M1N-TKH0401
User Manual



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2021-04-20	V1.1	Updated according to the UI of CP4	
2021-11-12	V1.2	Added new functions, modified and replaced new interface	
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1 Overview

M1N-TKH0401 User Manual is intended to introduce the powerful functions of the device system and help users get a better understanding of these functions and their operations.

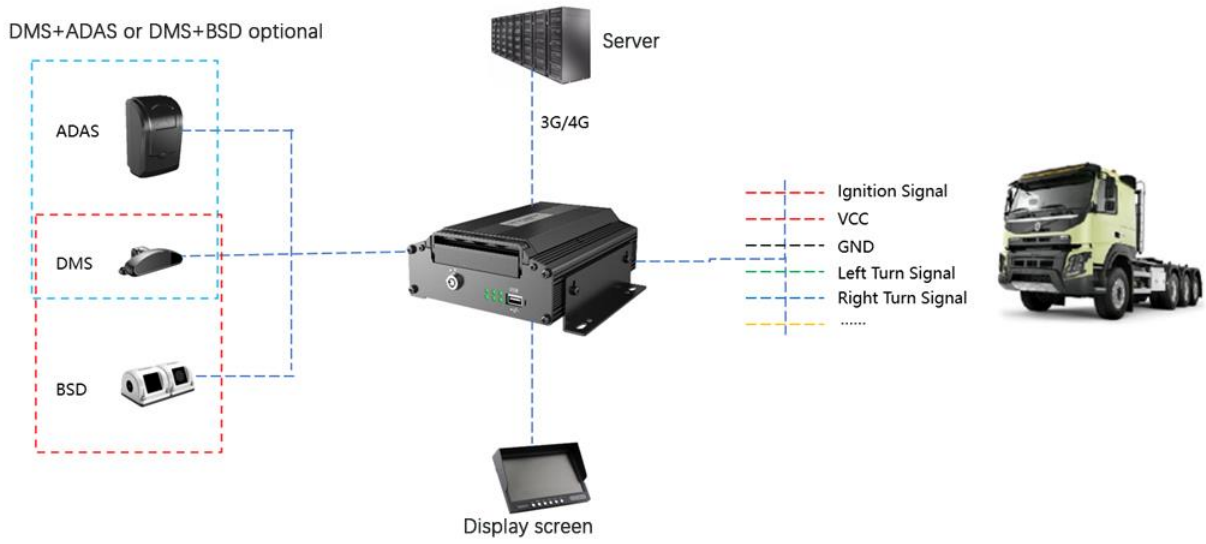
Please note that only professional O&M personnel can set the device.

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1.1 System Introduction

M1N-TKH0401 is a cost-effective device specially developed for mobile video surveillance and remote video monitoring, featuring high functional scalability. It is equipped with a high-speed processor and an embedded operating system, integrating state-of-the-art H.265 video compression/decompression technologies and GPS positioning technologies in the IT Industry. The device can realize 1080P and 720P high definition, WD1, WHD1, WCIF, D1, HD1, and CIF video recording. Supporting five channels of video recording (four for AHD and one for IPC), two channels of AI algorithms, it implements the detection functionality of Driver Monitoring System (DMS), Advanced Driver Assistance System (ADAS) alarms, and Blind Spot Detection (BSD) to effectively ensure driver safety and reduce pedestrian and vehicle accidents.

The system includes a vehicle-mounted terminal MDVR and 2 AI cameras (ADAS+DMS or DMS+BSD)



1.2 Function Overview

Streamax's vehicle-mounted terminal, M1N-TKH0401, is a highly cost-effective smart device specially developed for remote video surveillance and driving safety monitoring on commercial vehicles. It has the following functions and features:

1. The standard version supporting 2 AI cameras (DMS, ADAS, BSD, etc.);
2. Uploading alarm events and relevant video evidence to the cloud platform via a wireless network, providing real-time alarms, and preserving the onsite video evidence to facilitate forensics and truth restoration

3. Integrating 3G/4G, Wi-Fi, Bluetooth, G-Sensor, and other modules to provide various functions;
4. Adopting the GPS positioning technology to record the vehicle track in real time for background analysis
5. Two SD cards for video storage, each with a maximum capacity of up to 256 GB;
6. Support IP Voice Intercom

2 Display and Operations

The MDVR's operations, including parameter settings, preview, playback, and data export, can be performed on the CP4 control panel, EasyCheck App for trucks, or the IE terminal. CP4 supports operations via both the touchscreen and the mouse.

2.1 Control via Buttons



Button	Description
Menu	In the not login state, the menu item is used to enter the login interface by clicking the menu button; in the logged-in state, click the menu button to enter the setting interface.
Numerals 1–0	• When on the live view screen, to display channels 1–9, press 1-9; to display the next channel, press 0. • Numeral input buttons
Direction	Button for selecting directions
OK	Button for confirming the selection
Exit	Button for exiting the current menu

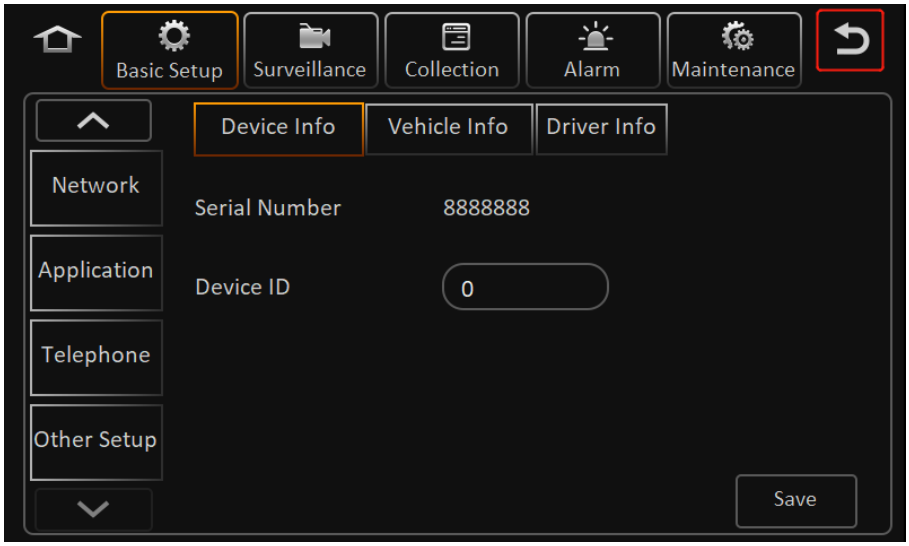
2.2 Control via a Mouse

Connect a mouse to the USB port to operate on the CP4 panel. There will be a mouse cursor on the screen after the mouse connection.

- When the device is split into 4/9 screens, double-click the left mouse button to expand and display only one of the screens;
- To select or perform other operations, click the left mouse button;
- Click the right mouse button to display the bottom menu.

2.3 Operations on Screen

When using the CP4, you can operate by tapping corresponding options on the screen or clicking the mouse buttons. To return to the previous screen operation, tap the button on the upper right corner of the screen.



3 Instructions for Use of Functions

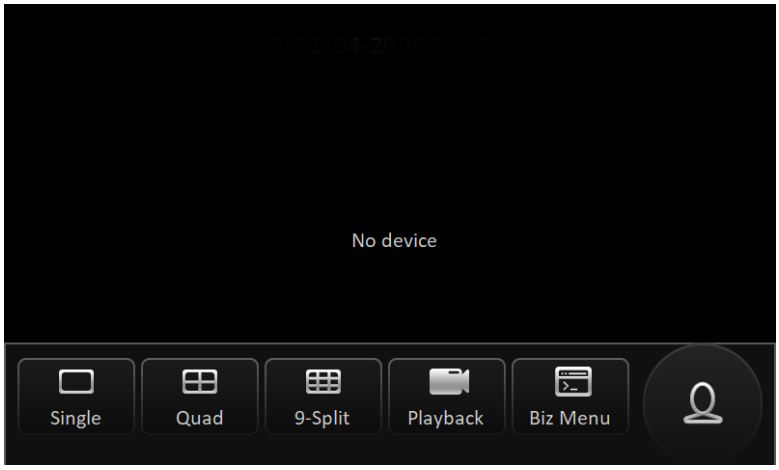
3.1 Live View Screen

After being powered on, the device enters the live view screen by default. On this screen, tapping the screen (or right-clicking with your mouse) will display a menu at the bottom, on which the buttons, from left to right, are Single, Quad, 9-Split, Playback, Biz Menu, and Login Avatar.

- Tap (or right-click with your mouse) any place on the screen to display the bottom menu bar;
- Information can be added and displayed on the live view screen, including Date/Time, Speed, Vehicle Plate, GPS, Alarm, Channel Name, Vehicle Num, and ACC Info; you can set whether to display the added information and the position where the information is displayed in Live OSD. See Section 3.5.2.1.3 for details.
- Single: Tap Single to switch between video channels.
- Quad/9-Split: After selecting the quad/9-split layout, double-tap one of the screens to expand display the only one screen; tap again to return to the quad/9-split layout;

3.1.1 Single

Single: On the live view screen, tap Single to display the video of a single channel. Double-tap to return to the quad layout.



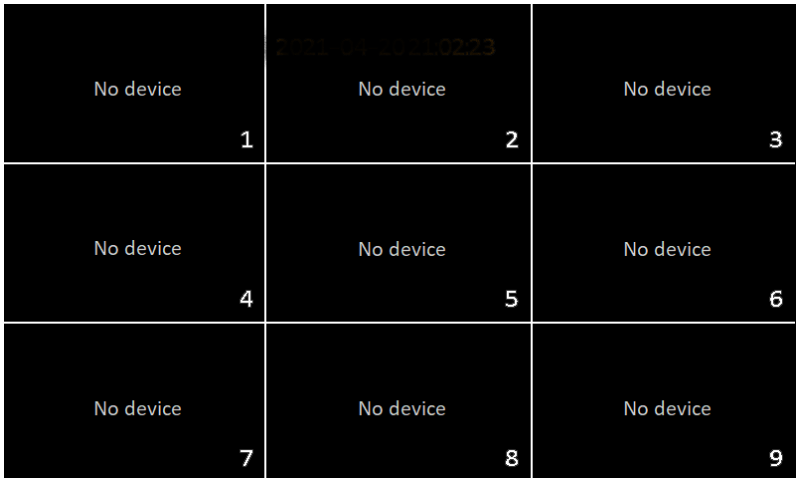
3.1.2 Quad

Quad: On the live view screen, tap Quad to display the videos of four channels. The screen only displays the videos of channels accessed by a camera, as shown in the following figures. Double-tap a channel on the screen to expand and display it. Double-tap again to return to the quad layout.



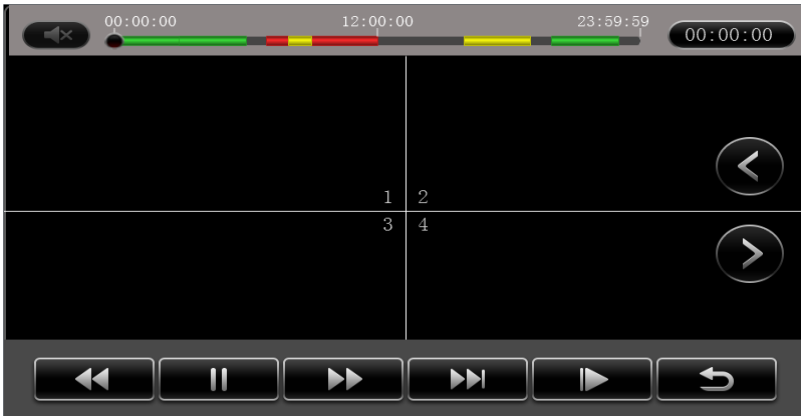
3.1.3 9-Split

9-Split: On the live view screen, tap 9-Split to display the videos of nine channels. The screen only displays the videos of channels accessed by a camera, as shown in the following figures. Double-tap a channel on the screen to expand and display it. Double-tap again to return to the 9-split layout.



3.1.4 Playback

Playback: On the live view screen, tap Playback to go to the Playback screen, as shown in the following figure:



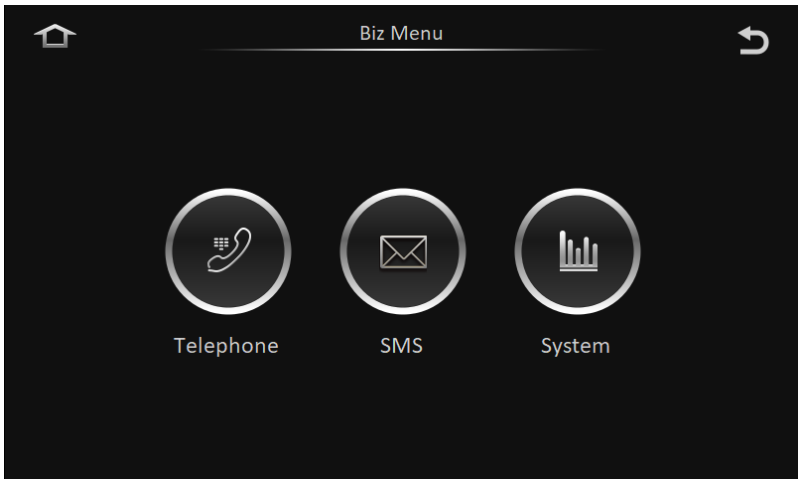
The playback starts from the point of 2 minutes ago from the current time. If the video is previewed on one split screen, it will be played back on the single split screen; if videos are previewed in the 9-split layout, videos of the first four channels will be played back.

Operations that can be performed on the Playback screen include volume adjustment/mute/fast forward/fast reverse/pause/speed setting (slow: 1/2×, 1/4×, 1/8×, and 1/16×; fast: 2×, 4×, 8×, and 16×)/back/channel switching and dragging the timeline.

To switch between channels, tap < or > on the right.

3.1.5 Biz Menu

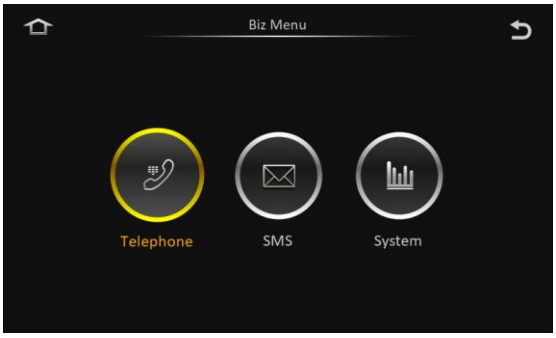
Biz Menu: On the live view screen, tap Biz Menu to go to the following screen:



From left to right, the buttons on the screen are Telephone, SMS, and System.

3.1.5.1 Telephone

On the live view screen, tap Biz Menu > Telephone to go to the following screen, on which you can make calls.





Dial:

- You can set on the platform whether to allow the device to call back via monitoring (the terminal cannot turn on the speaker).

Contacts:

- Contacts cannot be created on the device.

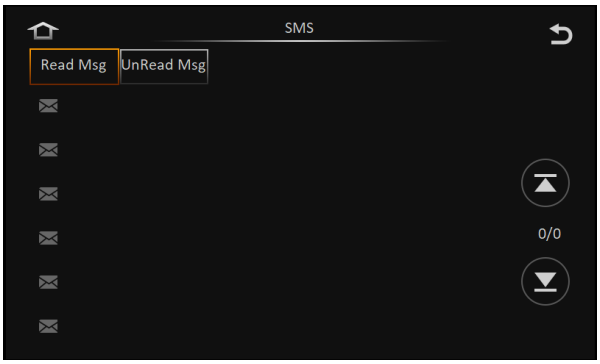
Records:

- Records provide the same function as a phone. It records answered, missed, and outgoing calls.

3.1.5.2 SMS

On the live view screen, tap Biz Menu > SMS to go to the following screen, on which you can read messages. SMS includes Read Msg and UnRead Msg.





- Only the service platform can send messages to the device, whereas the device cannot edit or send messages.
- If the TTS reading function is selected for the short messages sent, the device will automatically read the messages upon reception.
- The main screen provides reminders for unread messages.

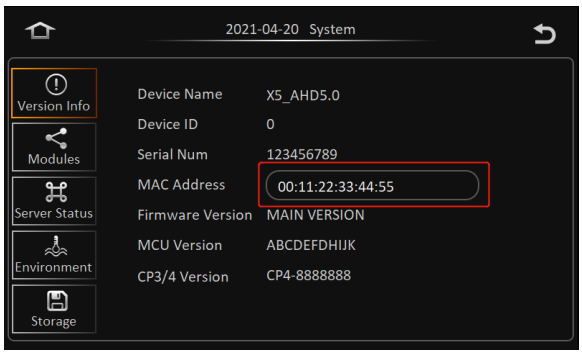
3.1.5.3 System

On the live view screen, tap Biz Menu > System to go to the following screen, on which you can view information of the device, including Version Info, Modules, Server Status, Environment, and Storage.





Version Info: displays Device Name, Device ID, Serial Num, MAC Address, Firmware Version, MCU Version, and CP4 Version. The MAC address can be modified. To do so, tap the input box and modify the address on the screen displayed, as shown in the following figure.

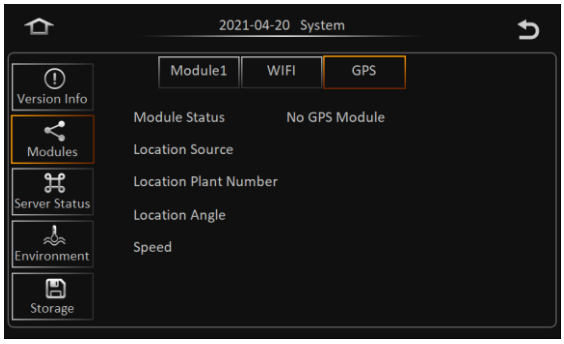




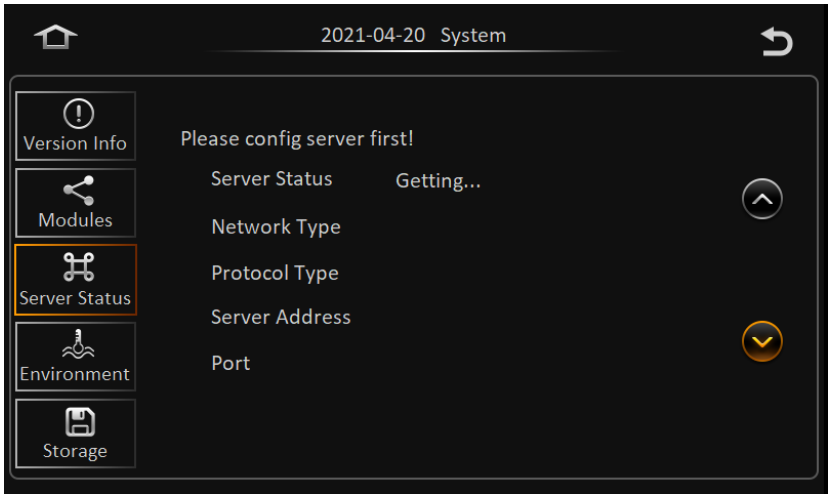
Modules: displays Module1, WIFI, and GPS.



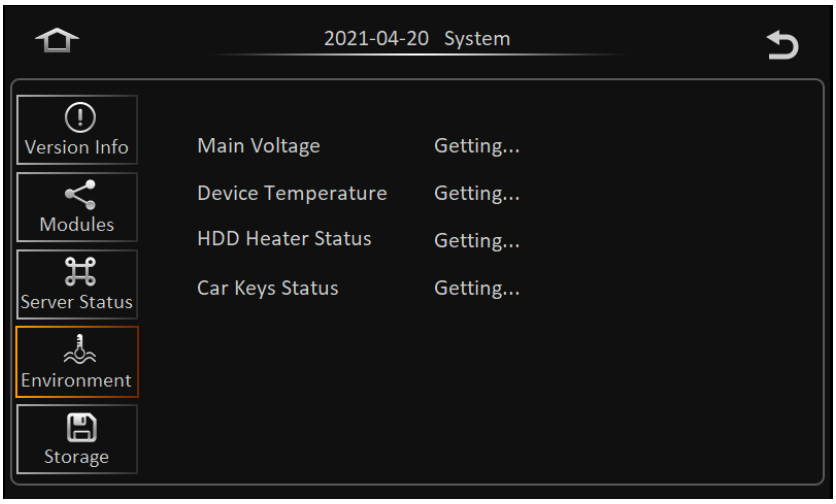




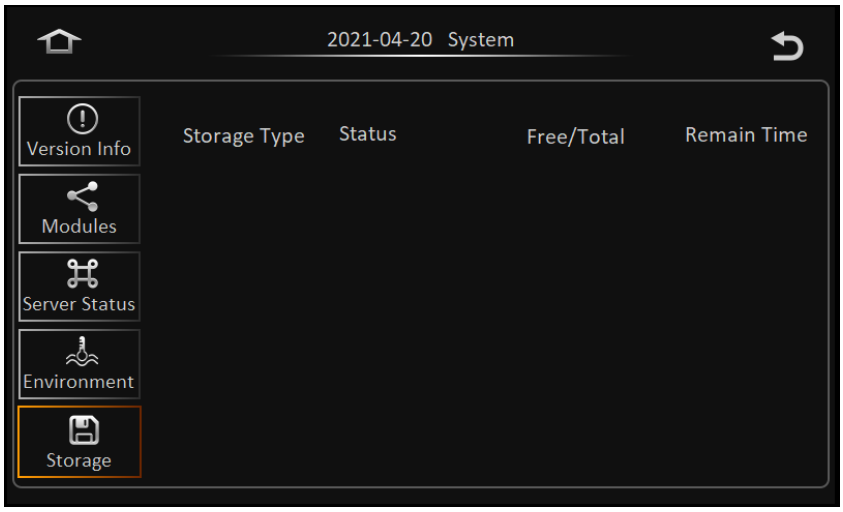
Server Status: displays the connection status and information of the connected server. If multiple servers are configured, tap the  and  on the right side of the screen to view the connection status of each server.



Environment: displays Main Voltage, Device Temperature, and other information.



Storage: displays the storage status of the SD cards on the device.



Functions available on this screen include:

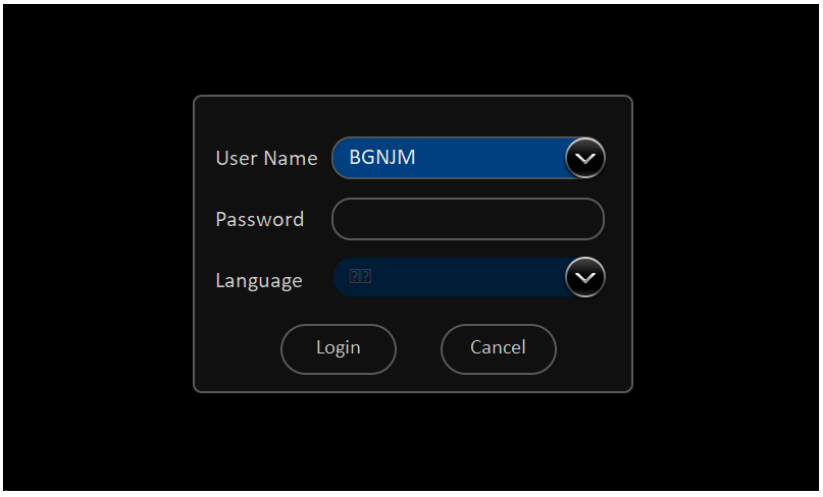
- Storage Type: the type of storage the device is using; it supports dual hard disks and dual SD cards.
- Status: current recording status.
- Free/Total: storage's current available capacity and total capacity.

- Remain Time: time for the remaining capacity to store recorded video (calculated automatically using the N9M bitrate calculator)

3.1.6 Login

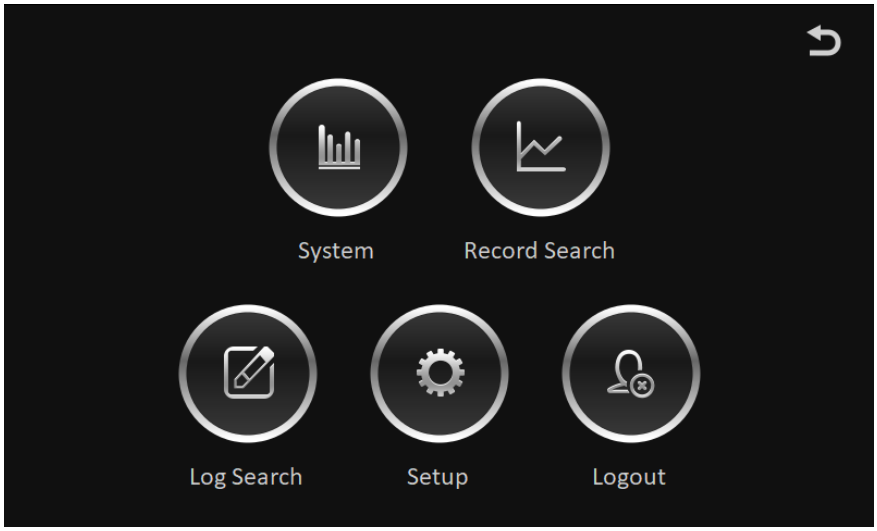
On the live view screen, tap (or right-click with your mouse) the screen. A menu is displayed at the bottom of the screen. Tap the avatar button rightmost to log in and go to the Settings screen.





- Select a username and enter the password. If the password is correct, you will go to the Settings screen; otherwise, enter again after the error message is prompted.
- The password can be set to null. In that case, you can log in without entering a password.
- Language: enables you to set the display language of the CP4.
  - Currently supports Chinese and English;
  - Displays and changes to a screen operating language supported by the device; the system changes to the language immediately after it is selected;
  - After the language is switched, a factory reset performed will not restore the language setting.

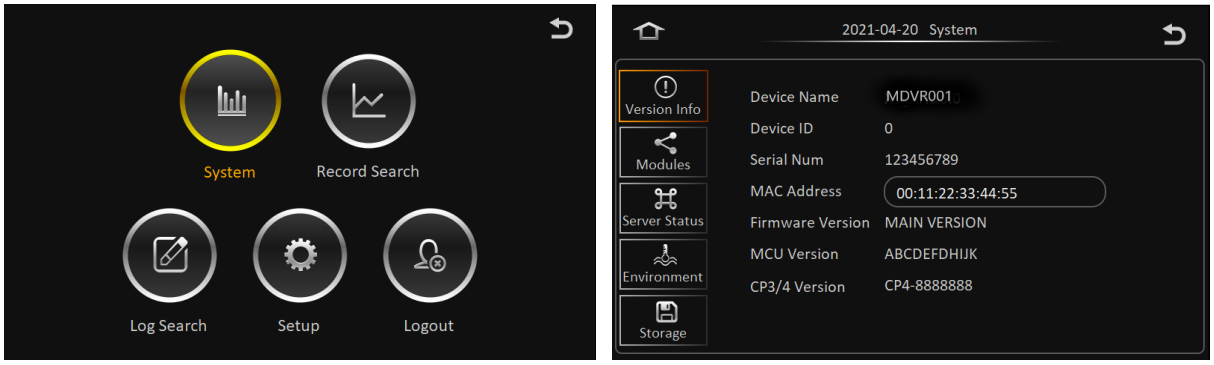
You will go to the following screen once logged in:



On the screen, you can view system-related information, search videos and logs, perform settings, and log out.

3.2 System

On the live view screen, tap Login Avatar > System to go to the following screen:

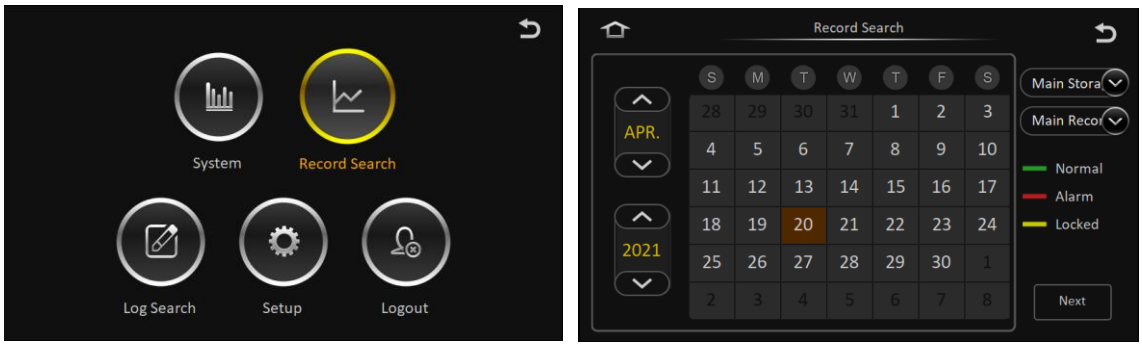


The content displayed on the screen is the same as those in Section 3.1.5.3 and is not described here.

3.3 Video Search

3.3.1 Video Search

On the live view screen, tap Login Avatar > Record Search to go to the Record Search screen (in the case of an SD card installed), as shown in the following figure:



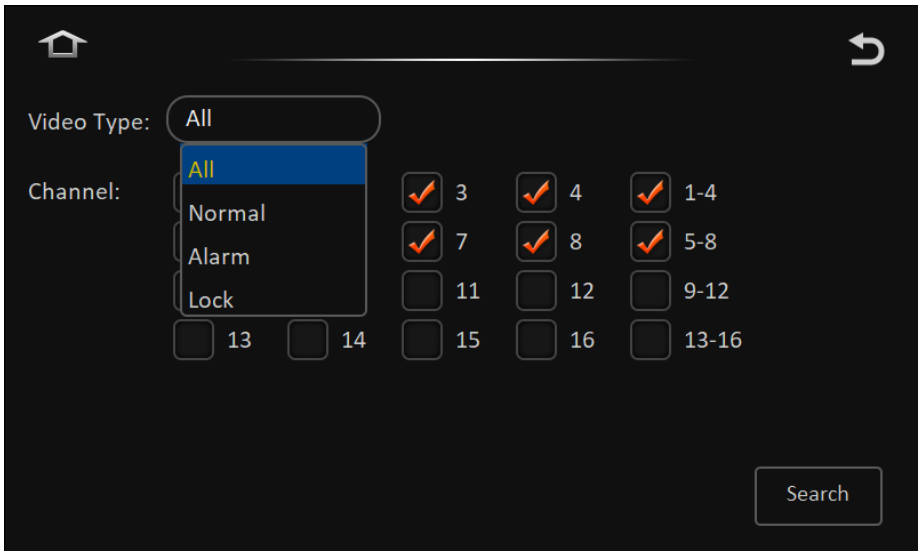
In the calendar, the color of the strip under a date indicates that videos were recorded on that day. Where,

No colored strip	No video recorded on that day
Green	Normal videos recorded on that day
Red	Alarm videos recorded on that day
Yellow	Alarm videos recorded on that day and file automatically locked (videos locked)

Source of videos can be selected: main recording, sub-recording, and mirrored recording. Where,

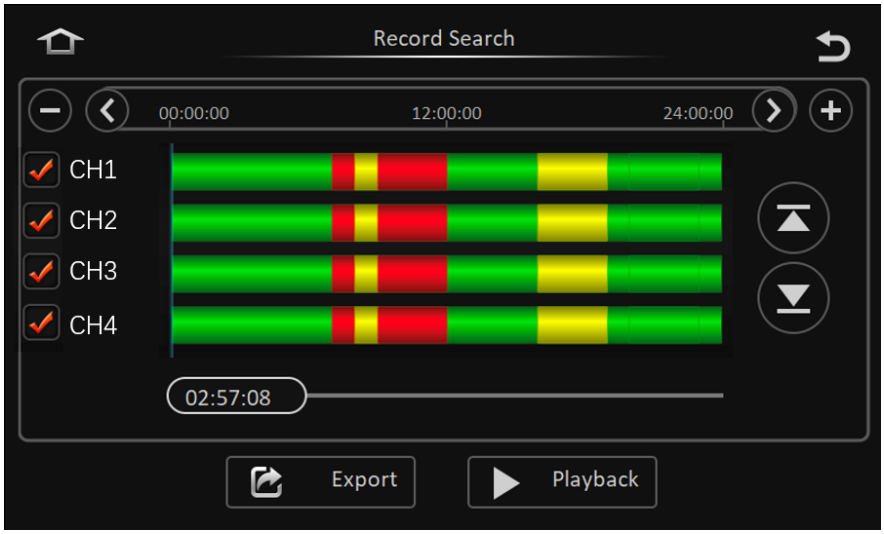
Main recording	Main card recording
Sub-recording/Mirrored recording	Dual-stream recording

You can search for the main and sub-stream videos on a specified date or time. Select the dates (year, month) to view videos on the left side of the screen. Select dates having recorded videos and tap Next to go to the screen for setting video search details, as shown in the following figure:



- Video Type:
  1) Select All to search for all videos meeting the conditions;
  2) Select Normal to search for all videos except for alarm videos;
  3) Select Alarm to search for alarm videos only;
  4) Select Lock to search for locked alarm videos only.
- Channel:
  1) Channels with recorded videos on the specified day can be selected and are marked with colors for video types;
  2) Channels without recorded videos on the specified day are in gray and cannot be selected;
  3) The last option on each line covers all optional channels on that line;
  4) Correlated prompts are different, depending on the selected video type.

After selecting the video type and channel, tap Search to go to the search result screen for the selected day.



- Timeline:
  1) The timeline at the top displays three time points: 00:00:00, 12:00:00, and 24:00:00.
  2) You can drag the 

to any position in the timelines below.
  3) Tapping the - or + icon on the left and right sides of the timeline can extend or narrow the timeframe (by half). This function is used to easily locate a certain period for subsequent playback/export when a video spans a long time period;
  4) Tap < or > above the timelines to move the timeframe left or rightward (30 min).
- Channel No.:
  1) The colored strip for each channel indicates the video types in different time periods;
  2) Tap  and  buttons on the right to view details of videos in each channel;
  3) Check a channel (or more) and select the timeline(s) to playback or export the videos in the channel(s) at the selected time.

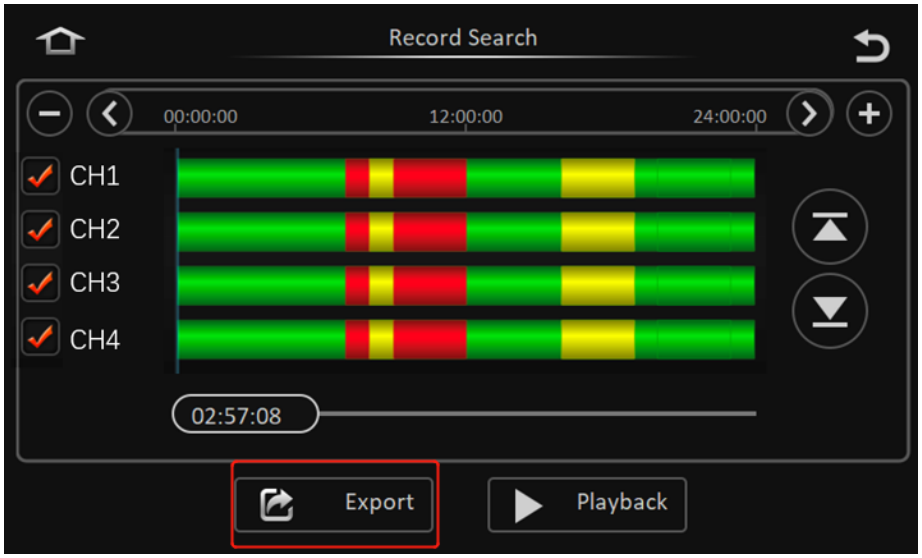
3.3.2 Video Export

You can either export video files to a connected USB peripheral or remove the SD card to export or playback the videos on a PC using professional software.

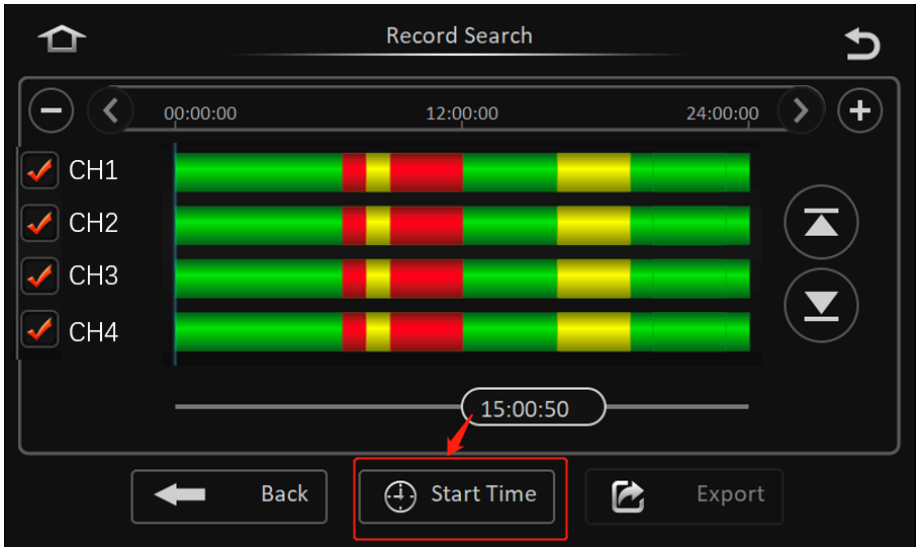
The data can be exported as comprehensive data or AVI data.

- Comprehensive data: This option exports the original H.264 data stream and black box data in a package. The exported comprehensive data can only be played using the player (platform) provided by Streamax. The video data and the black box will be correlated for playing the data.
- AVI data: Data is exported in standard AVI format and can be played in any data player.

On the video search result screen, tap the Export button, as shown in the following figure:

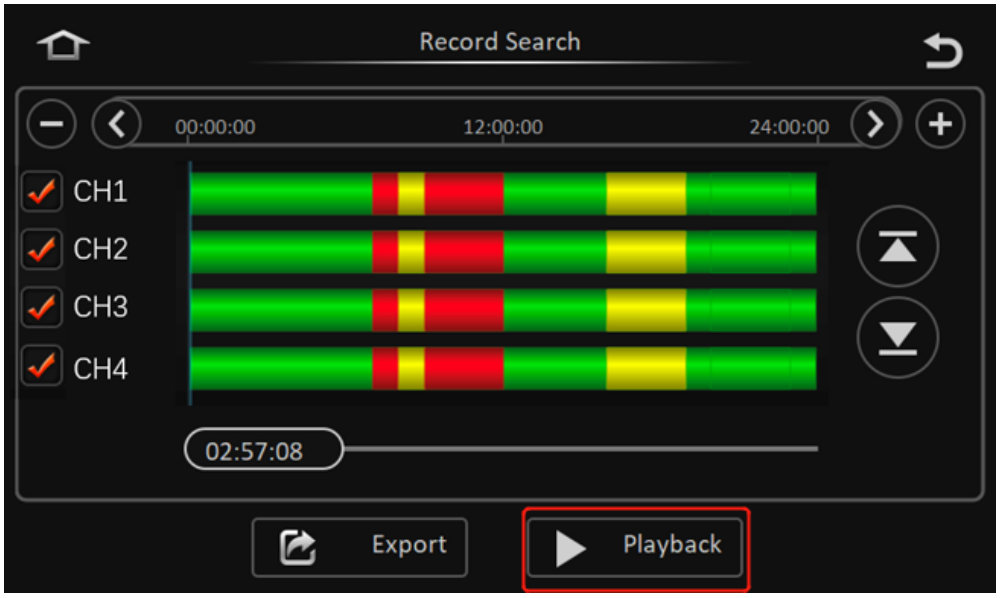


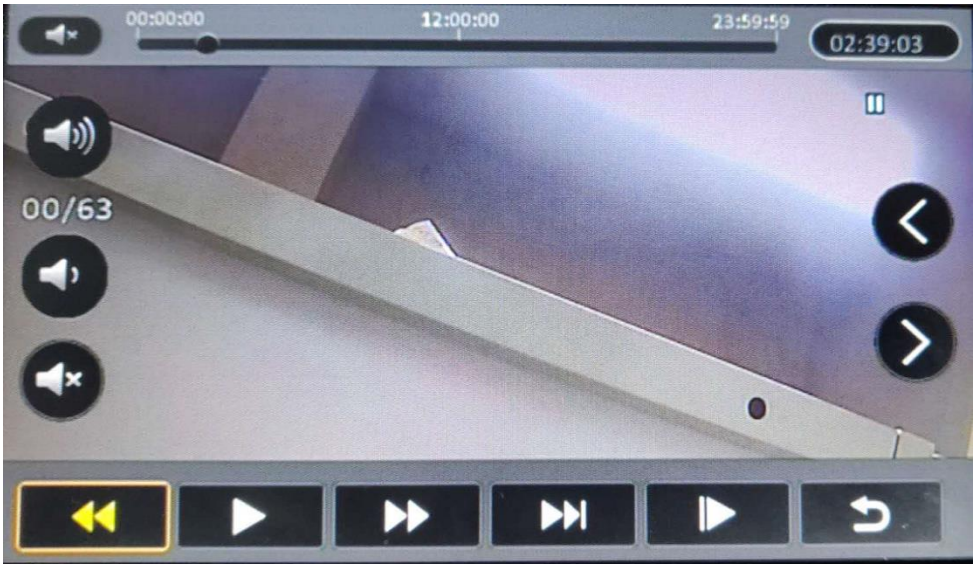
Enter the start time and end time for exporting videos to export the video files within the selected channel and time period, as shown in the following figure:



3.3.3 Video Playback

On the video search result screen, tap Playback to playback the video files within the selected channel and time period, as shown in the following figure:



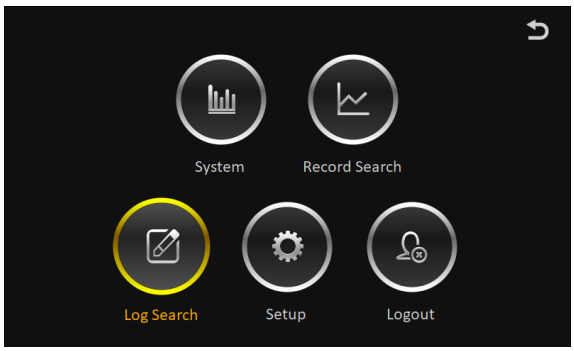


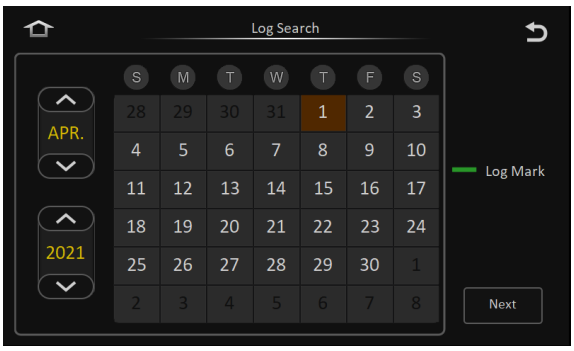
Operations that can be performed on the Playback screen include volume adjustment/mute/fast forward/fast reverse/pause/speed setting (slow: 1/2×, 1/4×, 1/8×, and 1/16×; fast: 2×, 4×, 8×, and 16×)/variable-speed play/back/channel switching and dragging the timeline.

To switch between channels, tap < or > on the right.

3.4 Log Search

The Log Search screen records and displays all alarm events and logs of login and other operations. Tap Login Avatar > Log Search to go to the following screen:



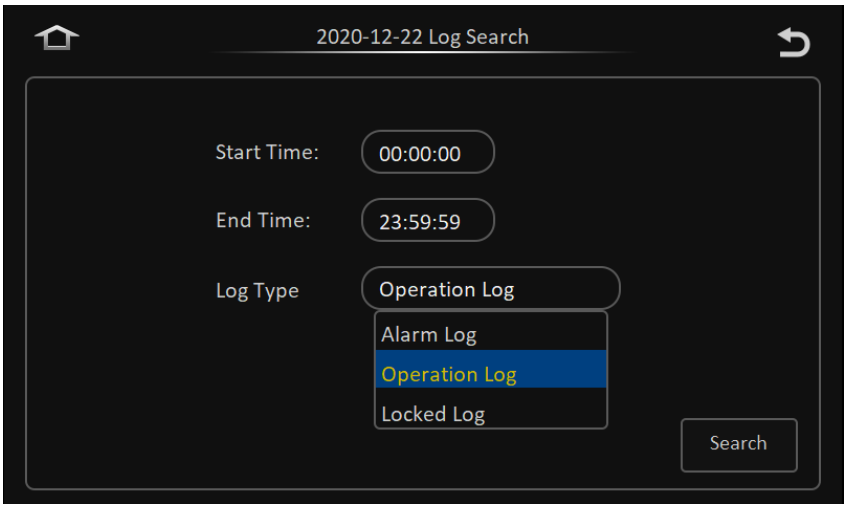


Descriptions of the Log Search screen:

- Calendar: Dates with recorded logs are indicated on the calendar by a green color.

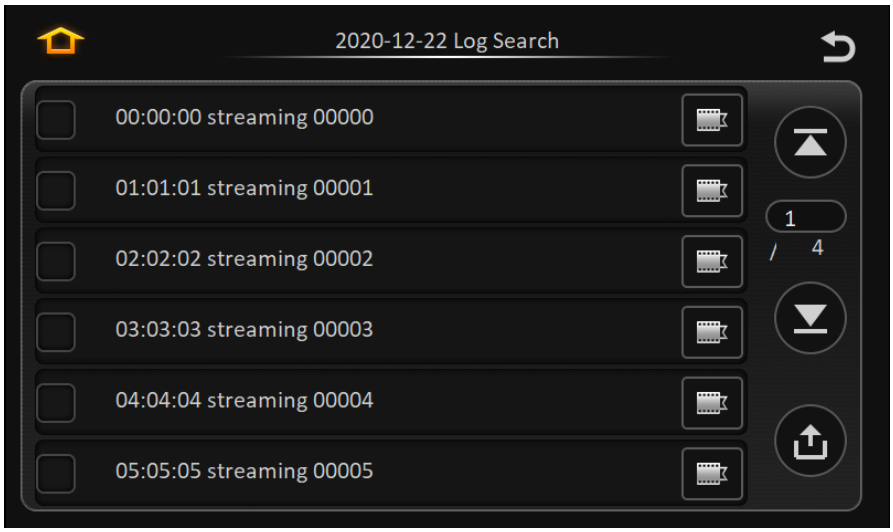
  Note: The "Log Mark" in Log Search does not distinguish between different log types but marks all logs in with green color;

- Select a date and tap Next, as shown in the following figure:



Screen descriptions:

- Start Time/End Time: Select the start/end time of log files to be searched;
- Log Type: Operation Log, Alarm Log, and Lock Log.
- Select a time period and Operation Log and tap Search, as shown in the following figure:



Descriptions of the Operation Log search screen:

- Log information includes:

  1) Log time: the time when the event happened;

  2) Log name: description of the event;

- Pages can be turned to search logs. Tap  or  to move to the previous or next page. All the log files of the selected day can be exported. Select the logs

to be exported and tap to export;

- Operation logs do not support correlation with video files, which means you cannot play video files by tapping the button after the logs.

Descriptions of the Alarm Log search screen:

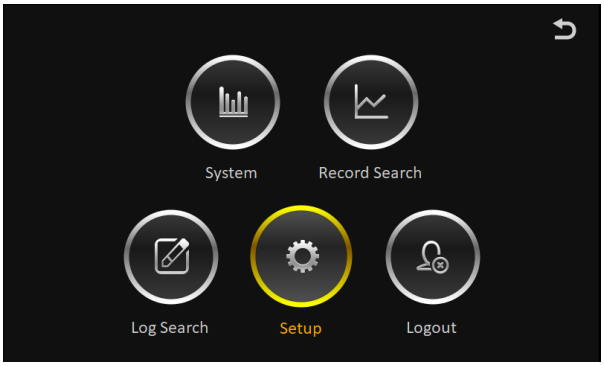
- Alarm Type: All, IO, Panel, Speeding, etc.
- Log information includes:
  1) Log time: the time period when the event happened;
  2) Log name: description of the event;
- Pages can be turned to search logs. Tap or to move to the previous or next page. All the log files of the selected day can be exported. Select the logs to be exported and tap to export;
- Operation logs support correlation with video files, which means you can play video files by tapping the button after the logs.

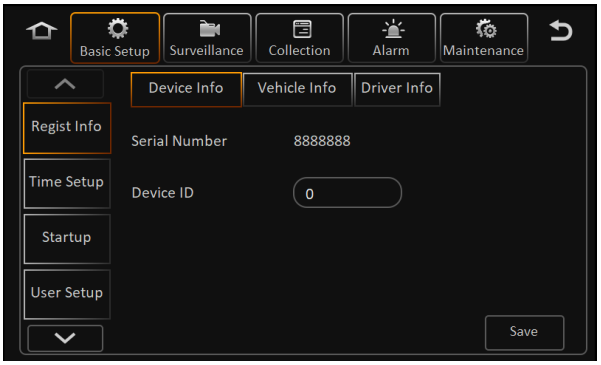
Descriptions of the Lock Log search screen:

- Alarm Type: All, IO, Panel, Speeding, etc.
- Log information includes:
  1) Log time: the time period when the event happened;
  2) Log name: description of the event;
- Pages can be turned to search logs. Tap or to move to the previous or next page. All the log files of the selected day can be exported. Select the logs to be exported and tap to export;
- Operation logs support correlation with video files, which means you can play video files by tapping the button after the logs.

3.5 Setup

On the live view screen, tap Login Avatar > Setup to go to the Setup screen The Setup screen includes functions of Basic Setup, Surveillance, Collection, Alarm, and Maintenance.

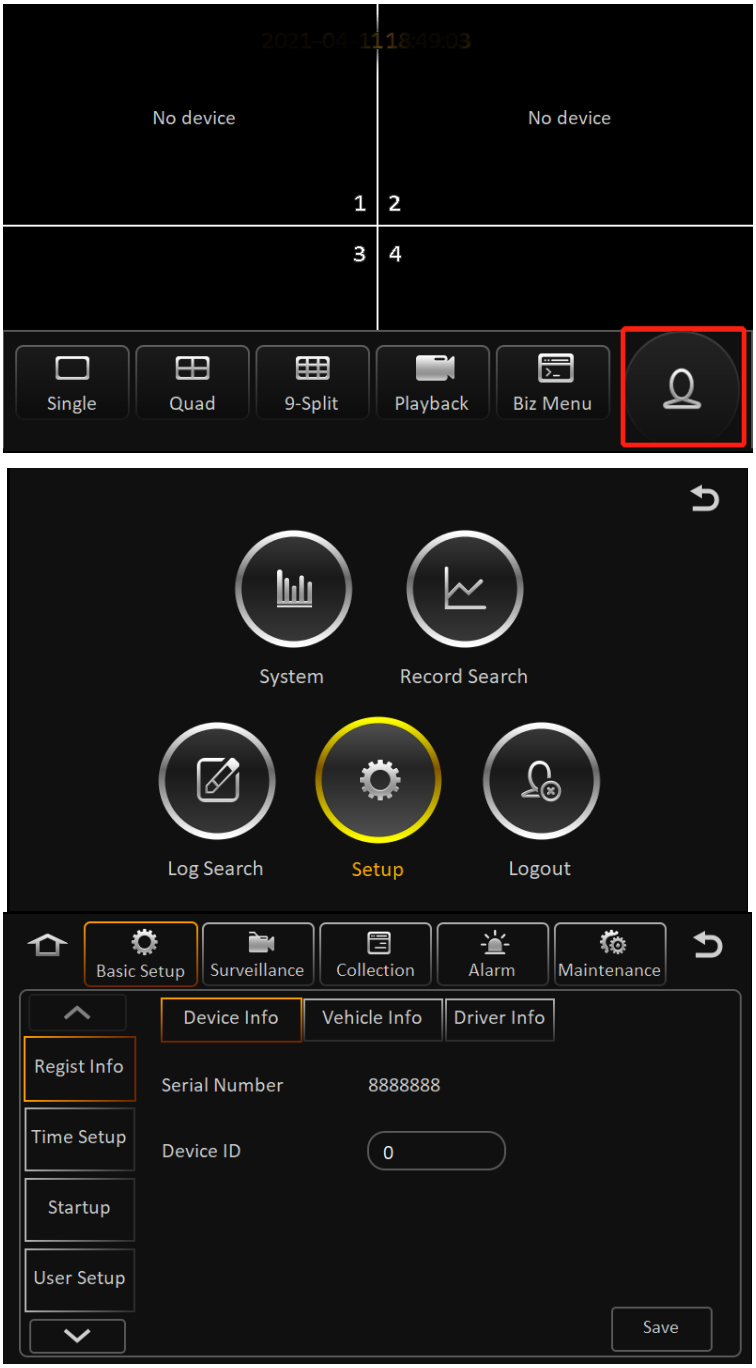




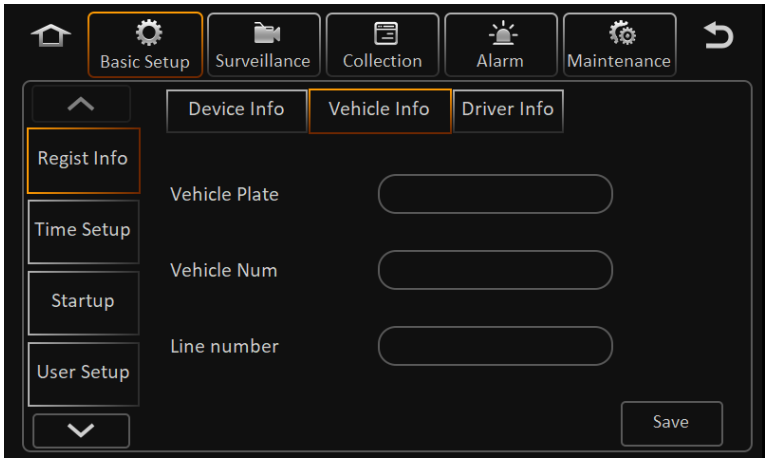
3.5.1 Basic Setup

3.5.1.1 Regist Info

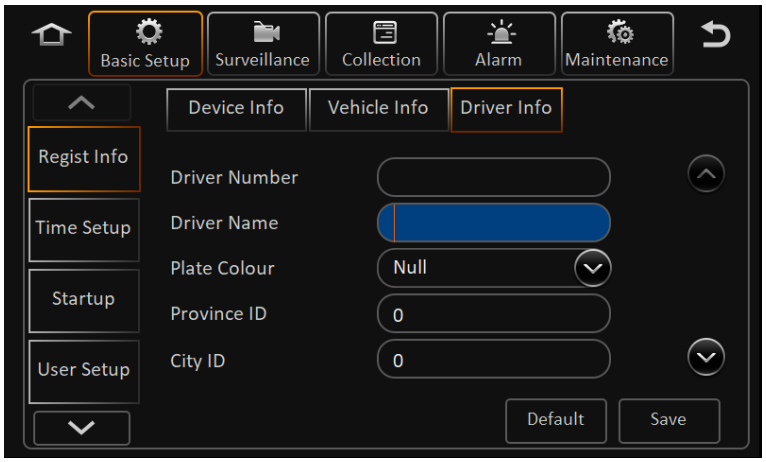
The function is used to set the registration information of the device. On the live view screen, tap Login Avatar > Setup > Basic Setup > Regist Info > Device Info/Vehicle Info/Driver Info, as shown in the following figure:



- Serial Number: the serial number of the device
- Driver ID: the driver ID information



- On the Vehicle Info screen, you can set the Vehicle Plate, Vehicle Num, and Line Number.

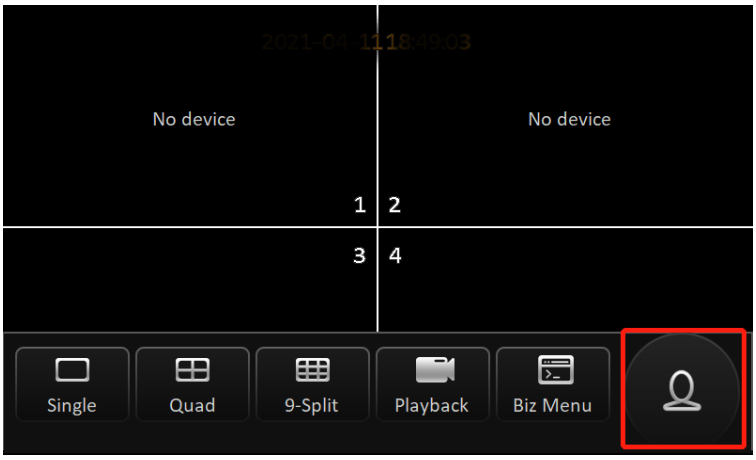


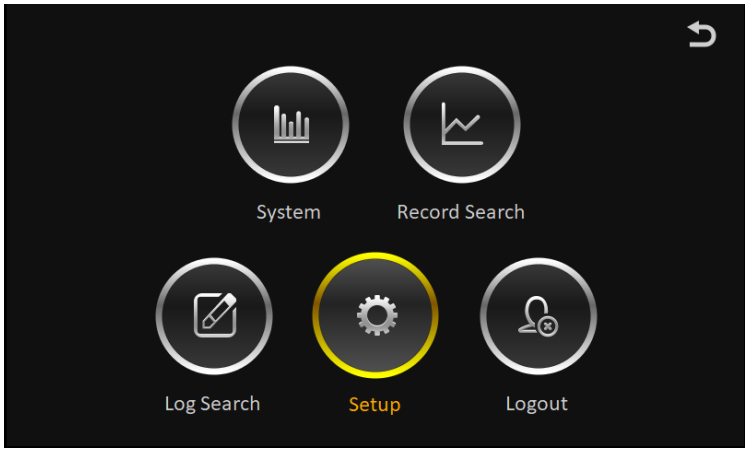
- On the Driver Info screen, you can set the driver's personal information, including Driver Number, Driver Name, and Plate Colour.

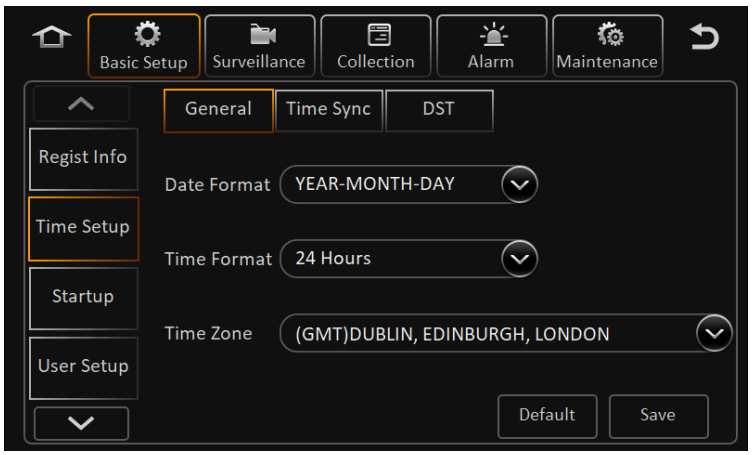
3.5.1.2 Time Setup

3.5.1.2.1 General

On the live view screen, tap Login Avatar > Setup > Basic Setup > Time Setup > General, as shown in the following figure:



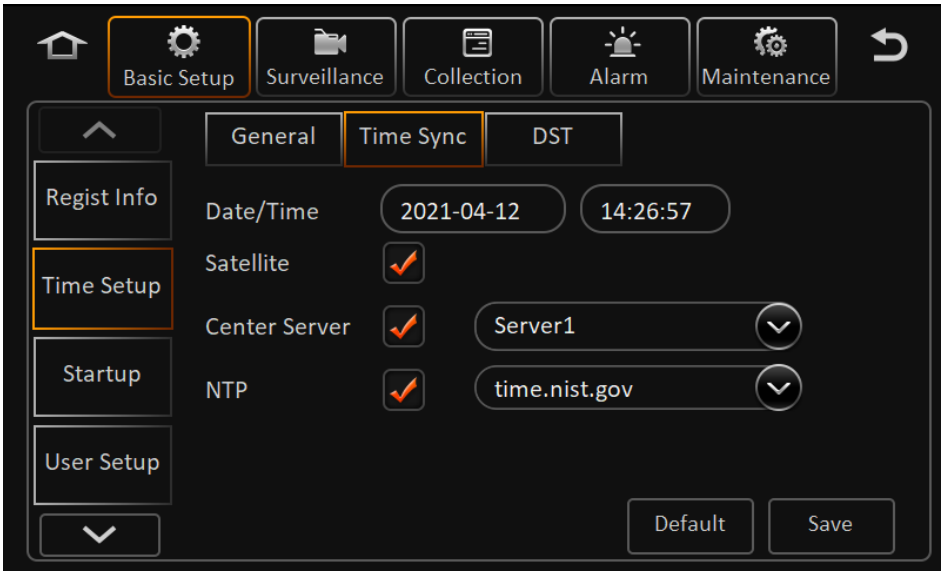




- Data Format: YEAR-MONTH-DAY/MONTH-DAY-YEAR/DAY-MONTH-YEAR. The format only reflects on the live view screen or in the video recording OSD.
- Time Format: 24 Hours or 12 Hours. The format only reflects on the live view screen or in the video recording OSD.
- Time Zone: supports the selection of time zones.

3.5.1.2.2 Time Sync

The time will be synchronized automatically when there is a deviation between the system time and the actual time. With the Time Sync function, you can enter the date and time manually, or set the mode for time calibration. On the live view screen, tap Login Avatar > Setup > Basic Setup > Time Setup > Time Sync, as shown in the following figure:



- GPS Satellite time calibration.
- NTP time calibration, with multiple choices of NTP servers.
- Center Server time calibration.
- More than one time-calibration mode can be selected at a time. When one mode cannot work, it will automatically switch to other modes for time calibration in the order of Satellite > NTP > Center Server. In the case of the failure to synchronize the time in the Satellite mode, it switches to the NTP mode, and if it fails again, the Center Server mode will be applied.
- After the successful time calibration during the startup time, another one will be conducted every 24 hours. To prevent the immediate time calibration after setting the time and date manually, the time calibration takes place in following situations:

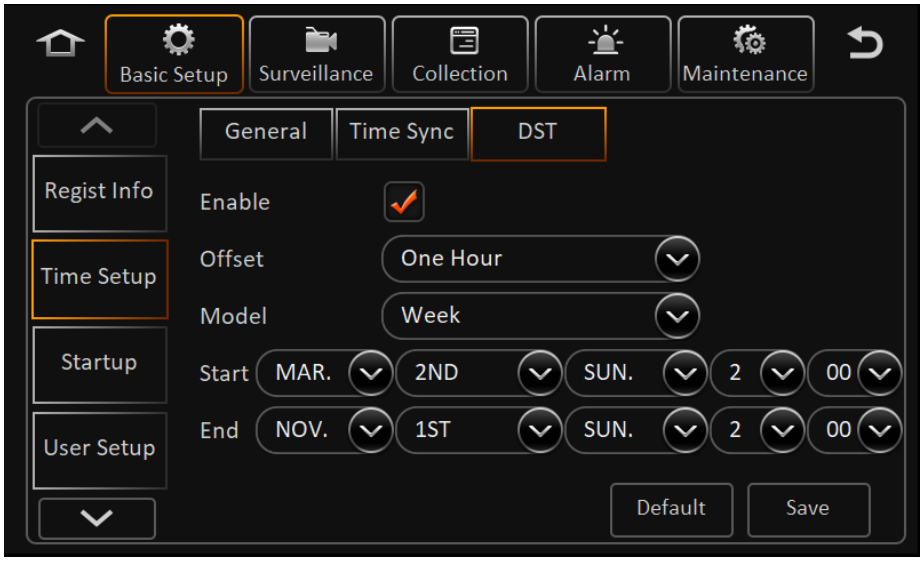
  1) After the system startup;

  2) When DPS signals changing from invalid to valid;

  3) After a failure, to continue the time calibration until success.

3.5.1.2.3 DST

As only some foreign countries adopt daylight saving time, the DST function is enabled only when the language is English. For some regions, you need to set the DST due to the time zone reason. Specifically, you can set the start & end time, and offset in weeks or days. On the live view screen, tap Login Avatar > Setup > Basic Setup > Time Setup > DST, as shown in the following figure:



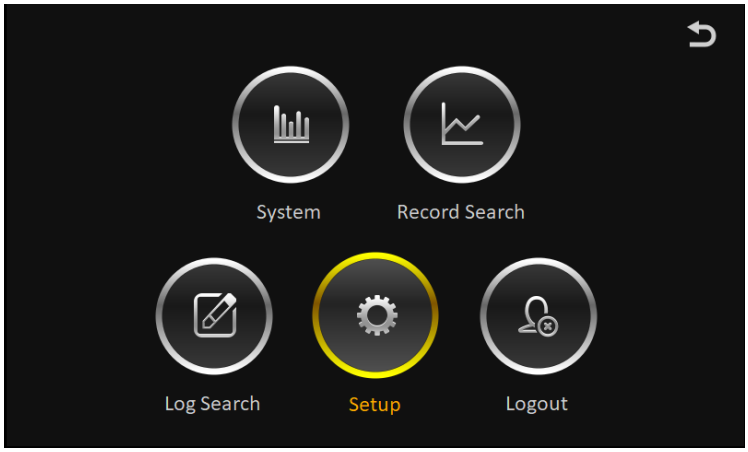
- Enable: The DST function can be enabled on user's will, disabled by default.
- Offset: offset of 1 or 2 hours.
- Model: week or date.
- Week Model: The Start and End of daylight saving time are set according to the month, week of the month, day of the week, hour, minute, and second.
- Date Model: The Start and End of daylight saving time are set according to the date, hour, minute, and second.

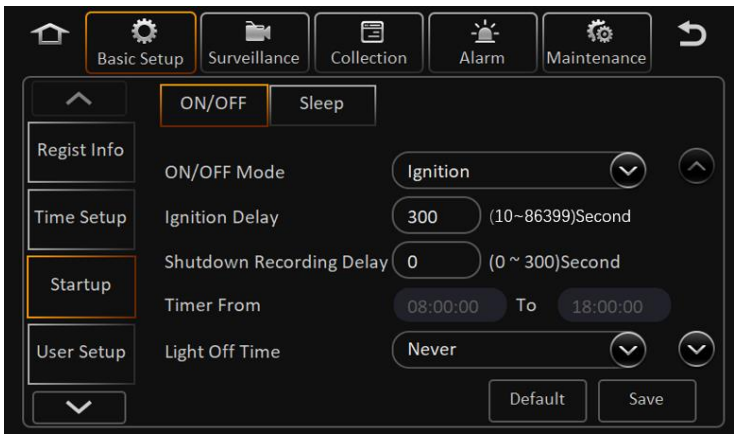
3.5.1.3 Startup

3.5.1.3.1 ON/OFF

The function is used to set the mode and time for the MDVR device. On the live view screen, tap Login Avatar > Setup > Basic Setup > Startup > ON/OFF, as shown in the following figure:





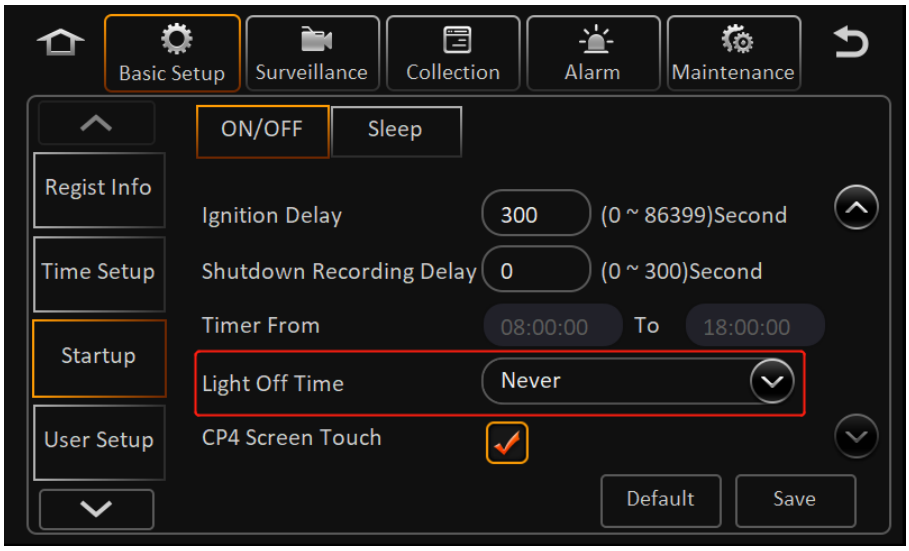


- ON/OFF Mode: Ignition, Timing, Ignition/Timing.
  1) Ignition: starts the device with the car key.
  2) Timing: allows you to set the device uptime from the start time to the end time (format: HH:MM:SS).
  3) Ignition/Timing: indicates that the device is on when either of the ignition and timing conditions is met and is off when both conditions are met.
- Ignition Delay:
  1) The function is enabled in the Ignition Mode only; turn off the car key and use the Ignition Delay, then the countdown shutdown time prompts on the live view screen, with the delay time range from 10 to 86,399 seconds.
  2) If the operation screen stays on the Setup screen, it will not enter the countdown, until exiting and returning to the live view screen.
- Timer:
  1) The function is enabled only in the ON/OFF Mode of Timing or Ignition/Timing;
  2) Fill in the time and the device will start and shut down at the fixed time.
  3) If the operation screen stays on the Setup screen, the device will not shut down, until exiting and returning to the live view screen.

Note: It is the same in the Timing Mode, that is, the device will not shut down on the Setup screen until exiting and returning to the live view screen.

- Light Off Time

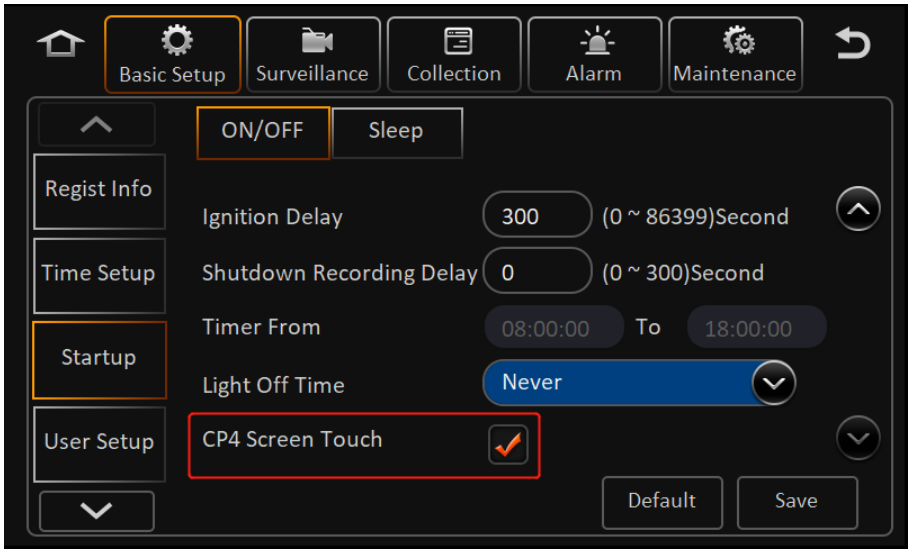
When the vehicle is driving at night, the backlight of the CP4 screen and button will affect the driver's safe driving to some extent. Therefore, when there is no operation, parameters can be configured to automatically close the LCD screen and button backlight. as shown in the following figures.



Light Off Time: 30 s, 1 min, 3 min, 5 min, 10 min, and never.

- **CP4 touch screen enabling switch**

You can set whether to enable the touch screen function of CP4. By checking **Enable**, you can use the touch screen function, and when you turn off the enabled function, the touch screen function is invalid.



3.5.1.3.2 Hard Disk Lock Shutdown

The Hard Disk Lock is to ensure the shutdown of the device before removing the SD card for the purpose of protection.

For M1N-TKH, the device has a door:

1) The device will not be off when the USB flash drive or EasyCheck App is connected after opening the door;

2) After opening the door, there is a 20-second waiting time when operation can be performed, and after 20 seconds, the device will be off.

3.5.1.3.3 Sleep

The function is used to set the Sleep Mode after shutdown. On the live view screen, tap Login Avatar > Setup > Basic Setup > Startup > Sleep, as shown in the following figure:



- Sleep Mode:

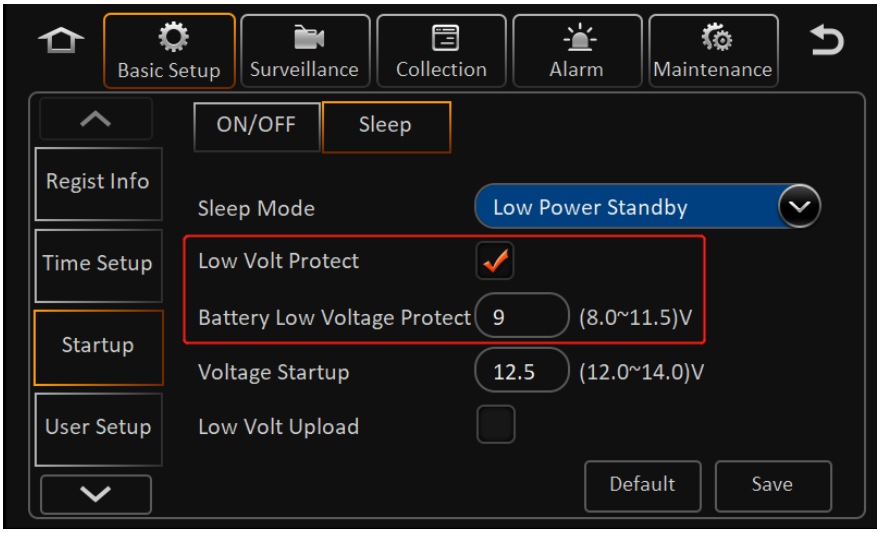
1) No Consumption Standby: After the device shutdown in flameout or at a fixed time, the system will not be awakened in the Sleep Mode.

2) Low Power Standby: After the device shutdown in flameout or at a fixed time, the system can be awakened by the IO alarm and start MDVR.

- Low Volt Protect

The function is designed to protect the battery from being drained after the voltage

of the external power supply is lower than a certain value. The screen is as follows:



- Low Volt Protect:

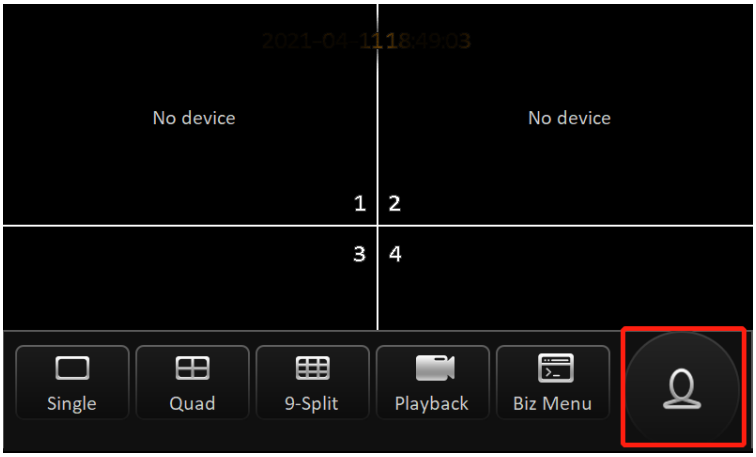
Low Volt Protect	Car Key	Device Working Conditions
Enable	Enable	• The device is in the Low Power Standby Mode when the voltage is lower than the protection level. • After the voltage is restored, the device is awakened to work.
	Disable	• The device is in the non-working status of the complete machine when the detected voltage is lower than the protection level. • After the voltage is restored, the device will not be awakened.
Disable	/	The device uses 10V as the judgment condition for enabling Low Volt Protection by default, and the switch of the car key is the same as the above two requirements.

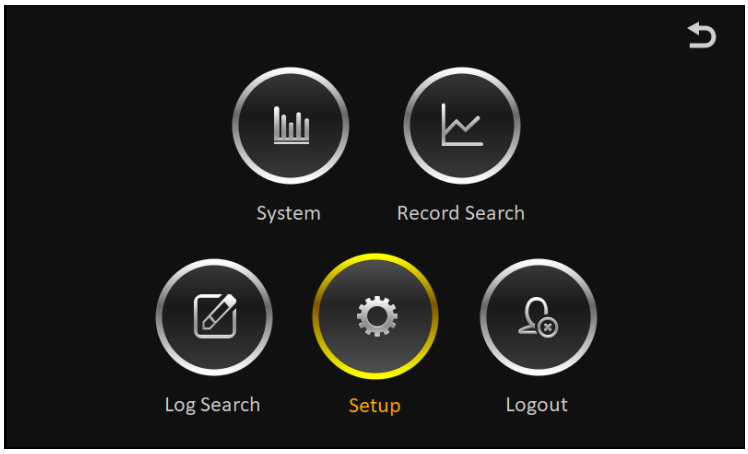
- Battery Low Voltage Protect: When the Low Volt Protection is enabled, the set value decides whether to turn on the Low Volt Protection.
- Voltage Startup: When the voltage reaches the set value, the device will restart.
- Low Volt Upload: If enabled, it will report the detected low voltage to the platform before providing protection; this is called "low voltage alarm", reported information including license plate number, time, and GPS position information.

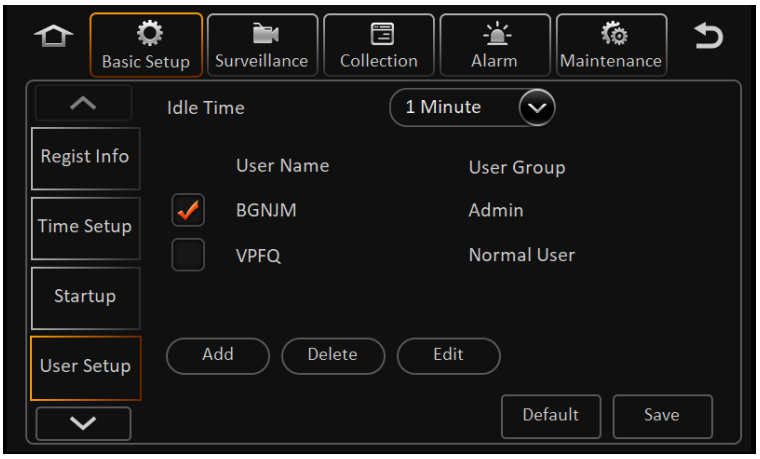
If the low volt shutdown protection appears, one log will be created and can be checked in the Log Search screen.

3.5.1.4 User Setup

On the live view screen, tap Login Avatar > Setup > Basic Setup > User Setup and open the following screen where the normal username and password can be added, deleted, and edited, and the administrator password can also be edited but the administrator username cannot be edited, nor can the administrator be deleted.







User Accounts:

1) Users are divided into two groups, Admin and Normal User;
2) In the initial login, there is one Admin account and one Normal User account by default;
3) It allows to reset the password and add or delete accounts.
4) Up to one Admin account and two Normal User accounts can be set up.

User Permission:

Account	Default Password	User Type	Permission
admin	admin	Admin	Administrator with all permissions

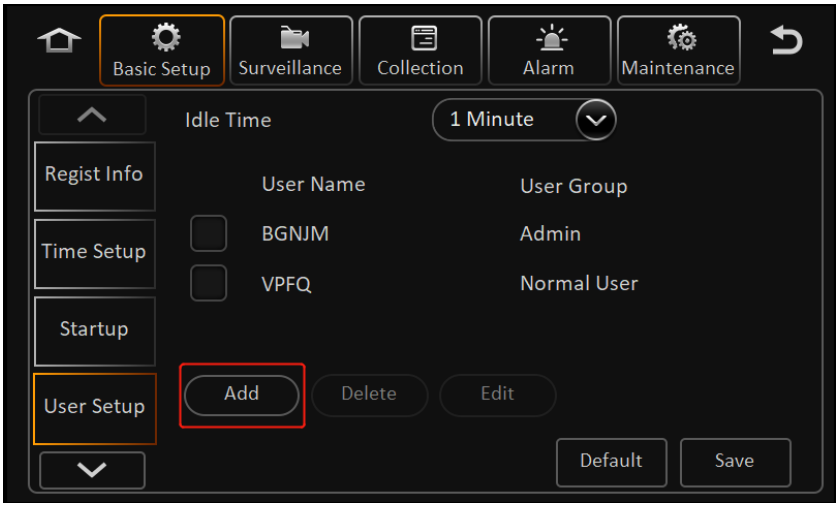
Account	Default Password	User Type	Permission
user	user	Normal User	All functions except Setup and Smart Traffic

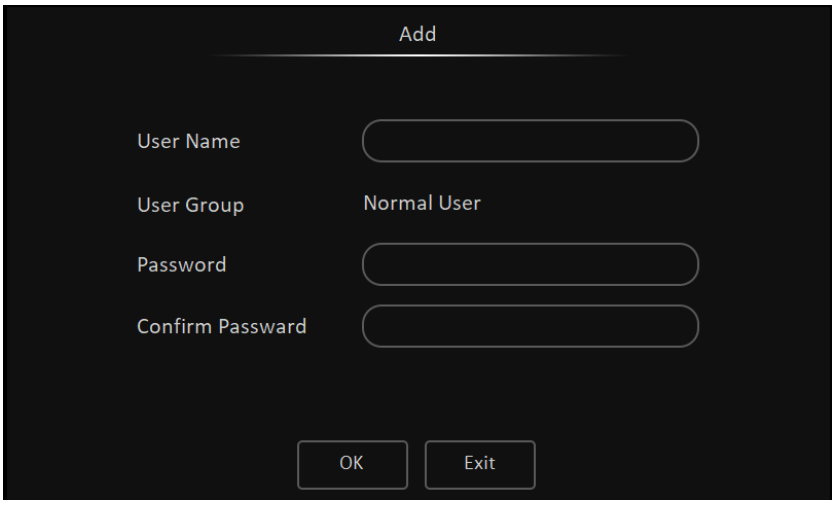
- Idle Time:

  Idle Time refers to the interval between the login and re-login to open the Setup screen after a period of time. The interval can be 30 s, 1 min, 3 min, 5 min, 10 min, and never.

- Add User

  In the User Setup screen, you can add normal users. Tap the “Add” button and the following screen will appear:



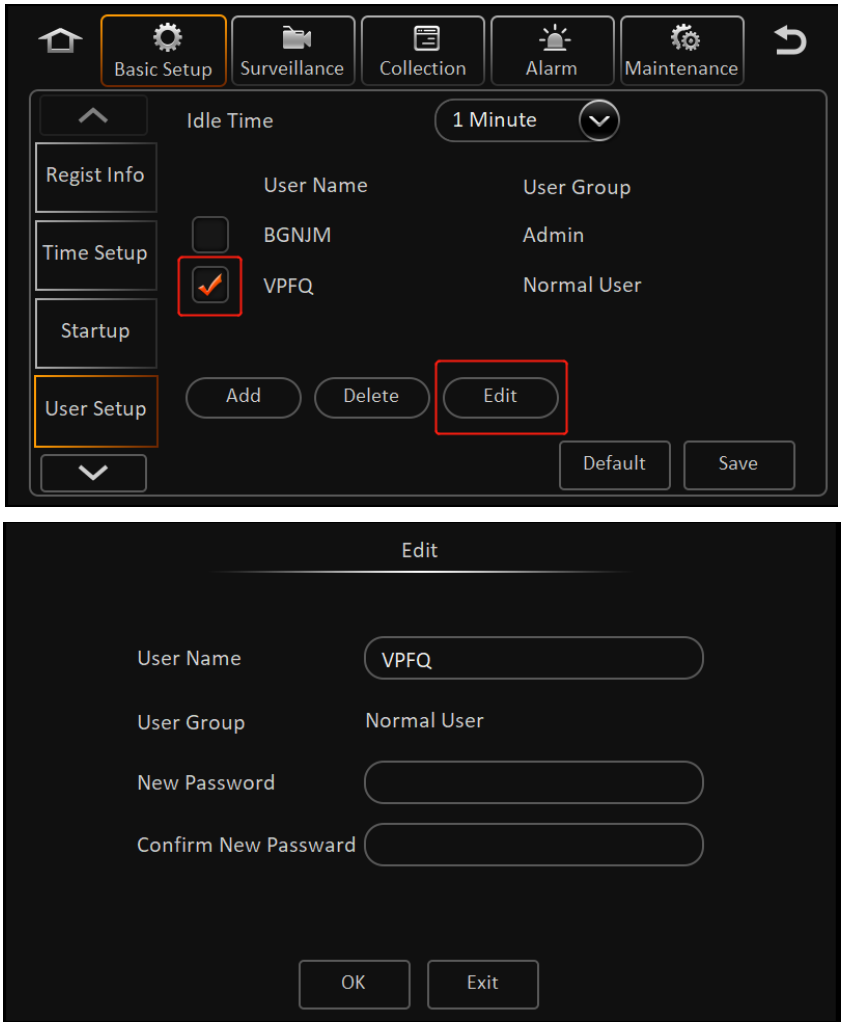


1) Only the administrator is allowed to add users.
2) Up to one administrator and two users are allowed.
3) The User Name cannot be null, or the same name as existing users.
4) The Password can be null.
5) After filling in the blank, tap the "OK" button to return to the User Setup screen and then tap the "Save" button.

- Edit User

  In the User Setup screen, the User Name and Password can be edited. Tick the

user that requires editing, tap the "Edit" button and the following screen comes:



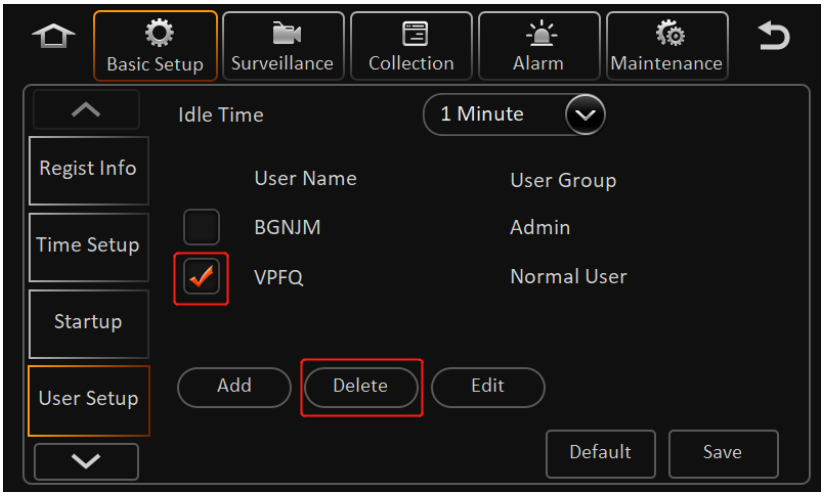
Enter the new User Name and Password, then after completion tap the "OK" button to return to the User Setup screen and tap the "Save" button.

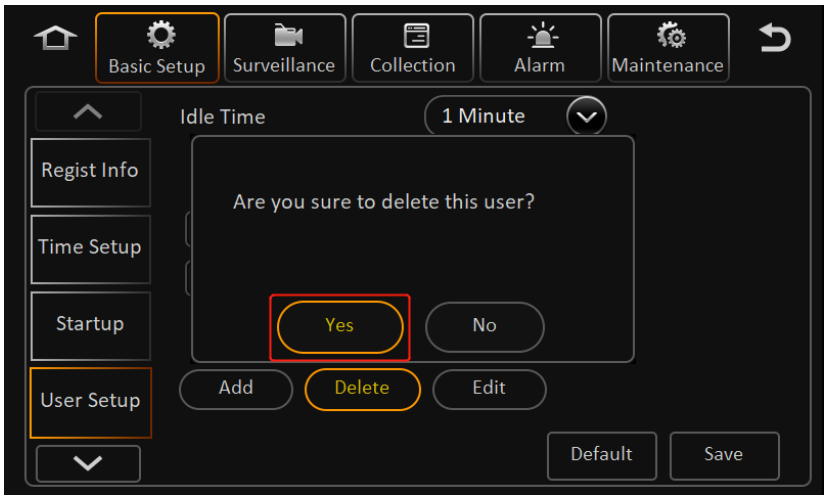
Editing the User Name and Password does not require the confirmation of the old password. The administrator user name cannot be edited.

- Delete User

In the User Setup screen, normal users can be deleted. Tick the user that requires deleting, tap the "Delete" button, confirm with the "Yes" button and then tap the "Save" button, as shown in the following figure:

Note: Administrators cannot be deleted.

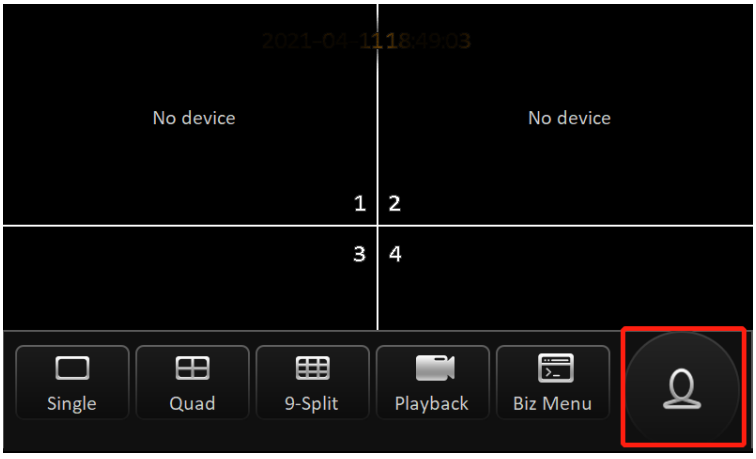


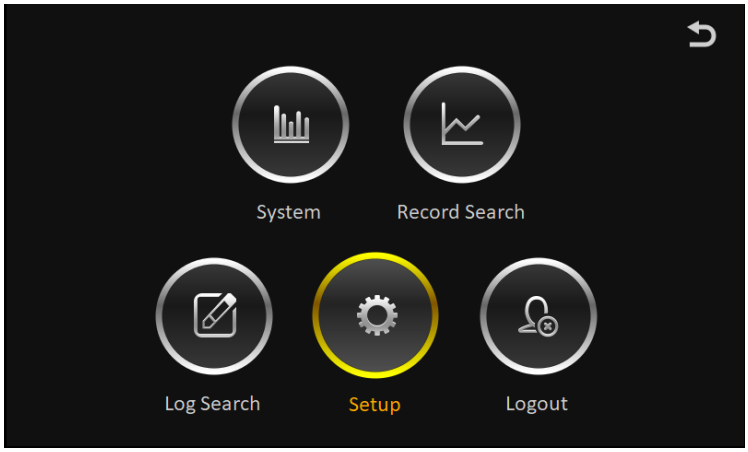


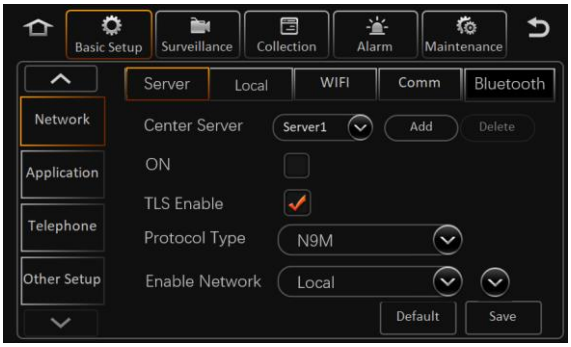
3.5.1.5 Network

3.5.1.5.1 Server

After the device is connected to the network, it should report to the server and you need to set the registration information for connecting to the network server, including Protocol Type/ Enable Network/Register Server Port/Media Server Port. On the live view screen, tap Login Avatar > Setup > Basic Setup > Network > Server, as shown in the following figure:





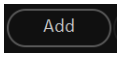


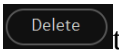


The device can connect to multiple servers at the same time according to the configuration. By default, one server is connected. It supports adding or deleting servers manually. Servers whose information can be reported include the CEIBA2 server, maintenance server, FT platform, and customer platform.

The network connected to the server supports the local network, WIFI network, and 3G/4G communication network.

If the dialing is successful, the server will be automatically connected. If it fails, it will be reconnected at an interval of 5 seconds.

- Center Server: By default, only Server 1 is available. More center servers can be added, no more than 6 in total. Tap 

to add new servers, and tap 

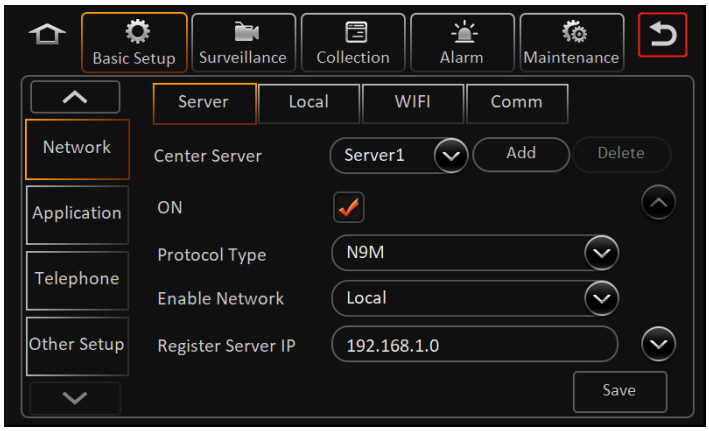
to delete servers. Server 1 cannot be deleted.

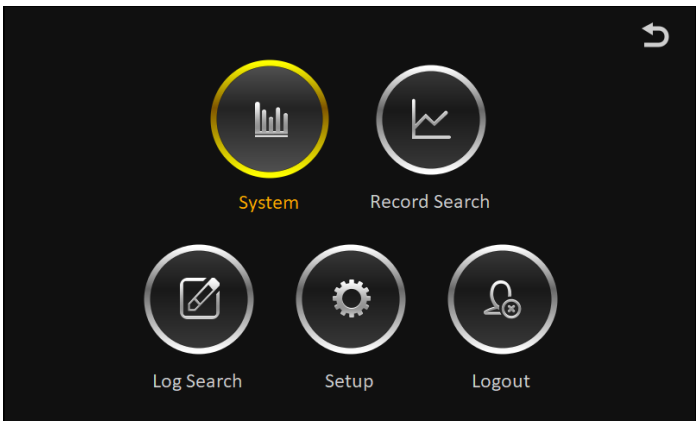
  Note: Up to two servers added to each platform.
- On: Tick the box to enable the server. If it is canceled, the device will not report the server information yet with server parameters reserved.
- Protocol Type
  1) N9M: the protocol type for the device to report information to the video monitoring platform CEIBA2;
  2) Maintenance: the protocol type for the device to report information to the maintenance platform;
  3) 808: the protocol type for the device to report information to the 808 platform (not used for trucks);
- Enable Network: By default, it is adaptive, and the current network is used automatically. The network can also be selected based on the current network mode acquired by the device, including Local, WIFI, and Comm types.

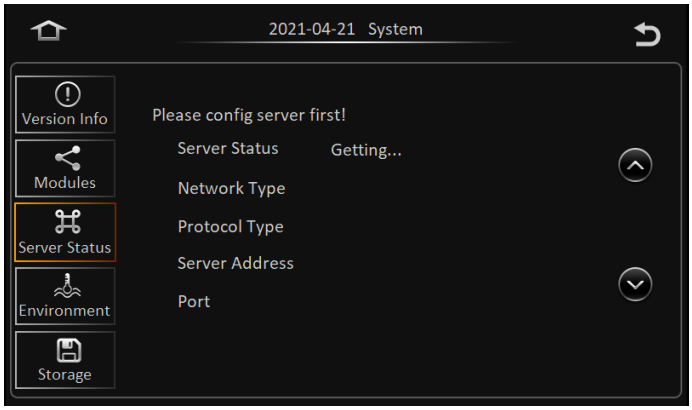
- Register Server IP: Fill in the Register Server IP/Media Server IP for the device to report information to the platform.
- Register Server Port: Fill in based on the platform port.
- **TLS encrypted port number:** During the normal startup and operation of the device, the interactive data between the device and the platform is transmitted through TLS encryption, which can ensure the security of the interactive data between the device and the platform. Data interaction in dormant state is not encrypted. For the usage, you need to enable TLS and configure the encrypted port number. Currently, only TLS encryption for the CEIBA3 platform is supported.
- Media Server IP: Fill in the Media Server IP for the device to report information to the platform.
- Media Server Port: Fill in based on the platform port.

The default addresses and ports of the register server and the media server are the same

After the server is connected, you can check whether the server is connected successfully. Tap  on the upper right corner of the screen and return to the main screen, and then tap System > Server Status to check whether the server is connected successfully. The screen is as follows:

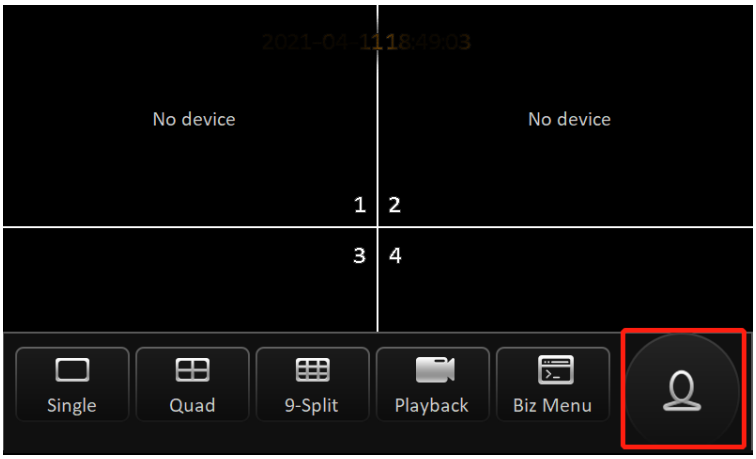


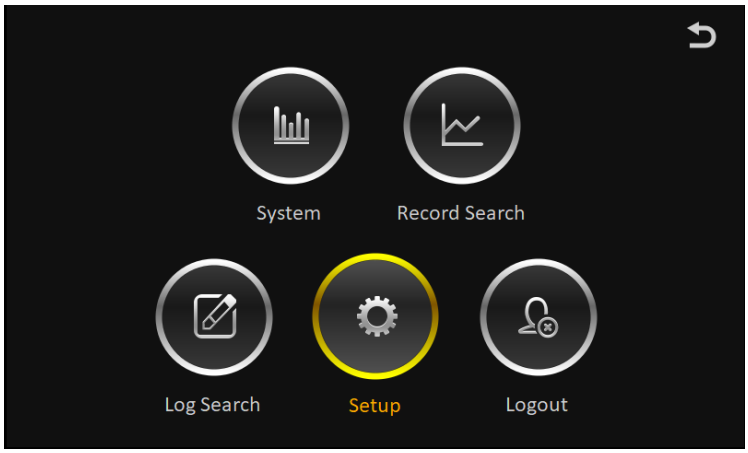


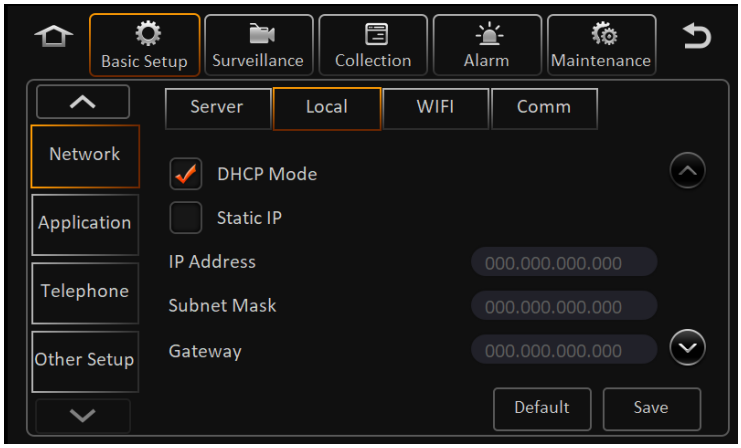


3.5.1.5.2 Local Network

The device MDVR can be connected to the local network through the IPC-to-network-interface cable. The device can be connected to the network through the local network and report information to the platform; or can be accessed remotely through IE by connecting the MDVR and the computer through the network screen and setting the corresponding IP. On the live view screen, tap Login Avatar > Setup > Basic Setup > Network > Local, as shown in the following figure:





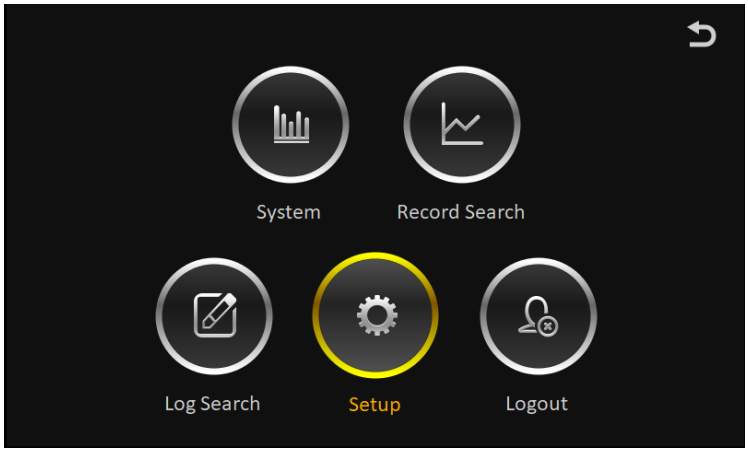


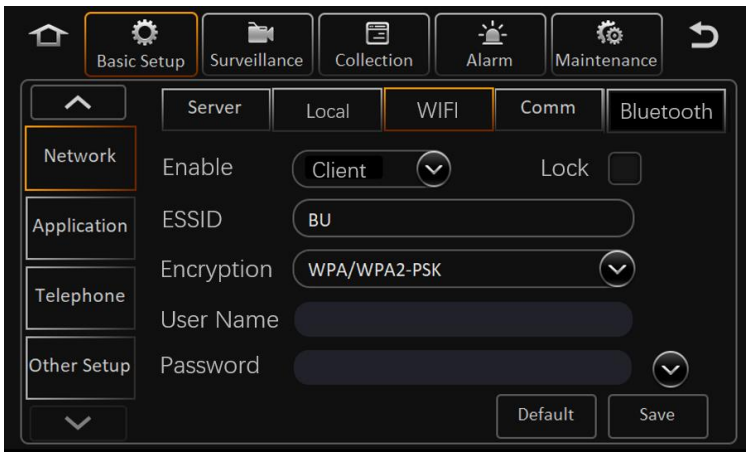
- DHCP Mode: The DHCP Mode is used to automatically assign an IP to the device. If this mode is selected, no other settings are required as the device will connect to the network directly via the network cable. If it is connected successfully, IP Address, Subnet Mask, and Gateway of the device will be displayed below.
- Static IP: Ticking the static IP requires the user to know the connectable IP network segment, and manually enter the IP Address, Subnet Mask and Gateway.
- DNS: supports two ways, automatic acquisition or self-setting.
  1) In the DHCP Mode, it supports automatic acquisition or self-setting.
  2) If Static IP is selected, only DNS can be customized.

3.5.1.5.3 WIFI

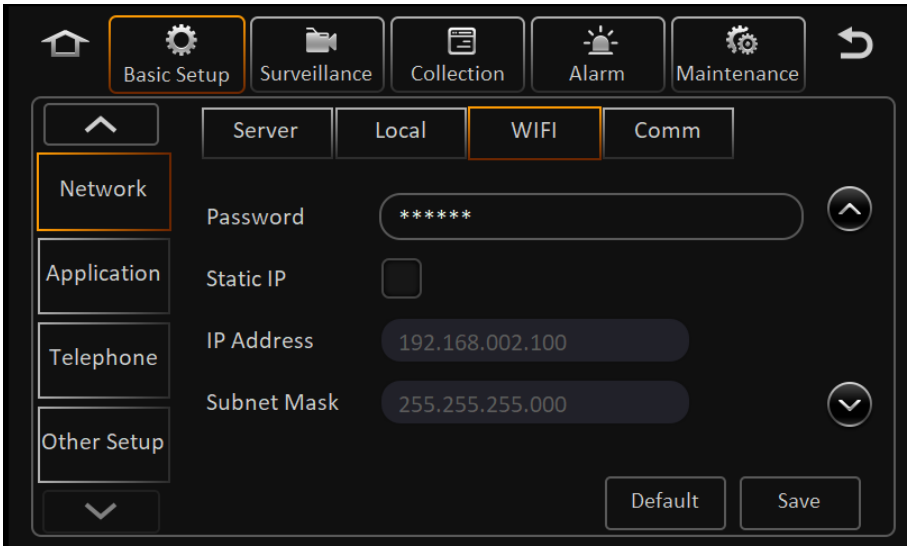
The device supports an external WiFi antenna and can connect to the network via Wi-Fi and report information to the platform. On the live view screen, tap Login Avatar > Setup > Basic Setup > Network > WIFI, as shown in the following figure:







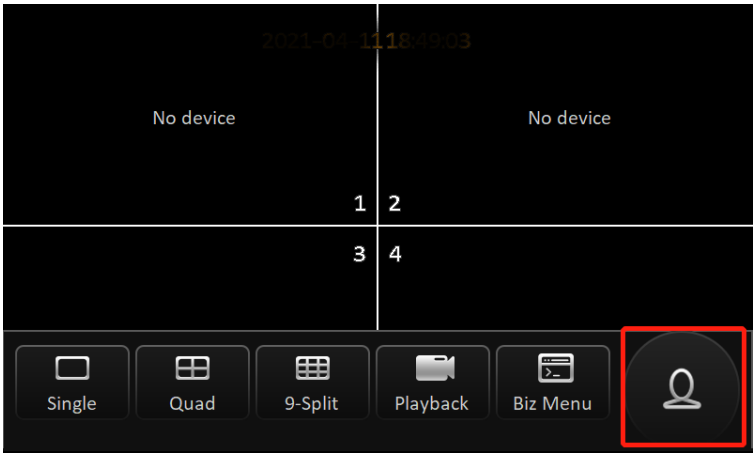
- Enable WIFI: By default, it is Disable; if Client is selected, it is to enable WIFI.
- **WiFi lock:** Enables/disables the modification of Wi-Fi hotspot parameters. After it is checked, the relevant parameters of the Wi-Fi hotspot will not be modified during parameter import.
- ESSID: It should be entered manually, generally the WIFI name.
- Encryption: The encryption methods include Wep, WPA/WPA2-PSK, and WPA2 _ Enterprise based on the connected WiFi. Among them, WPA/WPA2-PSK is the most commonly used one.
- Password: Fill in the WIFI password.

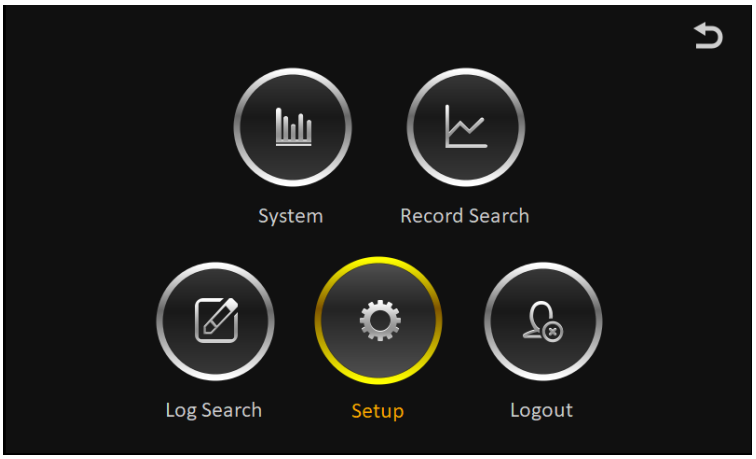


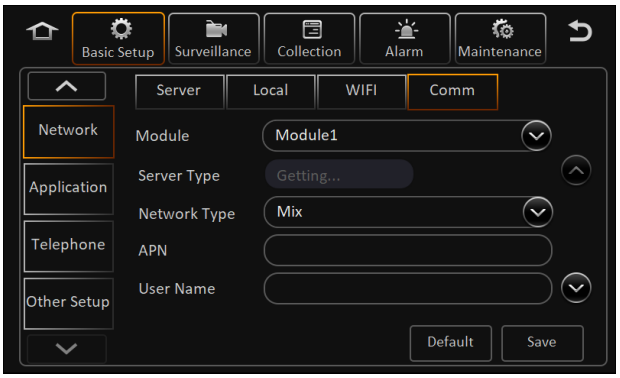
For WIFI network, you can obtain the IP address automatically, and also can configure it with a static IP.

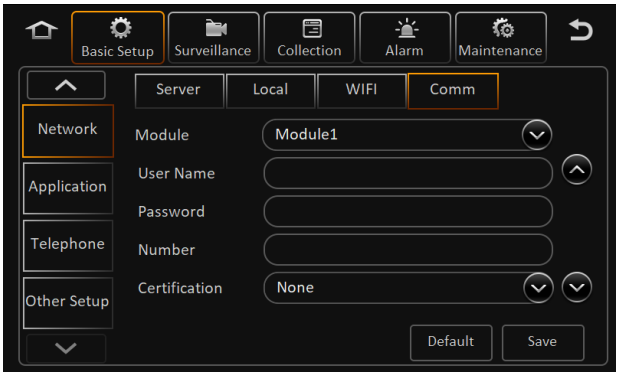
3.5.1.5.4 Comm Module

The device supports and can be configured with two network communication modules (3G, 4G) to connect to the network and report information to the platform. On the live view screen, tap Login Avatar > Setup > Basic Setup > Network > Comm, as shown in the following figure:

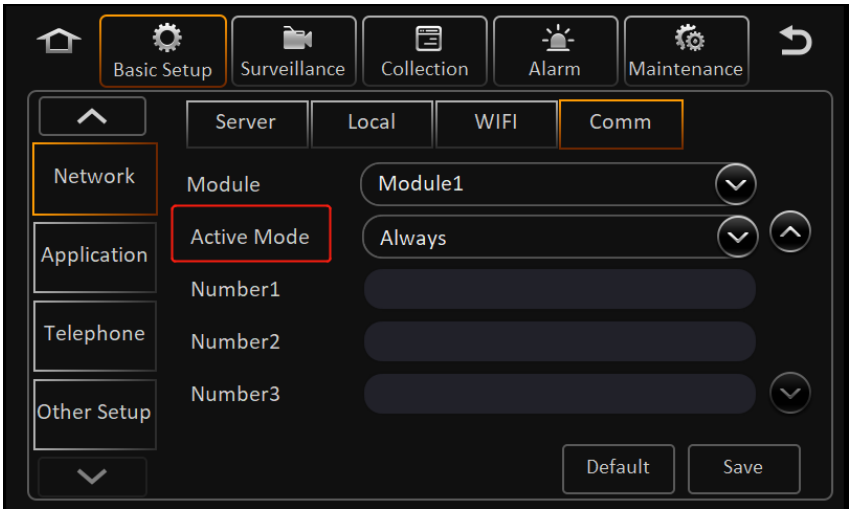








- Server Type: After the SIM card is inserted into the device, the wireless module type will be automatically monitored and displayed. No service will appear if there is no module.
- **Network access selection:** mixed mode by default.
- Dialing Parameters: includes APN, User Name, Password, Number, and Certification (None, PAP, CHAP, or Mix). Enter the parameters provided by the SMI card manufacturer. By default, it is null. If so, it will dial according to the program's parameters.



- **Active Mode:** The network module can be activated by external conditions. The modes include Always, Telephone or SMS.

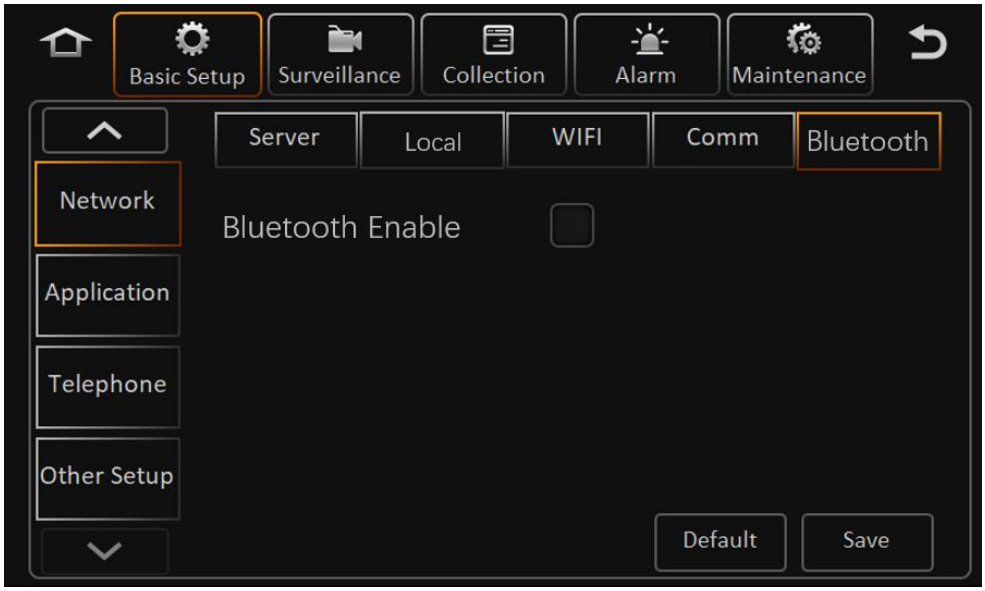
  1) Always: After the device is started, the network module automatically starts to dial and connect to the server.

  2) Telephone or SMS: After the device is started, the network module does not work. Only by calling or sending a message to the phone number of the device can the network module be activated to start dialing and connect to the server. Up to 3 dialable phone numbers can be configured.

Note: It will automatically dial successfully when there is the corresponding type of SIM card and normal 3G/4G signal.

3.5.1.5.5 Bluetooth

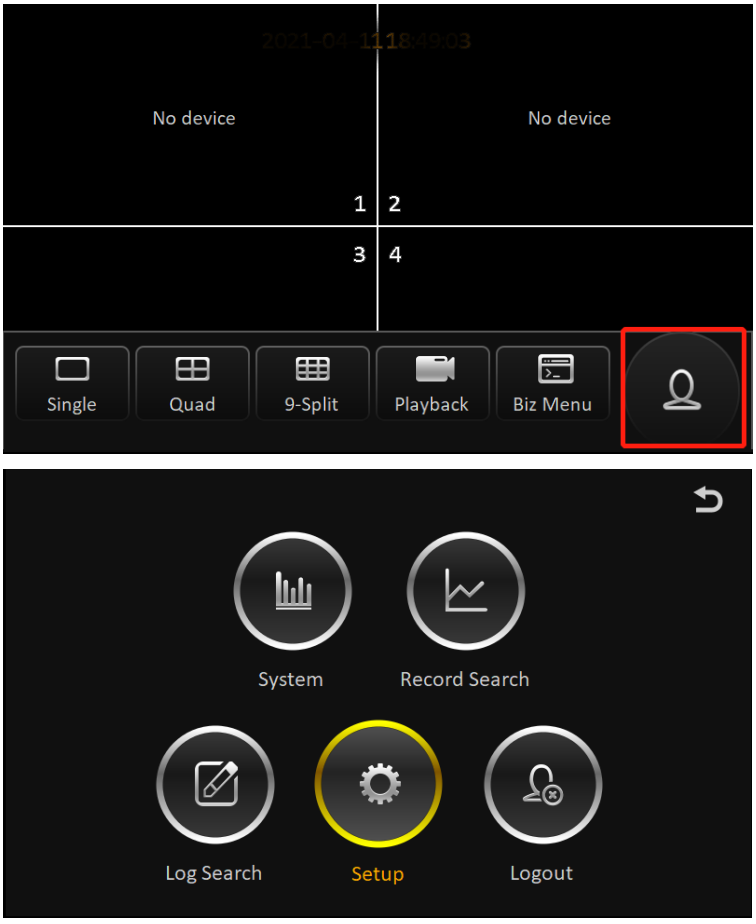
On the live view screen, tap **Login Avatar** > **Setup** > **Basic Setup** > **Network Setup** > **Bluetooth**, as shown in the following figure: Currently, the Bluetooth function is not supported.

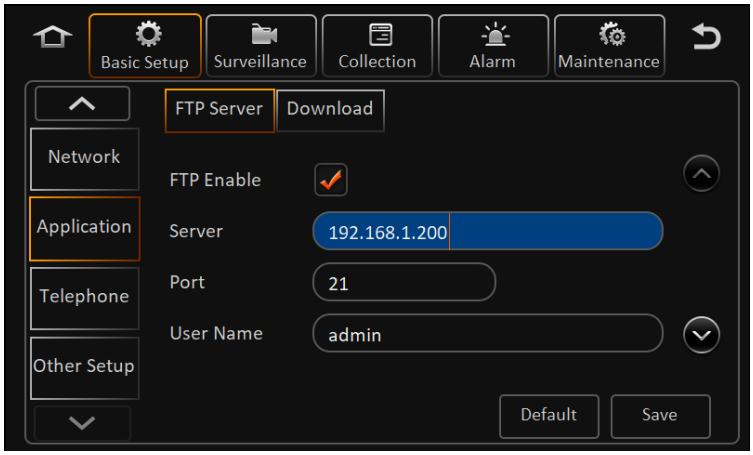


3.5.1.6 Application

3.5.1.6.1 FTP Configuration

The device supports connecting to an FTP server. After the IP, port, user name, and password of the established FTP service are configured, the device can connect to the FTP server to upload pictures or download files. On the live view screen, tap Login Avatar > Setup > Basic Setup > Application > FTP Server, as shown in the following figure:

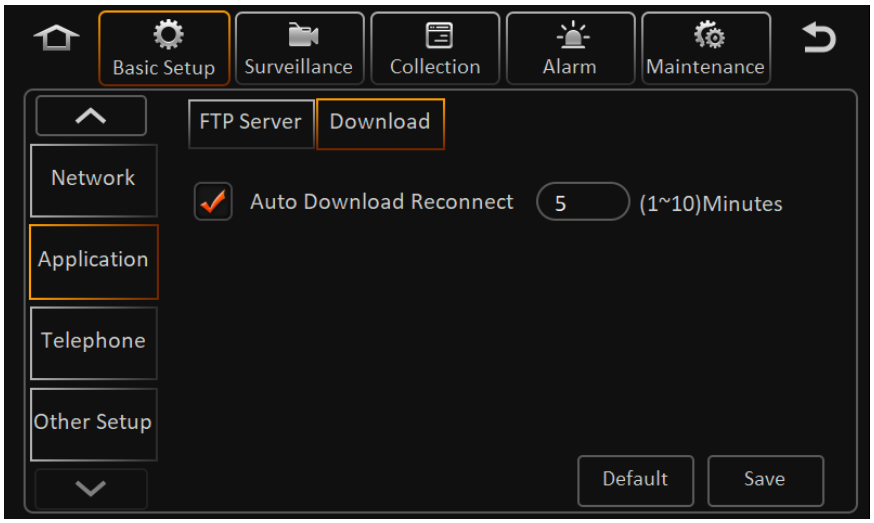




3.5.1.6.2 Auto Download

The Auto Download function is to be used in conjunction with the CEIBA2 platform. The auto download tasks can be created through CEIBA2. The platform manages the device's download, such as which cars to download, and under which network (4G, WIFI) to download. If you use WIFI network to download, you need to configure the WIFI-AP for each vehicle to download, and how many vehicles can be connected to each AP to download at the same time.

Auto Download Reconnect, that is, when the vehicle returns to the station and cannot connect to the service, it will restart and try to download again after entering the sleep mode for a while. When the download tasks are full, or the set AP reaches the upper limit, the platform will notify the device to enter sleep mode, and at the same time tell the device how long to sleep before restarting. On the live view screen, tap Login Avatar > Setup > Basic Setup > Application > Auto Download, as shown in the following figure:

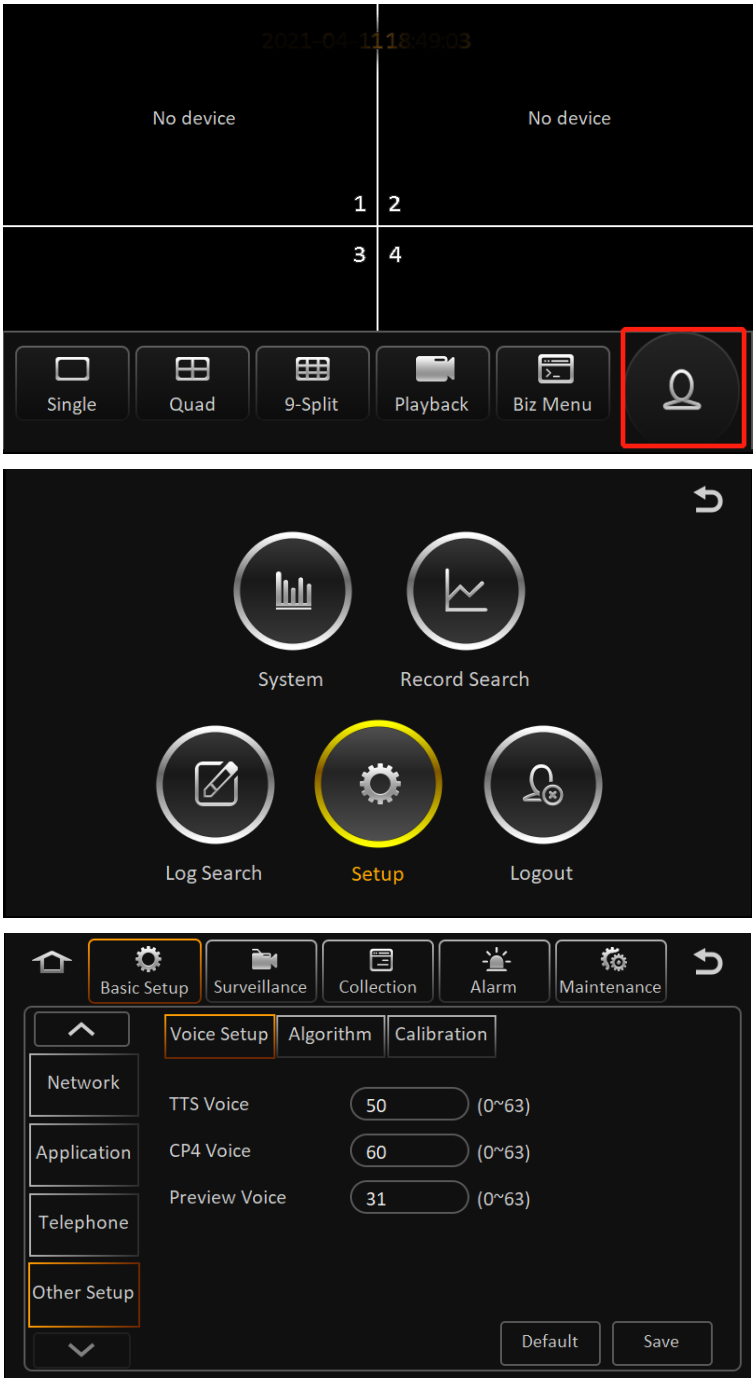


Tick to enable the Auto Download Reconnect and set the reconnection time between 1 and 10 min, the default is 5 min.

3.5.1.7 Other Setup

3.5.1.7.1 Voice Setup

The voice of TTS or CP4 can be set on CP4, the voice range is 0 to 63 DB. On the live view screen, tap Login Avatar > Setup > Basic Setup > Other Setup > Voice Setup, as shown in the following figure: The voice value can be modified manually.

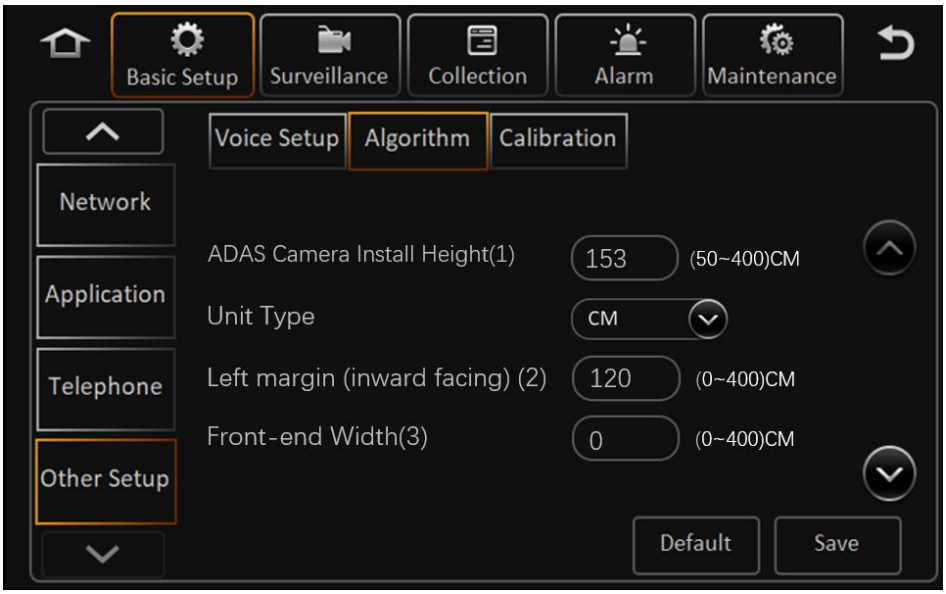


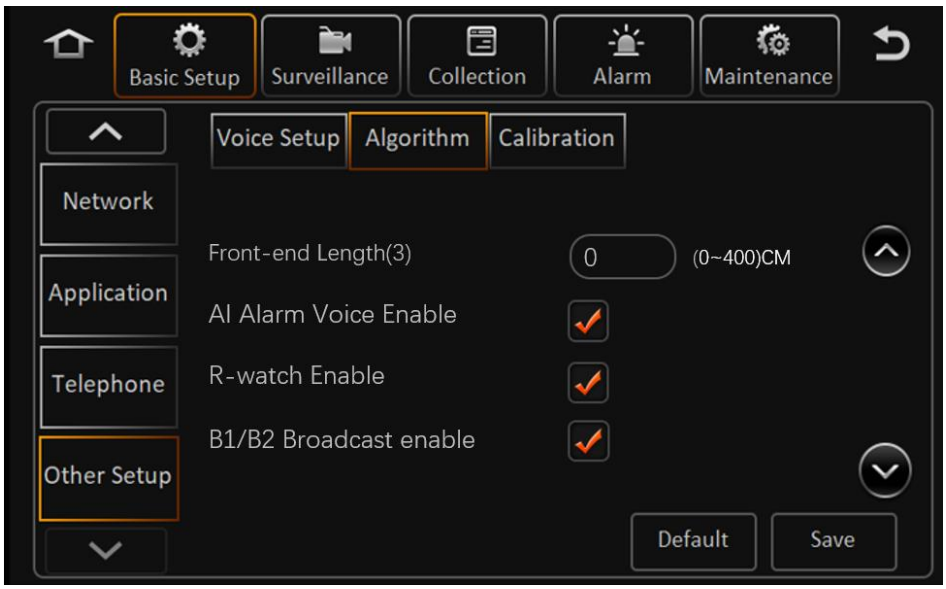
3.5.1.7.2 Algorithm

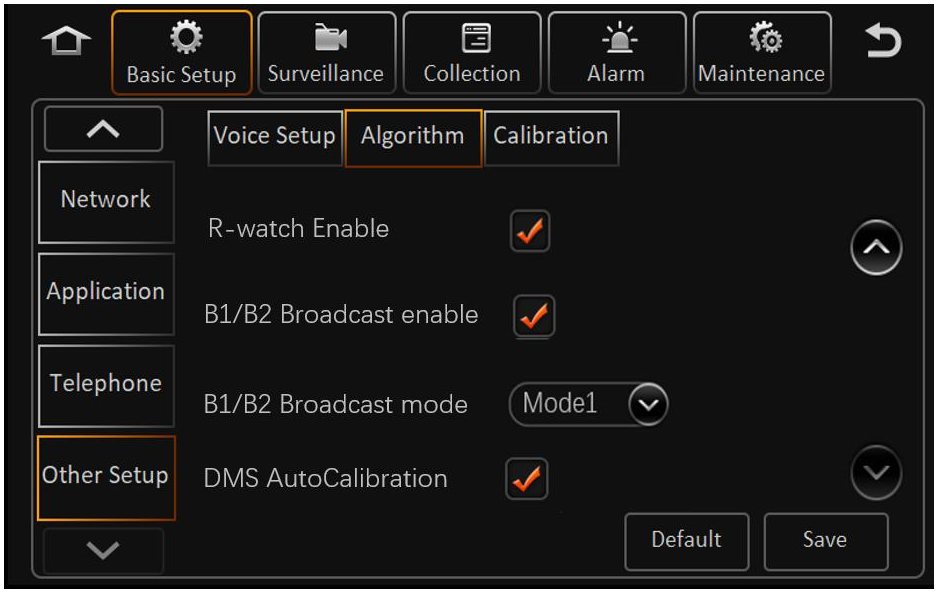
In this interface, you can set the installation height, left margin, front end width, and front end length of the ADAS lens, in centimeters or inches.

On this screen, the switch of the AI alarm voice can be turned on or off. After enabled, when an AI alarm is generated, the MDVR will give a voice prompt. At the same time, the enabling switch of R-Watch and B1 audible and visual alarm can also be set on this screen. After the function is enabled, and an alarm occurs, the R-Watch generates voice and icon prompts, and the audible and visual alarm makes voice and flash prompts. In addition, the DMS auto-calibration option has been added to this interface, enabling it to be enabled by default. After checking Enable, even if manual calibration is not performed, the device will automatically complete

the calibration process during normal use. Tap **Login Avatar** > **Setup** > **Basic Setup** > **Other Setup** > Algorithm, as shown in the following figure:

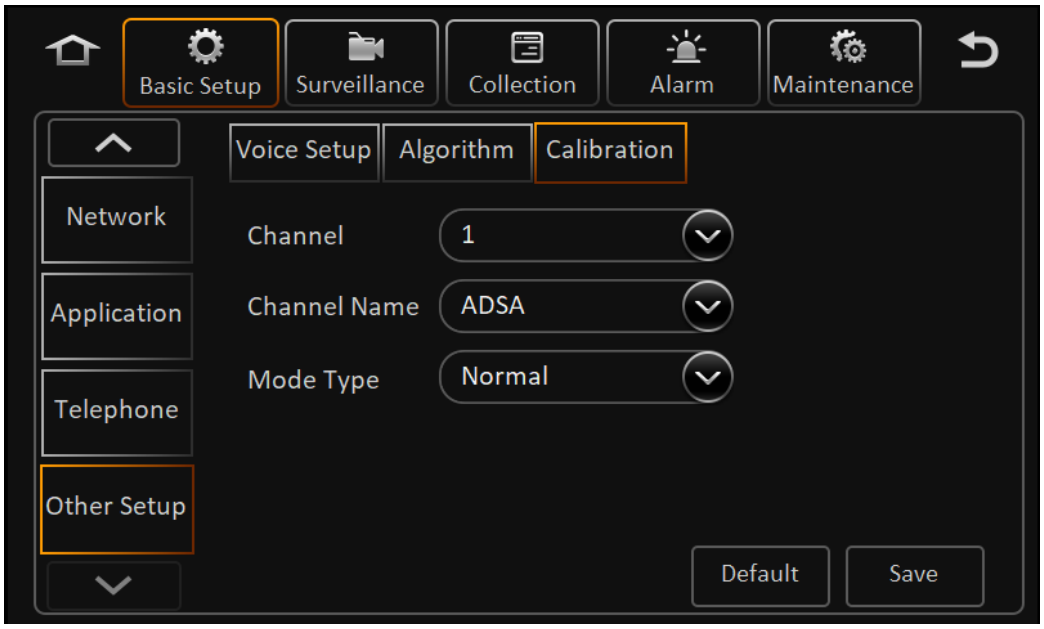






3.5.1.7.3 Calibration

On this screen, you can switch between the normal mode or calibration mode for each video channel. Tap Login Avatar > Setup > Basic Setup > Other Setup > Calibration, as shown in the following figure:



- Channel: The channel to switch the calibration mode can be selected;
- **Channel Name:** Select the algorithm to be used by the selected channel above;
- **Mode Type:** Normal mode or calibration mode can be selected. Select the calibration mode. After completing the calibration, be sure to switch back to the normal mode, otherwise, the alarm will not be triggered normally. It is not recommended to use this method for calibration.

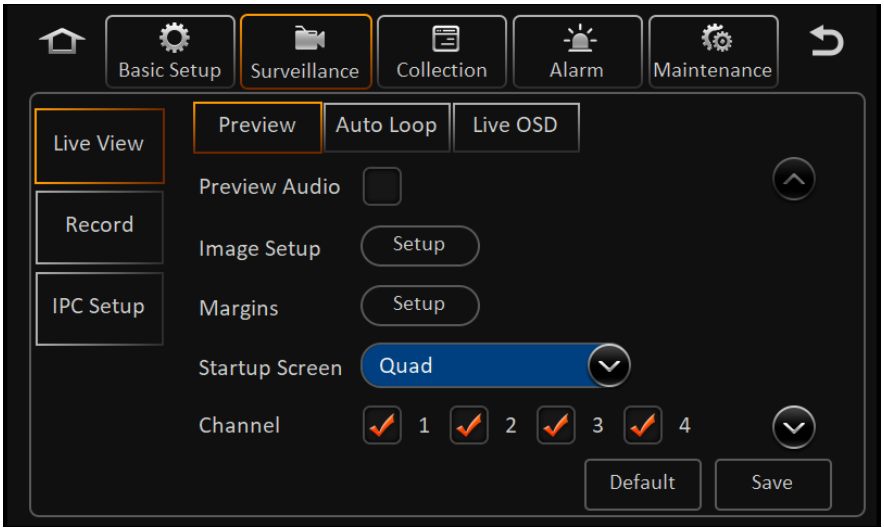
3.5.2 Surveillance

On the Surveillance screen, you can set the preview image, video record, and IPC.

3.5.2.1 live view

3.5.2.1.1 Preview

On the live view screen, tap Login Avatar > Setup > Surveillance > Live View > Preview, as shown in the following figure:

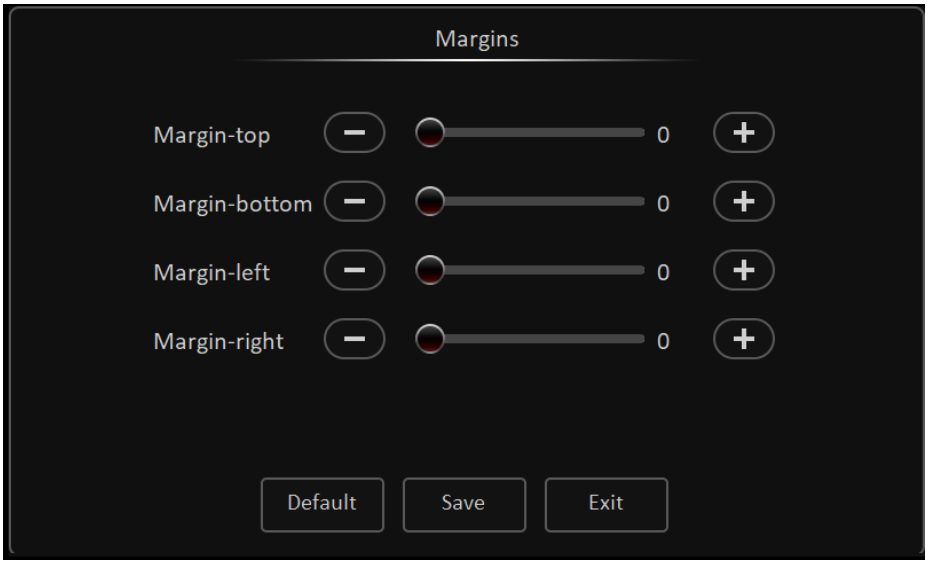


- Preview Audio: After enabled, the sound of the live view screen will be turned on.
- Image Setup: Tap the setup screen as shown below:



1) Adjust the brightness, contrast, chroma and saturation of each channel video by and ;
2) Tap to flip the video left and right, and tap to flip the video up and down;
3) The camera screen angle can be set at the installation angle, there are 0°, +90°, -90° optional;
4) After finishing setting a channel, you can copy the style to other channels.

- **Margins:** Adjust the CP4 display interface margin up, down, left, and right, as shown on the screen below:

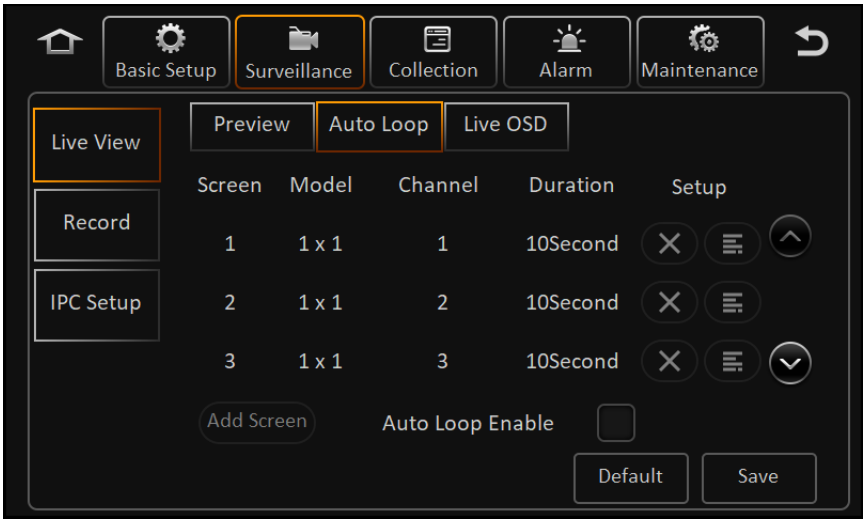


- Startup Screen: The live view preview after the device is started. You can set it as Single, Quad, or 9-Split.
- Channel: You can check it to set which channels to display after the device is started.

After finishing the setup, tap the Save button at the bottom.

3.5.2.1.2 Auto Loop

Auto loop is to loop the videos of each video channel infinitely on the preview screen. On the live view screen, tap Login Avatar > Setup > Surveillance > Live View > Auto Loop, and you can set the live view preview channel to switch automatically, as shown in the following figure:



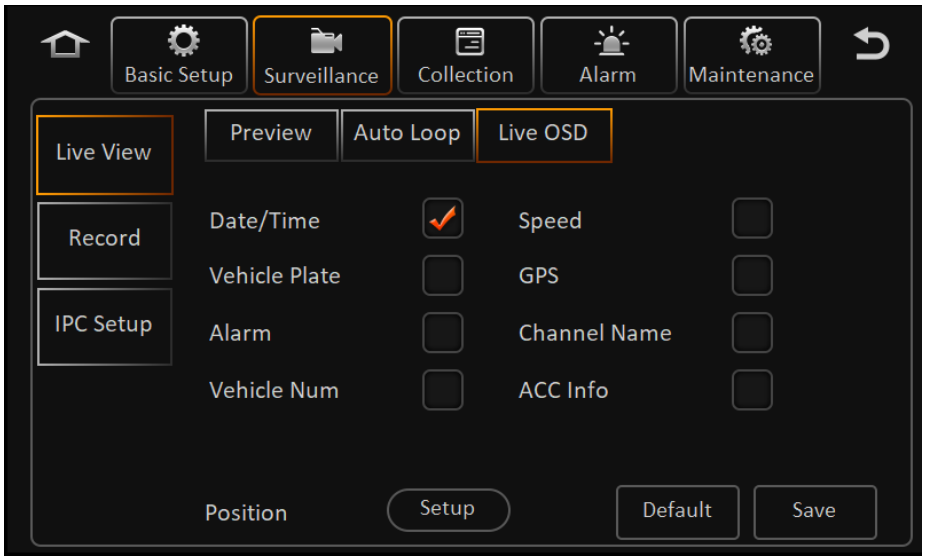
Below, you can enable the auto loop, delete and add the loop screen;

- Model: 1 × 1, 2 × 2, 3 × 3 can be selected, which means auto loop in single screen, quad screen, or 9-split screen.
- Channel: Every channel can be selected;
- Duration: Set the duration on this screen.

3.5.2.1.3 OSD

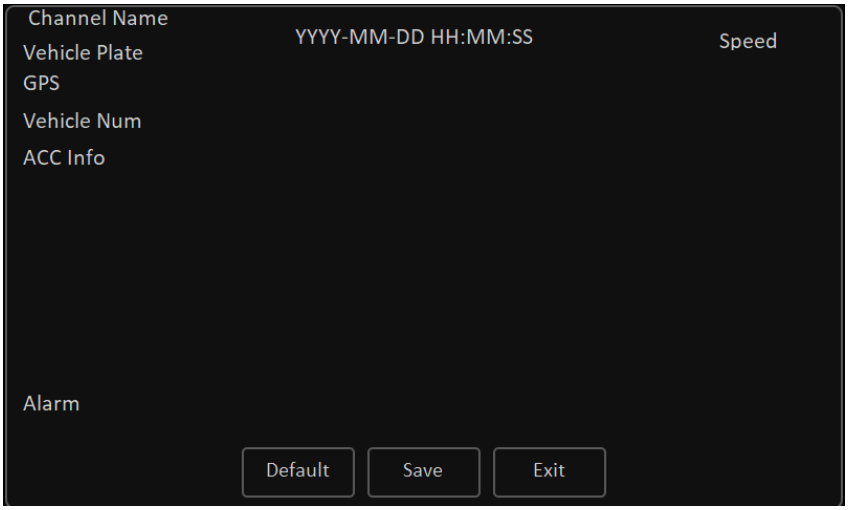
On the live view screen, tap Login Avatar > Setup > Surveillance > Live View >

Live Loop, and you can set the OSD information to be displayed on the live view preview screen, as shown in the following figure:



1) Check the corresponding information enabling switch to display this OSD superimposition on the live view preview screen;

2) After the corresponding information is enabled, tap Setup button below to specify the position of each OSD superimposition. Note that the position of each OSD superimposition cannot go beyond the boundary. Tap Setup and the screen is as below. Drag the OSD superimposition to change their position:

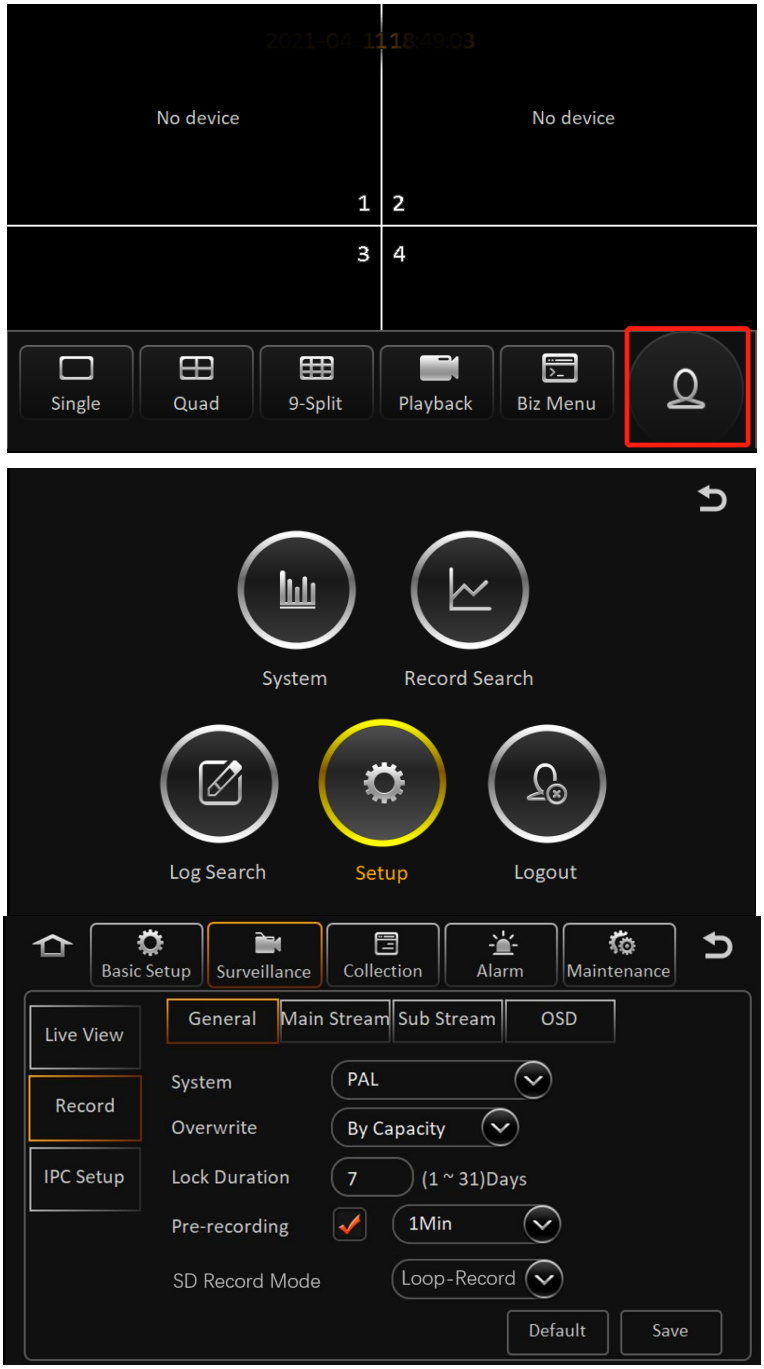


3.5.2.2 Record

3.5.2.2.1 General

In this module, you can specify the system mode, overwrite function, lock duration, and pre-recording.

On the live view screen, tap Login Avatar > Setup > Surveillance > Record > General, as shown in the following figure:



- System

  The systems include PAL and NTSC, and the default is PAL.

  Note: The setting must be consistent with the video source system.

- Overwrite

  You can select from By Capacity, By Day, or Never.

  Note: Locked recording can be overwritten and deleted only after the protection time is removed.

- By Capacity is selected by default. In this case:

  1) The SD card is overwritten by capacity. When the SD card storage space is less than 2 GB, overwriting starts, with files of 128 MB deleted each time.

2) Delete by channel number in sequence, and delete 250 M files of one channel at a time. If this channel segment is less than 100 M, look for the next channel with a longer duration.

- By Day:

  1) By Day means that files are overwritten by configured days. Configurable days from 1-31 days.

  2) If the number of days is configured to 1, the video will be saved for 1 day only. If the number of days is configured to 31, the recording is overwritten after having being saved for 31 days.

  3) 31-day storage duration is only possible when the disk has sufficient space. If you have set a 31-day duration but the recording is only available for 7 days, earlier recordings will be overwritten immediately after the disk is full.

- Never: Overwriting is not enabled for main stream recording, mirror stream, sub-stream, and alarm stream. Recording stops after the memory is full.

- Lock Duration

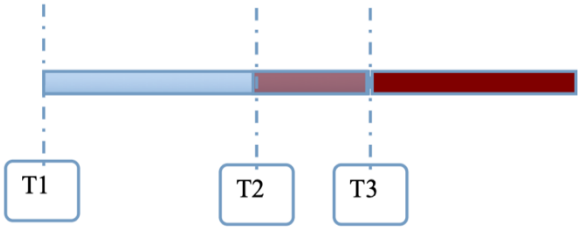
  Recording locked days: specifies the day(s) that locked recordings are retained to prevents them from being deleted earlier than expected. It is set to 7 days by default.

  For details about how to lock recording, see Section 3.4.

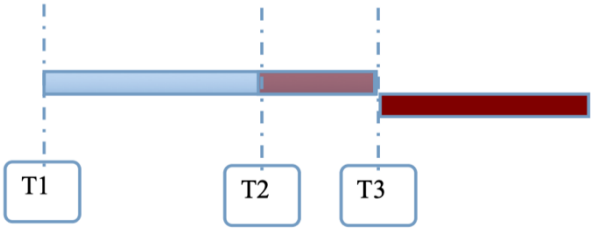
- Pre-recording

  In alarm recording, recording files generated before the linkage alarm are extracted for event analysis. The default is 1 min, with an option in 0 - 60 min (the off disabling is 0 min).

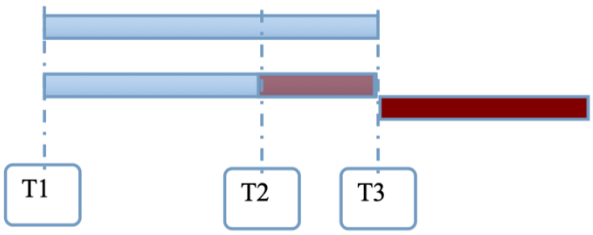
  1) In normal recording, when an alarm is triggered, earlier recording with a duration indicated by this parameter is extracted and marked as alarm recording. T1 to T3 is a normal recording. After an alarm is generated at T3, the duration between T2 and T3 is marked as alarm recording, the duration after T3 is marked as alarm recording too.



  2) If there is no normal recording, and the pre-recording switch is enabled, the device will establish a pre-recording stream segment upon startup. When an alarm is triggered at T3, the recording generated between T2 and T3 in the pre-recording stream segment is marked as alarm recording.



3) When non-alarm recording proves to be I-frame recording: After startup, two stream segments are established, one is I-frame stream segment and the other is pre-recording stream segment. When an alarm is triggered, the recording between T2 and T3 in the pre-recording stream segment is marked as alarm recording.



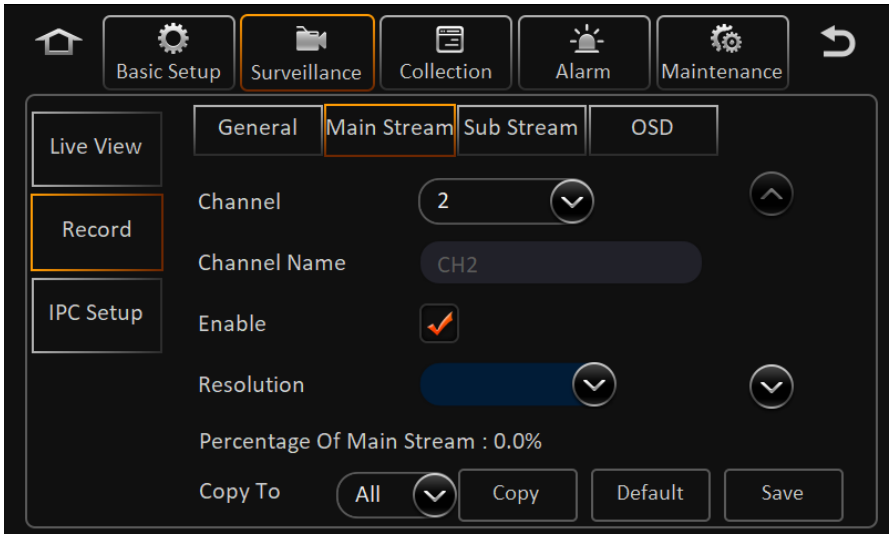
- **SD card recording mode**

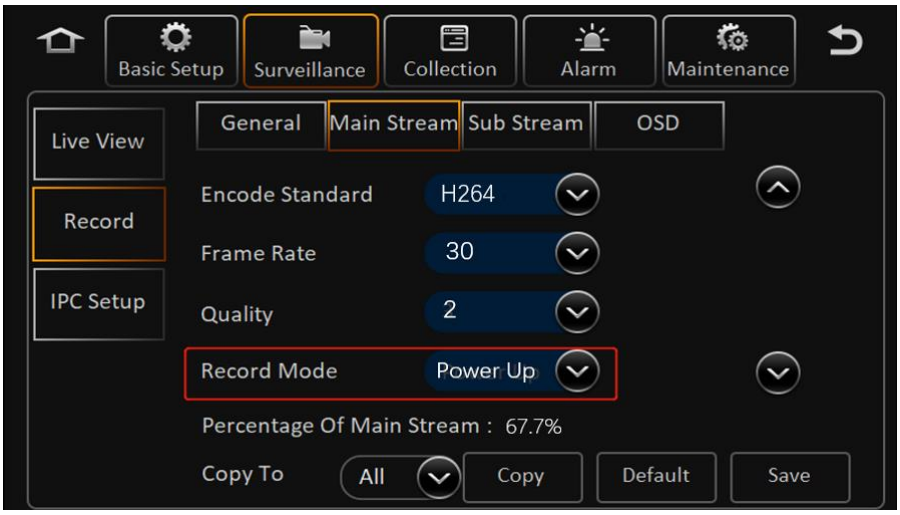
  It provides options including secondary card recording, sub stream recording, mirror recording, alarm recording backup, and loop recording.

  - **Sub Stream Recording**: stores sub stream recordings on the SD card.
  - **Mirror Recording**: uses main stream parameters, and the mirror recording data includes video data, log information, and black box data. If the channel of main stream video is disabled, mirror recording does not apply to this channel.
  - **Alarm Record Backup**: stores recording data only when an alarm is triggered.
  - **Loop Recording**: it is loop recording for dual SD cards.

3.5.2.2.2 Main Stream

On this screen, you can set the recording mode, recording parameters, and audio parameters for each channel. On the live view screen, tap Login Avatar > Setup > Surveillance > Record > Main Stream, as shown in the following figure:





- Channel: The channel number can be selected here. After selection, the recording and audio parameters of this channel can be set. You can customize the channel name below.
- Channel Name: The channel name is customizable.
- Enable: Main stream recording will be enabled after this option is selected.
- Resolution: If connecting it to an analog camera, you can choose CIF/WCIF/HD1/WHD1/D1/WD.

If connecting it to a digital camera, you can choose 720P or 1080P.

- Encode Standard: H264 or H265 optional.
- Frame Rate: recording frame rate, i.e. the number of frames played per second.
- Quality: recording quality. The value ranges from 1 to 8, the smaller the value, the better the quality. Value 1 indicates the best quality.
- Record Mode

  Note: Each channel can be individually set up for the record mode.

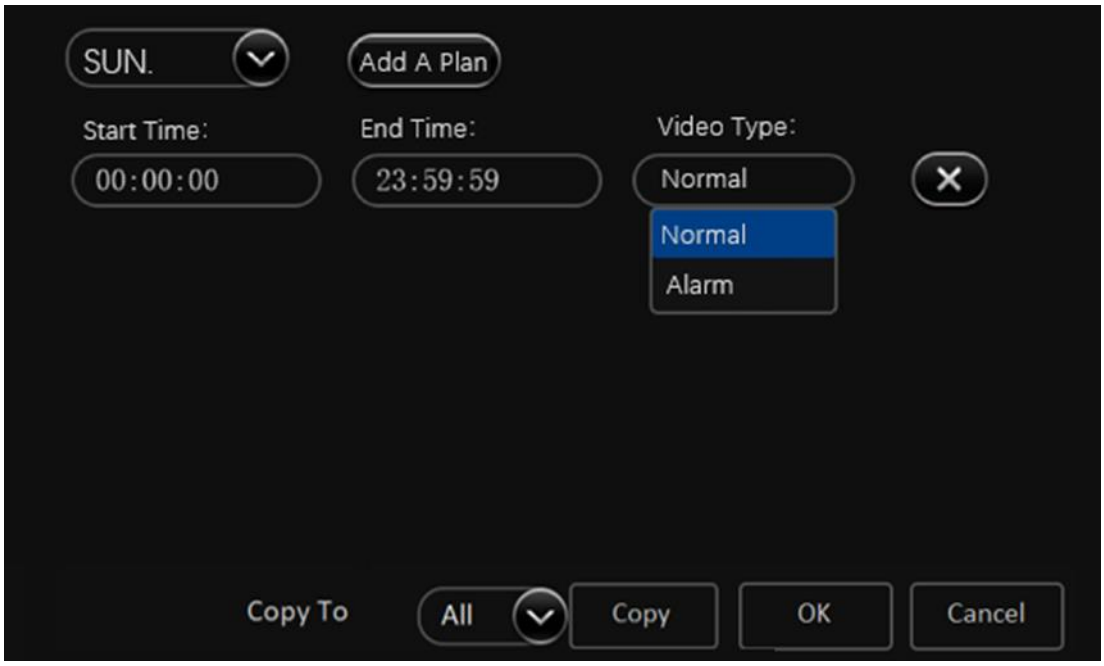
  Once the record mode is selected, it applies to both sub-stream and mirror recording.

  1) Startup: indicates that the device keeps recording when it is started if the

SD card is available and recording is enabled.

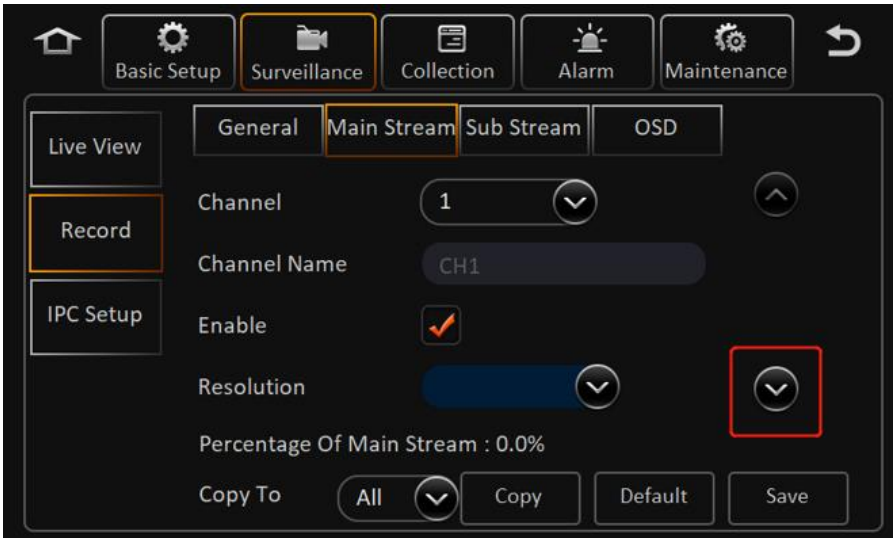
2) Alarm: The device starts recording when an alarm is triggered. For details about how to set alarm recording, see Section 3.5.4. Alternatively, you can enable pre-recording before alarm triggering.

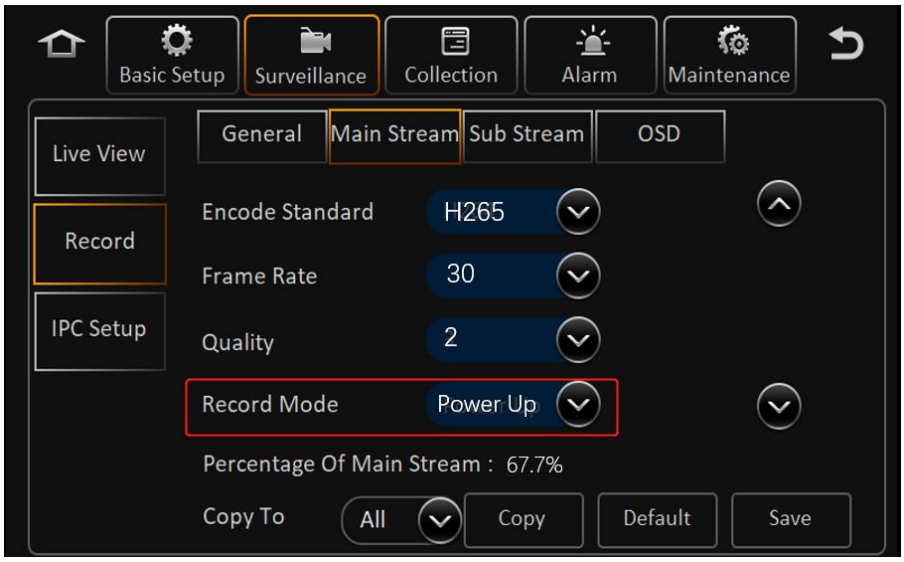
3) Scheduled: Record according to the set time schedule. Tap to add a schedule, the screen is as follows:



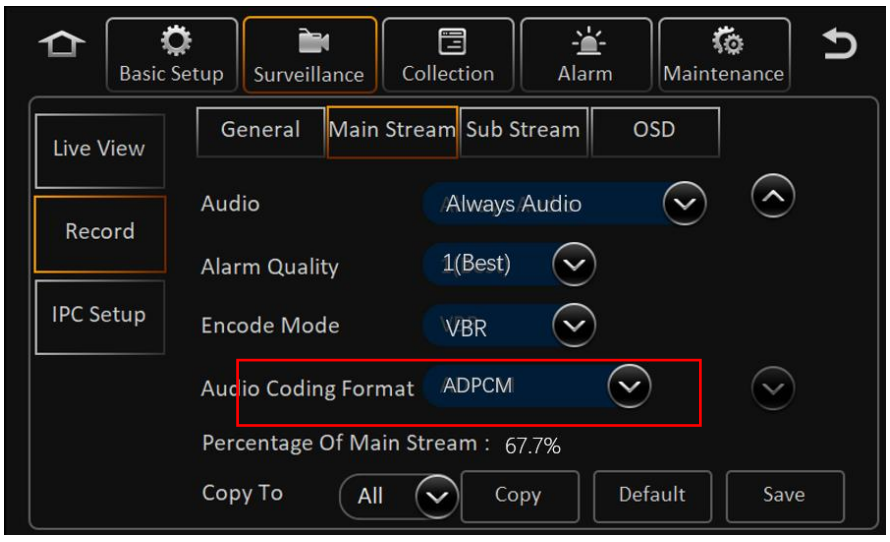
- Day of the Week: You can choose from Monday to Sunday and set the recording time period for each day in a weekly cycle.
- Add Schedule: Add a recording period on the day, and note that it cannot overlap with other recording periods.
- Start/End Time: specifies the start time and end time of recording.
- Record Type: specifies whether the recording is Normal recording or Alarm recording.
- Copy Style: You can copy this setup to other video channels.

- Alarm Quality: specifies the quality of alarm recording. The smaller the value, the better the quality.
- Encode Mode: You can choose the encoding format of VBR or CBR, and it is VBR by default.





- Audio Parameters



Note: Separate audio recording is not supported.

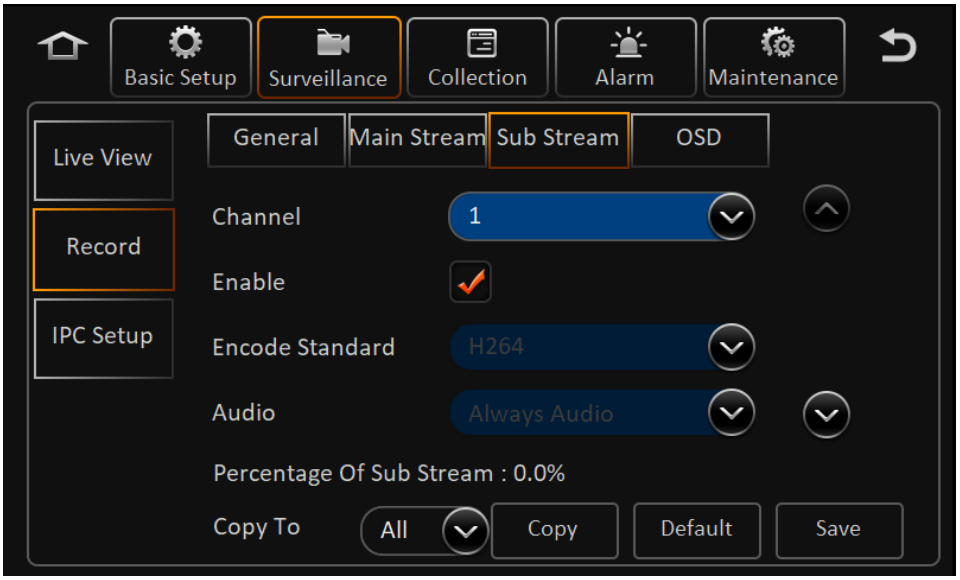
- Audio: Whether to record audio during video recording. You can select Always Audio or No Audio.

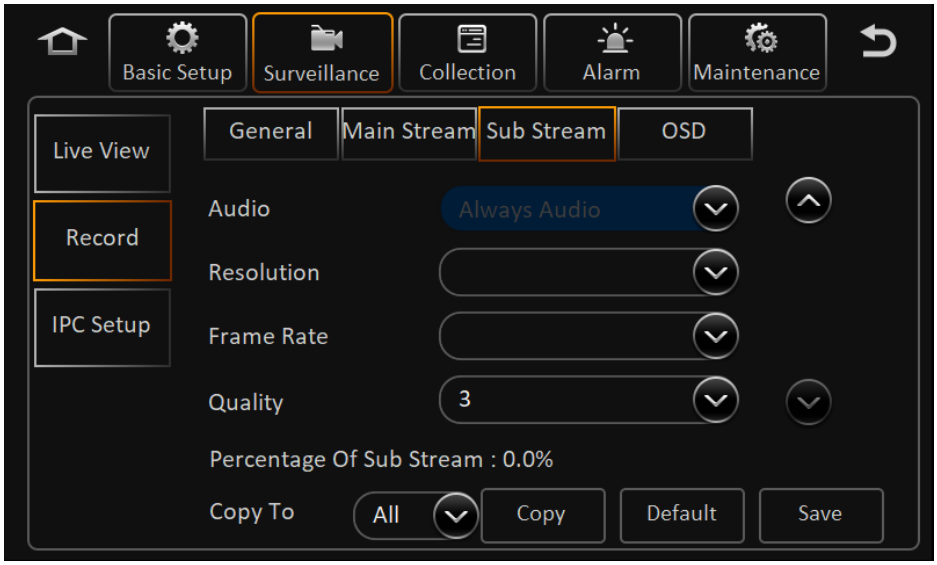
1) Always Audio: The video is always recorded with audio.
2) No Audio: The video is recorded without audio.
3) Alarm Audio: The video is recorded with audio only in the alarm state.

- Audio Coding Format: You can choose G711A, G711U, or ADPCM, and it's ADPCM by default.

3.5.2.2.3 Sub-stream Settings

The function is to set sub-stream. Click【Login Profile】>【Setup】>【Surveillance】>【Record】>【Sub-stream】 to enter the module.





- **Selection of channel**: The channel number is optional. You can set the recording and audio recording parameters after the selection. You can customize the channel name below.
- **Enable recording**: Enable the sub-stream recording function after the click.
- **Coding standard**: H264 and H265 optional
- **Audio recording**: It indicates whether to record audio while recording. Audio recording, no audio recording and alarm audio recording are optional.

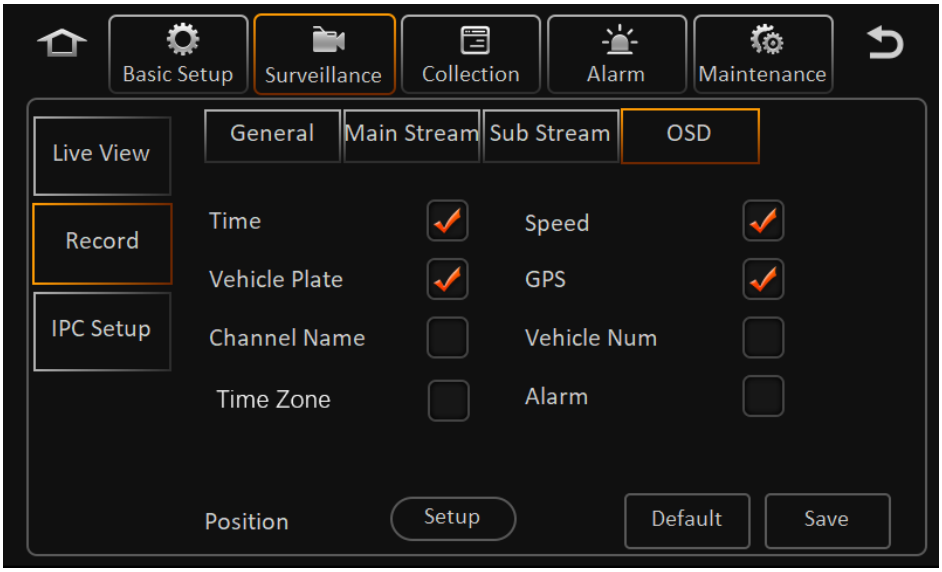
1） Audio recording: Always record audio while recording;

2） No audio recording: Don’t record audio while recording

3） Alarm audio recording: Only record audio when there is an alarm.

- **Encoding mode**: G711A, G711U and ADPCM are optional, ADPCM by default.
- **Frame rate**: Recording frame rate, that is, the number of frames played in one second.
- **Image quality**: Video image quality, 1-8 optional, the smaller the number, the better the image quality, image quality 1 is optimal

3.5.2.2.4 OSD

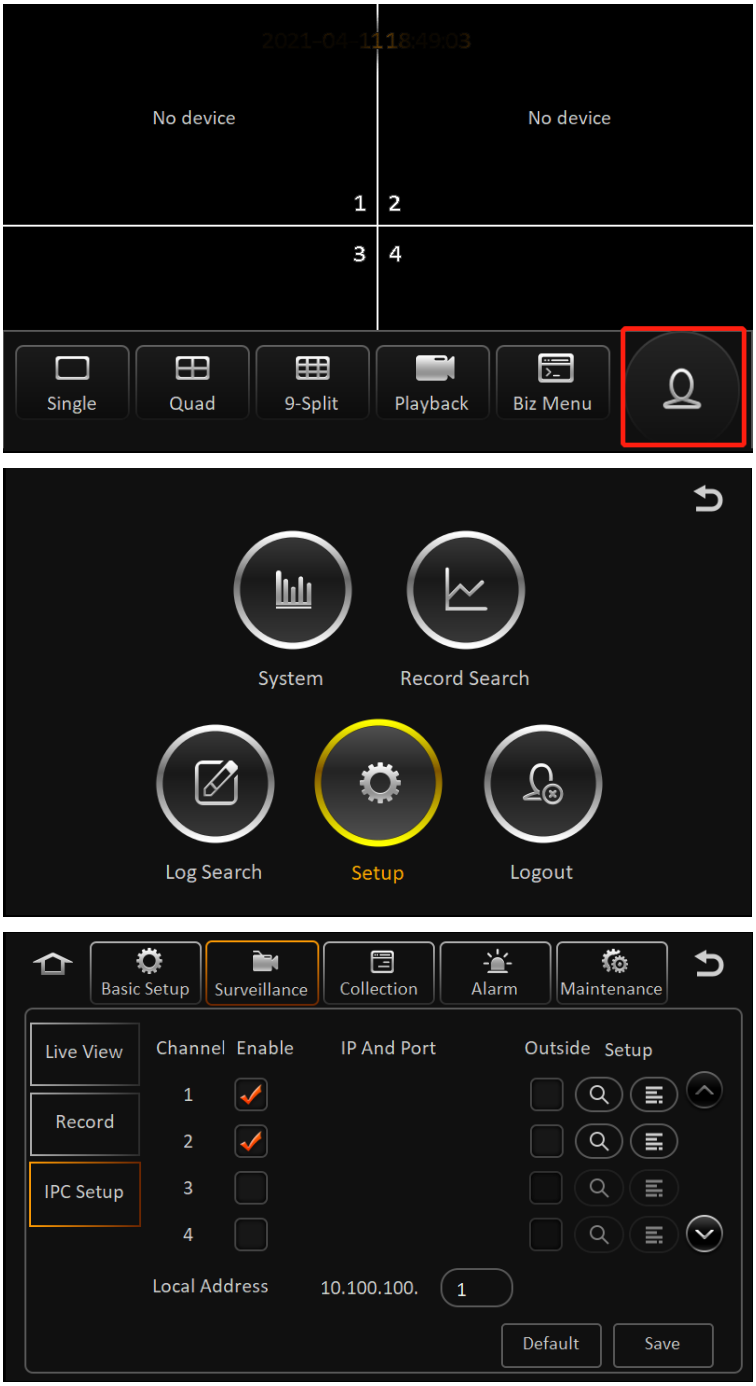


The OSD here is a recording function that allows you to superimpose selected information on the recording, and is different from OSD superimposition in live view preview.

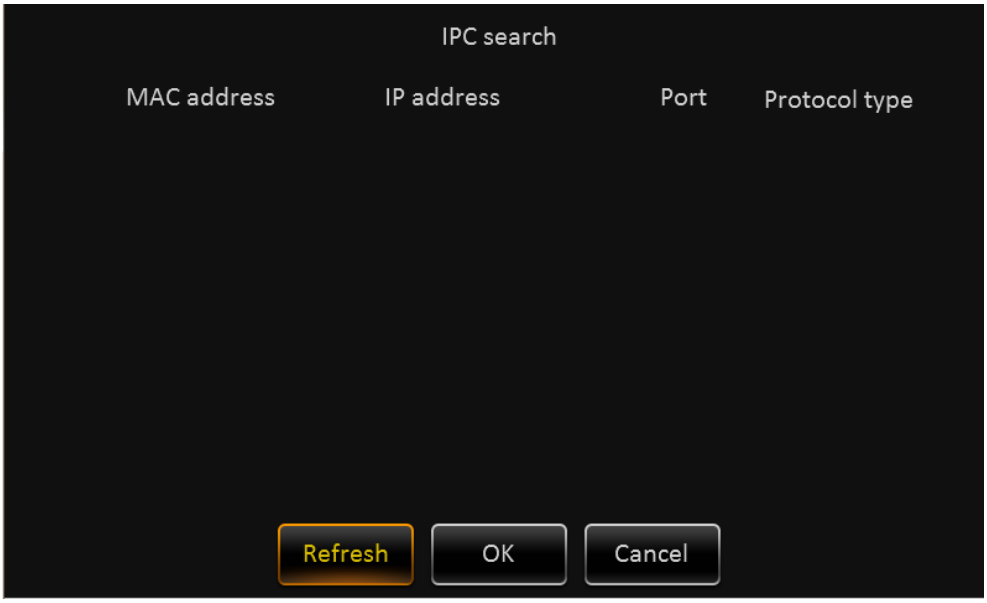
Other setups are the same as those for live view preview OSD superimposition and are not described here.

3.5.2.3 IPC Setup

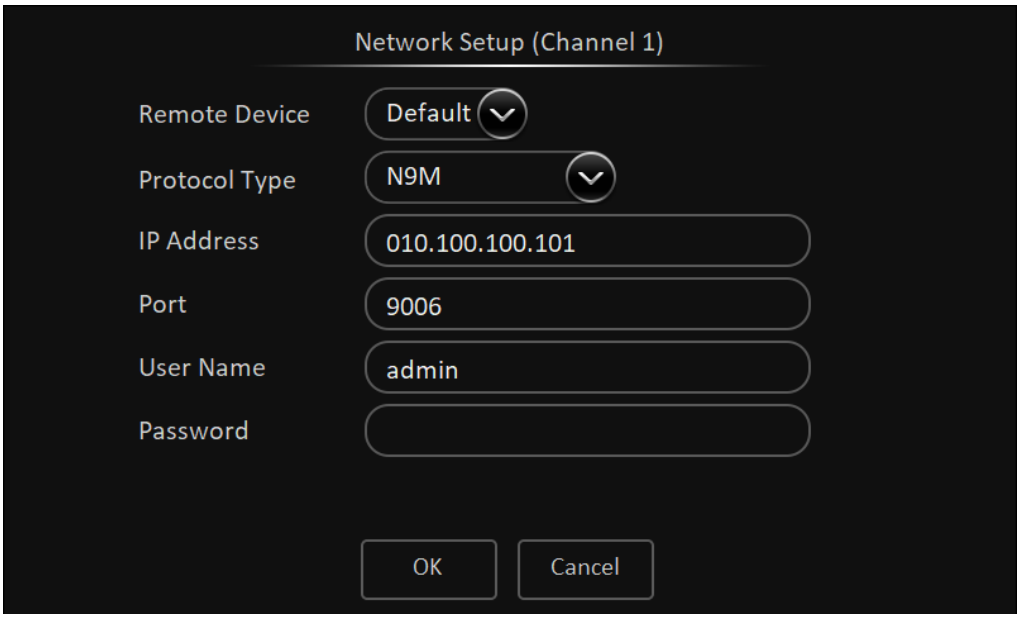
After the MDVR is connected to the IPC camera, you can search for and set the IPC here. On the live view screen, tap Login Avatar > Setup > Surveillance > IPC Setup, as shown in the following figure:



- Supports IPC plug-and-play automatic configuration, IPC quick setup, and manual configuration of IPC channels by searching for IP.
- Supports IPC quick setup.
- After the IPC channel is enabled, the corresponding analog channel is automatically invalid.



- Each channel supports the IPC search function, and can display the searched IPC list information. The modified IP address to IPC from the search result is to modify the IPC, and the modified IP address in the editing is to select the IPC for the channel.
- Supports the local address configuration of the IPC network segment. If the local IP specifies an address, the IP address will be skipped when automatically searching and configuring the IP.
- IPC search screen. You can modify the IP address of the IPC searched here.
- Tap Edit  as shown below. For onvif-protocol cameras, this channel is the binding relationship between the configuration channel and IPC. The modification of the IP address here is not to modify the IP address of the IPC, but to re-bind other IPCs.

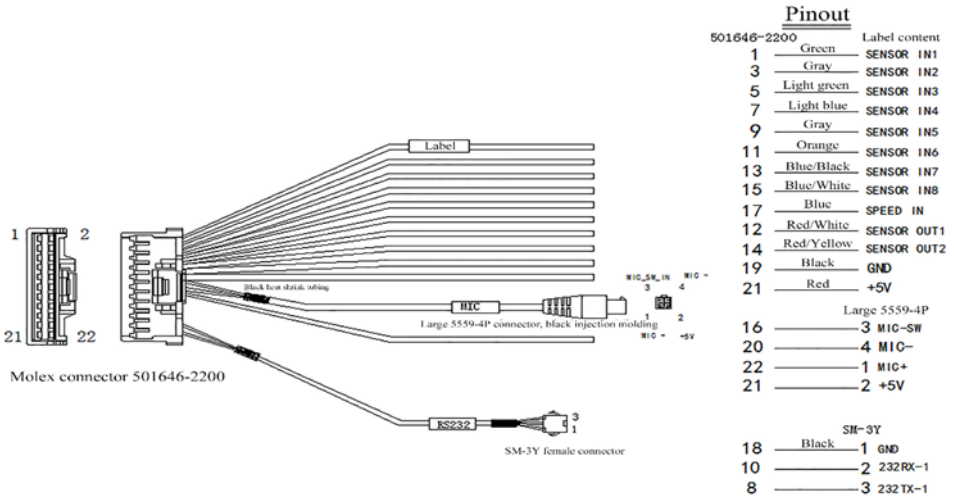


3.5.3 Collection

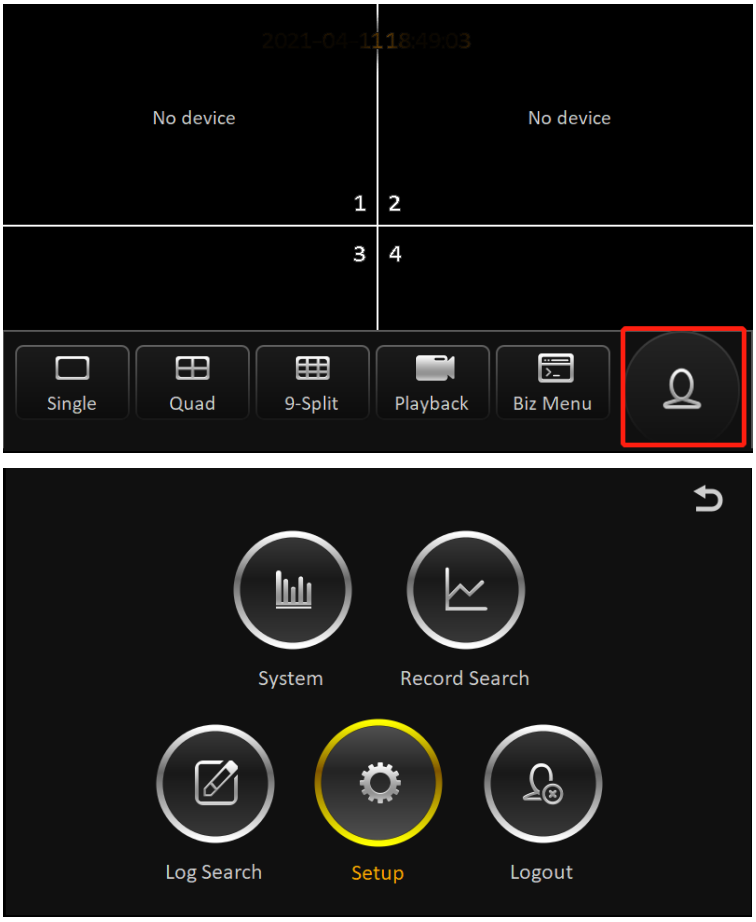
3.5.3.1 General

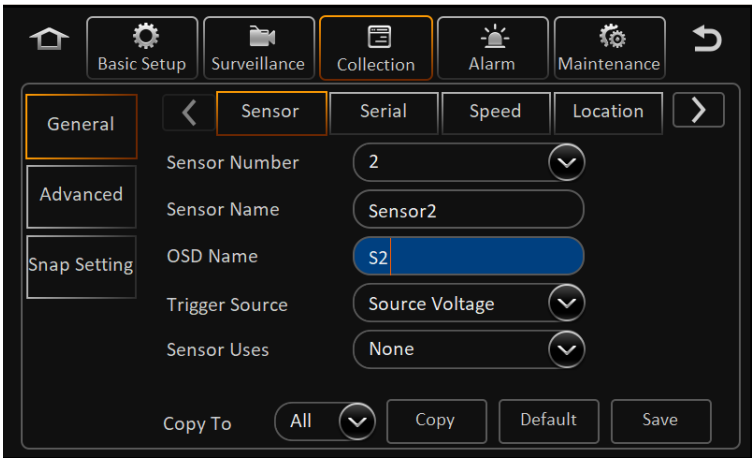
3.5.3.1.1 Sensor

The M1N-TKH0401 MDVR supports eight sensor input signals. The serial port lines shown in the following figure are labeled as SENSOR IN1 to SENSOR IN8:



This function can customize the name, abbreviation, trigger signal source, and purpose of the sensor. On the live view screen, tap Login Avatar > Setup > Collection > General > Sensor, as shown in the following figure:



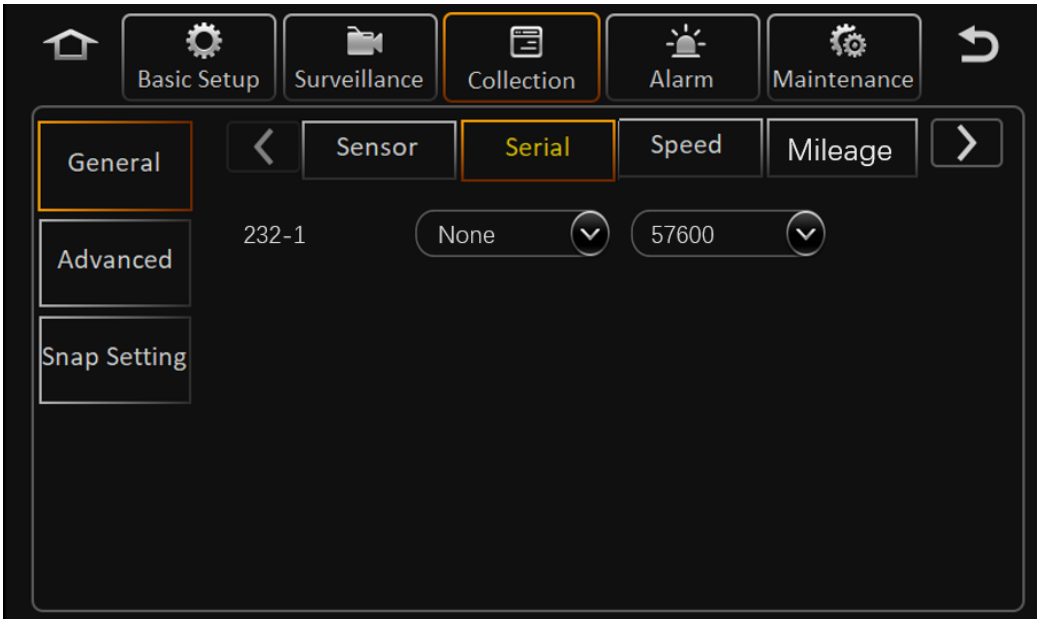


- Sensor Number: You can choose the sensor from 1 to 8, sensor 1 corresponds to the line labeled SENSOR IN1 above.
- Sensor Name: The name of the corresponding sensor, which can be set manually. After the setup, the sensor name on the alarm setup screen will be updated synchronously.
- OSD Name: The abbreviation of the name will be displayed when the alarm information is superimposed on the OSD.
- Trigger Source: Level and pulse. One use can be controlled by high and low levels with one level sensor, or controlled by pulse switch with two pulse sensors.
- Sensor Uses: Select the use of the sensor according to the actual scene.
- Copy To: Copy the parameter of a certain sensor to one or all other sensors.

3.5.3.1.2 Serial Port

M1N-TKH0401 supports the 2-channel RS232 and 1-channel RS485.

This function can set the function and Baud rate of the serial port. On the live view screen, tap Login Avatar > Setup > Collection > General > Serial, as shown in the following figure:



- The purpose of serial port can choose 【None】, 【Extend】, 【Control Panel】, 【485bus】, etc.
- Choose the corresponding 【Baud rate】 after selecting the purpose of serial port.

3.5.3.1.3 Speed

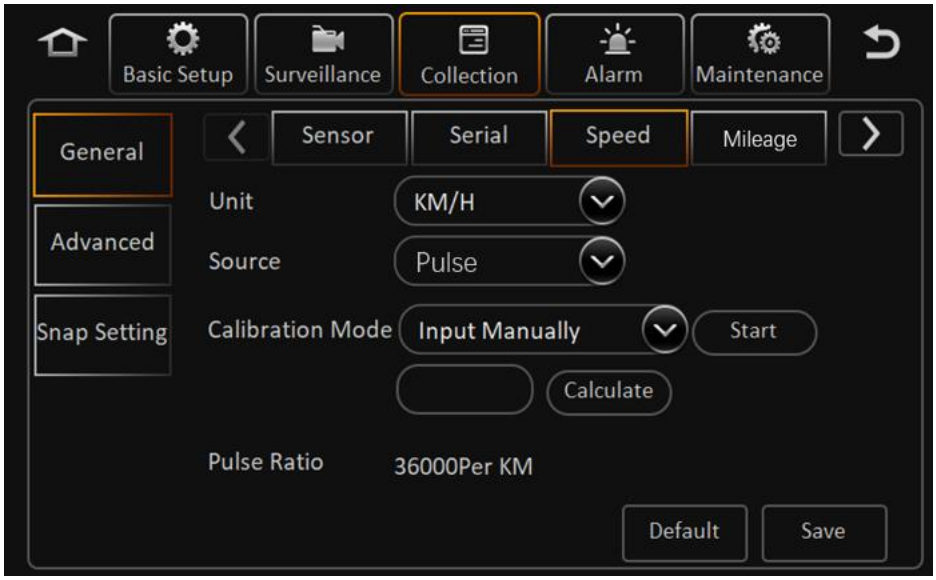
The source of vehicle speed can come from satellite positioning or pulse signals. Satellite positioning requires an external GPS module in the vehicle; pulse signals need to be connected to the serial port line corresponding to the line labeled SPEED IN.

On the live view screen, tap Login Avatar > Setup > Collection > General > Speed, as shown in the following figure:



- Unit: KM/H or mph.
- **Speed Source**: There are four sources available--**Satellite, Pulse, OBD,** or **Hybrid.**

When pulse is selected as the speed source, the setup screen is as follows:



The pulse speed calibration function is to obtain the value of the pulse coefficient. The pulse coefficient is the number of pulses generated per kilometer of the vehicle.

When selecting the calibration mode as Input Manually:

1） You need to manually enter the initial mileage of the odometer, and the system will calculate the initial mileage of the odometer.

2） Tap Start Training. (The MCU will automatically record the number of pulses)

3） At any time, you can tap End Training, and record the mileage of the odometer again and calculate the mileage difference.

4） Enter the difference mileage, and tap Calculate. The pulse coefficient will automatically display the calculation result. (the calculation result unit is consistent with the speed unit)

5） The status of Start Training will be automatically saved, and this status will not be cleared even if the device is powered off and restarted.

When **Hybrid** is selected as the speed source, the priority of the speed source can be set as per such 6 priority sorting methods as follows:

GPS>PLUSE>OBD

GPS >OBD>PLUSE

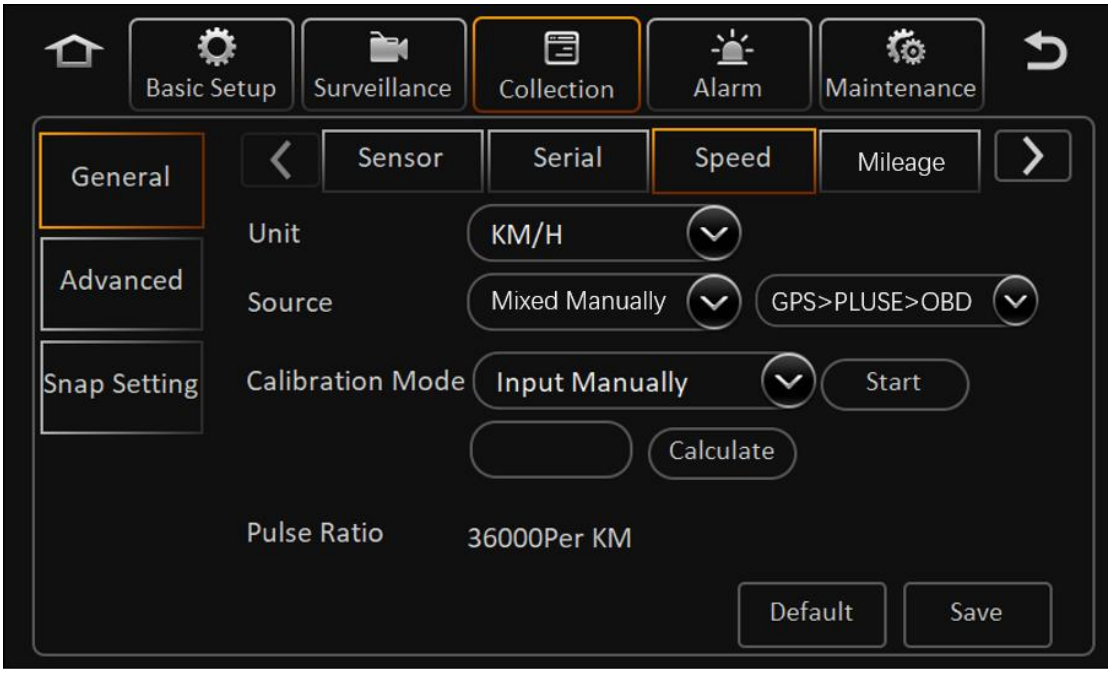
PLUSE> GPS>OBD

PLUSE>OBD >GPS

OBD >GPS> PLUSE

OBD > PLUSE >GPS

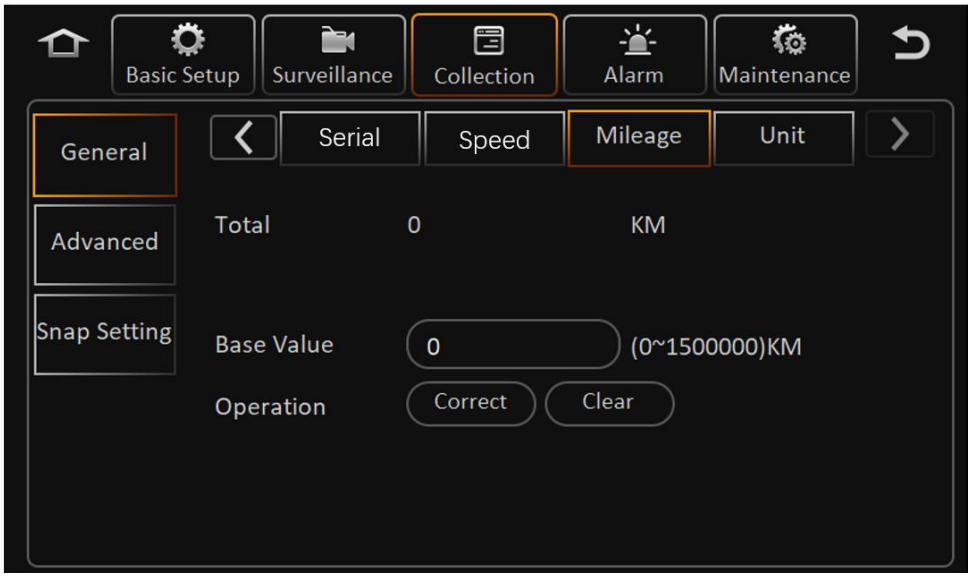
The setting screen is as follows:



Since the pulse speed is involved in the mixed speed source, the pulse speed shall also be calibrated according to the method same as that applied to the pure pulse speed source and which is not described here.

3.5.3.1.4 Mileage

The mileage function can record the total mileage of the vehicle. On the live view screen, tap Login Avatar > Setup > Collection > General > Mileage, as shown in the following figure:

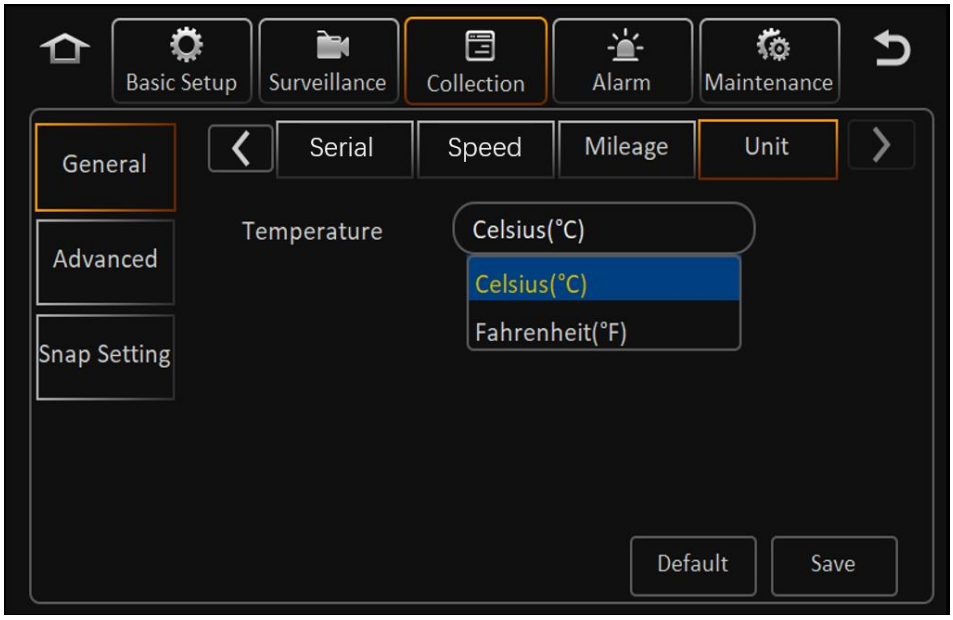


⚠Note: The speed source of the mileage value is the same as the speed source selected by the vehicle speed, and no special source is required to set here.

- Total: Here you can view the current total mileage of the vehicle.
- Base Value: You can set a current base value for calibration.
- Operation: Correct will change the current total mileage to the entered base mileage; Clear will clear the current mileage.

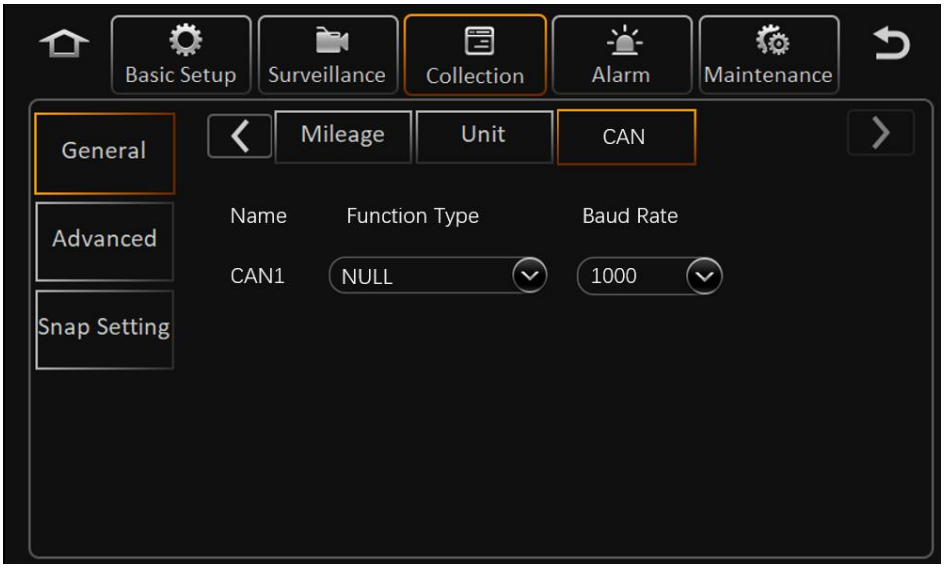
3.5.3.1.5 Unit

Here you can set the temperature unit to Celsius or Fahrenheit. The default unit is Celsius. The screen is as follows:



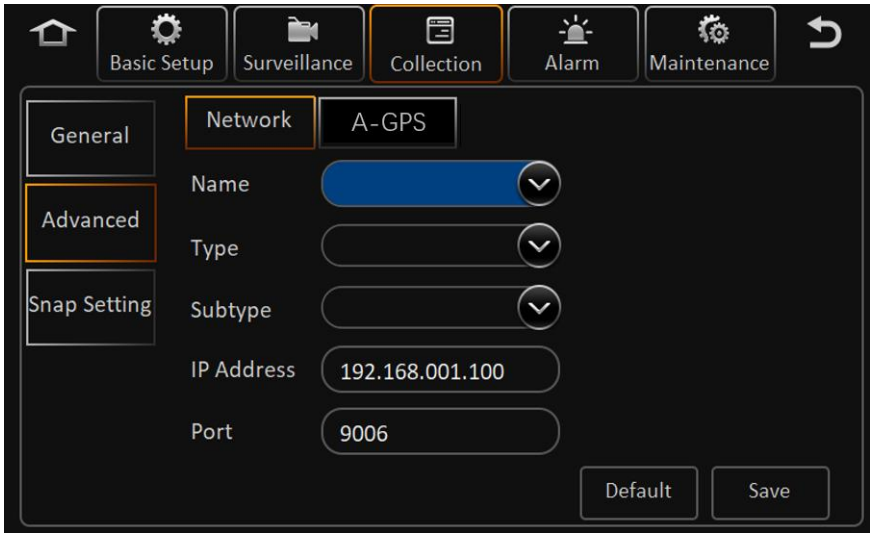
3.5.3.1.6 CAN

On this screen, you can set whether to use CAN and the baud rate of CAN, which is closed by default. When selecting **CAN BUS**, the baud rate automatically becomes 250. The screen is as follows:

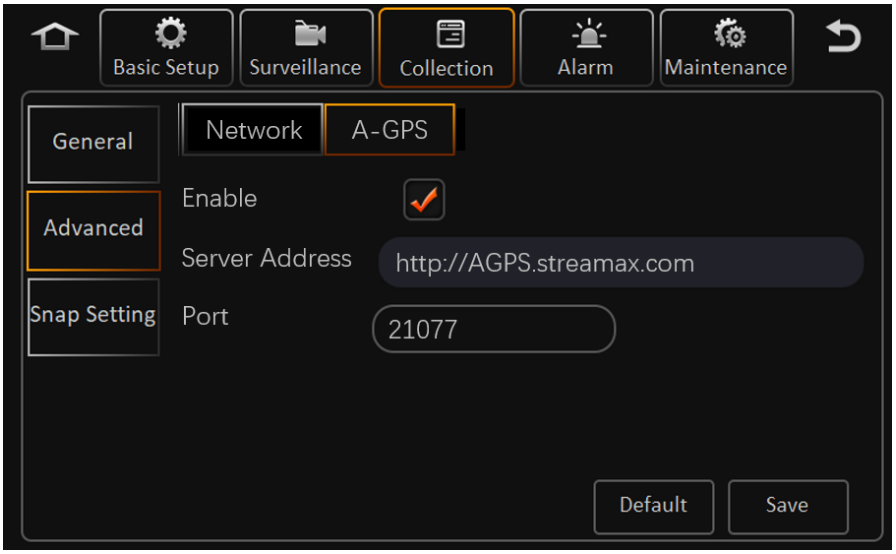


3.5.3.2 Advanced

This function can set the device's network name, type, IP address, and port. On the live view screen, tap **Login Avatar** > **Setup** > **Data Collection** > **Advanced**, as shown in the following figure:



In addition, click **Login Avatar > Setup > Data Collection > Advanced** on the live view interface, A-GPS can also be set, as shown in the following figure:



In a strong signal environment, the autonomous GNSS receiver can cold start positioning in about 30 seconds; but in a weak signal environment (such as under an elevated road, a tree-lined path, between urban high-rise buildings, just out of a tunnel, just out of an underground garage, etc.), Receivers without external assistance are slow to acquire satellites, have difficulty acquiring a text from satellites, and therefore take a long time to locate, or even impossible to locate. The AGNSS (AGPS) service can provide the receiver with auxiliary information necessary for positioning, such as text, rough position, and time. Whether in a strong signal or weak signal environment, the information can significantly shorten the time of first positioning time to achieve fast startup and fast positioning.

When in use, the AGPS proxy server regularly obtains all ephemeris data from various chip manufacturers and stores the data on the server. The device connects to the proxy server through the default IP/domain name and port of the proxy server (parameters can be modified manually). After the device is started, check whether the AGPS auxiliary information file expires (different chip files have different due time). If it expires, request the AGPS proxy server to obtain the latest ephemeris data, and download it to the local by overwriting. If the data can not be obtained, keep trying.

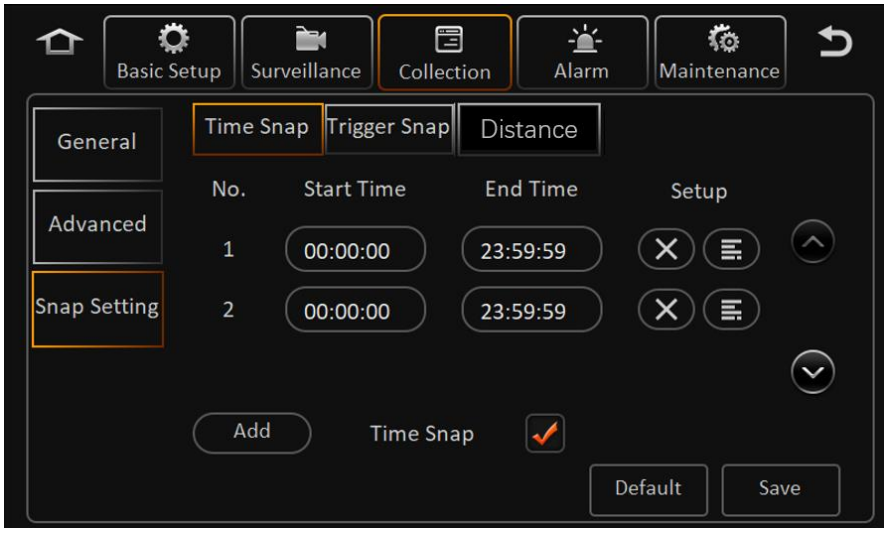
3.5.3.3 Snap Setting

The device can trigger the snap function under certain conditions and can automatically upload it to the server. Here you can set the snap conditions and the snap linkage. On the live view screen, tap Login Avatar > Setup > Collection > Snap Setting.

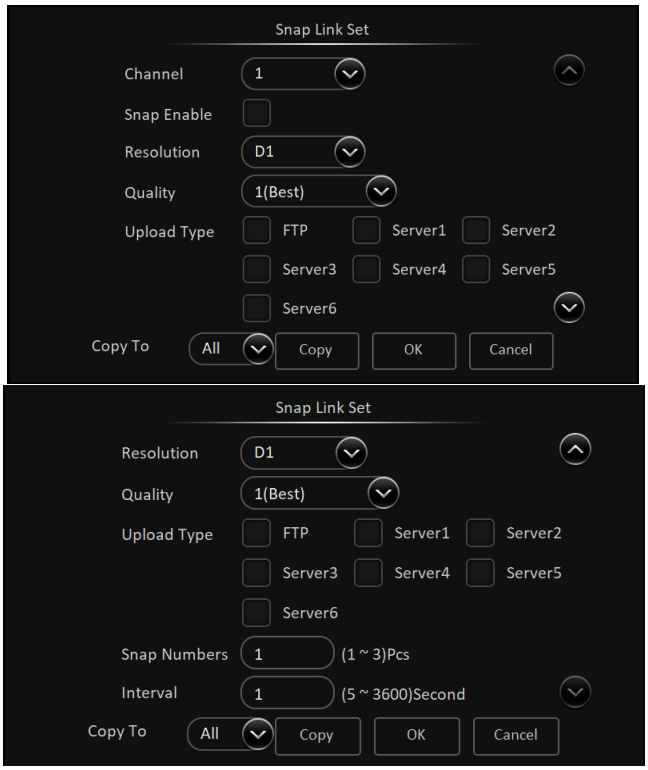


3.5.3.3.1 Time Snap

You can set the time period during which the device will automatically take snap pictures at regular intervals. The time snap setup screen is shown as below:



- Start Time/End Time:
  1) Set a time period and enable the snap function during this time period.
  2) The time period of time snap is within one day.
  3) It supports up to 8 time periods of time snap every day.
  4) You can add, delete, and edit time periods.
- Independent snap parameters can be set for each time period, tap Operate to enter the snap link screen:



  1) Channel: Select the camera channel to snap.
  2) Enable: Check to enable the time snap function of this channel.
  3) Resolution: Select the snap resolution.
  4) Quality: Select quality from 1 to 8, 1 indicates the best quality.

5) Upload Type: supports automatic upload of snap pictures via FTP and server. FTP setup is detailed in Section 3.5.1.6.1, server setup is detailed in Section 3.5.1.5.1.

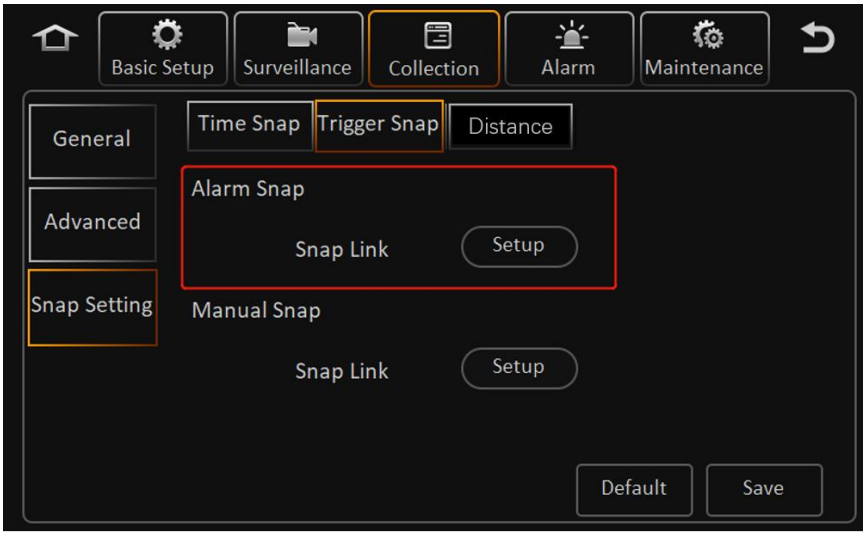
6) Snap Number: 1 to 3 snap pictures.

7) Interval: specifies the interval between each capturing, which is counted in seconds;

8) Copy To: You can copy the setup to other video channels.

3.5.3.3.2 Alarm Snap

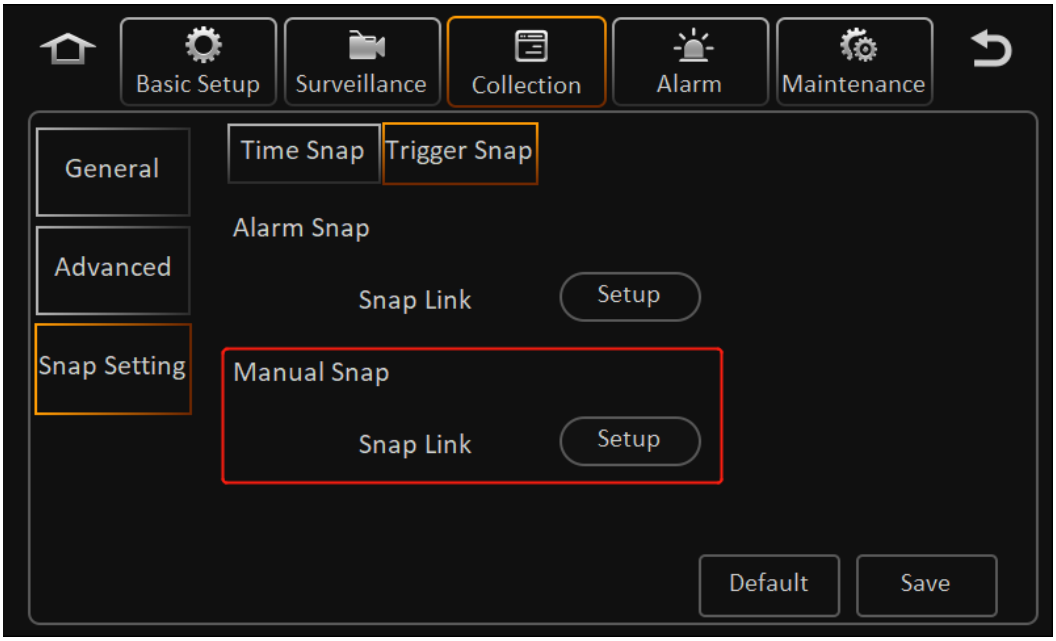
The alarm link snap, that is, the device starts to take snap pictures once an alarm is triggered. On the live view screen, tap Login Avatar > Setup > Collection > Snap Setting > Trigger Snap. The alarm snap setup screen is shown as below:



Tap Setup to enter the alarm snap link screen. Its setup is the same as the time snap.

3.5.3.3.3 Manual Snap

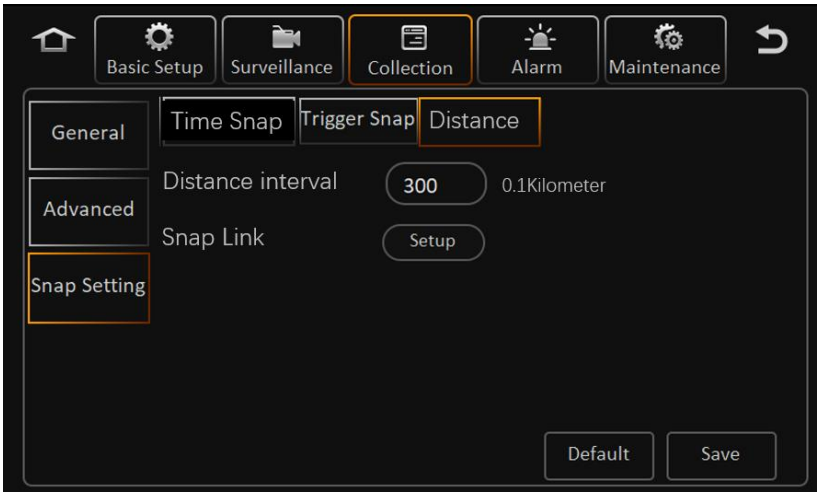
Connect an external button via IO or serial port, or a button on CP4 of the device. After triggering, a snapshot can be executed, and the snap method is executed according to the parameter configuration. For the parameter configuration, please refer to Section 3.5.3.1 on sensor and serial port. On the live view screen, tap Login Avatar > Setup > Collection > Snap Setting > Trigger Snap. The manual snap setup screen is shown as below:



Tap Setup to enter the manual snap link screen, and please refer to Time Snap for the linkage. However, the manual snap does not have the Interval setup, it will take a snap picture once triggered.

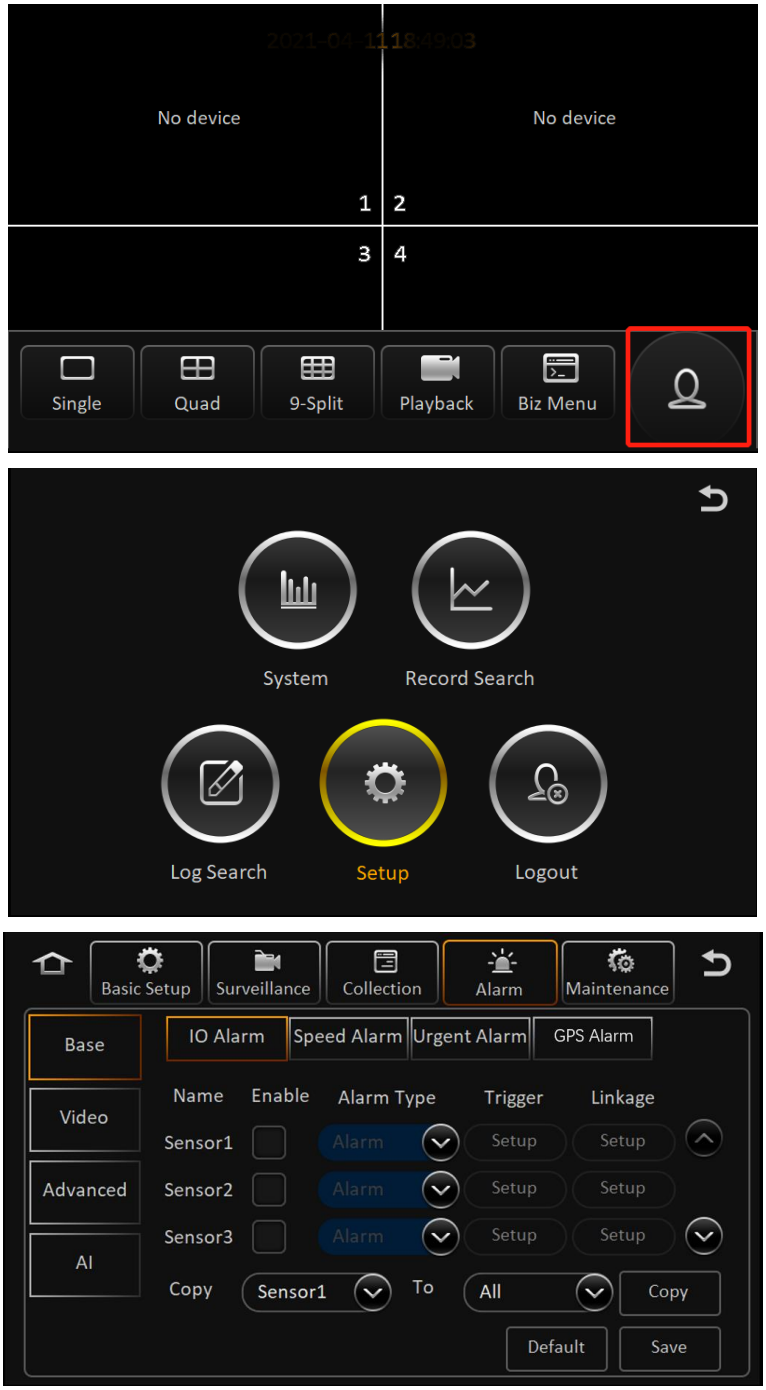
3.5.3.3.4 Fixed-range capture

The fixed-distance capture is supported, that is, capturing pictures at a fixed distance and uploading them to the platform. Click Preferences > Collection > Snap Setting > Distance Snap. The fixed-distance capture is disabled by default, and the distance unit follows the system unit. The difference between the capture linkage setting method and the timed capturing is that the fixed-distance capture setting does not contain capturing time interval setting.



3.5.4 Alarm Setting

On the live view screen, tap Login Avatar > Setup > Alarm to enter the following alarm setup screens.

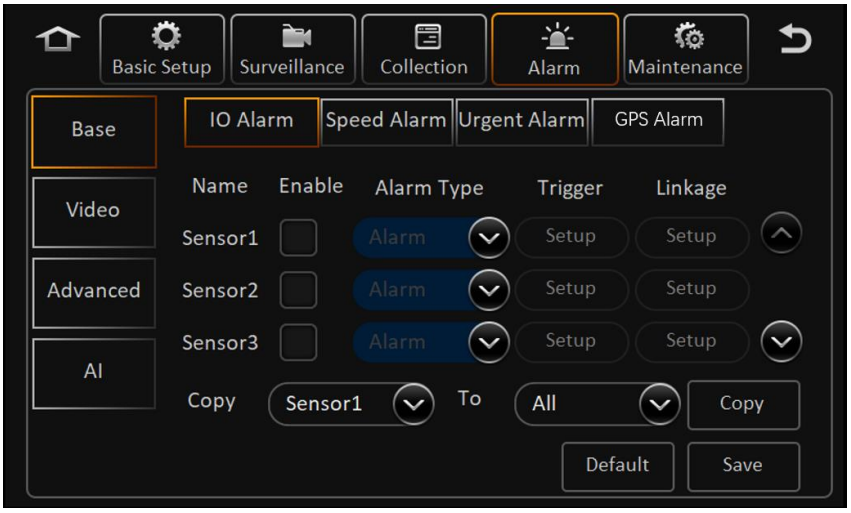


3.5.4.1 Base Alarm

3.5.4.1.1 IO Alarm

The MDVR can be connected to eight IO input signals. The IO alarm can be customized to set the name and alarm type, where you can set the triggering conditions and linkage setup of the alarm.

Tap IO Alarm on the base alarm screen, and the screen is shown as below:



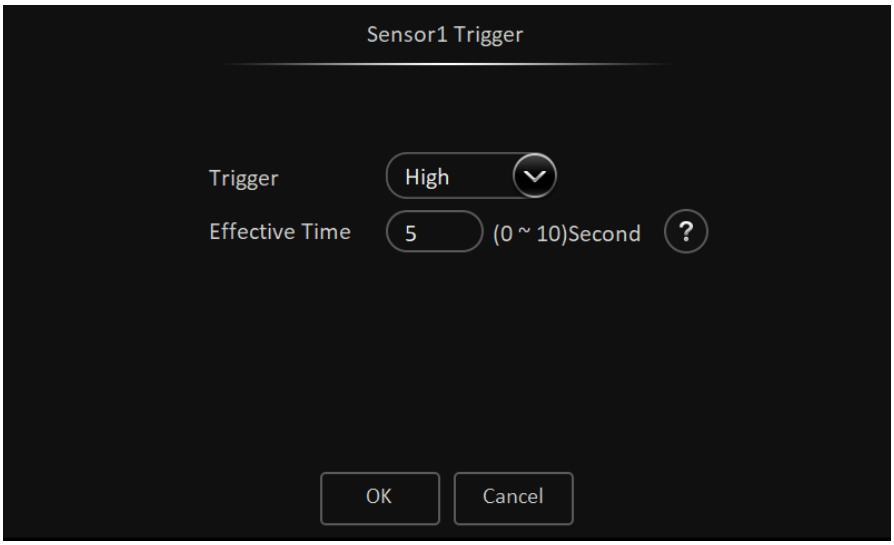
- Enable: Whether to enable the IO alarm function, check it to enable.
- Alarm Type: Alarm and Event.

  When Alarm Type is Alarm:

  1) The alarm can be OSD-superimposed on the preview screen and the recording.
  2) After the alarm is triggered, the ALM light on the MDVR panel lights up.
  3) The alarm will be uploaded to the platform.
  4) Write an alarm log.

  When Alarm Type is Event:

  1) No OSD superimposition.
  2) ALM light will not light up.
  3) The alarm will not be reported to the platform.
  4) Write an alarm log.
- Trigger: Tap the trigger Setup button to enter the following screen:

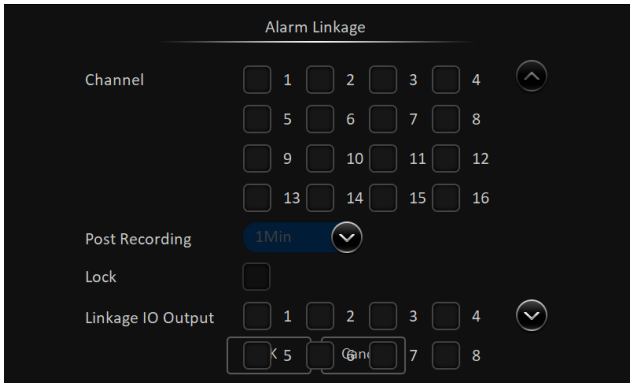


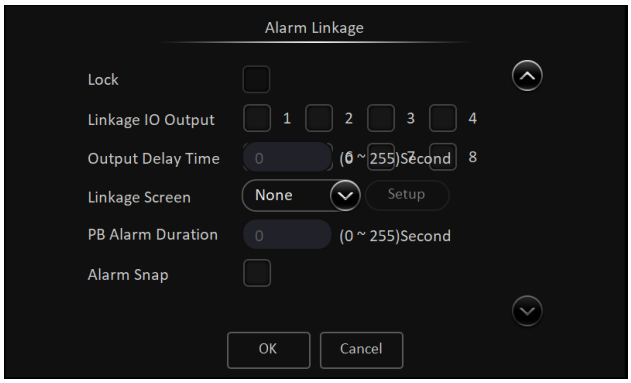
  1) Trigger: You can choose High or Low level, and it is High by default.
  2) Effective Time: a time period during which a cleared alarm is triggered

again. Alarms triggered in this period are considered the same.

For example: A motion detection alarm is triggered at 13:23:30 and cleared at 13:23:50. If the effective time is set to 10 seconds, and a motion detection alarm is triggered within 10 seconds, the two motion detection alarms are considered to be the same alarm, and are recorded in the alarm log as one. The alarm linkage will not stop until the subsequent motion detection is canceled.

- Linkage: The services that can be linked when an alarm occurs. Tap Setup to enter the following screen:





1) Channel: The channel that needs to be recorded after an alarm is triggered. The recording of these channels will be marked as alarm recording. Pre-Recording: In alarm recording, recording files generated before the linkage alarm are extracted for event analysis. The value ranges from 0 to 60 minutes and is 15 minutes by default.

2) Post Recording: The time for the video to continue when the alarm is cleared.

3) Lock: You can set whether to lock the alarm recording. If checked, after the speeding alarm is triggered, the started alarm recording will be locked. The recording lock will end after the alarm is cleared.

4) Linkage IO Output: After the speeding alarm is triggered, IO output 1 and 2 have high level output. 10 seconds after the alarm is cleared, IO output 1 and 2 return to low level.

5) Output Delay Time: The duration of the alarm output after the alarm is cleared when the linkage sound-light alarm output is activated.

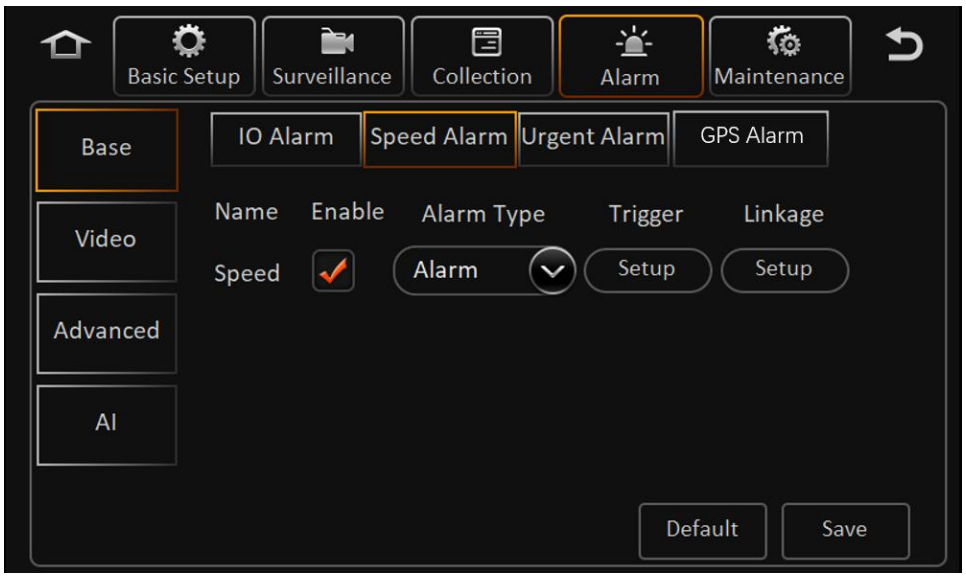
6) Linkage Screen: The required live view screen after an alarm is triggered. It is not displayed by default. You can also set it to be displayed in Single or Quad screen.

7) PB Alarm Duration: The duration that the alarm remains in effect after the emergency alarm event is cleared.

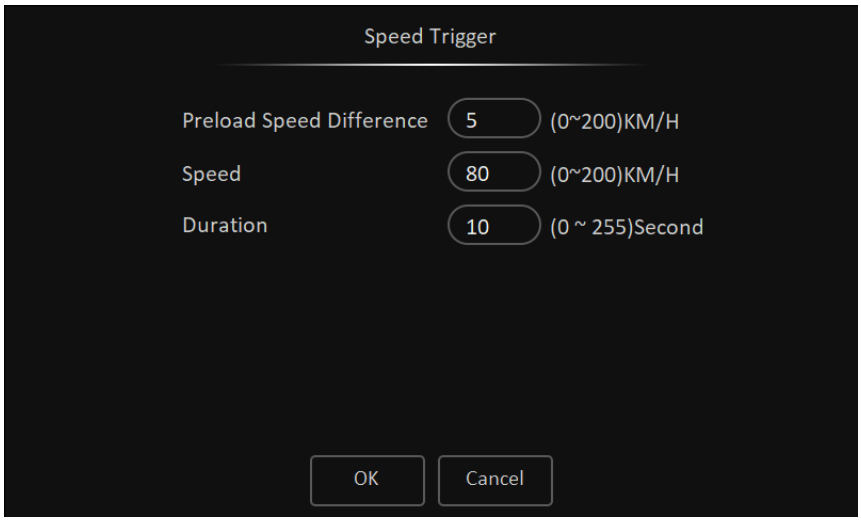
8) Alarm Snap: Whether to take a snap picture after the alarm is triggered. In the case of setting the FTP address, after the IO alarm is triggered, the channel snap will be enabled, and the snap pictures will be exported via FTP. Please refer to Section 3.5.3.3 for snap setup details.

3.5.4.1.2 Speed Alarm

The speed alarm is the warning reminder and alarm of speeding. Speed information can be obtained through satellite positioning, vehicle pulse, and OBD. Here you can set specific functions such as the corresponding alarm trigger conditions and linkage content. Tap Speed Alarm on the Base screen, the screen is shown as below:



- Enable: Whether to enable the speeding alarm function, check it to enable. Only by checking enable can you set the trigger condition and linkage.
- Alarm Type: Alarm and Event.
- Trigger: Tap Setup to enter the following screen:



1) The combination of Speed and Duration is used to trigger the speed alarm, that is, when the speed exceeds the set speed for a certain period of time, it is considered as a speeding alarm.

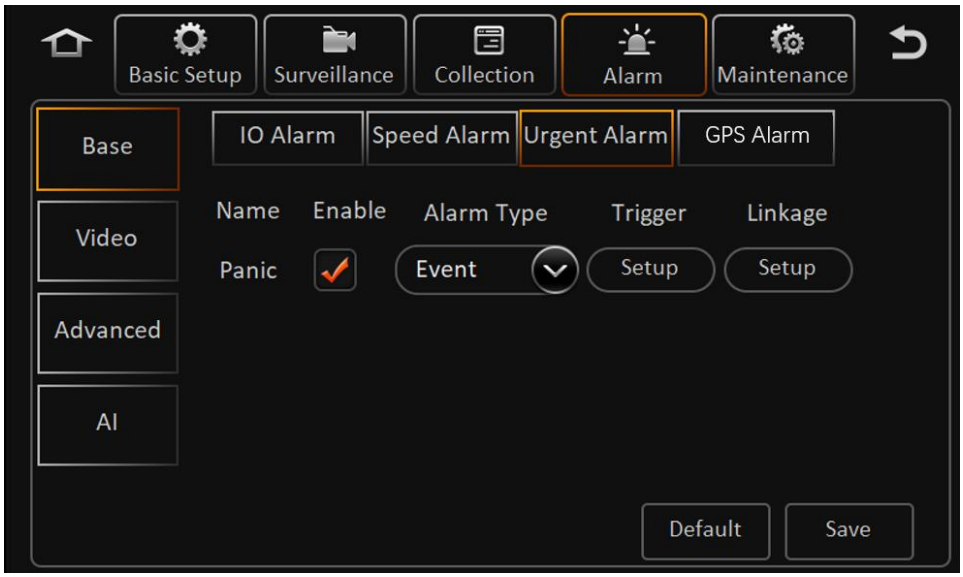
2) Preload Speed Difference is a value for speed warning. For example, the speed threshold is 80 kilometers and the warning speed difference is 5 kilometers, when the speed reaches 75 kilometers, a voice alarm will be triggered.

3) Effective Time: a time period during which a cleared alarm is triggered again. Alarms triggered in this period are considered the same.

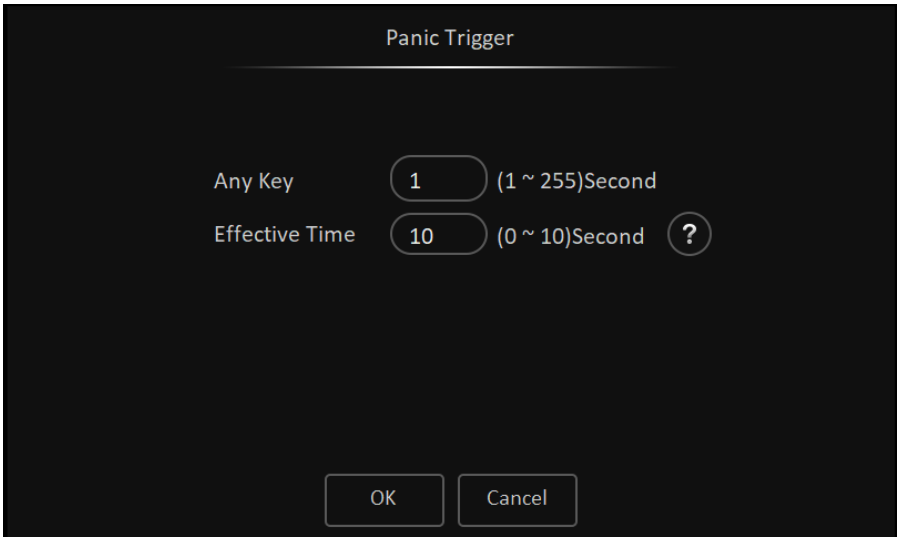
- Linkage: The services that can be linked when an alarm occurs. The specific setup is the same as the IO alarm.

3.5.4.1.3 Urgent Alarm

The urgent alarm is the alarm triggered by the driver pressing the emergency button in a dangerous situation. The signal input of the emergency button is generally accessed through the 485 protocol transmission port. In Section 3.5.3.1.2, the 485 port can be configured for control urgent alarms. Here you can set specific functions such as the corresponding alarm trigger conditions and linkage content. Tap Urgent Alarm on the Base screen, the screen is shown as below:



- Enable: Whether to enable the urgent alarm function, check it to enable. Only by checking enable can you set the trigger condition and linkage.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



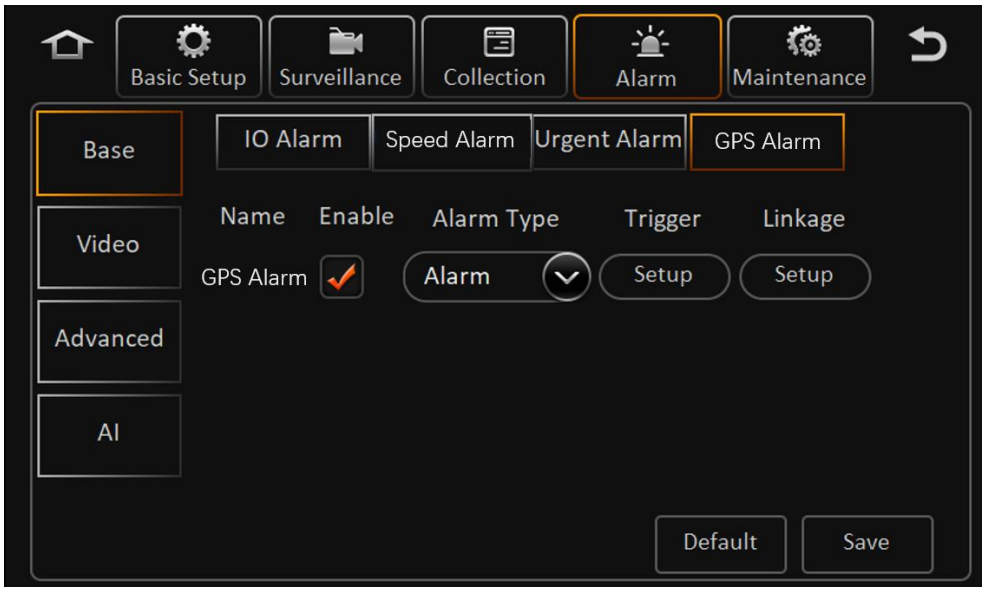
1) Any Key: Set the duration of the key-press for emergency alarm.

2) Effective Time: a time period during which a cleared alarm is triggered again. Alarms triggered in this period are considered the same. The detailed description is the same as those of the IO alarm.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

3.5.4.1.4 GPS alarm

The GPS alarm is an alarm triggered by the device when the GPS signal is lost (such as poor GPS signal, GPS antenna pulled or cut, etc.). Tap **GPS Alarm** on the Base screen, the screen is shown as below:



- **Enable:** Whether to enable the GPS alarm function, check it to enable. Only by checking enable can you set the trigger condition and linkage.
- **Alarm Type:** Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- **Trigger:** Tap Setup to enter the following screen:



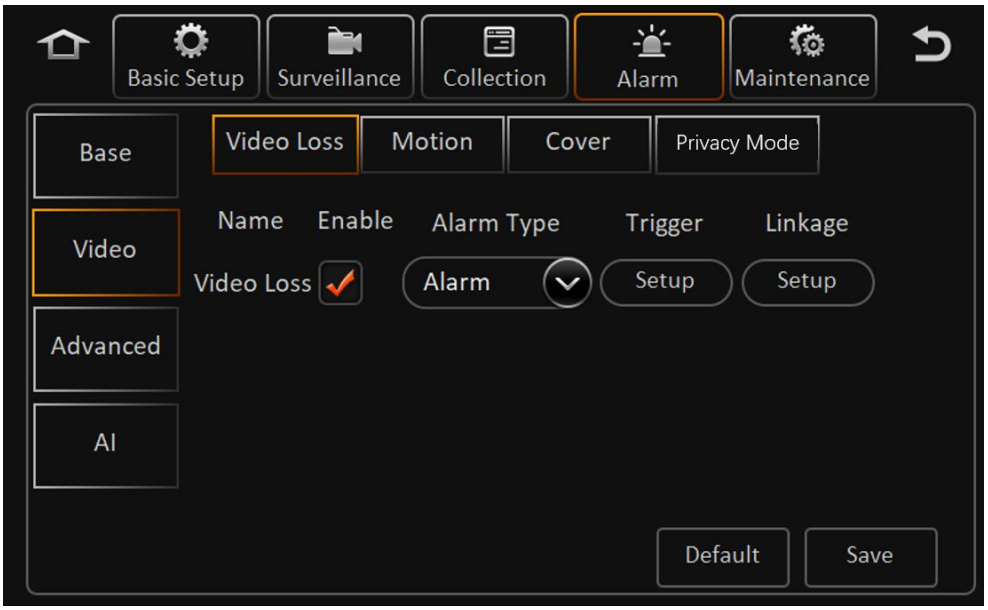
Effective Time : indicates a time period during which an alarm that is repeatedly triggered after being cleared will be considered as a single alarm. The detailed description is the same as those of the IO alarm. The effective time of GPS alarm can be any of 0 ~ 10s.

- **Linkage:** Tap Setup. The screens and details are the same as those of the IO Alarm.

3.5.4.2 Video Alarm

3.5.4.2.1 Video Loss

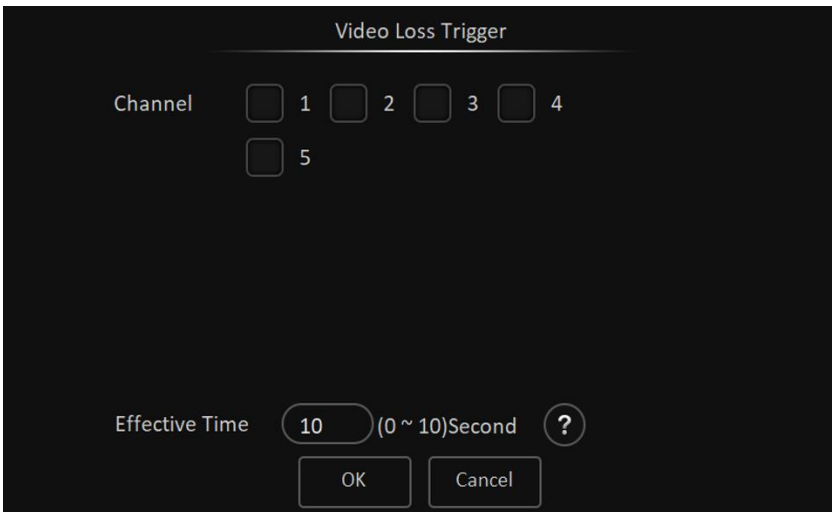
Video loss alarm refers to the alarm and corresponding linkage when the video signal of a certain channel is lost. Here you can set specific functions such as the corresponding alarm trigger conditions and linkage content. Tap Video > Video Loss in the Alarm screen, the screen is shown as below:



- Enable: Whether to enable the video loss alarm function, check it to enable. Only by checking enable can you set the trigger condition and linkage content.
- Alarm Type: Alarm and Event. The detailed description of the difference

between alarm types is the same as those of the IO alarm.

- Trigger: Tap Setup to enter the following screen:



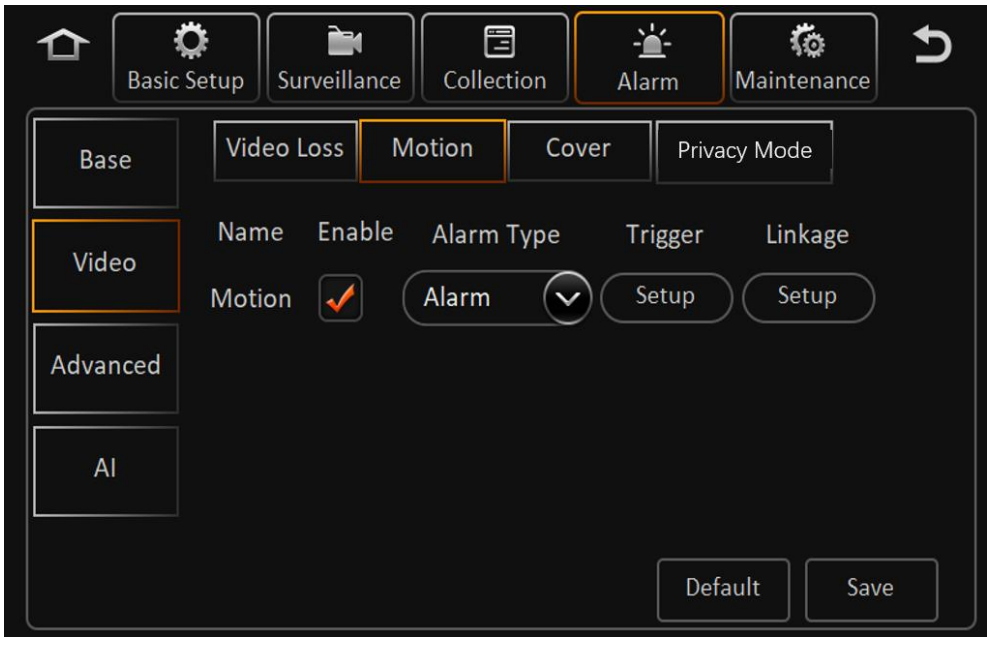
1) Channel: An alarm will be triggered once the videos of checked channels are lost.

2) Effective Time: a time period during which a cleared alarm is triggered again. Alarms triggered in this period are considered the same. The detailed description is the same as those of the IO alarm.

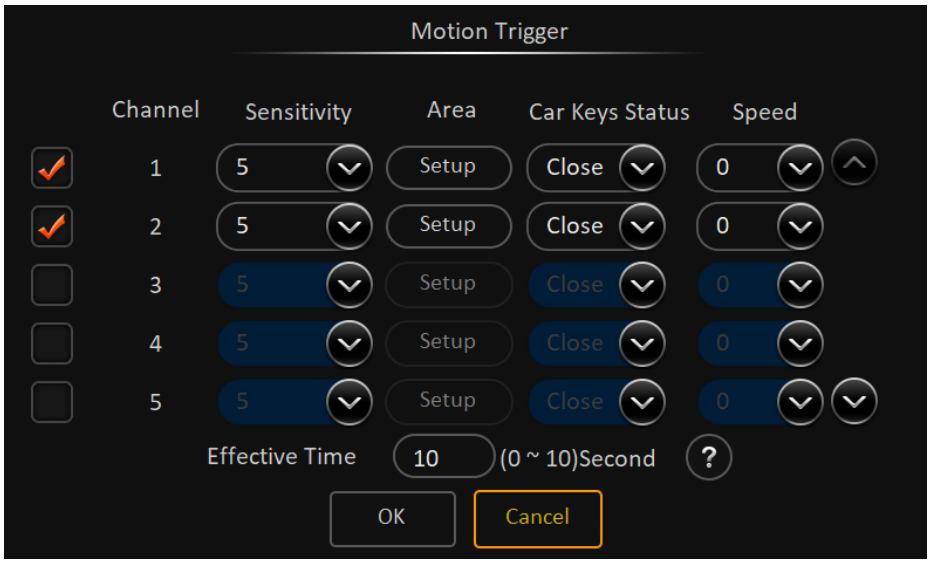
- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

3.5.4.2.2 Motion

Motion detection alarm means that an alarm will be triggered when a moving target appears within a certain area. The premise that the motion detection alarm can be set is that the corresponding channel has a video monitoring screen. Here you can set specific functions such as the corresponding alarm trigger conditions and linkage content. Tap Video > Motion on the Alarm screen, the screen is shown as below:



- Enable: Whether to enable the motion detection alarm function, check it to enable.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:

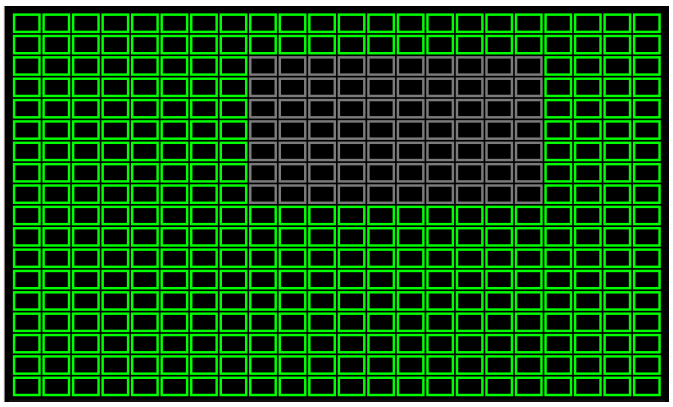


1) Channel: Activate the motion detection alarm for the checked channels.

2) Sensitivity: ranges from 1 to 8. The smaller the sensitivity value, the higher the sensitivity. Because the sensitivity is affected by the color time (day or night), etc., the value needs to be adjusted according to the actual situation.

3) Area: Tap Setup, and drag the motion detection area on the channel image. You can set multiple motion detection areas.

   ⚠ Note: The default is to select all. The motion detection areas are in green, and the non-detection area in gray. as shown in the following figure.



4) Car Keys Status: You can choose Close, Open, or All. That is, a motion detection alarm will be triggered once the vehicle is closed, started or in any status.

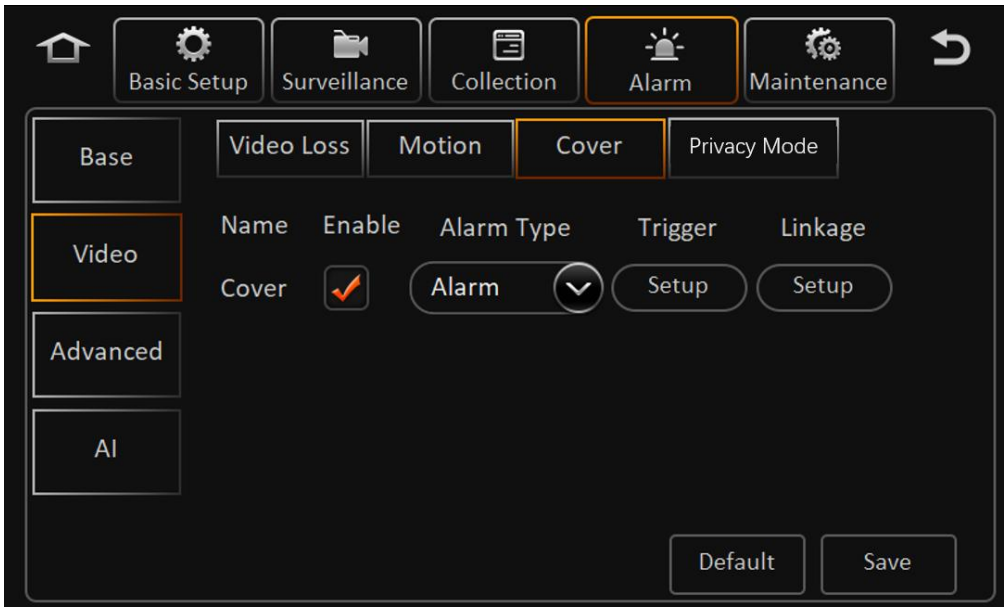
5) Speed: You can choose 0 or All. That is, a motion detection alarm will be triggered once the vehicle stops or at any speed.

6) Effective Time: The time interval between two adjacent motions is detected. If another motion is detected within this time period, it will be considered as a continuous motion. If another motion is detected outside this time period, then these two adjacent motions are considered to be independent and different motion events.

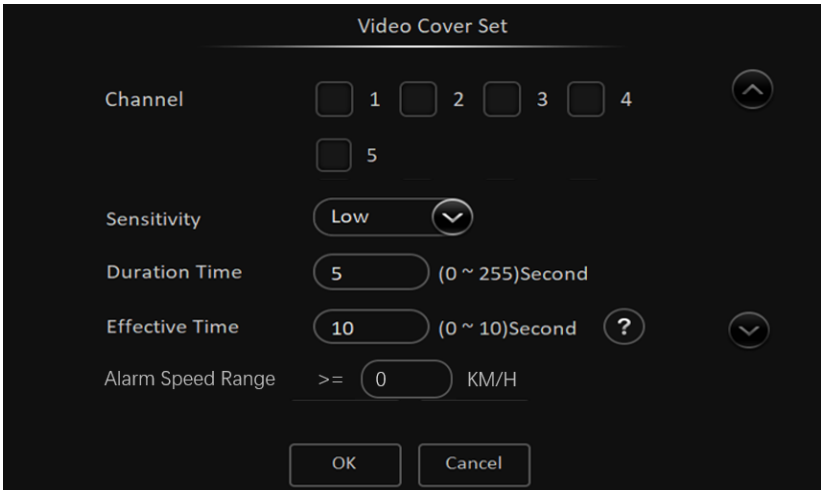
- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

3.5.4.2.3 Cover

Cover alarm means that an alarm will be triggered when a moving target appears in a certain area. The premise that the cover alarm can be set is that the corresponding channel has a video monitoring screen. Here you can set specific functions such as the corresponding alarm trigger conditions and linkage content. Tap Video > Cover on the Alarm screen, the screen is shown as below:



- Enable: Whether to enable the cover alarm function, check it to enable.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



1) Channel: An alarm will be triggered once the checked channels are

detected to be covered.

2) Sensitivity: You can choose Low, Medium, or High.

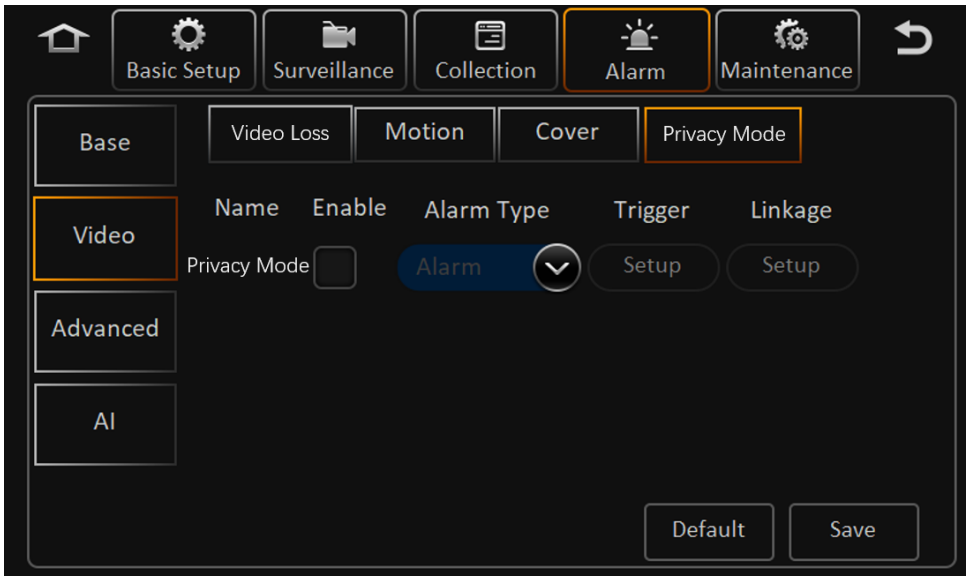
3) Duration Time: How long the coverage lasts for the alarm to be triggered.

4) Effective Time: a time period during which a cleared alarm is triggered again. Alarms triggered in this period are considered the same. The detailed description is the same as those of the IO alarm.

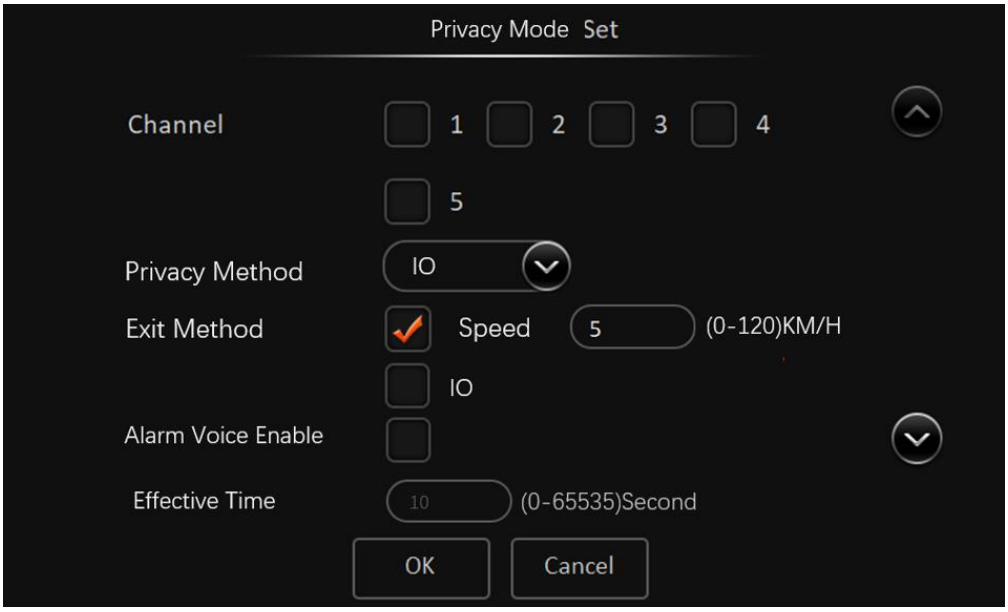
- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

3.5.4.2.4 Privacy Mode

Drivers can enable the privacy mode when they want to have a rest. When the privacy mode is turned on, the audio and video recordings of the set channel are all turned off, and neither the local preview nor the remote live view is available. If a non-private channel in the cab reuses the recording of the private channel, the non-private channel in the cab just enables the video recording without audio recording. The privacy mode can be triggered by IO and ACC. It is a way to release the privacy mode by IO, or when the speed is greater than a certain set value, the speed is greater than a certain set value is automatically released. Tap **Primacy Mode** on the Base screen, the screen is shown as below:



- **Enable:** Whether to enable the primacy mode function, check it to enable. Only by checking enable can you set the enable and release mode of the primary function.
- **Alarm Type:** Alarm and Event. The default is an event.
- **Trigger: Tap Setup to enter the following screen:**



1) **Channel**: used to set the channel for enabling the privacy mode. Check the corresponding channel to enable. The channel will stop recording when the privacy mode is triggered;

2) **Privacy Mode**: The way to enable the privacy mode can be set, including such three trigger modes as by IO, 485 button and ACC. When IO is used to trigger the mode, it is necessary to configure the purpose in the switching value setting interface.

3) **Release Mode**: Set the release method of the privacy mode, including release when the speed is greater than the set value, by manual control through IO or RS485.

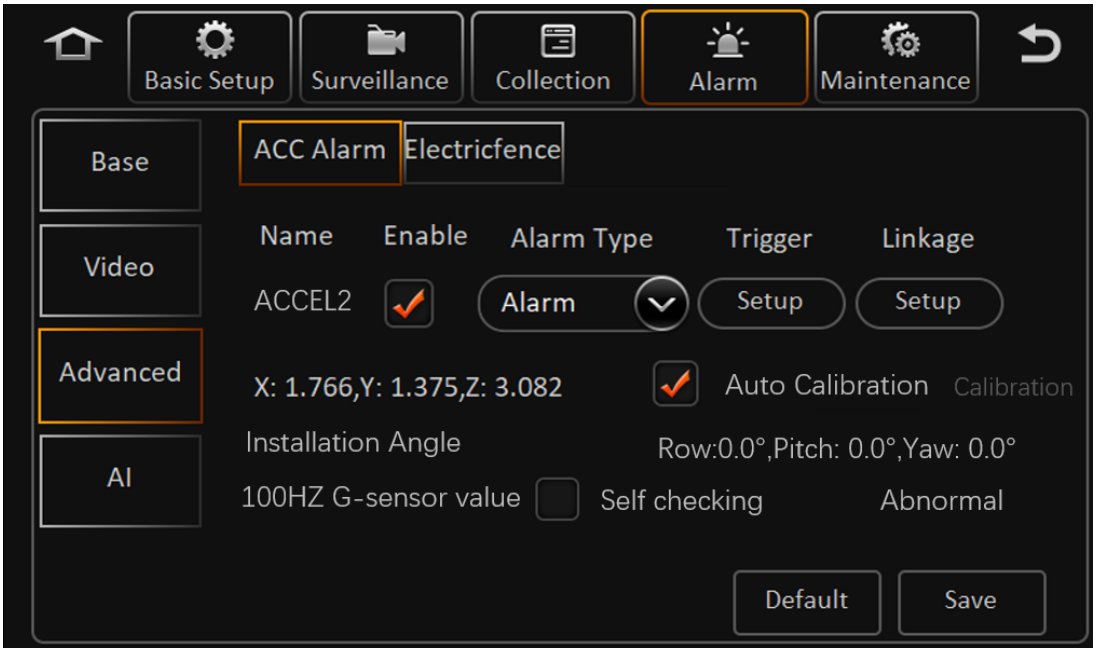
4) **Alarm Voice Enable**: Controlling whether to play a voice prompt when the privacy mode is turned on or off. The default is turned off.

5) **Effective time**: This value cannot be set.

3.5.4.3 Advanced Alarm

3.5.4.3.1 ACC alarm (driver's behavior alarm)

The ACC Alarm is triggered based on the change of position and impact force detected by the built-in G-sensor of the MDVR. Tap **Advanced** > **ACCA Alarm** on the Alarm setting screen, as shown in the following figure:



- Alarm Type: Alarm and Event.
- Calibrate: Tap Calibrate, and the value of each coordinate axis will return to zero.
- Installation Angle: includes roll angle, pitch angle, and yaw angle. Editing is not supported. Tap the Calibrate button and the angles will be updated automatically.
- Installation Direction:
  1) The G-sensor supports automatic training and calibration, and the automatic calibration takes about 15 minutes;
  2) In Training will be displayed during the training;
  3) When the training is done, the mapping relationship between the X, Y, and Z axes of the device and the actual X, Y, and Z axes of the vehicle will be displayed.
  4) When the training is done, the operation log will record the WriteAxisResult.
  5) When the training is done, tap the Retrain button to restart training.
- 100HZ: Check the 100HZ G-sensor value. ACC is two packages per second, 50 entries each package.
- Trigger: Tap Setup to enter the following screen:

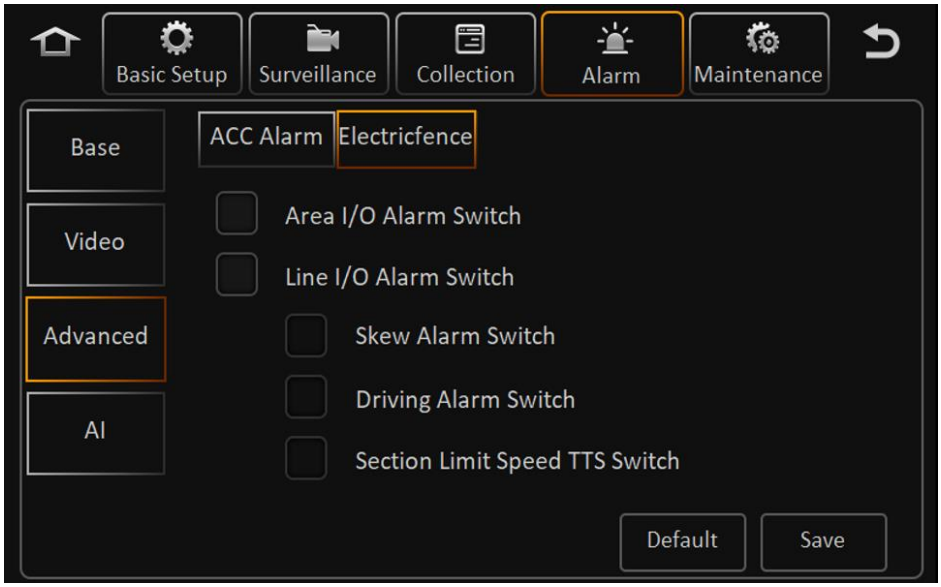


1) Offset is the acceleration from the resultant force in a certain axis direction. If the acceleration in the direction is greater than this value, an alarm will be triggered;
2) Harsh Braking: negative value corresponding to the x-axis;
3) Hard Acceleratic：Corresponding to the positive value in x-axis direction;
4) Harsh Left Turn: positive value corresponding to the y-axis;
5) Harsh Right Turn: negative value corresponding to the y-axis;
6) Effective Time: a time period during which a cleared alarm is triggered again. Alarms triggered in this period are considered the same.
7) Recommended Settings: The recommended values can be set according to three types of vehicles: Light Duty, Medium Duty, and Heavy Duty. Tap the corresponding button and the recommended values will be filled in automatically.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

3.5.4.3.2 Geo-fence

The function of the Geo-fence is to ensure that the vehicle is driven along the designated line and parked in the designated area. Tap Advanced > Geo-fence on the Alarm setting screen, as shown in the following figure:



In this screen, you can only enable or disable the Geo-fence alarm and voice broadcast, and cannot set the location and range of the Geo-fence. The area and line of the Geo-fence can be set on the CEIBA platform.

3.5.4.4 AI Alarm

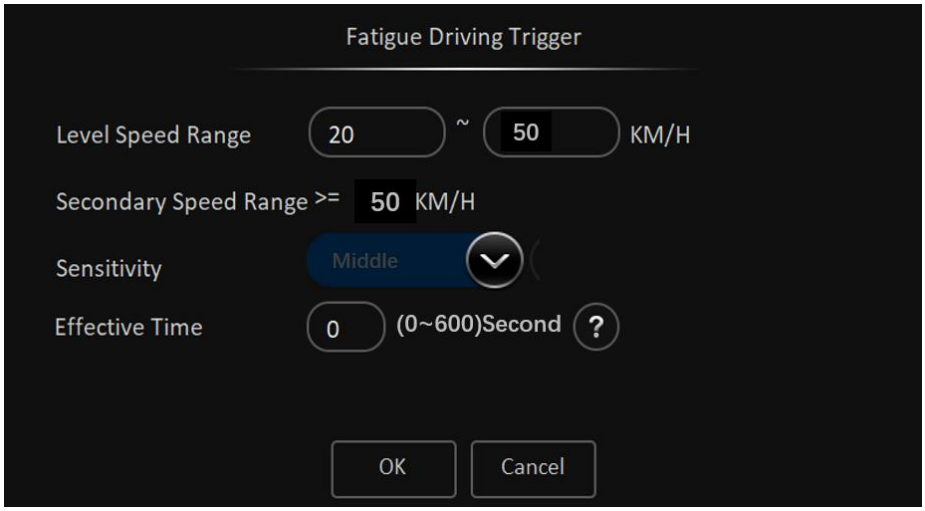
AI alarms are based on active safety kits and cameras that support AI algorithms, currently including alarms for driver behavior monitoring, road safety, and blind-spot monitoring. Tap AI on the Alarm setting screen to enter the AI alarm setting screen, as shown in the figure below.



3.5.4.4.1 DMS Alarm

The Driver Monitor System (DMS) is for monitoring driver's behaviors. Connect to the DMS cameras to enable the alarm functions. The settings for DSM alarm are as follows:

- Fatigue Driving: alarm for closing eyes and fatigue of a driver
  - Enable: You can check the box to enable the alarm function.
  - Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
  - Trigger: Tap Setup to enter the following screen:



1) Level Speed Range: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts.

2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.

3) **Sensitivity**: Eye-closed fatigue sensitivity cannot be set, and the default sensitivity is medium;

5) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

➢ No Driver: alarm for no driver is detected

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm and Event.
- Trigger: Tap Setup to enter the following screen:



1) Level Speed Range: The alarm will be triggered by the driver's

behavior only when the vehicle speed is within the set range;

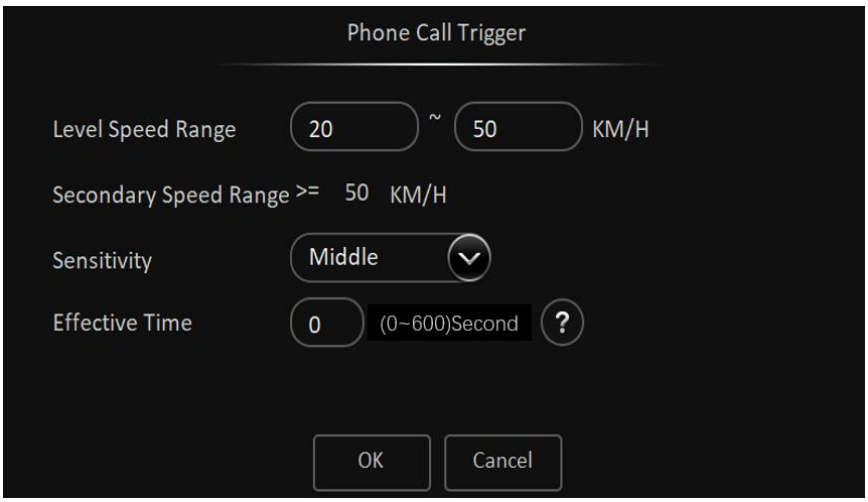
2) Sensitivity: There are four options: Low, Middle, High, and User-Defined;

3) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

➢ Phone Call: alarm for making phone calls

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



1) Level Speed Range: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;

2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.

3) Sensitivity: There are four options: Low, Middle, High, and User-Defined;

4) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same. The detailed description is the same as those of the IO alarm.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

➢ Smoking: alarm for smoking

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.

- Trigger: Tap Setup to enter the following screen:



1) Level Speed Range: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;

2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.

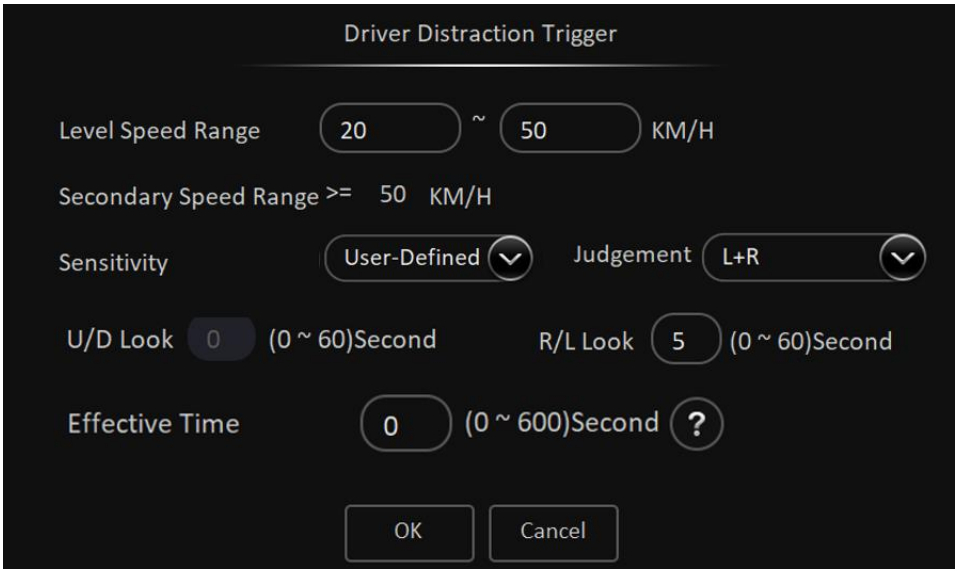
3) Sensitivity: There are four options: Low, Middle, High, and User-Defined;

4) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same. The detailed description is the same as those of the IO alarm.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

➢ Distraction: alarm for distracted driving

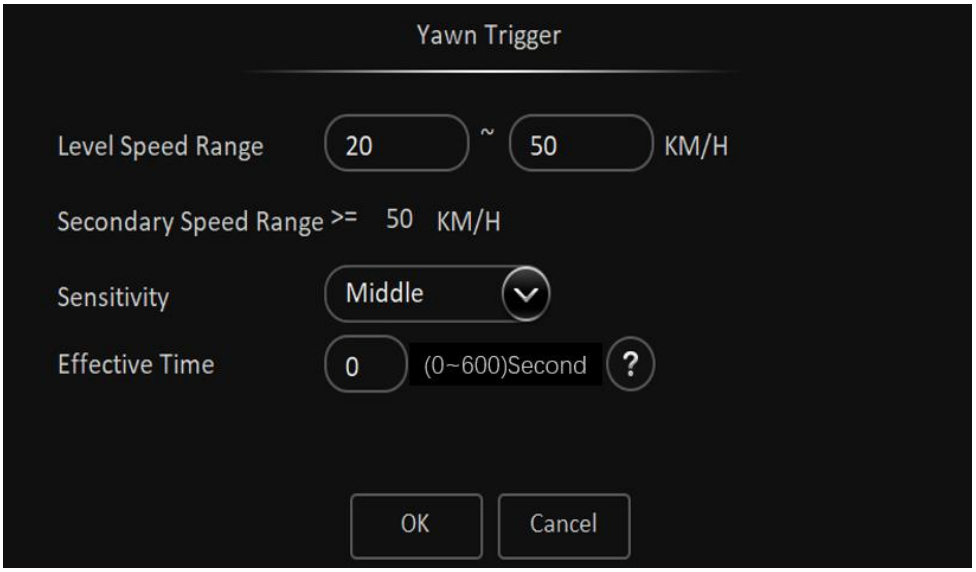
- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



- **Level Speed Range**: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;
- Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.
- **Sensitivity**: There are four options: Low, Middle, High, and User-Defined. When you choose User-Defined, you can choose the judgment method of distraction alarm, including such three methods as looking leftward and rightward distraction, looking upward and downward distraction (actually only supporting looking downward distraction), looking leftward and rightward distraction + looking upward and downward distraction (only supporting looking downward distraction). Select different distraction judgment methods, and the judgment threshold parameters that can be set below are different. When the looking upward and downward distraction is selected, only the upward and downward thresholds can be set; when the looking leftward and rightward distraction is selected, only the leftward and rightward thresholds can be set; when looking leftward and rightward distraction + looking upward and downward distraction are selected, both parameters can be set;
- Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same. The detailed description is the same as those of the IO alarm.
- Linkage: Tap Setup to set the linkage. The screens and details are the same as those of the IO Alarm.

➢ Yawn: alarm for yawn

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm or Event
- Trigger: Tap to enter the following screen



1) **Level Speed Range**: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;

2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.

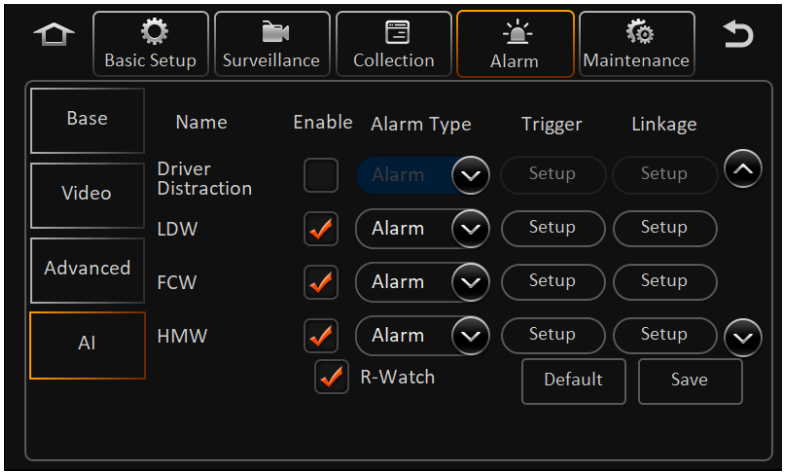
3) **Sensitivity**: There are four options: Low, Middle, High, and User-Defined;

4) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same. The detailed description is the same as those of the IO alarm.

- Linkage: Tap Setup to set the linkage. The screens and details are the same as those of the IO Alarm.

3.5.4.4.2 ADAS Alarm

The ADAS is short for Advanced Driver Assistance Systems. Connect to the ADAS cameras to enable the alarm functions. The settings for ADAS alarm are as follows:



➢ LDW: Lane Departure Warning

- Enable: You can check the box to enable the alarm function.

- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



1) Level Speed Range: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;
2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.
3) **Sensitivity**: The lane departure sensitivity is optional for low, medium and high, but it is medium sensitivity by default and cannot be changed in the setting interface. For the requirement of changing sensitivity value, the modification command shall be issued remotely through the platform.
4) **Effective Time**: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same. The detailed description is the same as those of the IO alarm.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

➢ FCW: Front Collision Warning

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



1) Level Speed Range: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;

2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.

- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

➢ HMW: Headway Monitoring Warning

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



1) **Level Speed Range**: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;

2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.

3) **Sensitivity**: There are four options: Low, Middle, High, and User-Defined;

4) **Duration**: The alarm will be triggered only when the duration of action reaches the set value. The setting range of the HMW duration is 0.1 ~ 10.00s, with 2s by default;

5) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same. The detailed description is the same as those of the IO alarm.

- Linkage: Tap Setup to set the linkage. The screens and details are the same as those of the IO Alarm.

➢ PCW: Pedestrian Collision Warning

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm and Event. The detailed description of the difference between alarm types is the same as those of the IO alarm.
- Trigger: Tap Setup to enter the following screen:



1) **Level Speed Range**: Level-1 alarm for speed range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. When the level-1 alarm is triggered, there are both "beep" sounds and voice prompts;

2) Secondary Speed Range: The lower limit of this range varies with the upper limit of the level-1 alarm speed range.

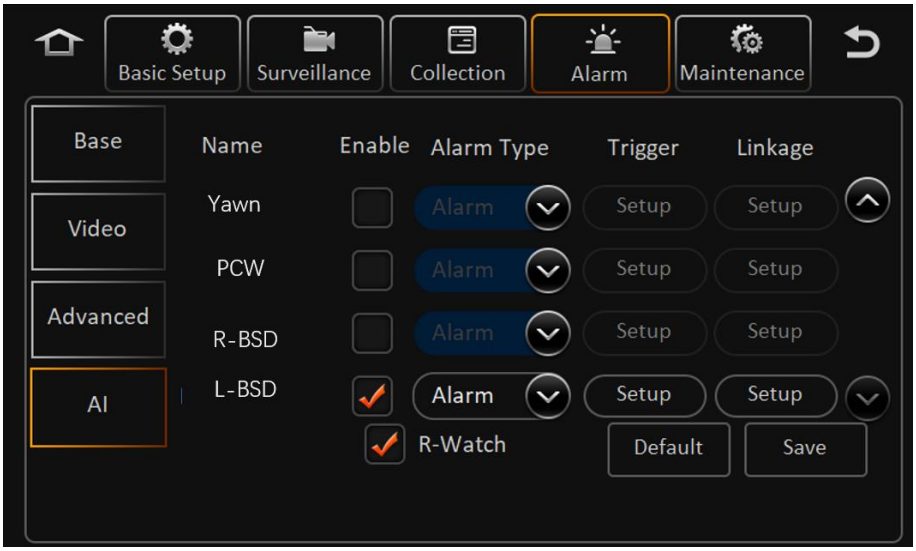
3) Sensitivity: There are four options: Low, Middle, High, and User-Defined;

4) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the two alarms are considered the same. The detailed description is the same as those of the IO alarm.

- **Linkage: Tap Setup to set the linkage. The screens and details are the same as those of the IO Alarm.**

3.5.4.4.3 BSD Alarm

The BSD is short for Blind Spot Detection. Connect to the BSD cameras to enable the alarm functions. The settings for BSD alarm are as follows:



➢ Right BSD: Right Blind Spot Detection

- Enable: You can check the box to enable the alarm function.
- Alarm Type: Alarm or Event
- Trigger: Tap to enter the following screen



1) Level Speed Range: The alarm will be triggered by the driver's behavior only when the vehicle speed is within the set range. The speed limit is 0-255 km/h.

2) **Duration**: The alarm will be triggered only when the duration of action reaches the set value.

3) Effective Time: It means when an alarm is canceled and the same alarm is triggered within a certain period after the cancellation, the

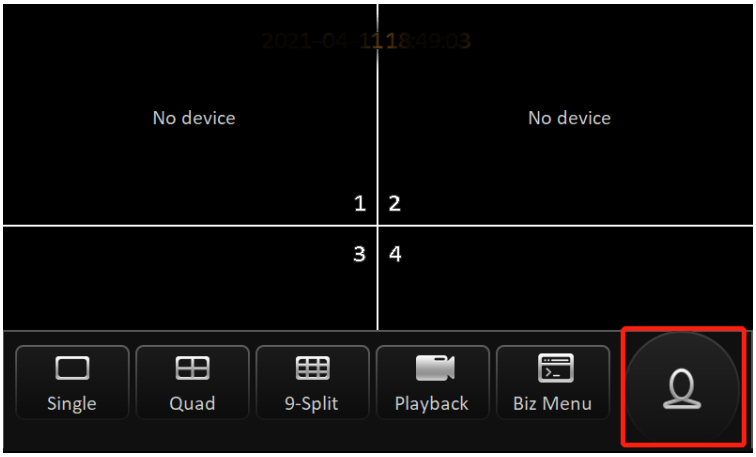
two alarms are considered the same. The detailed description is the same as those of the IO alarm.

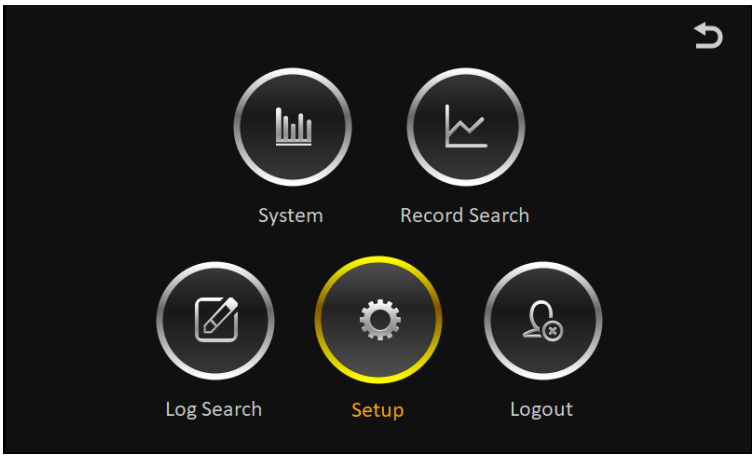
- Linkage: Tap Setup. The screens and details are the same as those of the IO Alarm.

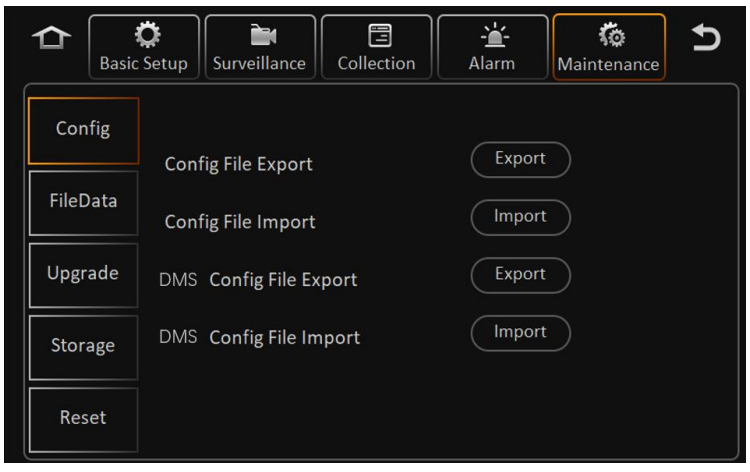
Note: The settings of the L-BSD alarm are the same as the above and are not described here.

3.5.5 Maintenance Settings

On the Config screen under Maintenance, you can import and export parameter config files, upgrade devices, view storage, and reset or restart the device. On the live view screen, tap Login Avatar > Setup > Maintenance to enter the following screen:





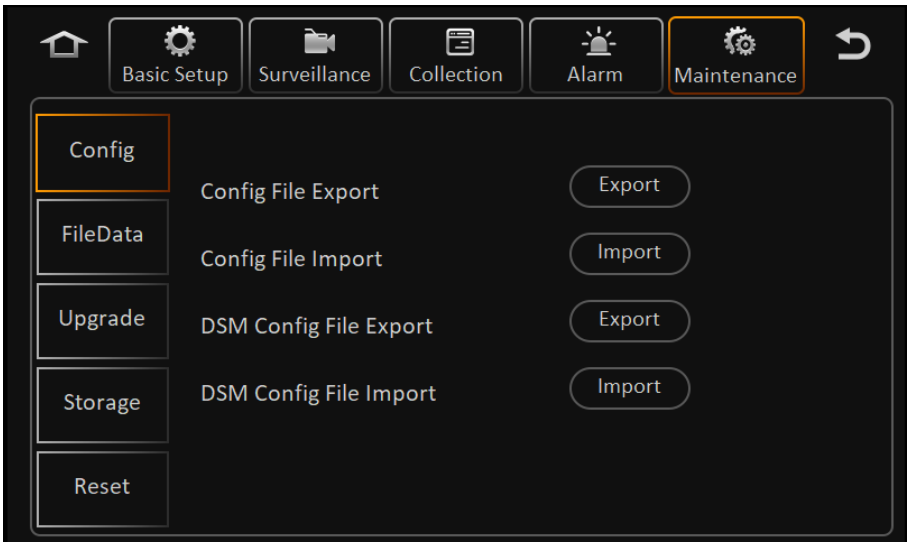


3.5.5.1 Config. File

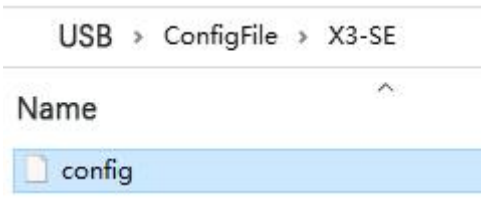
You can import and export config parameters with a USB flash drive. When there are only parameters to be imported, you need to create a folder named "ConfigFile" under the root directory of the USB flash drive and place the parameter file in the folder.

- Device Parameters

Device parameters are a series of settings for the MDVR. If you export the parameters and then import them to another device, the setting parameters will be copied to the device. Tap Config under the Maintenance settings to enter the screen as shown in the following figure:



Connect the device to a USB flash drive, select the Export button in the Config File Export line to export the config file to the root directory of the USB flash drive, generating a folder named "ConfigFile". There is an MDVR model folder (such as X3-SE) in the ConfigFile. The MDVR model folder contains the parameter file named config. The config file contains all the parameters that can be exported from the MDVR (registration information such as license plate number will not be exported).



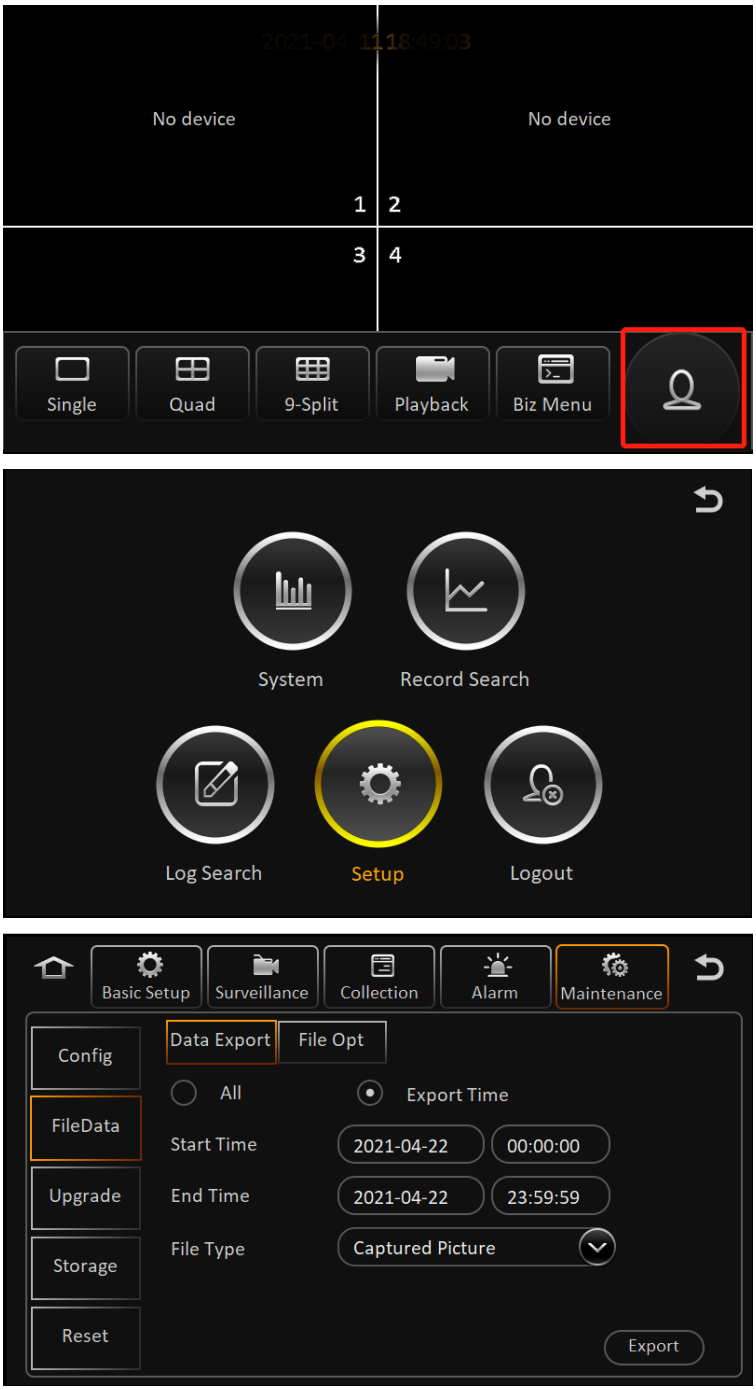
Connect the USB flash drive containing the config file to another device, select "Import", and the device will prompt that the parameter import is successful. Parameters in the config file contained in the USB flash drive will be imported into the device (registration information such as license plate number will not be imported).

The import and export processes of DMS device parameter files are the same as those of MDVR and are not described here.

3.5.5.2 File Data

3.5.5.2.1 Data Export

On the Data Export screen, you can export the specified Captured Picture/Alarm Log/Operation Log/Black Box File/DEBUG File at any time. On the live view screen, tap Login Avatar > Setup > Maintenance > File Data to enter the screen as follows:



Export Time: You can export the data of all the time periods, or export the data of part of the time periods.

File Type: You can select Captured Picture/Alarm Log/Operation Log/Black Box File/DEBUG File.

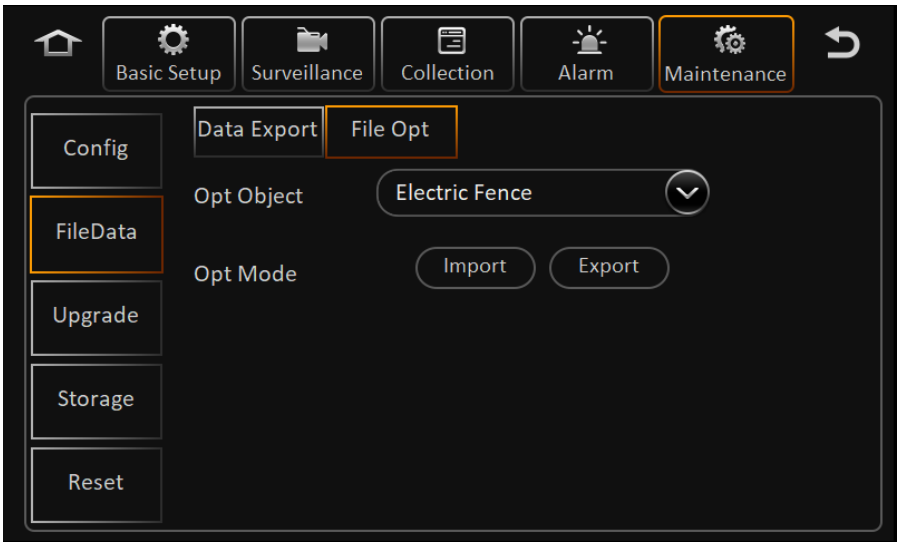
Connect the device to a USB flash drive and tap Export. If there are relevant files, the "Export succeeded." message will be displayed; if there is no corresponding file, the "No file." message will be displayed.

After exporting the files, plug the USB flash drive into a computer and select the corresponding files to be exported. The log location is shown in the following figure:



3.5.5.2.2 File Operation

The File Opt screen is for importing and exporting the Geo-fence file in the device.



- Geo-fence file

Export: Export the file from the device to the root directory of a USB flash drive. The file name is area.json. The location of the file is shown in the following figure:

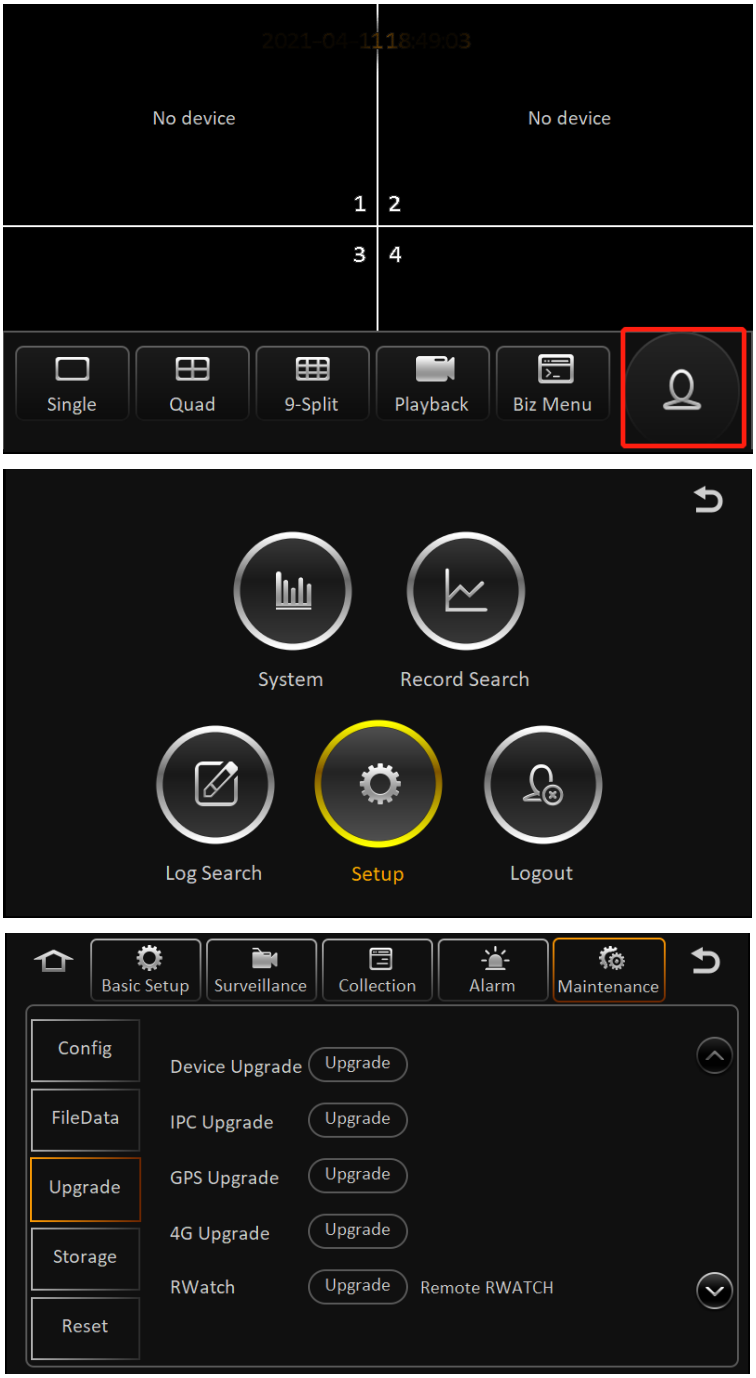


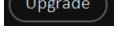
Import: Place the Geo-fence file in the root directory of a USB flash drive and tap Import to import the file. (It can also be issued remotely via the CEIBA platform.) Note: The Geo-fence is applicable to all models.

3.5.5.3 Upgrade

The Upgrade function can upgrade and update MDVR software, CP4 software, IPC software, GPS module, and R-Watch software. On the live view screen, tap Login

Avatar > Setup > Maintenance > Upgrade to enter the screen as follows:



Create a folder named "upgrade" under the root directory of a USB flash drive, place the upgrade file in the folder, plug the USB flash drive into the USB port on the front panel of the MDVR, and tap the corresponding upgrade  button.

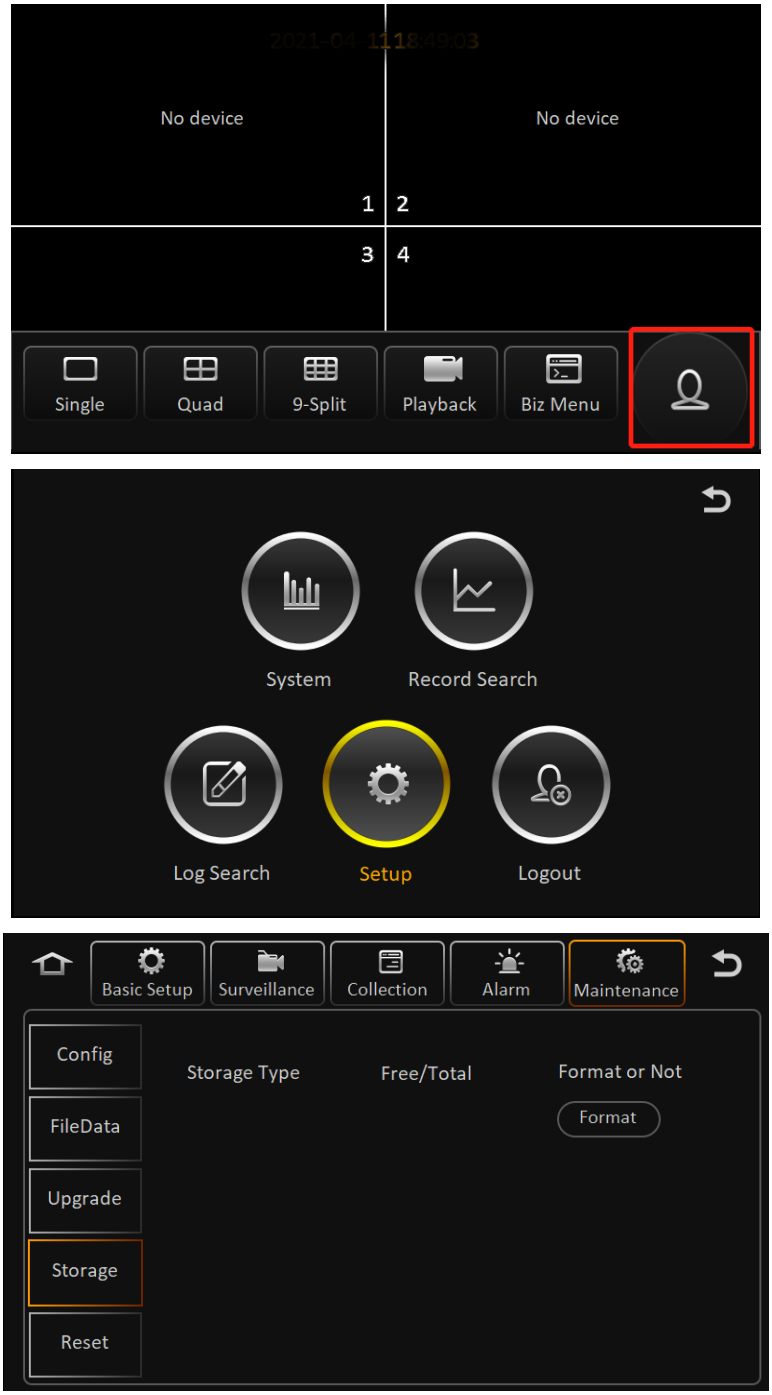
When upgrading MDVR software, the device will restart automatically and enter the upgrade screen. When the upgrade is done, the device will restart automatically and start normally. The MDVR will not restart when other software is upgraded.

Note: 1) Do not shut down the device during the upgrade. 2) When upgrading software, do not place multiple upgrade files at one time, otherwise, one upgrade file will be randomly selected for the upgrade.

3.5.5.4 Storage

Storage includes SD card (built-in), fireproof box (displayed as SD card (external)), and USB flash drive. SD card is for video storage, and USB flash drive is for importing and exporting parameter files.

On the live view screen, tap Login Avatar > Setup > Maintenance > Storage to enter the module. On this screen, the built-in memory and external memory (such as a USB flash drive) can be formatted as shown in the following figure:



- Storage Type: Four types: hard disk, SD card (built-in), SD card (external), and USB flash drive. M1n-TKH0401 cannot be connected to a hard disk.
- Free/Total:
  1) The memory works well if the device is displaying the correct memory information;

2) Not Exist: The hard disk is not found (not installed or damaged);

3) Unformatted: The hard disk is found, but the local formatting (new hard disk) is required.

- Format or Not:

1) Tap Format to start formatting. After successful formatting, the capacity information of the formatted disk will be refreshed;

2) When the formatting is successful, the device can record video normally without restarting;

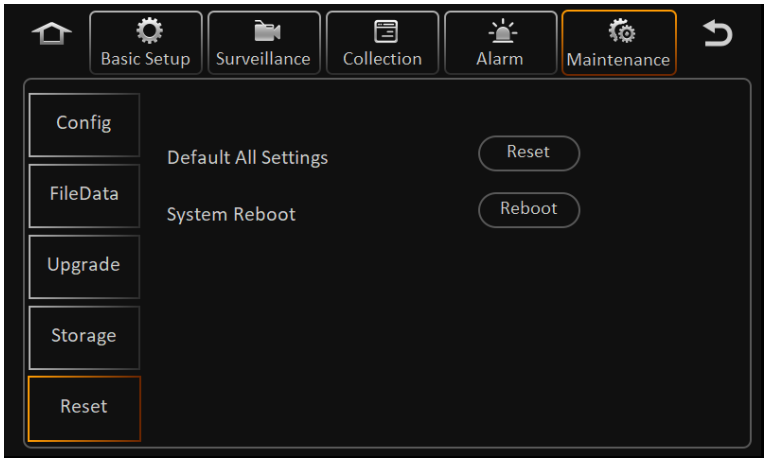
3) The formatting takes about 10 seconds.

⚠ Note: New hard disks and SD cards must be formatted manually before the first startup.

3.5.5.5 Reset

On this screen, you can reset the device parameters to factory settings or restart the device. On the live view screen, tap Login Avatar > Setup > Maintenance > Reset to enter the screen as follows:





➢ Default All Settings

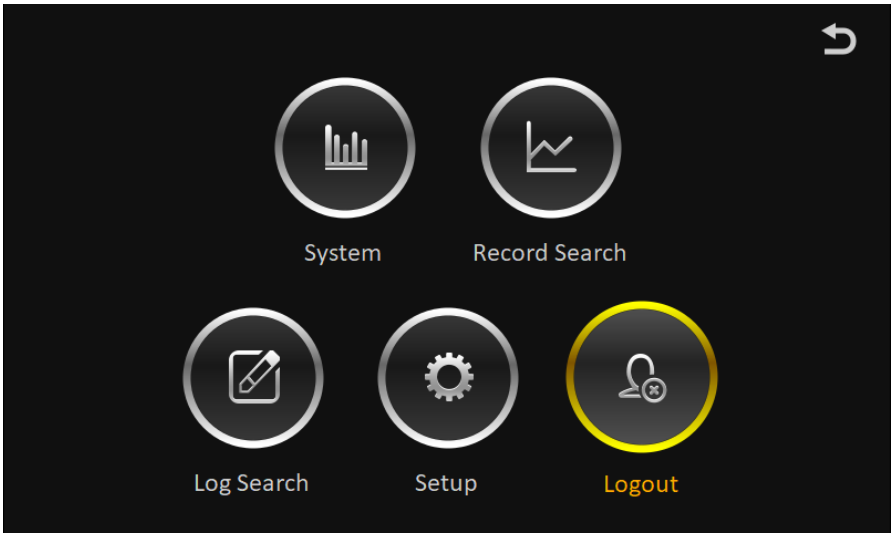
Default All Settings can restore all parameters to the default factory settings. Tap the Reset button to restore the default setting parameters.

➢ System Reboot

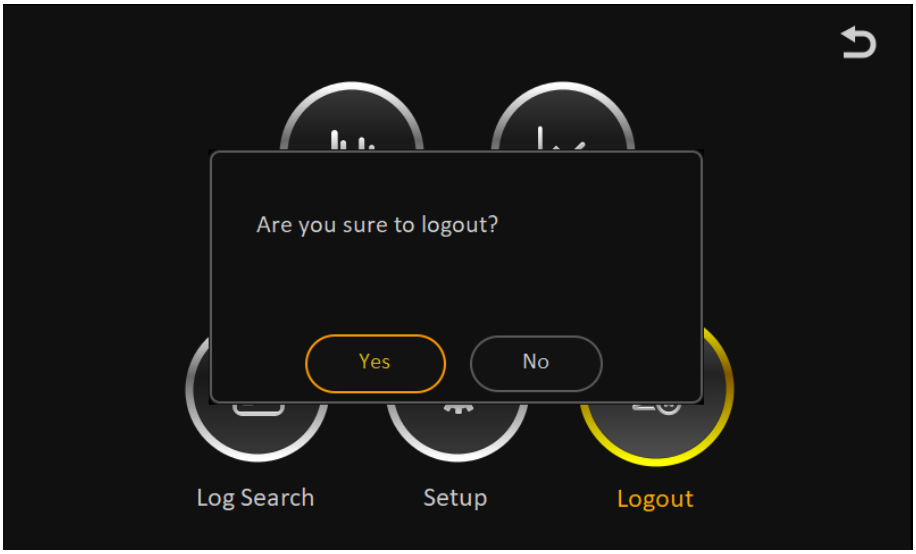
Tap the Reboot button to restart the system.

3.6 Logout

Tap the  button on the upper right corner of the Setup screen, Record Search screen, or the Log Search screen to return to the main setting screen, as shown in the following figure:



Tap the Logout button and tap "Yes" in the prompt box to log out and return to the live view screen.


Are you sure to logout?
Yes
No
Log Search
Setup
Logout