) Click [Preferences] > [Collection] > [General] > [Location] to enter the GPS reporting strategy settings interface. You can choose different methods for uploading GPS signals according to market needs.



Warning: The interface for setting parameters will only be displayed when the device detects the GPS module.



GPS reporting can be based on the ACC (Accessory) status and divided into constant upload mode and variable upload mode:

ACC status	Constant Upload	Variable Upload
ACC ON	1. Timing Upload: The time can be manually adjusted, with options ranging from 3 to 3600 seconds, defaulting to 10 seconds; 2. Distance Upload: The interval can be manually adjusted, with options ranging from 0.1 to 10 km; 3. Timing Upload and Distance Upload can be selected simultaneously.	As per the detailed description, please note that "Constant Upload" and "Variable Upload" can only be chosen separately, meaning once "Constant Upload" is selected, "Variable Upload" cannot be selected, with "Constant Upload" being the default option.

1. Detailed Description of Variable Upload:

Firstly, define two states: moving start and moving stop. Variable upload means reporting based on the change of these two states.

Next:

- Moving Start: When the vehicle's speed exceeds a certain value for a specific duration, it is considered to be moving. The default speed is 30 km/h, and the default duration is 60 seconds.
- Moving Stop: When the vehicle's speed falls below a certain value for a specific duration, it

is considered to be stopped. The default speed is 20 km/h, and the default duration is 5 minutes.

Upload Method:

- When the state changes from moving stop to moving start:

Timing Upload: The time can be manually adjusted, defaulting to 60 seconds.

Distance Upload: The interval can be manually adjusted, defaulting to 0.1 km.

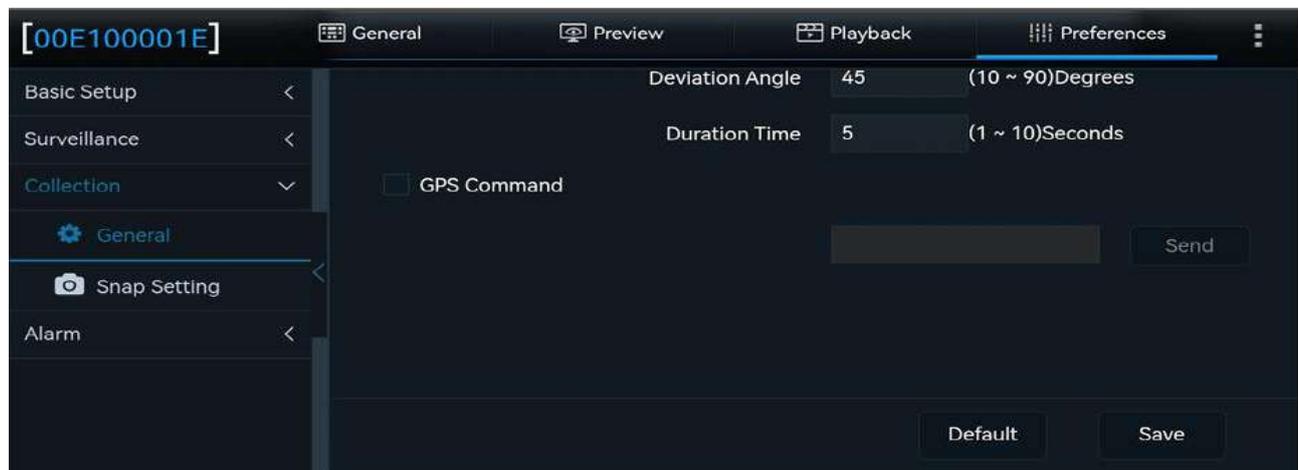
- When the state changes from moving start to moving stop:

Timing Upload: The time can be manually adjusted, defaulting to 60 seconds.

2. Multiple reporting when there is significant change in vehicle's driving angle: Users can set the angle themselves, with the default being reporting a GPS data point when the angle reaches 45°.

3. When uploading GPS information, simultaneously report ACC status information.

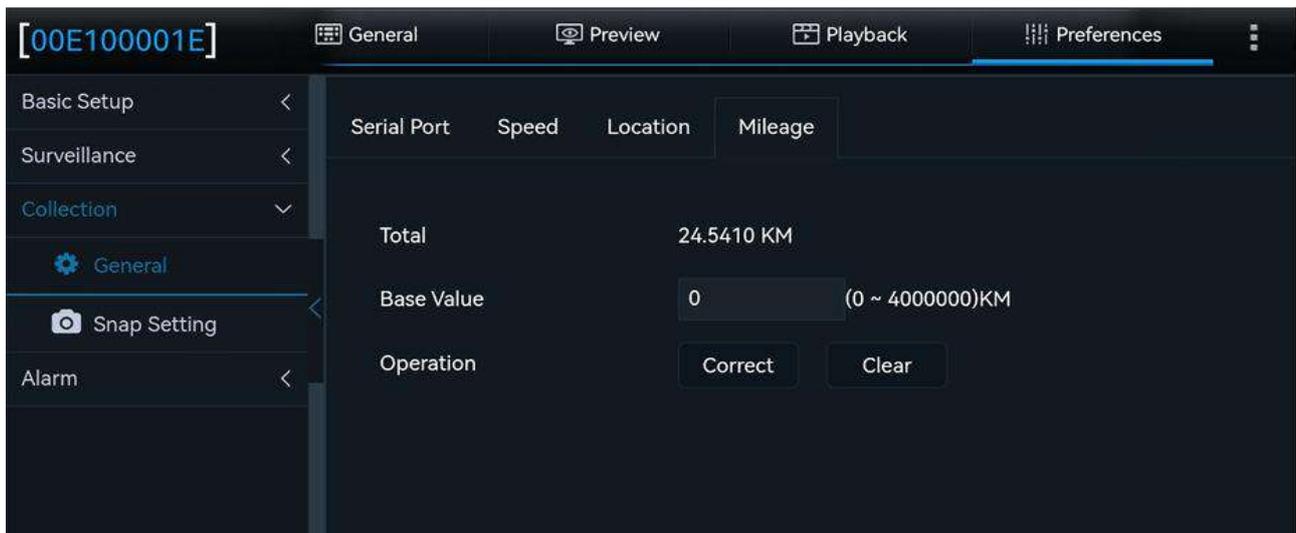
GPS Command: To ensure that raw GPS data can be obtained for analysis when there are issues with inertial navigation GPS, a command for obtaining raw GPS data has been added. In the [Location] > [GPS Command] command input box, enter "log gpgsv", then click send to save. This action will enable the logging of raw GPS data. These data will be recorded in the device's black box, accessible either locally on the device or remotely through the platform. After parsing, usable GPS data can be obtained for analysis. The GPS raw data recorded in the black box includes RMC, GGA, GSA, GSV, and GPATT. The interface is as shown in the figure below:



When the log gpgsv command is sent, the general information display interface in Veyes will show the satellite positioning signals received by the device. In [General] > [Location Information], you can view the number of satellites and the corresponding satellite signal quality.

4. Click on [Preferences] > [Collection] > [General] > [Mileage] to enter the mileage setting interface. You can set the mileage base value and perform calibration and reset operations on the

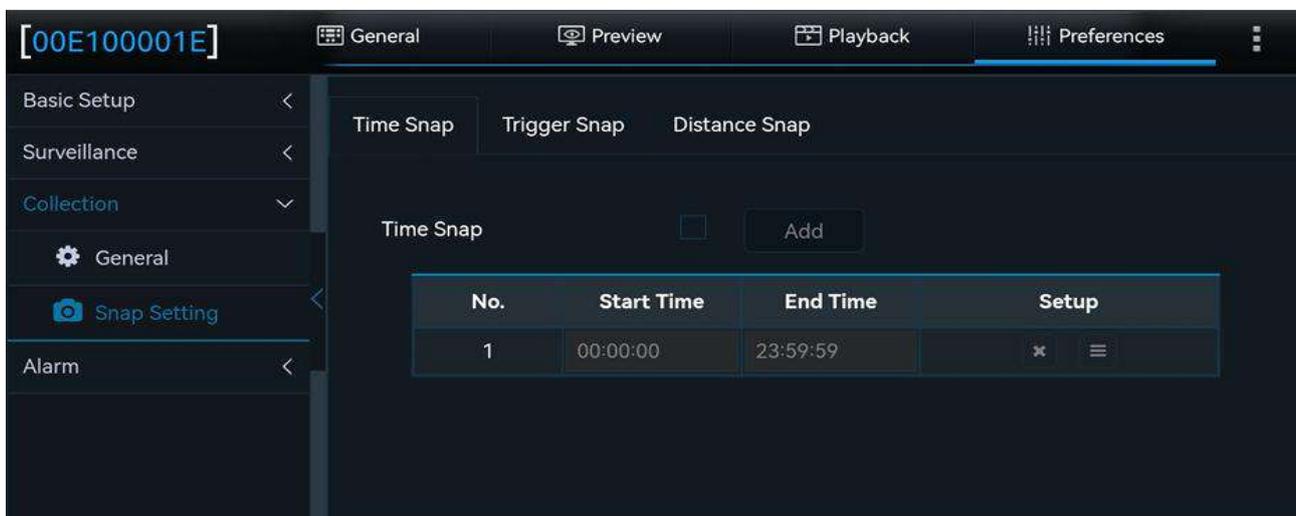
mileage value, as shown in the following image:



## 5.8.2 Snap Setting

### 5.8.2.1 Time Snap

You can set time periods for automatic snapshots at specified intervals. Click on [Preferences] > [Collection] > [Snap Setting] > [Time Snap]. The interface for setting timed snapshots is shown in the figure below:



- Check the enable switch to activate scheduled snapshots. Click the [Add] button to add a time period for the time snapshots.
- Start/End time:
  - 1) Set a time period to enable the snapshot function within that period;
  - 2) The time period for scheduled snapshots is within a day;

- 3) Up to 8 time periods for scheduled snapshots are supported per day;
  - 4) You can add, delete, or edit time periods.
- Each time period can be set with independent snapshot parameters. Click on [Setup] , to enter the snapshot linkage interface, as shown below:

Snap Link Set (Time Snap 1)

Channel	Snap Enable	Resolution	Quality	Upload Type	Snap Numbers (1~3)Pcs	Interval (5~7200)Seconds
1	<input type="checkbox"/>	D1	1(Best)	Setup	1	5
2	<input type="checkbox"/>	D1	1(Best)	Setup	1	5
3	<input type="checkbox"/>	D1	1(Best)	Setup	1	5
4	<input type="checkbox"/>	D1	1(Best)	Setup	1	5
5	<input type="checkbox"/>	720P	1(Best)	Setup	1	5

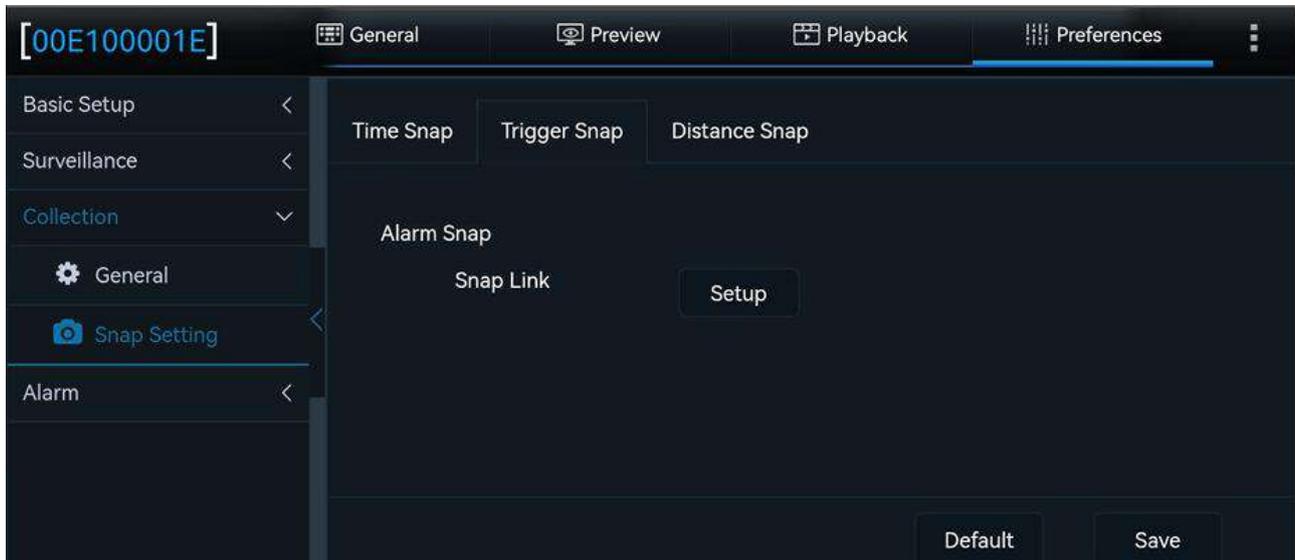
Copy  To  Copy

Cancel OK

- 1) Channel: Select the camera channel for snapshot;
- 2) Snap Enable: Check to enable time snapshots for this channel;
- 3) Resolution: Select the snapshot resolution;
- 4) Quality: Choose from 1 to 8, with 1 being the best image quality;
- 5) Upload Type: Supports FTP upload and HTTP upload. You can automatically upload snapshots via FTP. For FTP settings, refer to [Preferences] > [Basic Setup] > [Application] > [Communication Module] > [FTP Server]. When selecting HTTP snapshot, the images will be uploaded to the specified platform via HTTP. HTTP parameters are empty by default, and the HTTP address is sent from the platform.
- 6) Number of Snapshots per Time: Set from 1 to 3;
- 7) Snapshot Interval: The interval between snapshots during this time period, in seconds;
- 8) Copy Style: Copy the settings to other video channels.

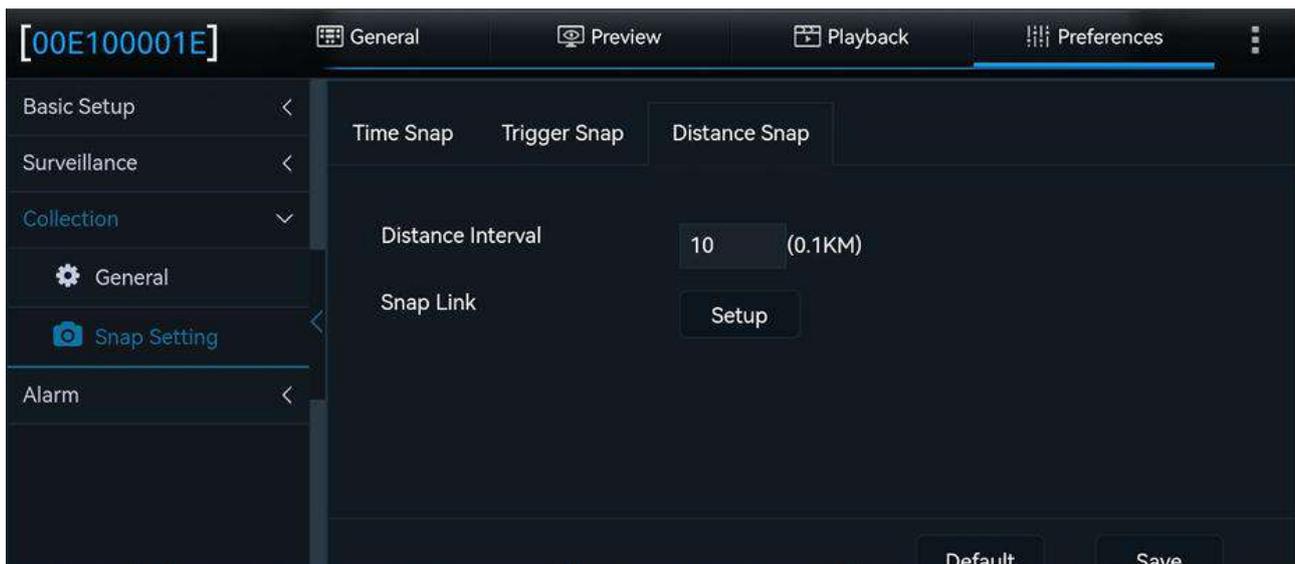
### 5.8.2.2 Trigger Snap

Supports alarm-triggered snapshots, which start capturing images when an alarm is triggered. Click on [Preferences] > [Collection] > [Snap Setting] > [Trigger Snap]. The trigger snapshot settings are the same as for time snapshots and will not be detailed here.



### 5.8.2.3 Distance Snap

Supports distance snapshot, meaning images are captured at fixed intervals and uploaded to the platform. Click on [Preferences] > [Collection] > [Snap Setting] > [Distance Snap]. Distance snap is disabled by default, and the distance unit follows the system unit. The setting method for snapshot linkage is the same as for timed snapshots, except that there is no setting for snapshot time interval in distance snap setting.



Warning: The snapshot function consumes a certain amount of system resources. The overall

upper limit for various snapshot settings is an average of no more than 3 snapshots per 5 seconds for all channels combined. Streamax is not responsible for any system resource issues caused by frequent snapshots due to these settings.

## 5.9 Alarm

### 5.9.1 Base

In the basic alarm settings interface, you can configure IO alarms, speed alarms, panel alarms, and GPS alarms.

Click [Preferences] > [Alarm] > [Base] to enter the following interface:



This device uses the corresponding power box and supports 4-channel IO input.

- IO Alarm interface:

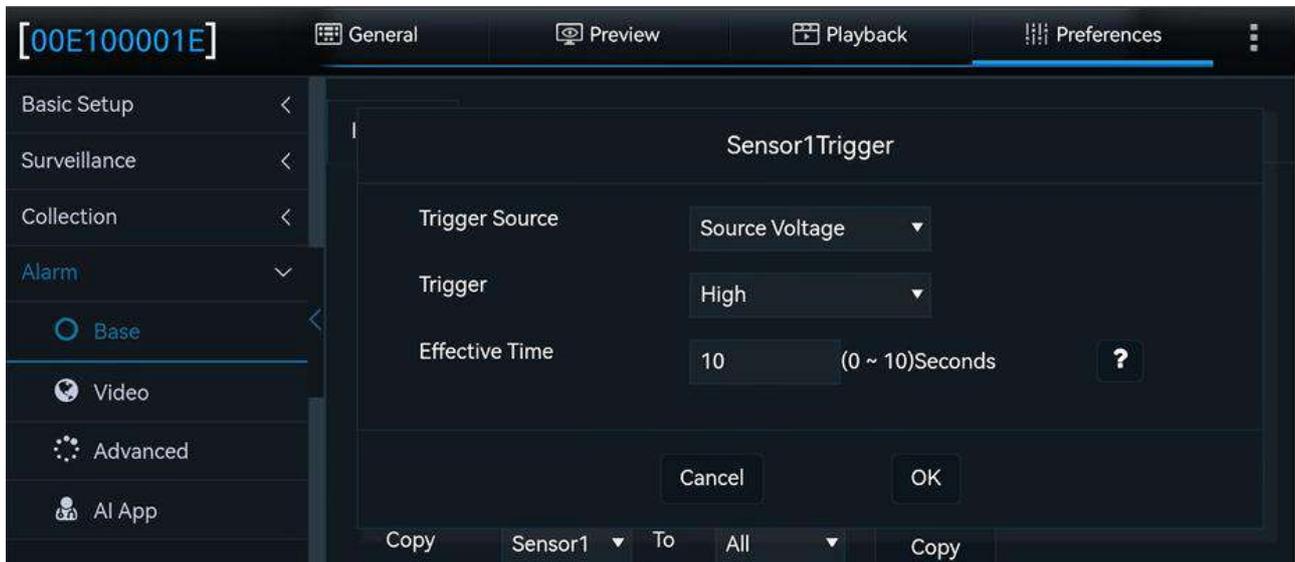
1. Number: Options include Sensor1, Sensor2, Sensor3, and Sensor4;
2. Name: The IO name can be customized and modified by clicking on it;
3. Name Abbreviation: The abbreviation for the IO name can be customized for OSD overlay information;

4. Alarm Type: Includes Alarm and Event

- Alarm:

- 1) Alarms can be overlaid on both the preview interface and recordings via OSD
- 2) Alarms will be uploaded to the platform

- 3) Write alarm logs
  - Event:
    - 1) Overlay OSD
    - 2) Will not be reported to the platform
    - 3) Write alarm logs
5. Sensor Uses: The switch can be configured for left turn, right turn, braking, or privacy functions.
6. Trigger: Click to set, enter the following interface:



- 1) [Trigger]: You can choose between high/low level or pulse triggering. By default, left and right turns trigger on pulse, while other functions trigger on high level.
  - High Level: Normally low level, switches to high level when triggered
  - Low Level: Normally high level, switches to low level when triggered
  - Pulse Signal: Normally low level, switches between high and low levels when triggered.



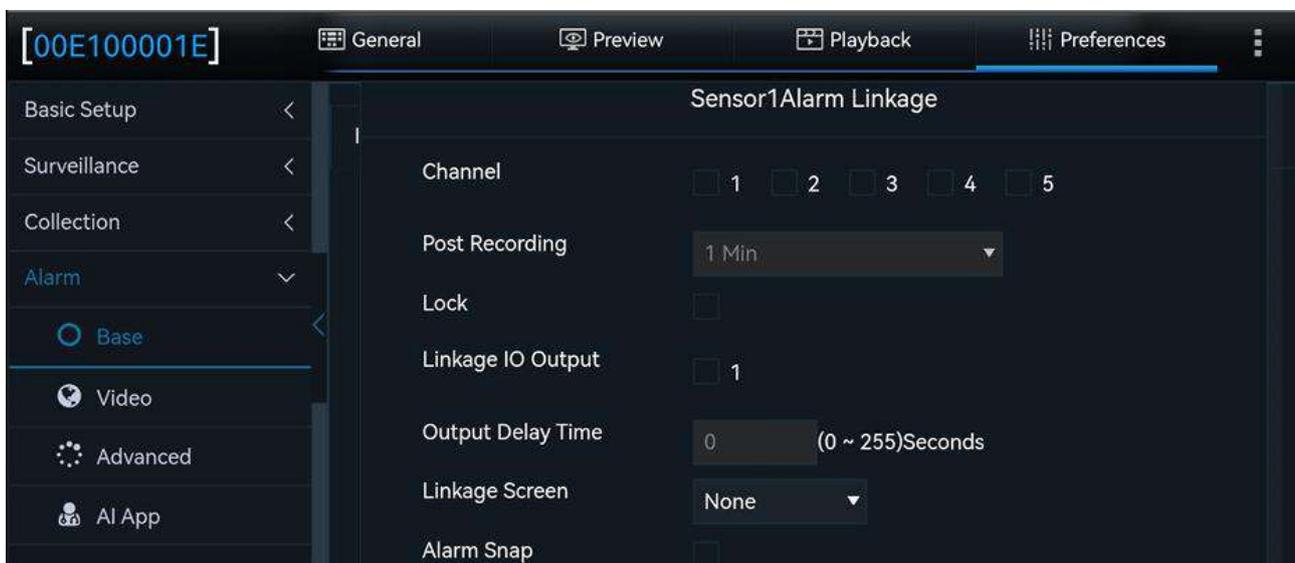
**Warning:** The voltage range that IO ports can detect is 0-36V, with levels below 3.9V considered low and levels above 3.9V considered high. Please use within the visible range. Streamax is not responsible for any damage caused by exceeding the detectable range.

- 2) [Effective Time]: The effective time refers to a period during which a subsequent alarm of the same type, occurring within a specified time after the resolution of the initial alarm,

is considered to be the same alarm. Options range from 0 to 10 seconds, with a default of 5 seconds.

For example: If a motion detection alarm occurs at 13:23:30 and is canceled at 13:23:50, and if the effective time is set to 10 seconds, and another motion detection alarm occurs within 10 seconds, it will be considered as the same alarm. Only one entry will be recorded in the alarm log, and the alarm linkage will stop when the subsequent motion detection alarm is canceled.

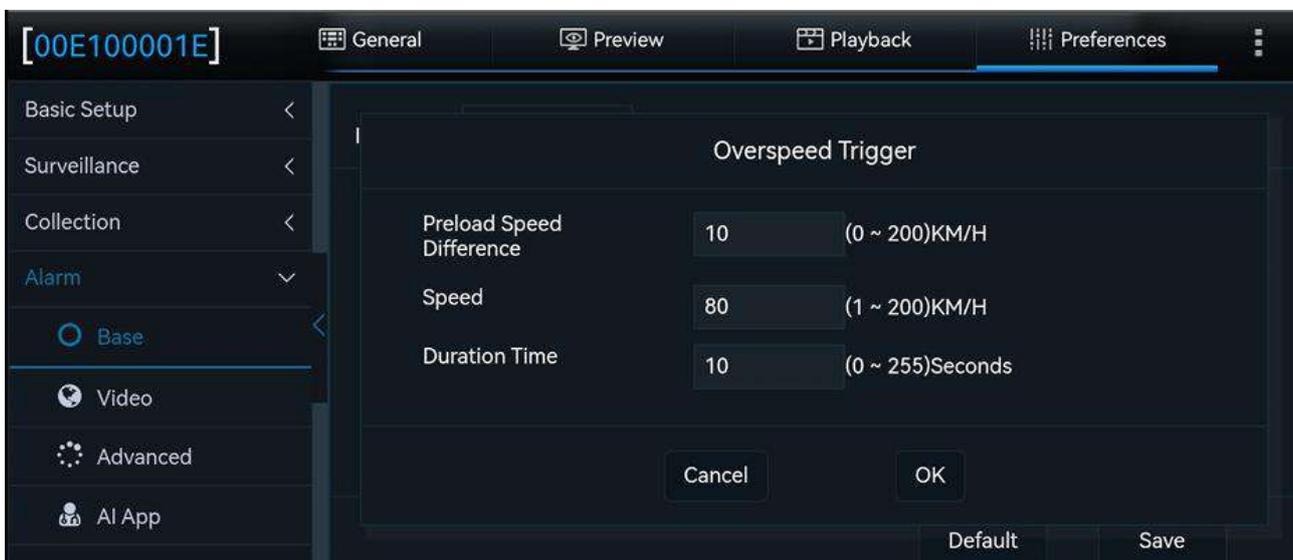
7. Linkage : When an alarm occurs, the linked business functions can be activated. Click to set, enter the following interface:



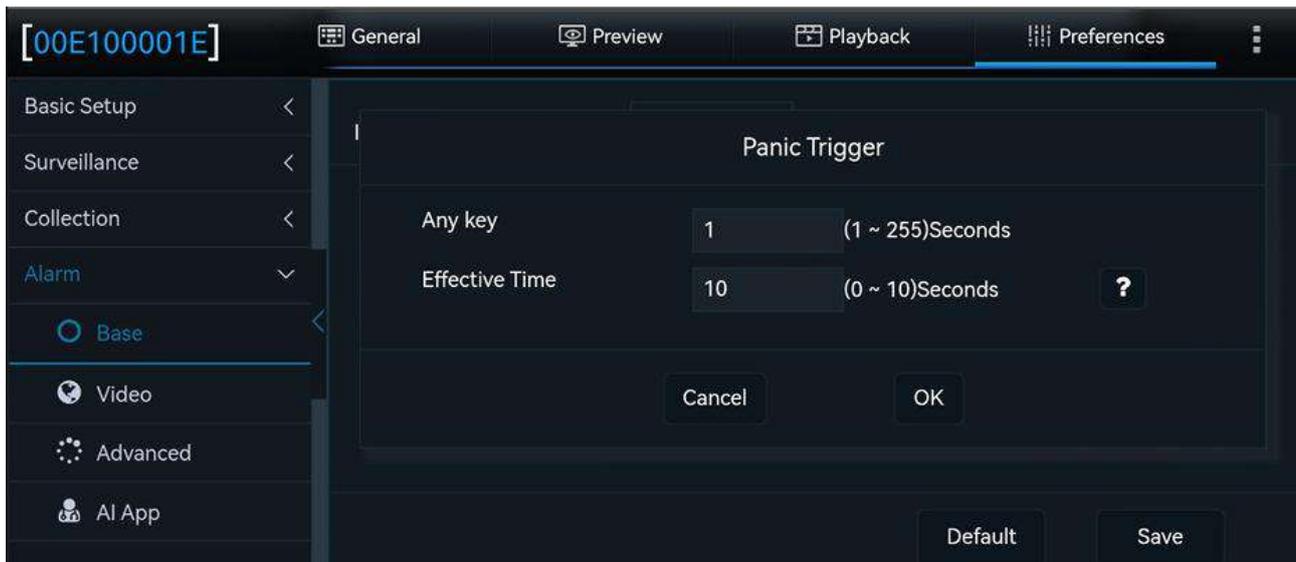
- 1) [Channel]: The channels that need to record when an alarm is triggered; these recordings will be marked as alarm recordings.
- 2) [Post Recording]: The duration for which recording continues after the alarm is canceled. Selectable from 1 to 30 minutes, with a default of 1 minute.
- 3) [Lock]: Specifies whether to lock the alarm recordings. If selected, the alarm recordings will be locked when IO alarm is triggered and unlocked when the alarm is canceled.
- 4) [Linkage IO Output]: Configures the IO output when an IO alarm is triggered, including the duration of the output, which can be set between 0 and 255 seconds.
- 5) [Linkage Screen]: Specifies the display mode when an alarm occurs. By default, it is not displayed, but it can be set to single or quad display.

6) [Alarm Snap]: Determines whether to take snapshots when an alarm occurs. If an FTP address is set, snapshots will be taken when the IO alarm is triggered and exported via FTP. It can also be reported to the platform if the alarm evidence reporting parameters are configured.

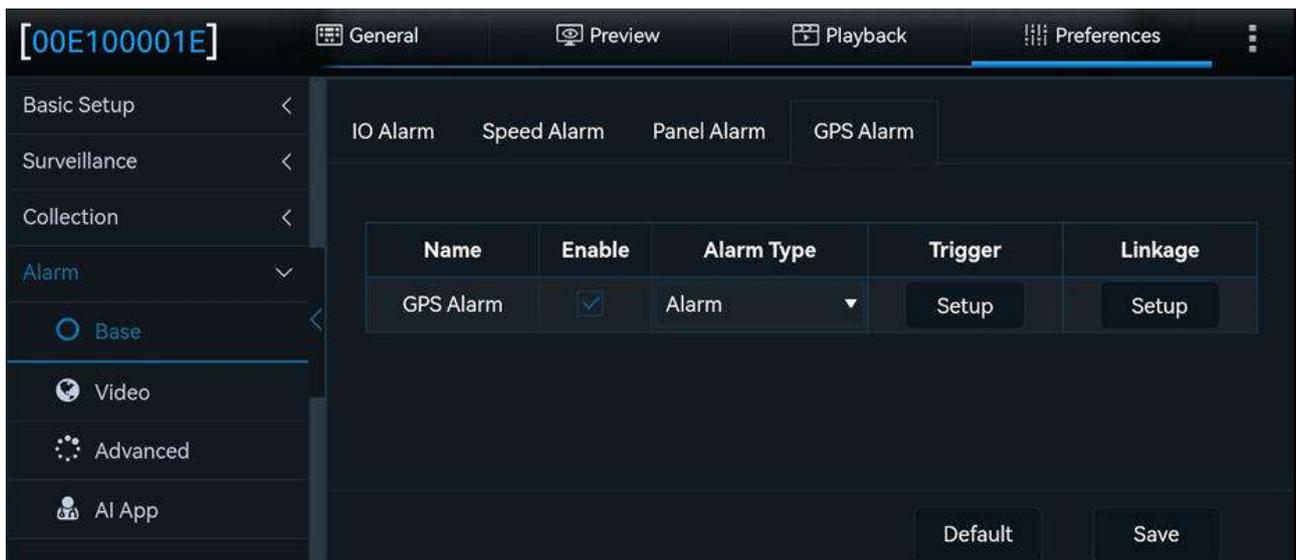
- Speed Alarm Interface: Enables the overspeed alarm and sets the alarm type to either alarm or event. In the overspeed alarm settings, you can configure the overspeed pre-warning parameters, which trigger a pre-warning when the vehicle's speed is slightly below the limit and an overspeed alarm when the speed exceeds the limit. The voice alerts for the pre-warning and overspeed alarm are different. Other settings are the same as for switch alarm settings.



- Panel Alarm: Configure the Panic Button alarm enable and linkage parameters. In the alarm trigger settings interface, you can set the trigger time for the panel alarm button, which can be selected between 1 and 255 seconds, with a default of 1 second. Other settings are the same as for IO alarms.



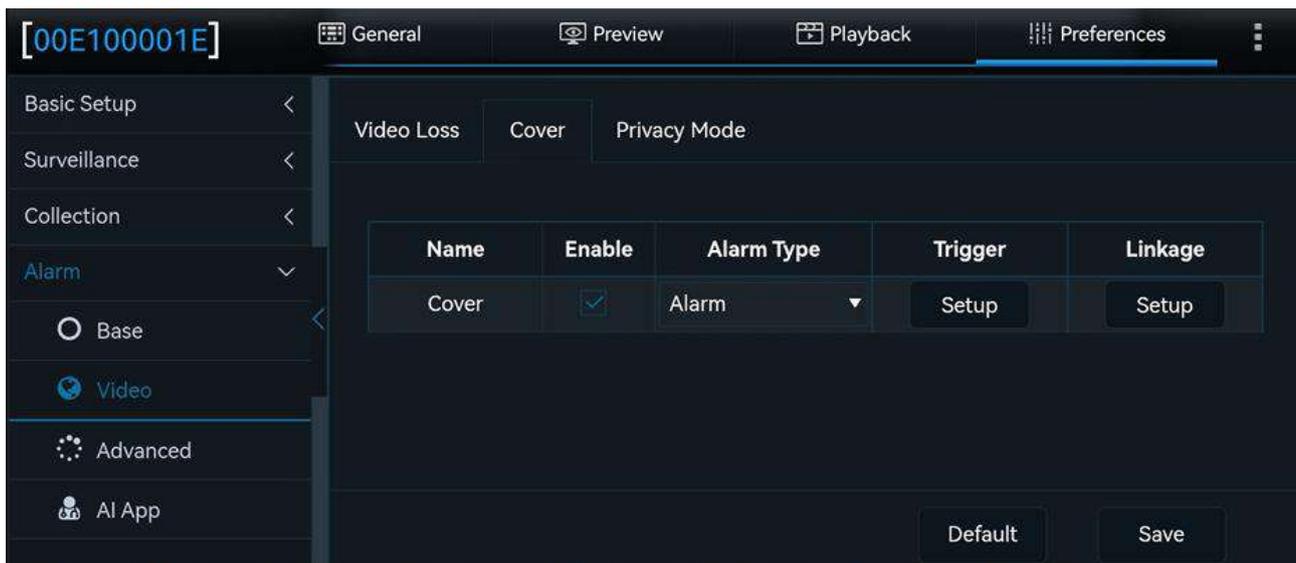
- **GPS Alarm:** Alarm generated when GPS signal is lost. The settings are the same as for IO alarms.



### 5.9.2 Video Alarm

- **Cover**

The cover interface allows you to set video loss alarm parameters. Click Preferences > Alarm > Video > Cover to enter the following interface:



Click to enter the alarm trigger settings interface, as shown below. You can configure the channel for the cover alarm, as well as the alarm sensitivity, duration, active time, and speed threshold. For AI channels, algorithm detection is used. For non-AI channels, the host makes the judgment. Linkage settings are the same as for switch alarms.

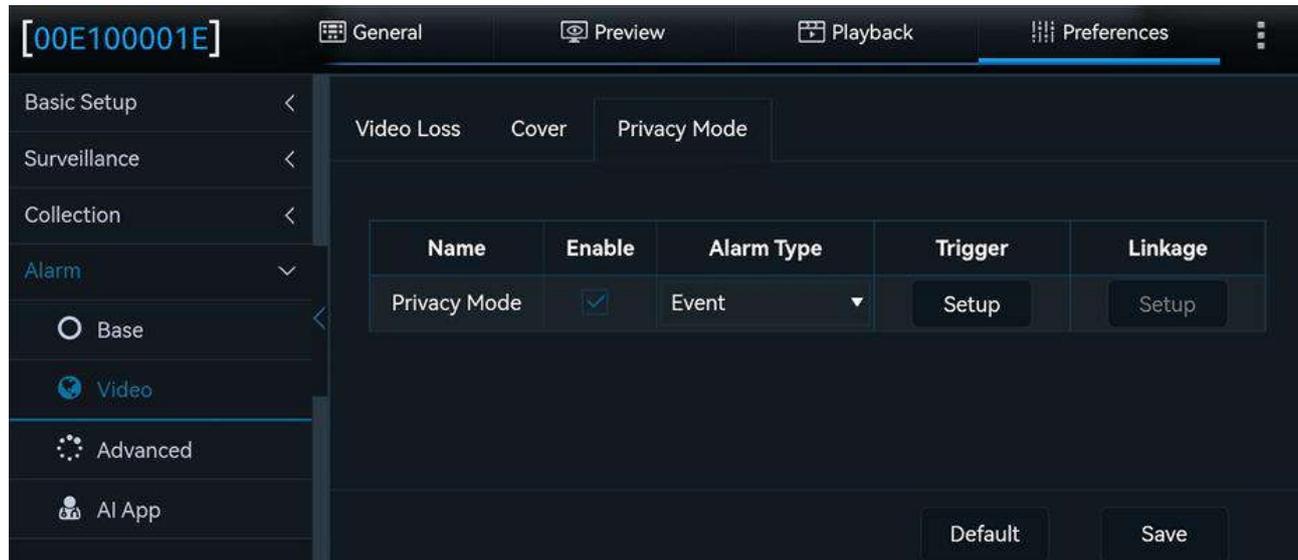
For DMS channel obstruction alarms, a continuous obstruction of 10 seconds and the speed value set in the obstruction alarm interface are required to trigger the alarm.



- Privacy Mode

The privacy mode settings interface allows you to configure the triggering and deactivation

methods for privacy mode. Click Preferences > Alarm > Video > Privacy Mode to enter the following interface:



Clicking on the settings button will take you to the following interface, where you can configure the privacy channels, privacy mode activation method, privacy mode deactivation method, and privacy mode voice enablement.

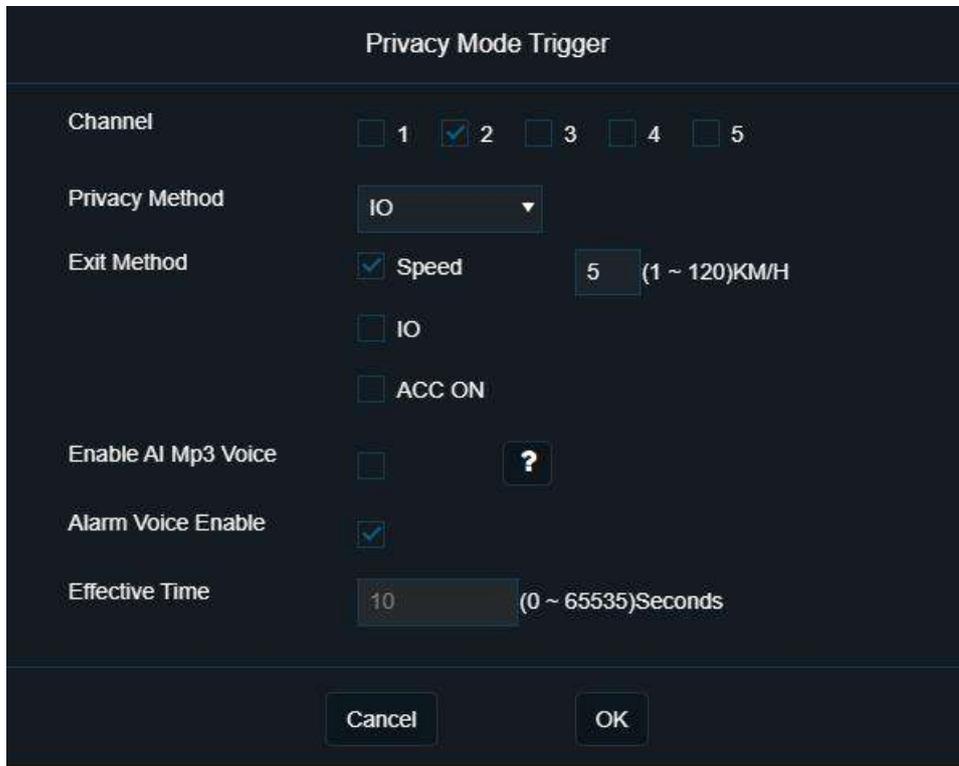
**Channel:** Enabling privacy mode for a specific channel indicates that recording and audio for that channel will be disabled. Enabling this setting activates the privacy mode for the channel.

**Privacy Method:** There are two options: IO and ACC OFF. After configuring the purpose of the IO, triggering the IO can activate or deactivate the privacy mode. For specific settings of the IO, please refer to [Preferences] > [Alarm] > [Base]. The ACC triggering method refers to activating privacy mode (stop recording and audio) 10 seconds after ACC is turned off.

**Exit Method:** There are three options to release privacy mode: Speed, IO, and ACC ON. One of these must be selected. The setting and usage of IO are consistent with the triggering method. Once the IO is configured, it can be used for both triggering and deactivation. The speed method involves deactivating privacy mode when the vehicle speed exceeds a certain value. The ACC ON method means that when privacy mode is activated by ACC OFF, it can be deactivated when ACC is turned on.

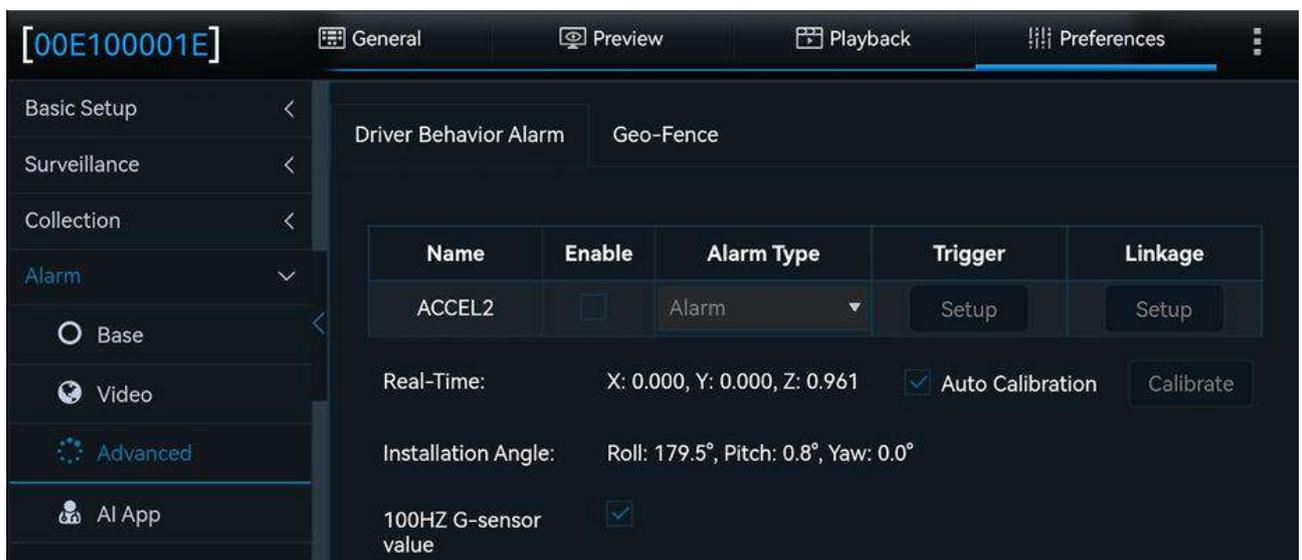
**Enable AI MP3 Voice:** In privacy mode, if local AI alarm enable is checked, the corresponding channel can still trigger AI alarms. However, no alarm recording will be generated for that channel, while other channels will generate alarm recordings normally.

Voice Enable: This option determines whether a voice prompt should be played when privacy mode is triggered or deactivated. Enabling this feature controls both the voice prompt for activating and deactivating privacy mode, and cannot be controlled separately.



### 5.9.3 Advanced

In this interface, you can configure G-Sensor alarms and Geo-fence alarms. Click Preferences > Alarm > Advanced. See the interface below:



- Driver Behavior Alarm:

1. ACCEL2 represents the name of the driver behavior alarm algorithm. Checking the box indicates the effectiveness of this algorithm.
2. Alarm Type indicates the type of event triggered after aggressive driving behavior.
3. Trigger represents the conditions for triggering driver behavior alarms: you can set the detection switches and alarm conditions for harsh braking, rapid acceleration, and sharp turn alarms, as shown below:

### ACCEL2 Trigger

Alarm Name	Enable	Offset	Speed
Harsh Braking	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Hard Acceleration	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Harsh Left Turn	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Harsh Right Turn	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Shock	<input type="checkbox"/>	X: 1 (0.1 ~ 8)    Y: 1 (0.1 ~ 8)    Z: 2 (0.1 ~ 8)	
Effective Time	10 (0 ~ 10)Seconds		
Recommended Setting	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <div style="border: 1px solid gray; padding: 5px; background-color: #34495e; color: white; border-radius: 5px;">Light Duty</div> <p>≤ 6 tons</p> </div> <div style="text-align: center;"> <div style="border: 1px solid gray; padding: 5px; background-color: #34495e; color: white; border-radius: 5px;">Medium Duty</div> <p>≤ 14 tons</p> </div> <div style="text-align: center;"> <div style="border: 1px solid gray; padding: 5px; background-color: #34495e; color: white; border-radius: 5px;">Heavy Duty</div> <p>&gt; 14 tons</p> </div> </div>		
<div style="border: 1px solid gray; padding: 5px; background-color: #34495e; color: white; border-radius: 5px; display: inline-block;">Cancel</div>		<div style="border: 1px solid gray; padding: 5px; background-color: #34495e; color: white; border-radius: 5px; display: inline-block;">OK</div>	

[Shock]: This refers to collision detection, which uses the G-Sensor to determine whether a vehicle has experienced a collision. Here, you can set the collision detection threshold.



Note: In the ACCEL2 Trigger, the offset values for Harsh Braking, Hard Acceleration, Harsh Left Turn, and Harsh Right Turn alarms are determined by complex formulas. The overall setup logic is as follows: select the recommended values based on the vehicle's tonnage. If the alarms are triggered too easily, increase the offset value. If the alarms are difficult to trigger, decrease the offset value. Note that the offsets for these four types of alarms are not entirely linear; a larger offset means a more noticeable effect for the driver. The XYZ values for Shock are measured in gravitational

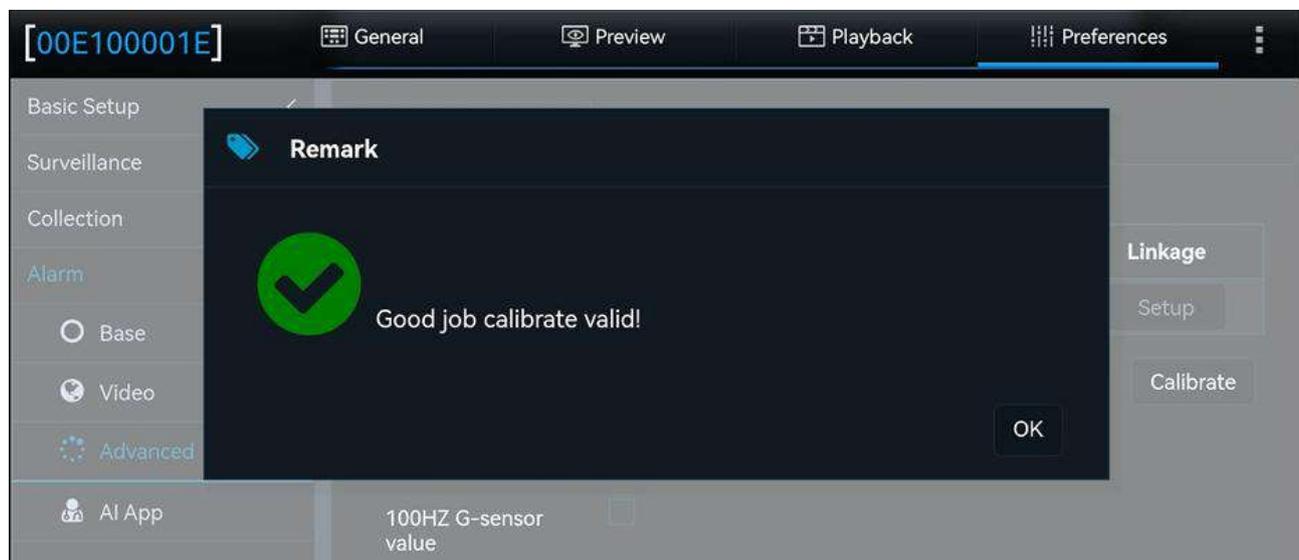
acceleration (G). This parameter directly indicates the acceleration threshold in the XYZ directions during a collision.

4. Linkage indicates that when an alarm is triggered, it can link to some alarm-related services. The setup method is the same as for switch-type alarms.

5. Automatic and manual calibration of the G-sensor is supported.

➤ Manual Calibration:

After saving the manual calibration, if the detected XYZ values are (0,0,1), it is considered successful. The operation log will record the successful calibration with the following information: G-sensor calibration success status, time, and real-time XYZ values. After successful manual calibration, the page will display a prompt as shown in the image below:



➤ Auto Calibration:

Following the existing calibration logic, upon the fifth calibration completion, if the XYZ values deviate less than  $\pm 0.1$  from (0,0,1), it is considered successful. The calibration success log will include the following information: G-sensor calibration success status, time, and real-time XYZ values.

When the device enters the calibration process again and completes the calibration state, it will record the data once more.

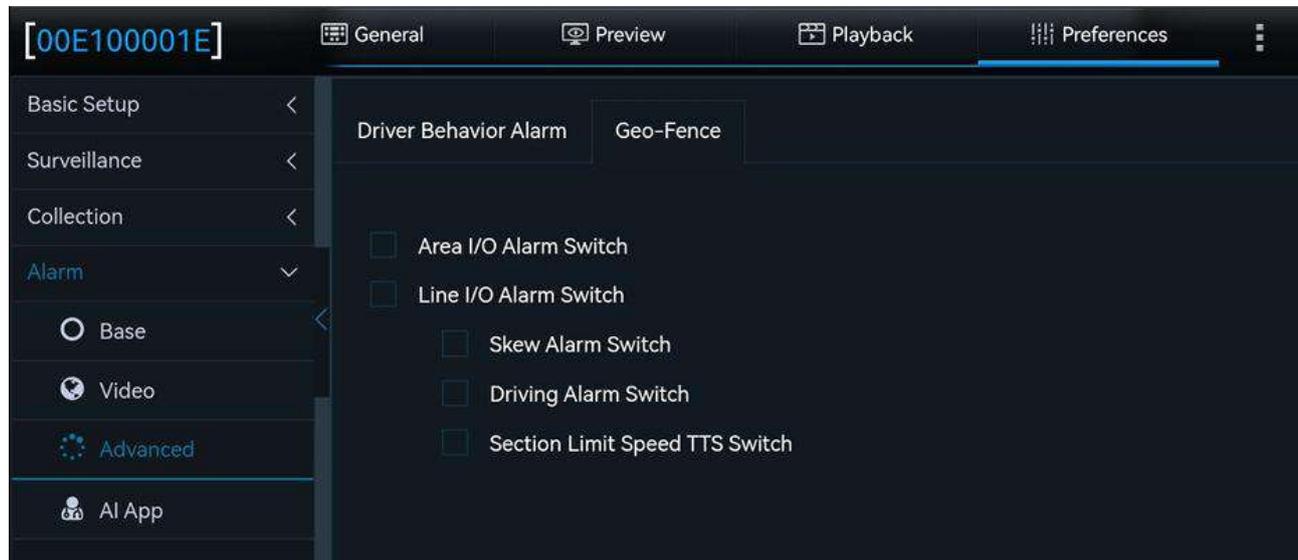
➤ Calibration Failure State Determination:

Manual Calibration: After saving manual calibration, if the detected XYZ values are not (0,0,1), it indicates a failure. Since manual calibration forcefully sets the calibration value to (0,0,1), the

failure rate for manual calibration is almost zero.

**Automatic Calibration:** As automatic calibration is a continuous process, if after five consecutive calibrations the XYZ values deviate more than  $\pm 0.1$  from (0,0,1), it is recorded in the log as an automatic calibration status anomaly, including the time and real-time XYZ values.

6. Display the installation angle of the device;
  7. Support for 100Hz G-sensor data pass-through, which can be enabled or disabled.
- The electronic fence interface allows selecting entry/exit strategies for the fence/route, and it must be used with the CEIBA2 platform or FT Cloud platform.



#### 5.9.4 AI App

Support for AI alarm parameter settings through Veyes. Click [Preferences] > [Alarm] > [AI App] to enter the AI alarm settings interface. The AI alarms displayed include:

DMS Alarm	Driver Fatigue、No driver、Handheld Devices、Smoking、Distraction、Yawn、Seatbelt (Red bold font indicates currently supported standard alarm types)
-----------	--

The parameter setting logic for each AI alarm is basically the same. According to different scenarios, the trigger conditions for each alarm can be set. The basic trigger conditions for each alarm include: speed range, sensitivity settings, effective time (only one alarm is recorded if triggered multiple times within this time range), and duration (how long the triggered alarm lasts).

However, there are slight differences in the parameters that can be set for different alarms, as shown

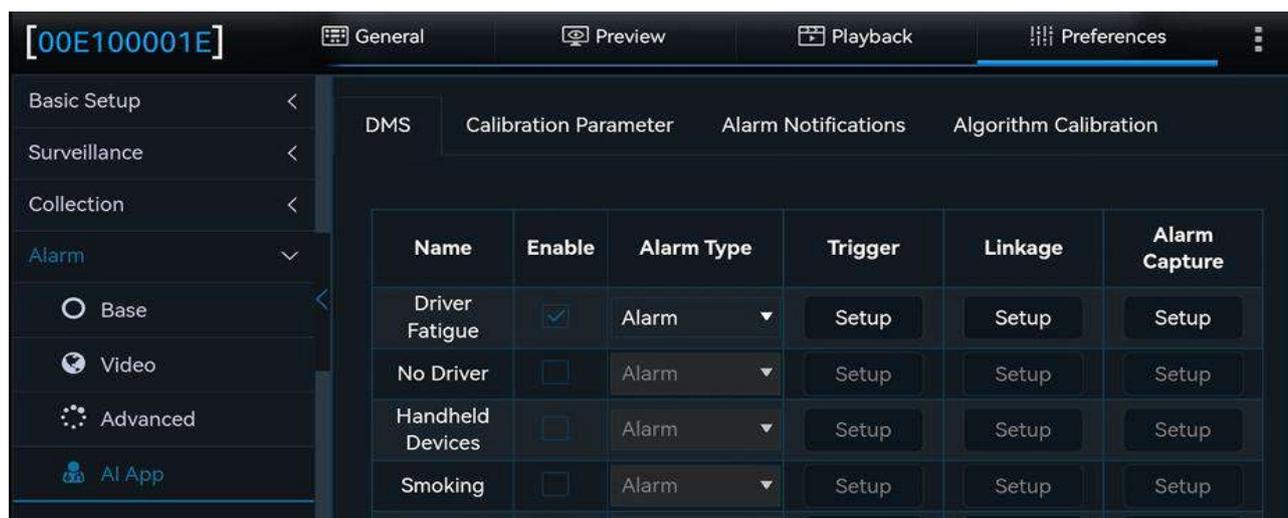
in the table below:

AI App	Type	Adjustable Parameters					
		Primary and secondary speed distinction settings	Sensitivity	Duration	Effective time	Linkage content	Snapshot
DMS	Driver Fatigue	√	√	×	√	Identical	Identical
	No driver	×	√	×	√	Identical	Identical
	Handheld Devices	√	√	×	√	Identical	Identical
	Smoking	√	√	×	√	Identical	Identical
	Distraction	√	√	×	√	Identical	Identical
	Yawn	√	√	×	√	Identical	Identical
	Seatbelt	√	√	×	√	Identical	Identical
	No Mask	√	√	×	√	Identical	Identical
	Infrared Block Alarm	√	√	×	√	Identical	Identical

Since the parameter setting logic for each AI alarm is basically the same, the Driver Fatigue alarm will be used as a general example to explain the parameter setting method. The differences in parameter settings for the No Driver alarm and the Distraction alarm in DMS alarms will also be illustrated as examples.

- Driver Fatigue

Click [Preferences] > [Alarm] > [AI App] > [DMS], and check the Driver Fatigue alarm enable switch, as shown in the figure:



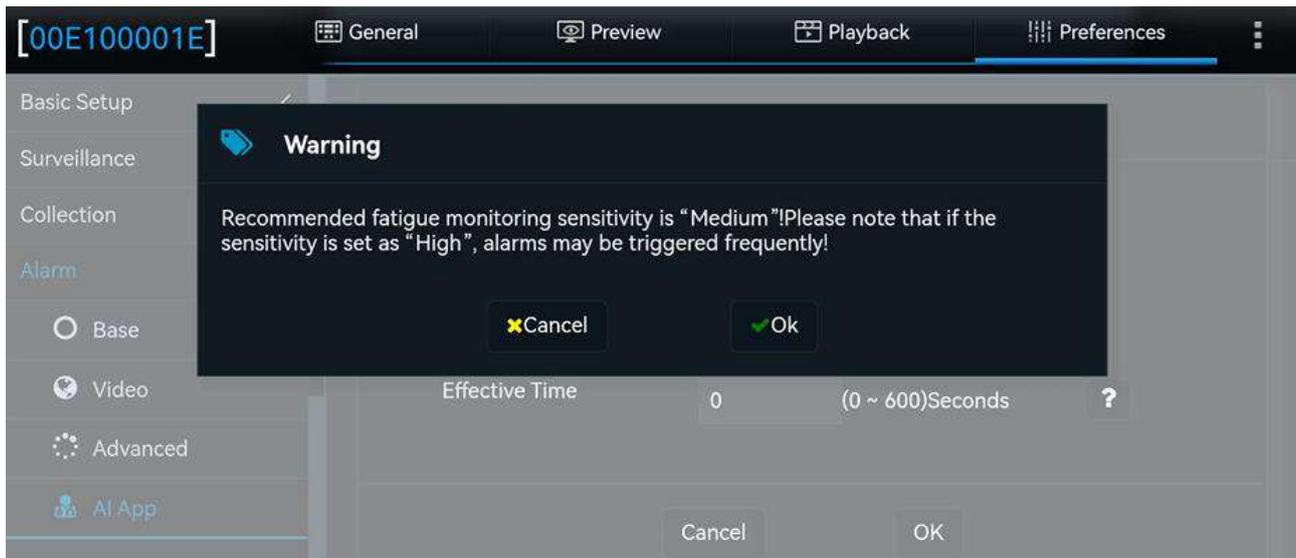
[Alarm Type]: You can choose either Alarm or Event. If Event is selected, the generated alarm will not be reported to the platform. For detailed differences, see section 2.9.1 Basic Alarms.

[Trigger]: Click the [Setup] button for trigger conditions to set the alarm trigger conditions, as shown in the figure below:



- Lv1 Speed Range: Level 1 alarm speed setting range, default is 20~50 km/h. When a Level 1 alarm occurs, the device will have an MP3 voice broadcast prompt.
- Lv2 Speed Range: Level 2 alarm speed setting range. The lower limit of the Level 2 alarm is related to the upper limit of the Level 1 alarm. When the upper limit of the Level 1 alarm is modified, the lower limit of the Level 2 alarm changes accordingly. When a Level 2 alarm occurs, only a beeping sound is prompted by the device.
- Sensitivity: The sensitivity when the alarm is triggered can be set to "Low", "Medium", "High", or "Custom". The default is "Medium" sensitivity. A pop-up window will prompt

when changing to other configuration options.



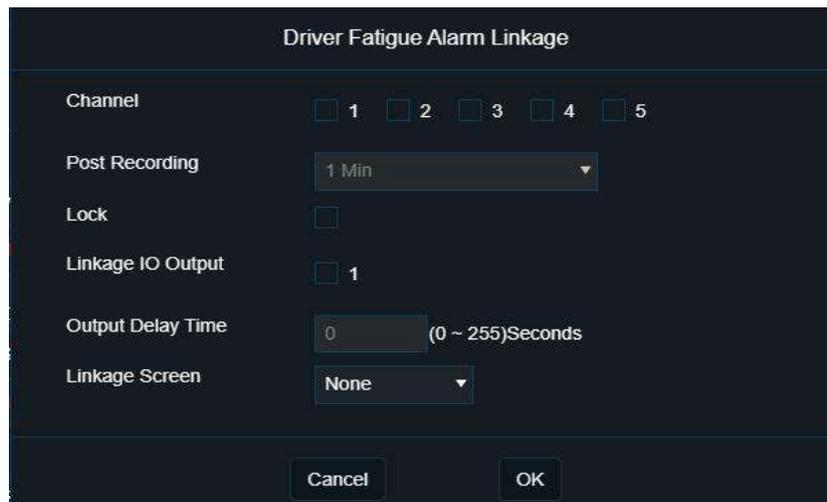
The default custom value is 50\*100ms. It can be manually changed. The custom value range is selectable from 10 to 255 (please configure this time according to actual needs), as shown in the figure below.



Special Note: It is recommended to configure the sensitivity of the fatigue alarm to "Medium". If custom configuration is needed, please configure the parameters cautiously according to actual requirements. Arbitrary parameter configuration may cause abnormal alarm notifications.

- Effective Time: Effective time refers to the period during which, if the same alarm occurs again after being canceled, it is considered the same alarm. It can be set between 0 to 600 seconds.

[Linkage]: Click the [Setup] button in the linkage settings to enter the following interface:



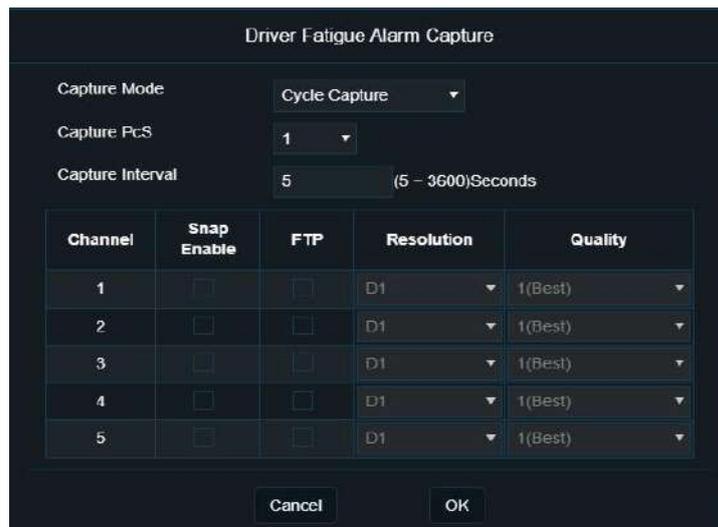
The screenshot shows a configuration window titled "Driver Fatigue Alarm Linkage". It contains the following settings:

- Channel:** Five checkboxes labeled 1, 2, 3, 4, and 5. All are currently unchecked.
- Post Recording:** A dropdown menu showing "1 Min".
- Lock:** An unchecked checkbox.
- Linkage IO Output:** A checkbox labeled "1" which is checked.
- Output Delay Time:** A text input field containing "0" with a range "(0 ~ 255)Seconds" to its right.
- Linkage Screen:** A dropdown menu showing "None".

At the bottom of the window are two buttons: "Cancel" and "OK".

- **Channel:** The channel(s) that need to record video when an alarm is triggered. The recordings from these channels will be marked as alarm recordings.
- **Post Recording:** The time for which the alarm recording continues after the alarm is canceled. It can be set between 1 to 30 minutes, with the default being 1 minute. At least one channel must be selected for alarm recording.
- **Lock:** You can set whether the alarm recording is locked. If checked, the recording triggered by the Driver Fatigue alarm will be locked; once the alarm is canceled, the recording lock will end.
- **Linkage IO Output:** You can set the IO output when an IO alarm is triggered, and the duration of the IO output can be set between 0 to 255 seconds.
- **Linkage Screen:** The screen to be directly displayed when an alarm occurs. By default, it is not displayed, but you can set it to single-screen or quad-screen display.

[Alarm Capture]: Click the [Setup] button under alarm capture to enter the following interface:



In the past, setting alarm capture/snapshots required enabling alarm snapshots in the AI alarm settings and configuring the snapshot image resolution and number of images in the Collection > Snap Setting interface. To simplify the operation, the alarm capture parameter settings are now unified in the settings interface of each AI alarm.

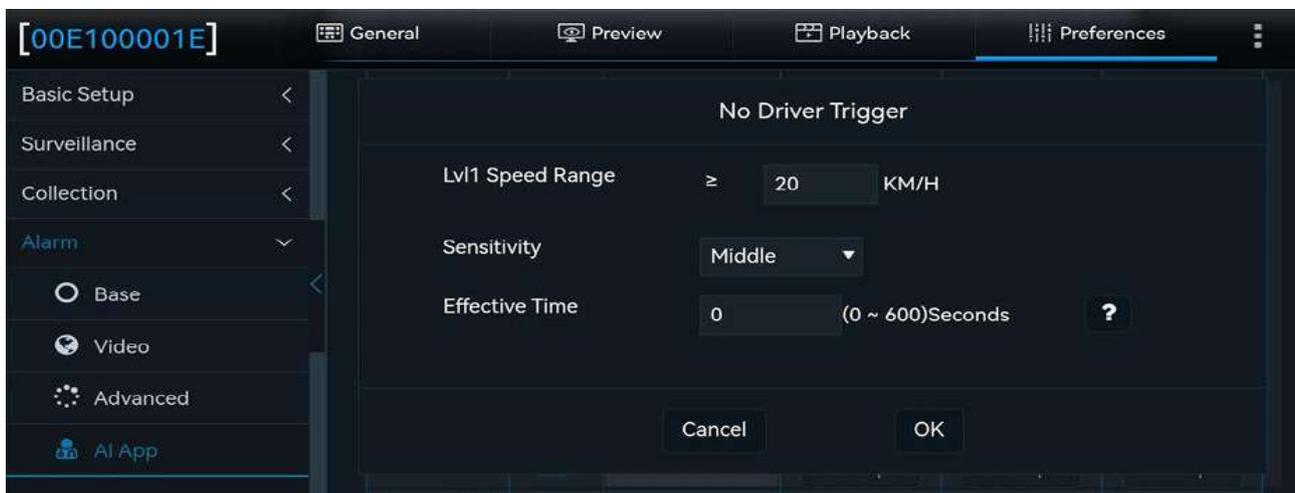
- Capture Mode: There are two options: single capture and loop capture. Single capture means taking only one picture at each capture interval, which is determined by the "Capture Interval" parameter below. For example, if the single capture number is set to 3 and the capture interval is set to 1 second, then starting from the alarm moment, one picture is taken every second until 3 pictures are taken, and no more captures are taken until the effective alarm time ends. Loop capture means taking multiple pictures at each capture interval continuously until the effective alarm time ends. The number of pictures and the interval are determined by the "Capture PcS" and "Capture Interval" parameters below. For example, if the capture number is set to 3 and the capture interval is set to 5 seconds, then starting from the alarm moment, 3 pictures are taken simultaneously every 5 seconds until the effective alarm time ends.
- Capture PcS: The number of snapshot images can be set from 1 to 3, with the default being 1.
- Capture Interval: The time interval between snapshot images can be set from 5 to 3600 seconds, with the default being 5 seconds. For a single capture, if the capture number is set to 3 and the interval time is set to 5 seconds, then a picture is taken when the alarm is

triggered, a second picture is taken after 5 seconds, and a third picture is taken after another 5 seconds.

- Capture Channel Setting: Select the channel(s) for taking snapshot images when an alarm occurs. You need to enable the channel, set the upload method, and configure the resolution of the snapshot images.

- No Driver

Click [Preferences] > [Alarm] > [AI App] > [DMS/DSC], and check the No Driver alarm enable switch. In the alarm trigger settings interface, click the [Setup] button to enter the following interface:



For the No Driver alarm, it only has a Level 1 alarm, with no Level 2 alarm. Therefore, whenever a No Driver alarm is triggered, there will be a voice prompt. The alarm speed value can be custom set, with the default being 20 km/h.

The other settings interface is the same as the Driver Fatigue alarm and will not be elaborated here.

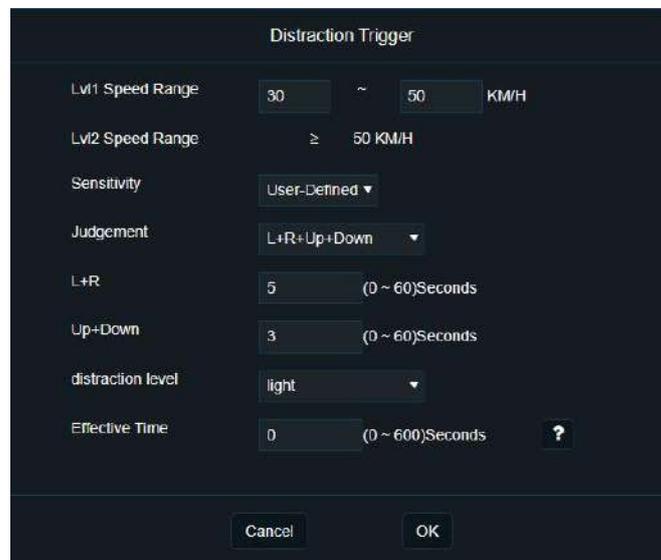
- Distraction

The trigger conditions for the Distraction alarm are similar to other alarms. The difference lies in the options for setting the distraction judgment method and distraction angle. These settings allow for more precise control of the Distraction alarm scenario.

- Judgment Conditions: This refers to determining whether the driver is distracted by looking

left or right or by looking down. For different distraction judgment conditions, there are respective sensitivity threshold settings (the sensitivity parameter must be set to custom).

- **Distraction Angle:** When a driver looks at the rearview mirror, it is considered normal driving behavior. To avoid false alarms when the driver is looking at the rearview mirror, the distraction angle parameter can be set to allow the driver to turn their head to a certain degree. The distraction angle parameter is divided into three levels: light, medium, and severe. Light means the driver will be considered distracted with a slight head turn; severe means the driver must turn their head at a large angle to be considered distracted.



Distraction Trigger	
Lvl1 Speed Range	30 ~ 50 KM/H
Lvl2 Speed Range	≥ 50 KM/H
Sensitivity	User-Defined
Judgement	L+R+Up+Down
L+R	5 (0~60)Seconds
Up+Down	3 (0~60)Seconds
distraction level	light
Effective Time	0 (0~600)Seconds ?

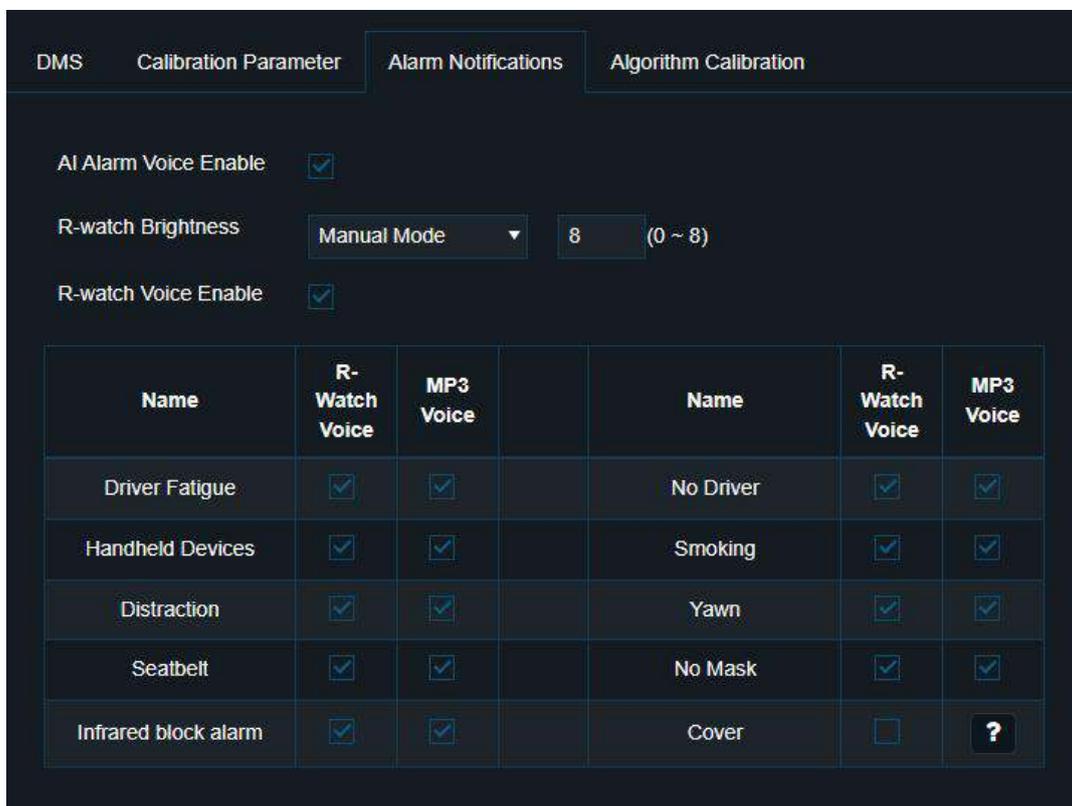


Warning: The accuracy of AI alarms depends on standard installation. For example, the seatbelt alarm may frequently trigger due to clothing color, intentional obstruction of the seatbelt, etc. For this type of alarm, it is recommended to disable local reminders for seatbelt detection and enable image uploads. This can be used for inspections, capturing typical cases of not wearing a seatbelt, and for training purposes.

### 5.9.4.1 Voice Control

In the voice control interface, you can manage the AI alarm voice prompts uniformly. After enabling the main sound control switch, you need to turn on each individual alarm switch to enable voice prompts. If the main sound control switch is turned off, there will be no voice prompts even if the individual alarm switches are on.

Click [Preferences] > [Alarm] > [AI App] > [Alarm Notifications], as shown in the figure below:



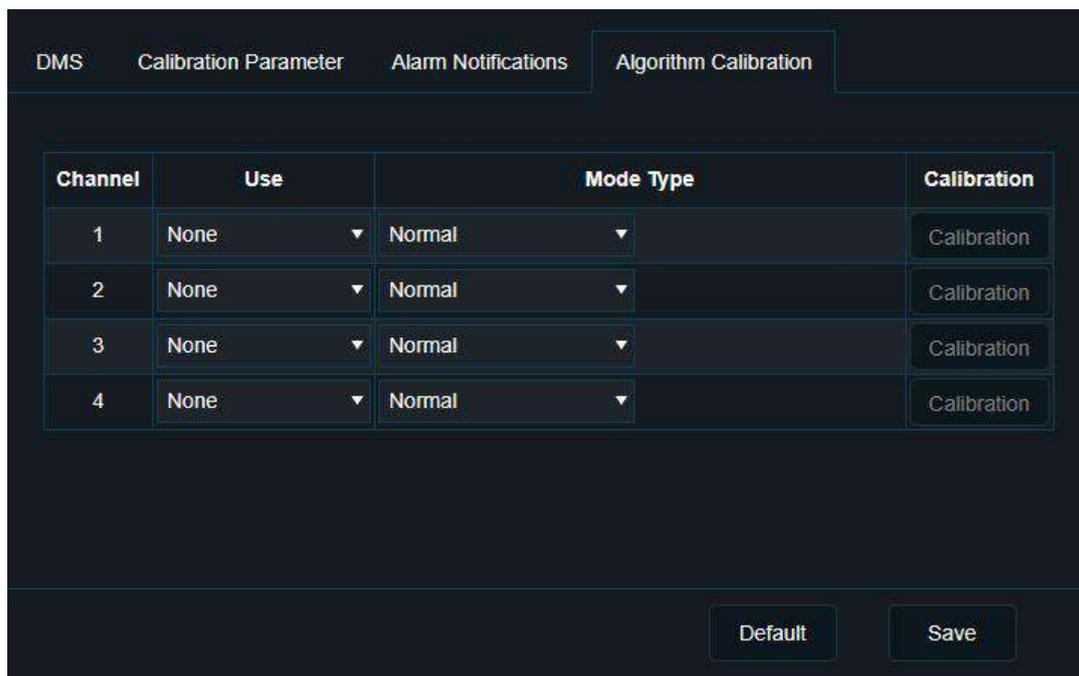
- [AI Alarm Voice Enable]: MP3 alarm voice enable switch. When enabled, the device will play MP3 alarm voice prompts when an alarm is triggered. The voice prompt for Level 1 alarms is an alarm notification sentence, while Level 2 alarms use a "beep beep" sound.
- [R-watch Brightness]: R-watch brightness adjustment switch, with 0-8 brightness levels.
- [R-watch Voice Enable]: R-watch alarm voice enable switch. When enabled, R-watch will provide a beeping voice alert when an alarm is triggered.
- Below, the MP3 Voice sound control enables the separate control of the prompt voice for

each alarm.

### 5.9.4.2 Algorithm Calibration

In the AI alarm algorithm calibration settings interface, you can set the intelligent algorithms used for each camera channel.

Click [Preferences] > [Alarm] > [AI App] > [Algorithm Calibration], as shown in the figure below:



When the Cabin Facing Camera is used for DSC purposes, the algorithm purpose for Channel 2 needs to be set to DMS, and the mode type should be configured as Normal Mode.

## 6. Special Function Operation Instructions

### 6.1 Privacy Protection Function Explanation

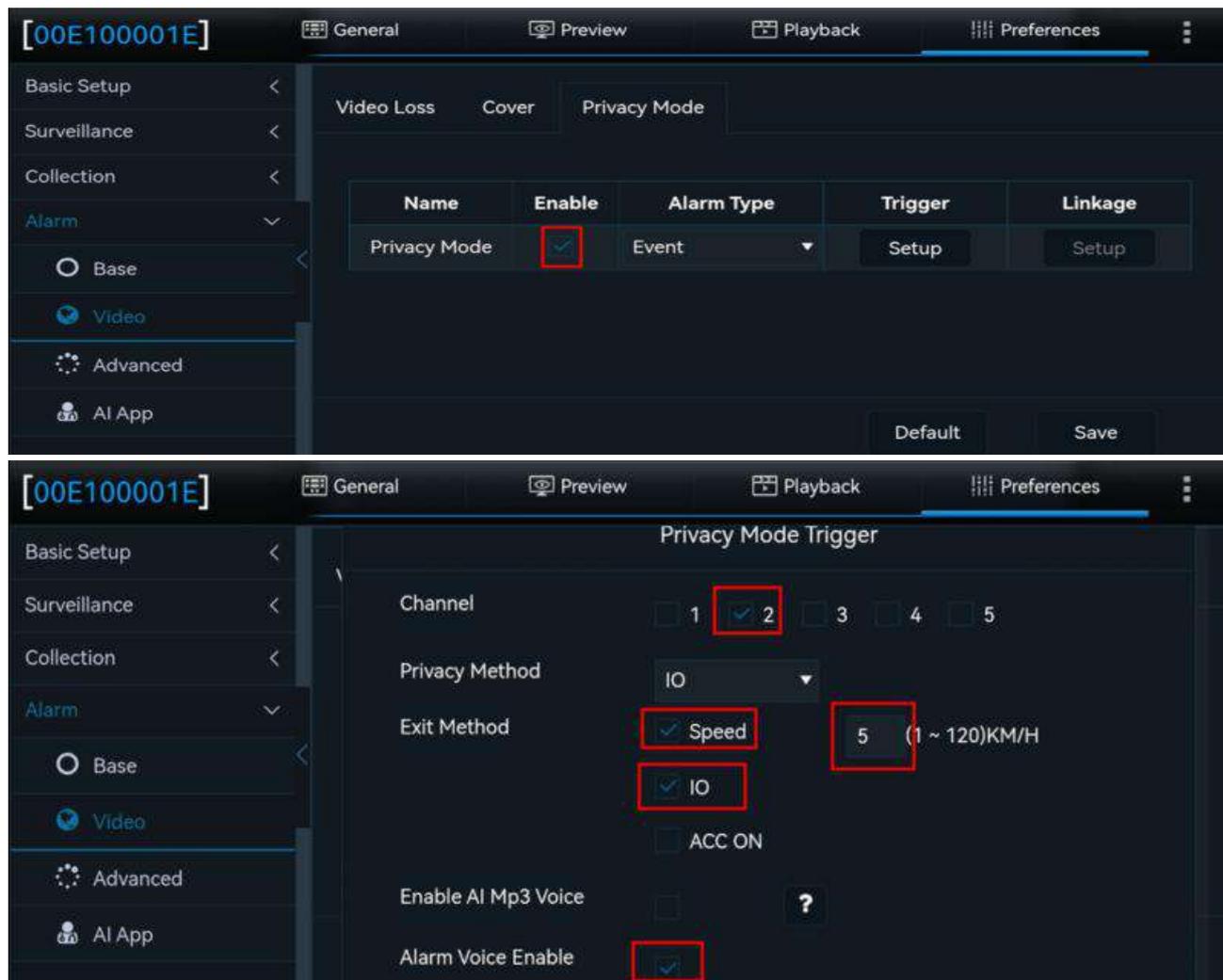
#### 6.1.1 Function Overview

This device places great emphasis on driver privacy protection and has specifically designed a privacy mode feature to ensure that the driver is not subject to remote preview and recording in All rights reserved.

parking scenarios. Privacy mode means that after parking, the driver can manually trigger the device to disable the video function of the corresponding channels. The device supports multiple triggering methods, automatic privacy mode deactivation, and flexible configuration of the video channels to be disabled. Below is a guide on how to quickly configure and use the privacy mode feature.

### 6.1.2 Related Configurations

Refer to the Privacy Mode in the video alarm settings, as shown in the following figure:



1. Configure any IO purpose to privacy mode and enable it.
2. Enable the privacy mode.
3. Select the channels that need to be turned off when privacy mode is triggered.
4. Set the deactivation method to speed and configure it to 5 km/h.
5. Enable the voice reminder.

6. Save the settings.

### 6.1.3 Instructions for Use

1. Park the vehicle
2. Trigger the IO configured for privacy mode with a high-level signal, and the device will voice broadcast "privacy mode enable."
3. The privacy channels will be turned off to protect the driver's privacy.
4. When the vehicle speed exceeds the threshold, privacy mode will automatically deactivate, and the device will voice broadcast "privacy mode disable."
5. To manually exit privacy mode, trigger the IO configured for privacy mode with a high-level signal again, and the device will voice broadcast "privacy mode disable."

For other methods, refer to the video alarm privacy mode.

## 7. Q/A

### 7.1 Device Cannot Power On

- Please check if the power cable connection is good and if the fuse is intact and fully inserted.

### 7.2 Device Cannot Connect to Network After Startup

- Please ensure the SIM card is inserted before the device is powered on. If inserted after startup, please power off and restart the device.
- Check if the SIM card is installed correctly.
- Ensure that the current location has a good network signal.
- Confirm that the SIM card has sufficient data.

### 7.3 Device Cannot Record After Startup

- Please ensure the MicroSD card is inserted before the device is powered on. If inserted after startup, please power off and restart the device.

- Check if the MicroSD card is installed correctly.
- After inserting the MicroSD card into the device, please format it before use.

## 8. Appendix

### 8.1 Glossary of Terms

**Main Stream:** High-definition stream mainly used for recording storage and post-event evidence analysis.

**Sub Stream:** Standard-definition stream generally used for remote preview. It can also be used for recording storage. When storage capacity is limited and cannot meet storage requirements, dual storage can be considered to save both main and sub streams. The main stream is used for general recording storage and evidence analysis, while the sub stream is used for extended storage.

**CEIBA2:** The previous generation video service platform based on CS architecture. The CEIBA2 client is the client software for this platform, supporting playback of H264 (raw data, including black box data, etc.) exported from devices. If this platform software is needed, please contact regional technical support for assistance.

## Building a Brighter Future of Transportation with Technology



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