Contents

1. Function Overview

1.1 Direct Mode Preview

- On the direct mode preview screen, you can click any position to hide/show the menu bar.

- You can overlay other information on the direct mode preview screen, for example, time, speed, vehicle license plate, positioning, alarm state, channel name, vehicle No., and ACC. The display and position of overlay information can be set in parameter settings (**Video Surveillance** > **Real-time Surveillance** > **Direct Mode OSD**).

- The direct mode preview screen supports **Single**, **Quad**, and **9-Split** screen modes, which can be switched as desired.

- If the device is recording currently, a recording tag is overlapped on each channel of the direct mode preview screen. If there are dual-code recording streams, three recording tags are overlapped. The first tag indicates the dual-code streams (used to differentiate the main code stream and sub code stream in a hard disk partition). The second tag indicates the main code stream (the stream with the highest resolution, stored in the primary storage disk). The third tag indicates the sub code stream (the stream with relative low resolution, stored in an auxiliary disk or an SD card). Common recording tags are highlighted green, and alarm recording tags are highlighted red.

- When you click **Playback**, the system displays the playback screen and plays the video two minutes ahead of the current time. In **Single** screen mode, the system displays the screen of the current channel. In **9-Split** screen mode, the system plays screens of the first four channels, as shown in the following figure.

- When you click **Biz Menu**, the system displays the **Biz Menu** screen without requiring any password. You can directly operate on this menu as a common user or a driver.
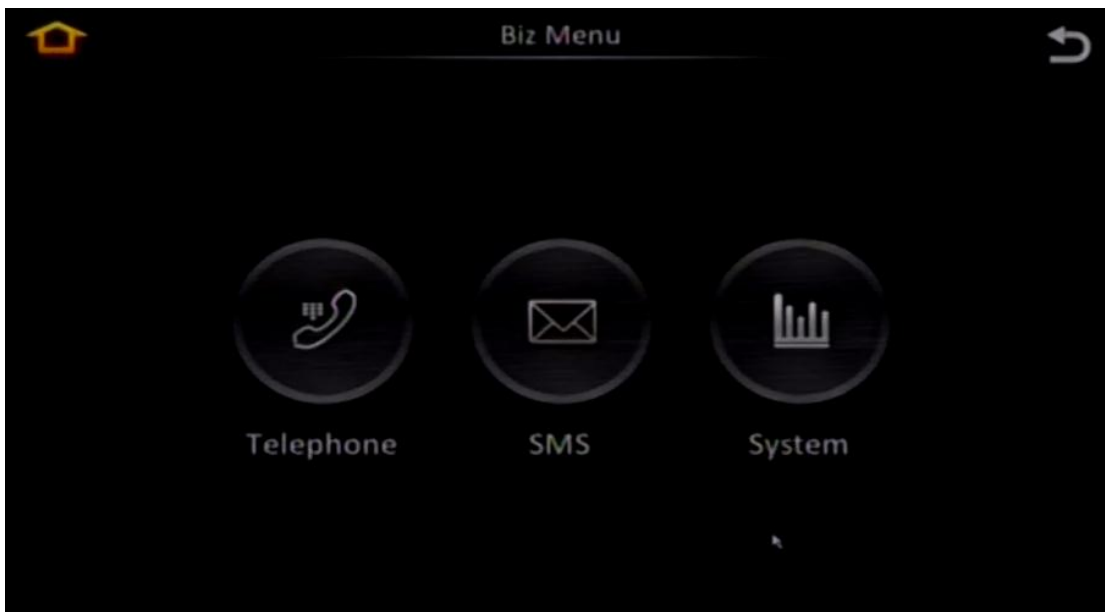
1.2 Calling Functions

Dialing:

Contacts/Records:

- The system can store only mobile numbers that are delivered from the 808 platform in **Contacts**. Mobile numbers cannot be created on the mobile digital video recorder.

- The system can record call logs, including the incoming calls, missed calls, and received calls, in **Records**.

1.3 SMS Functions

- SMS messages can only be sent by the service platform rather than privately editing and sending.

1.4 State Query

State information includes the following:

- **Version Info**: Includes the software and hardware version No., device serial number, and MAC address (an exclusive IP address of each network node).

- **Modules**: Includes the 3G/4G communication module (running status, SIM state, dialing state, and signal strength), Wi-Fi module (signal strength, ESSID, IP address, and module state), and positioning module (positioning state, positioning data source, number of satellites, and speed).

- **Server Status**: Includes the connection service status, network type (cable, Wi-Fi, or 3G/4G), connection protocol, and IP address and port of the server.

- **Environment**: Includes the voltage, temperature, and hard disk heating status.

- **Storage**: Includes the quantity, type, and capacity of the memory, and left recording duration (this value is estimated and subject to the current recording configuration).

- **ECO-Driving**: Includes the OBD data such as OBD connection status, real-time vehicle data obtained by the OBD, and six-axis real-time data.

1.5 User Login

- To log in to the system, click **Login** on the direct mode previous screen and enter the user name and password.
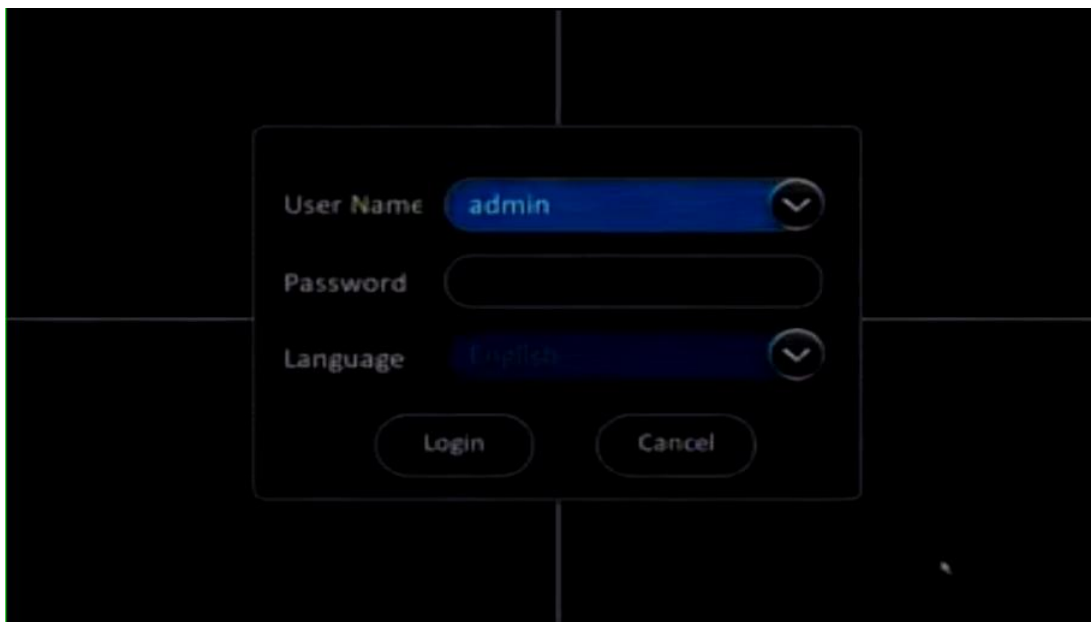
- The **User Name** can only be selected from the drop-down list box instead of manual input. You can set the user name in **Basic Setup**. For details, see the corresponding parameter settings.

- After login, the following screen is displayed.
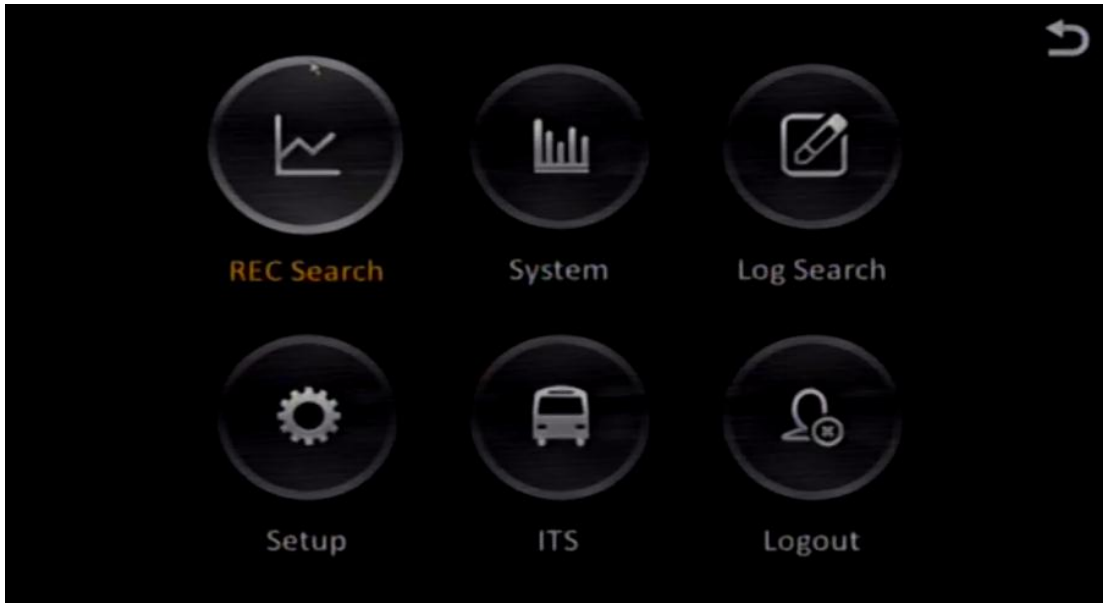
1.6 User Logout

- After login, you can click the back icon in the upper right corner to go back to the direct mode preview screen. Then, you do not need to enter the user name and password again when you enter the **Setup** screen the next time.

- If you click **Logout**, you need to enter the user name and password again when you enter the **Setup** screen the next time.

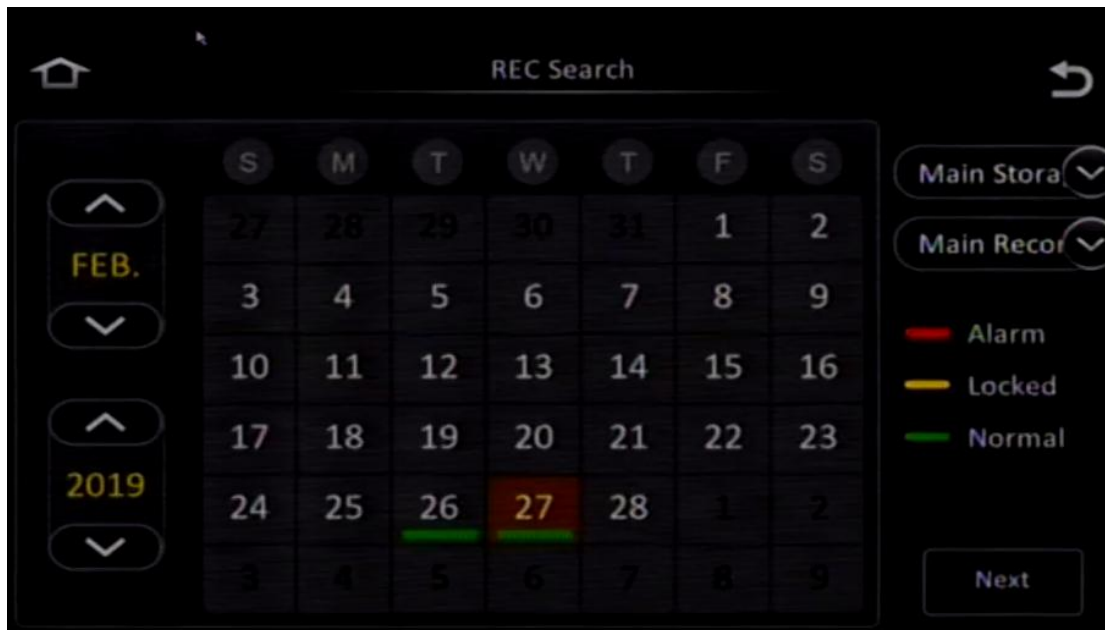## 1.7 Record Search and Playback

1.7.1 Record Search

- You can retrieve a record using the calendar. The record types include main record, sub record, and mirror record.

- The record search is subject to the record type rather than storage mode.

- After setting the parameters, click **Next** to search for the specific record.

- The record types include **All**, **Alarm**, and **Normal**.

- If you select **All**, the system searches for records of all qualified channels. If you select **Alarm**, the system searches for records involving in alarm interaction. If you select **Normal**, the system searches for records other than alarm records.
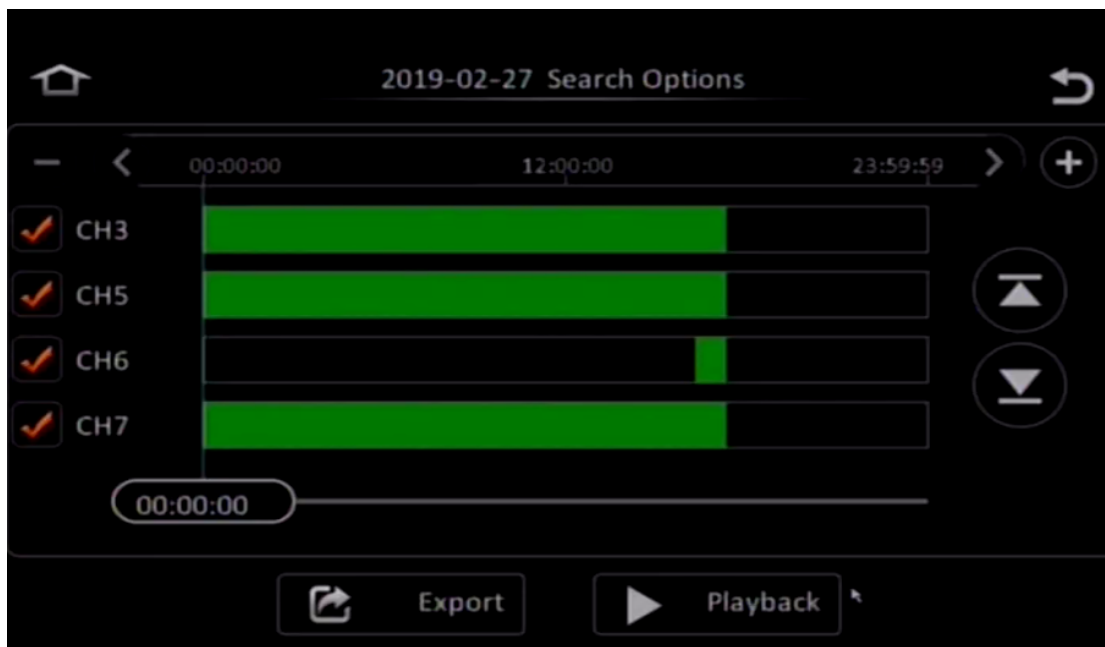
- To enlarge or narrow the time range, you can click the **+** or **−** button. This design facilitates the query of multiple records or playback records generated within a specified period of time.

- To query record situations of each channel, click the up or down arrow. Record situations include: whether there is any record in a channel and what type of record it

is in a specified period time. Records highlighted green are normal records, records highlighted red are alarm but unlocked records, and records highlighted yellow are alarm and locked records.

1.7.2 Exporting Records

● To export a record, click **Export**.
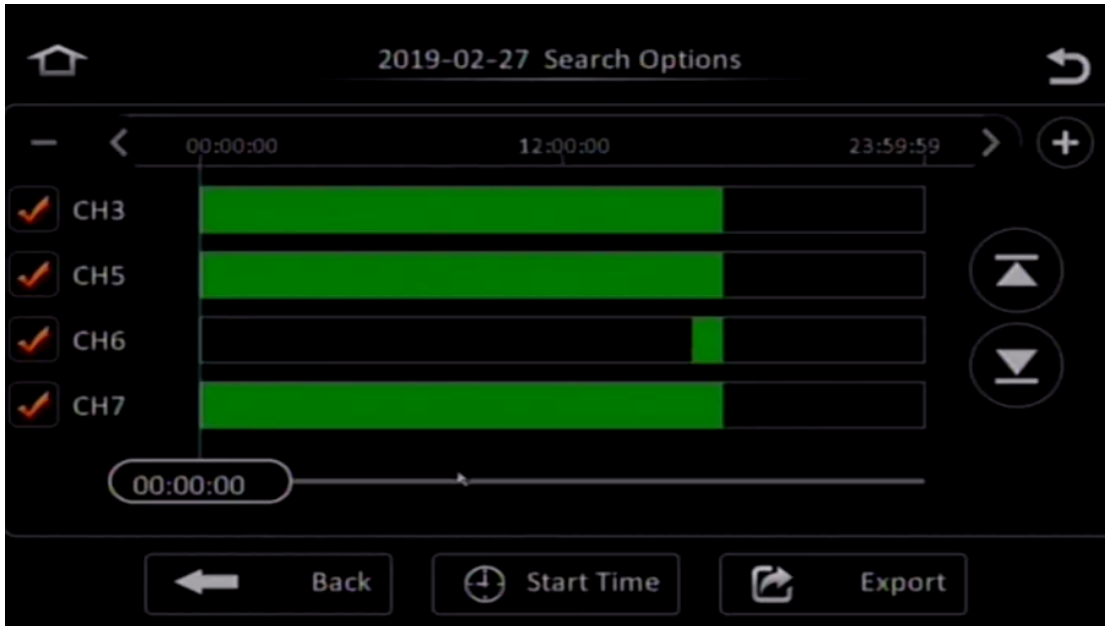
● You can select a time period for exporting records by dragging the timeline or directly entering the time. Then, click **Start Time** to set the start time for export.
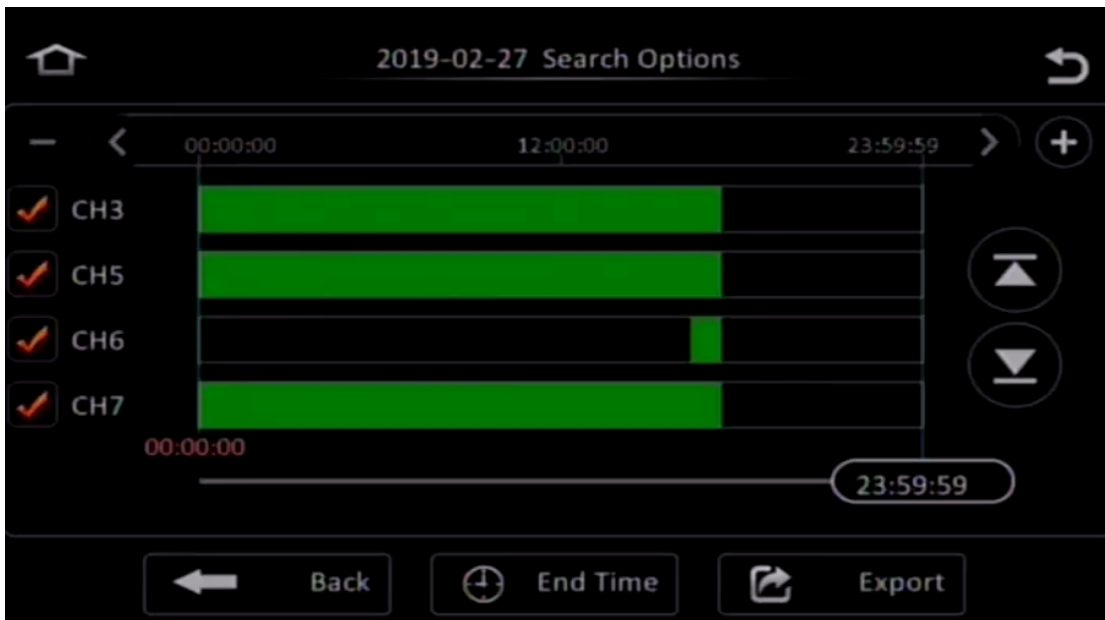
● Click **End Time** to set the end time for export as well as the size of the file.
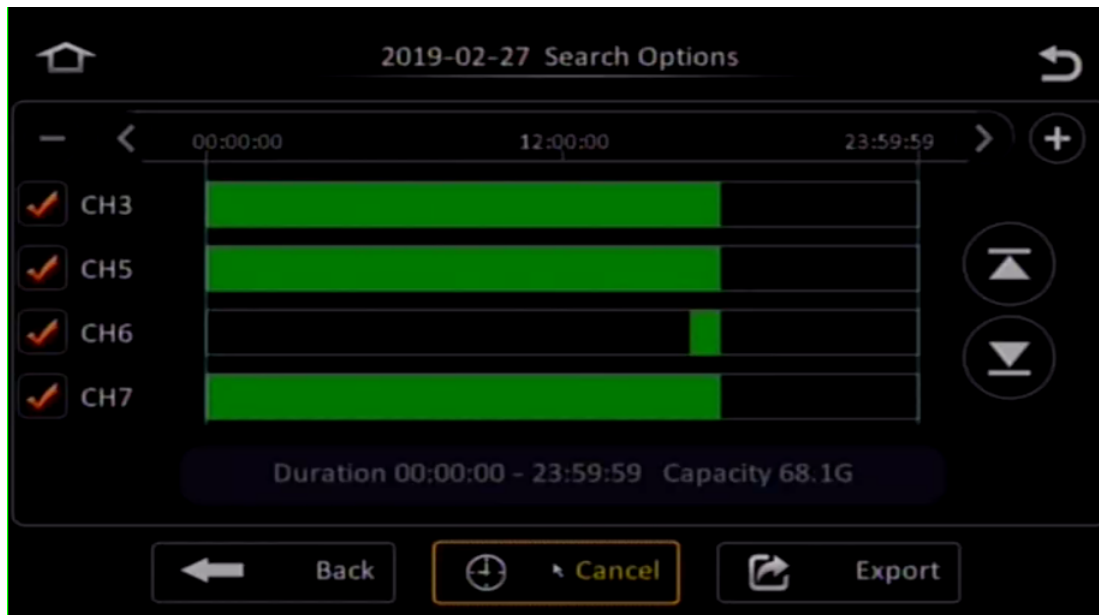
- Click **Export**.
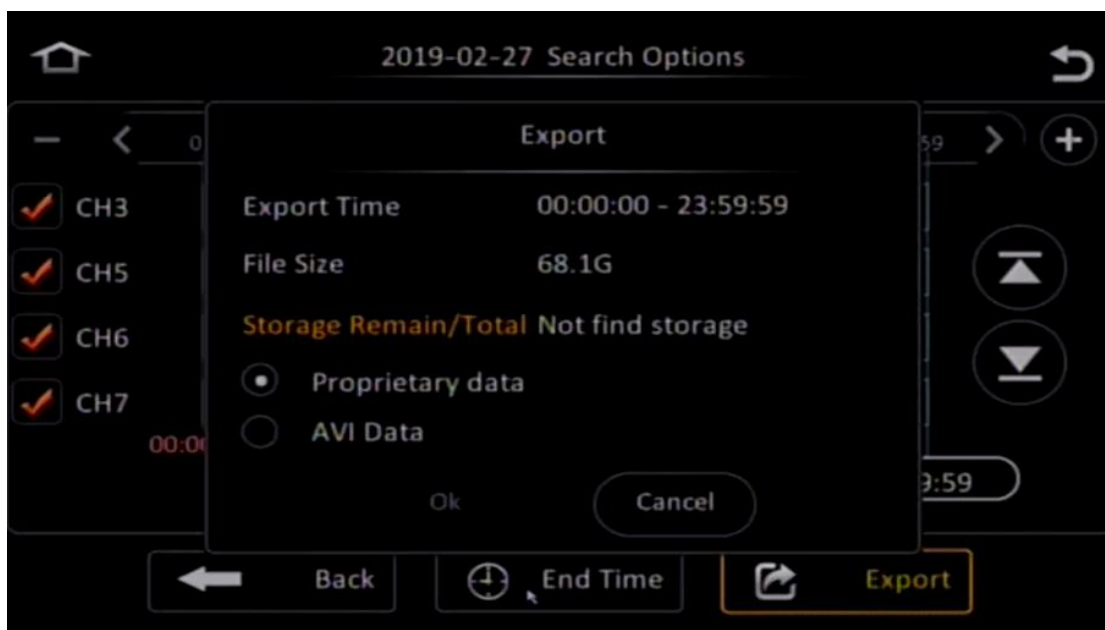
- If you select **Proprietary data**, the system exports the raw H.264 data and black box data together. The exported records can only be played back using Streamax player or platform. The video data and black box will be associated during playback.

- If you select **AVI Data**, the system exports the data in the AVI format, which can be played using any player.

1.7.3 Record Playback

- You can drag the timeline to play back the record at the specified time.

- You can click the arrow at the right part to switch between channels. The playback screen plays videos of four channels simultaneously. To play back records of other channels, you can select the corresponding channels.

- This screen provides multiple functional buttons, including playback, pause, fast forward (x2, x4, x8, and x16), rewind (x2, x4, x8, and x16), replay in slow motion (1/2, 1/4, 1/8, 1/16), and play by frame.

- You can also disable the audio. If you enable the audio, the system plays the sound of the selected channel.

1.8 Log Search
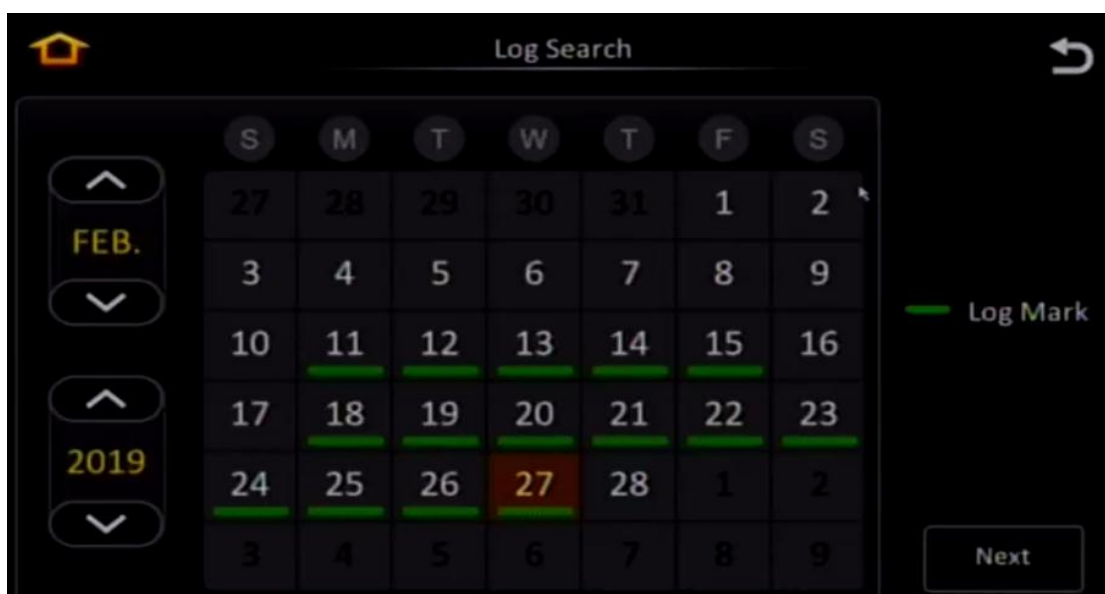
- Click **Next**.
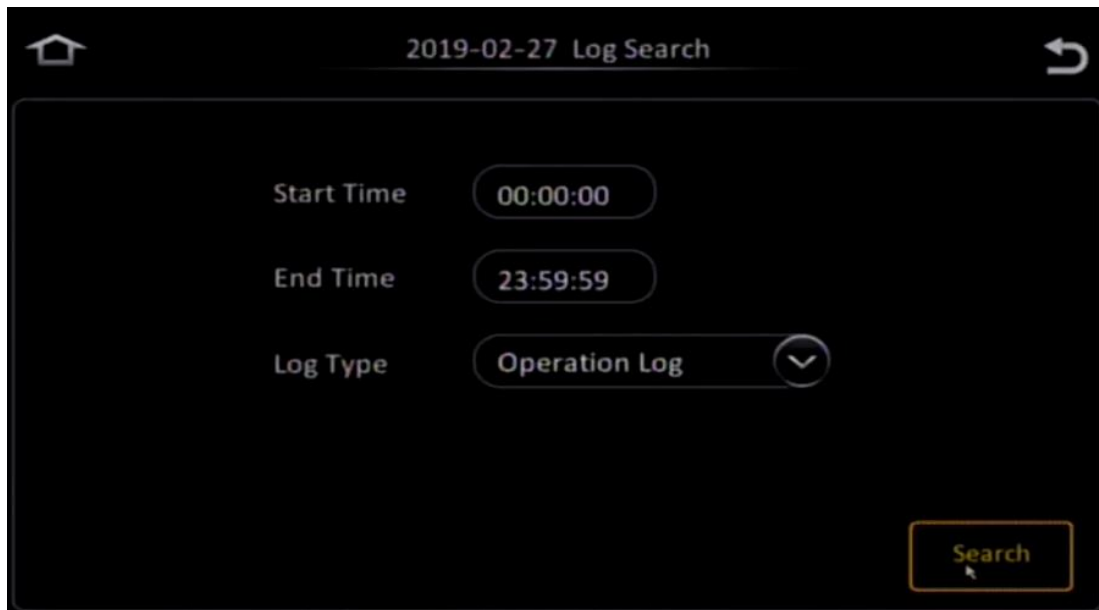
- You can query logs within a specified period of time.
- Logs are classified into operation logs, alarm logs, and locked logs.

- When you select the alarm log, if it is associated with a record, you can click the playback button to play back the corresponding record. Otherwise, the playback button is unavailable.
- For alarm logs with associated records, you can directly play back or export the records.

1.9 Parameter Settings

1.9.1 Basic Setup – Regist Info

1.9.2 Basic Setup – Time Setup

- Time can be synchronized based on the satellite, center server, and NTP. You can select one or more synchronization modes. If you select multiple synchronization modes, time synchronization is implemented based on satellite, NTP, and center server in sequence. In this case, if the synchronization based on the satellite fails, the system synchronizes the time based on the NTP. If the synchronization fails again, the system synchronizes the time based on the center server.

- In center server synchronization mode, time synchronization is based on the CEIBA2 server.

1.9.2 Basic Setup – Time Setup
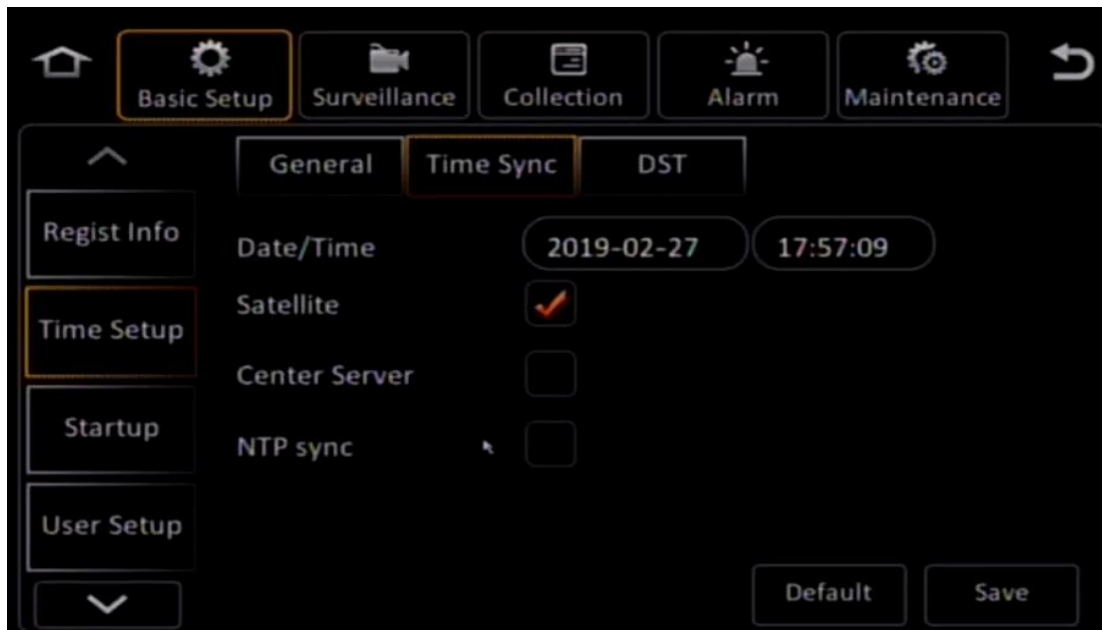
● For some regional time zone reasons, you need to set the daylight saving time. You can set the start time or time delay in the unit of weeks or days.

1.9.3 Basic Setup – Startup
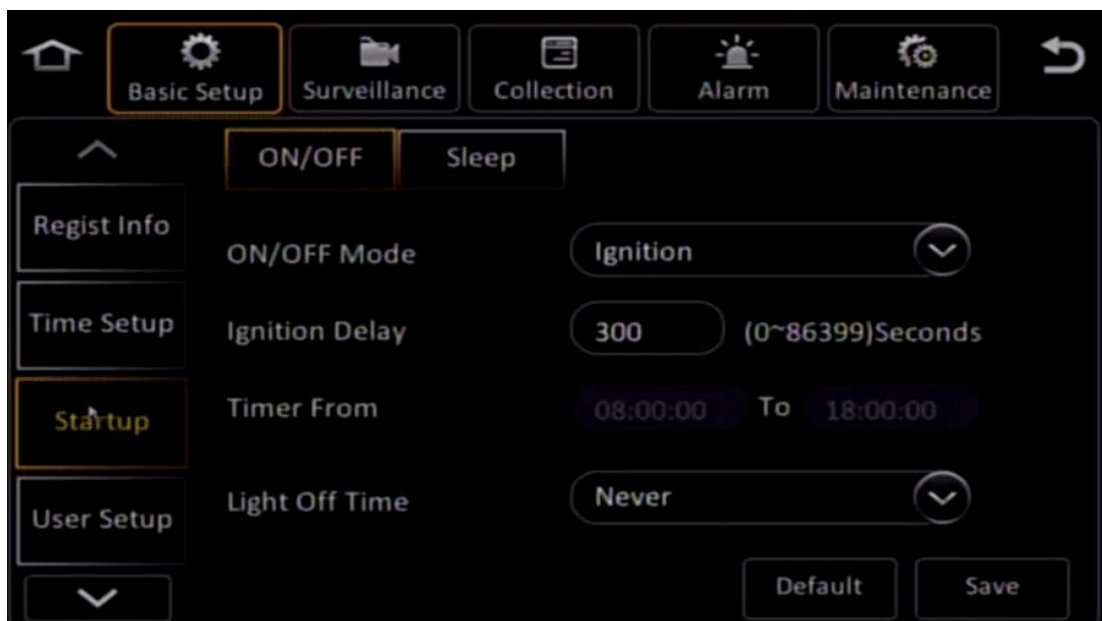
● **ON/OFF Mode**: Includes **Ignition**, **Timer**, and **Ignition or Timer**.

● **Ignition Delay**: It is valid only when the device is powered on in ignition mode. If the vehicle key is set to the OFF position, the device enters the ignition delay period, until the countdown timer is displayed on the direct through preview screen. If the operation screen stops at the setup screen, the system does not display the countdown timer. If you go back to the direct mode preview screen, the system displays the countdown timer. **Timer From**: Indicates the timer for device shutdown. The same rules of ignition delay are applicable to the scheduled power-off mode. The

system is not shut down if the operation screen stops at the setup screen but is shut down after you go back to the direct mode preview screen.

- **Light Off Time**: Sets the CP4 screen backlight time. This function can automatically turn off the backlight when there is no operation during the vehicle driving at night since CP4 has a certain influence on drivers.
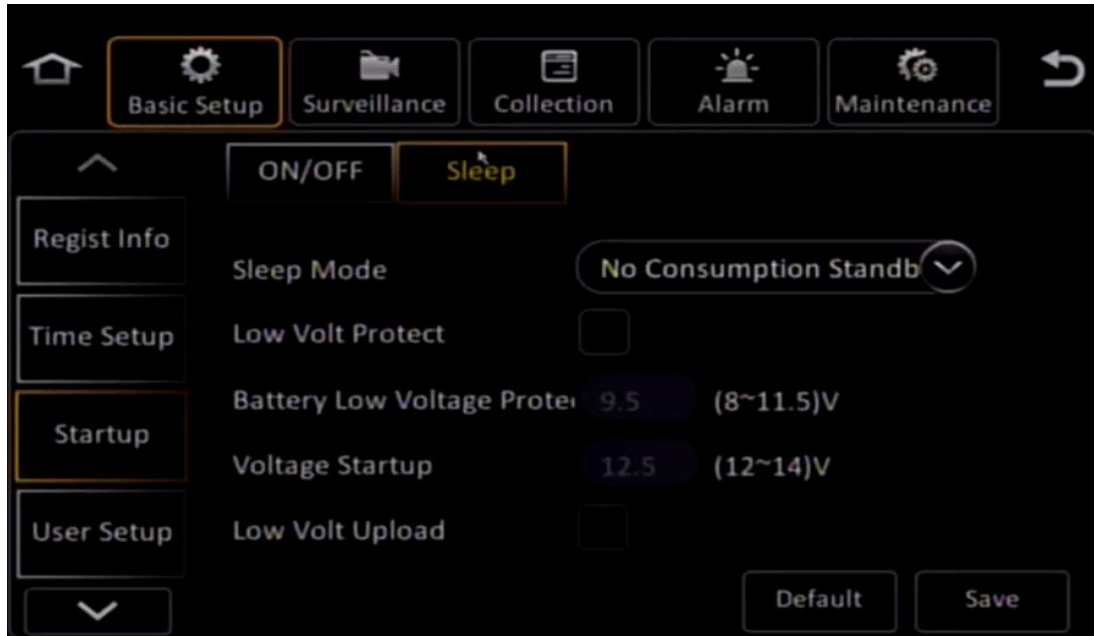
- **Sleep Mode**: Enables the system to enter the sleep mode when the external power voltage is lower than a specified threshold, so as to protect the battery from exhaust.

- **Battery Low Voltage Protection**: Protects the battery from exhaust after the key is set to the OFF position.

- When the key is set to the ON position, the low-voltage protection is enabled. Upon detecting that the current voltage is lower than the protective voltage, the device enters the standby state (the MCU works while the host does not work). After the voltage resumes to the normal level, the device wakes up.

- When the key is set to the OFF position, the low-voltage protection is enabled. Upon detecting that the current voltage is lower than the protective voltage, the device enters the off state (the whole device does not work). After the voltage resumes to the normal level, the device does not up.

- **Low Volt Upload**: Determines whether to enable low-voltage protection. The default threshold is 7 V. The requirements for this function under different key setting conditions are the same as the preceding requirements.

1.9.4 Basic Setup – User Setup
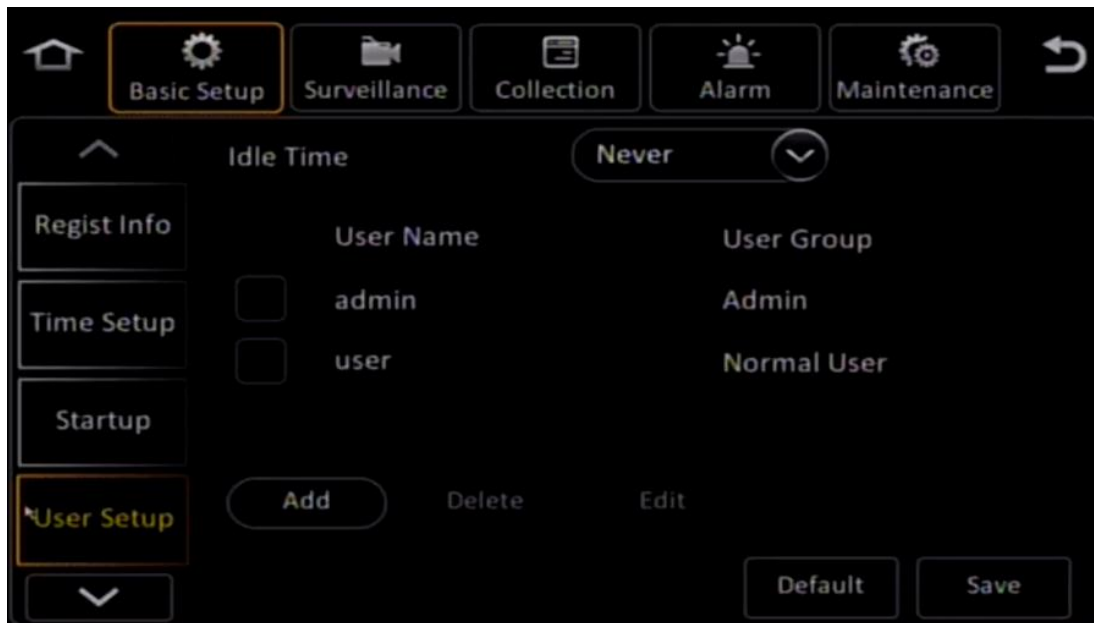
- The system has an administrator by default, which cannot be deleted. You can only change the login password of the administrator in **Edit**.

- In **Add**, you can add common users but not administrators. You are allowed to edit or delete common users.

- The administrator has all setup permissions, while common users have only query permissions instead of parameter setup permissions.

- **Idle Time**: Specifies the time interval that the system needs to wait on the setup screen before entering the direct mode preview screen.

1.9.5 Basic Setup – Network
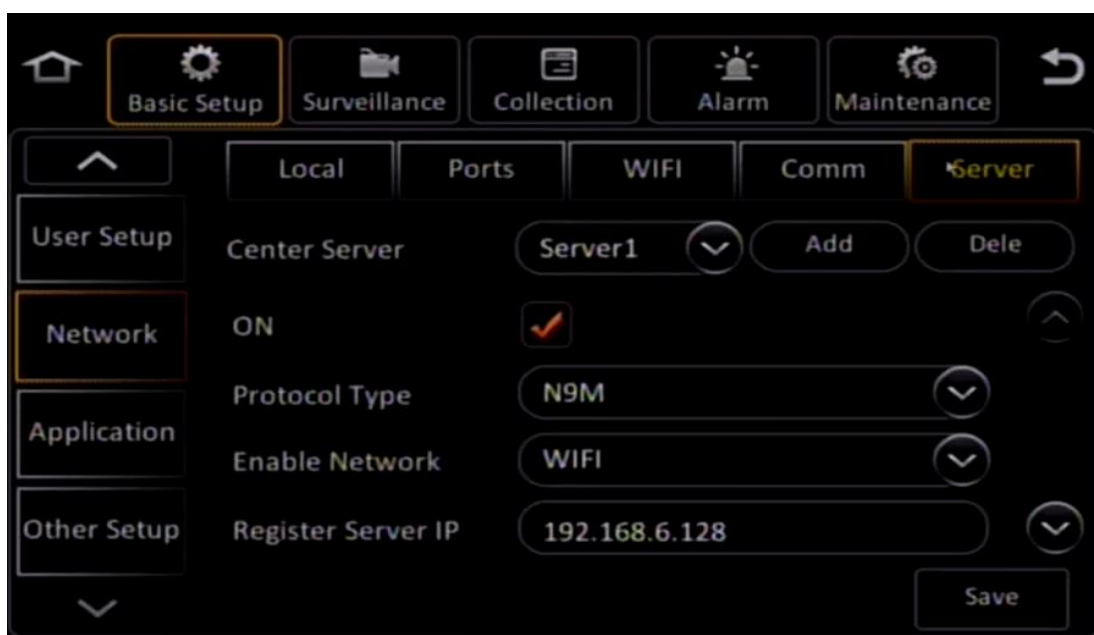
- Server configuration allows you to configure the number of servers to which the device reports the data. You can configure a maximum of six servers, including up to two center servers.

1.9.6 Basic Setup – Application
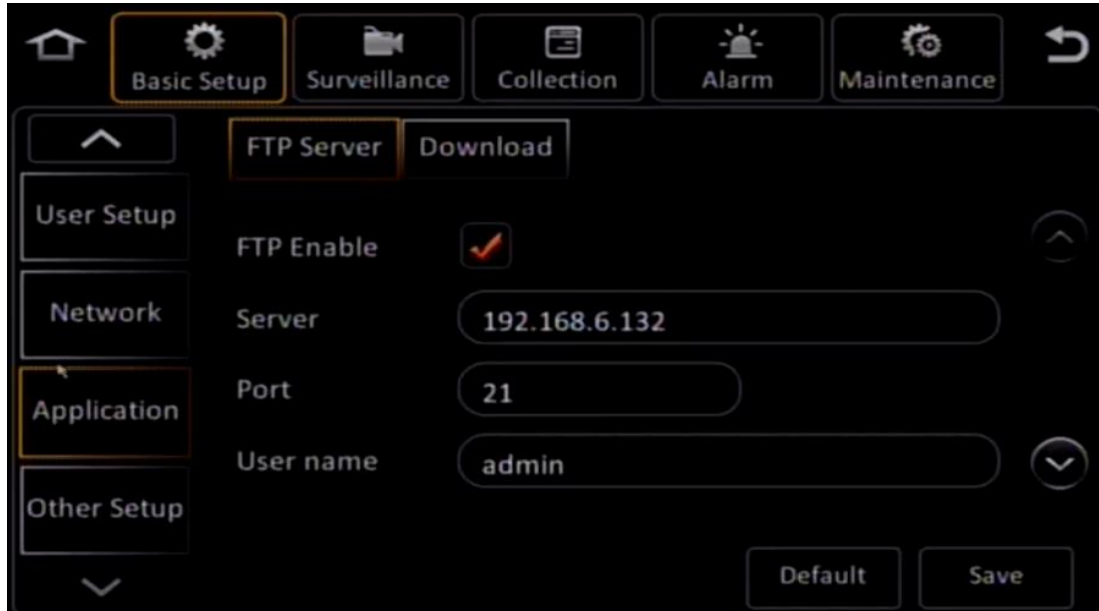
- **FTP Enable**: Enables the device to connect to a specified server through FTP. For example, images captured by the MDVR can be uploaded to the FTP server specified here.
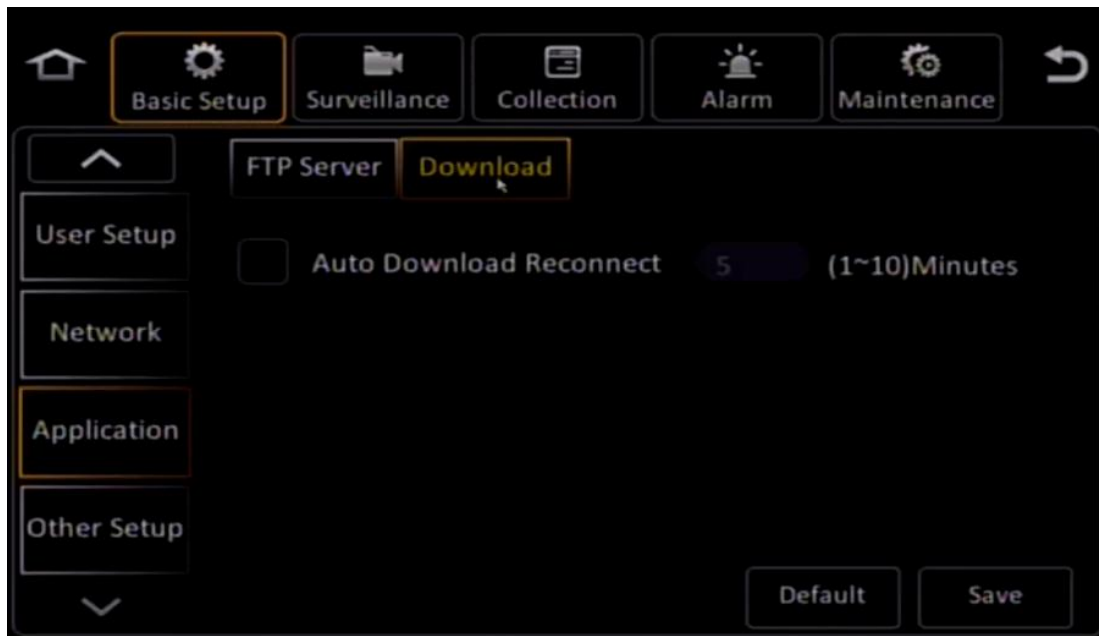
- The automatic download function requires the cooperation of the CEIBA2 platform. You can create an automatic download task on the CEIBA2 platform. Then, the platform manages the download task of the device, for example, downloading data from the specified vehicles and downloading data through a specific network (4G or Wi-Fi). If the data is downloaded through the Wi-Fi network, you can set the specific Wi-Fi-AP and the corresponding connected vehicles.

- **Auto Download Reconnect**: Indicates that the system reconnects to the platform if it fails to connect to the server and stays in the sleep state for a while and attempts to download the data again. If the number of download tasks or the number of specified APs reaches the upper limit, the platform informs the device to enter the sleep mode as well as the restart time. (This function avoids the waste of resources by enabling the device to enter the sleep mode during queuing.)

1.9.7 Basic Setup – Other Setup
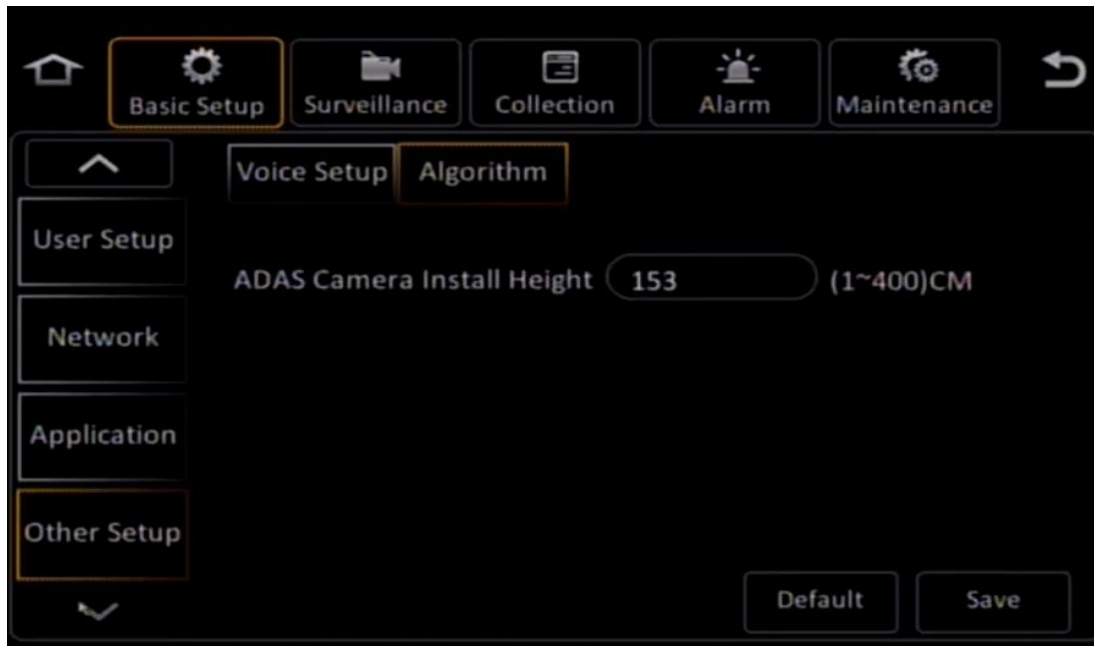
- **Other Setup**: You can set the TTS, CP4, and preview volume in **Voice Setup**. After the height for calibration is determined, you can set the **ADAS Camera Install Height** in **Algorithm**.

1.9.8 Surveillance – Live View
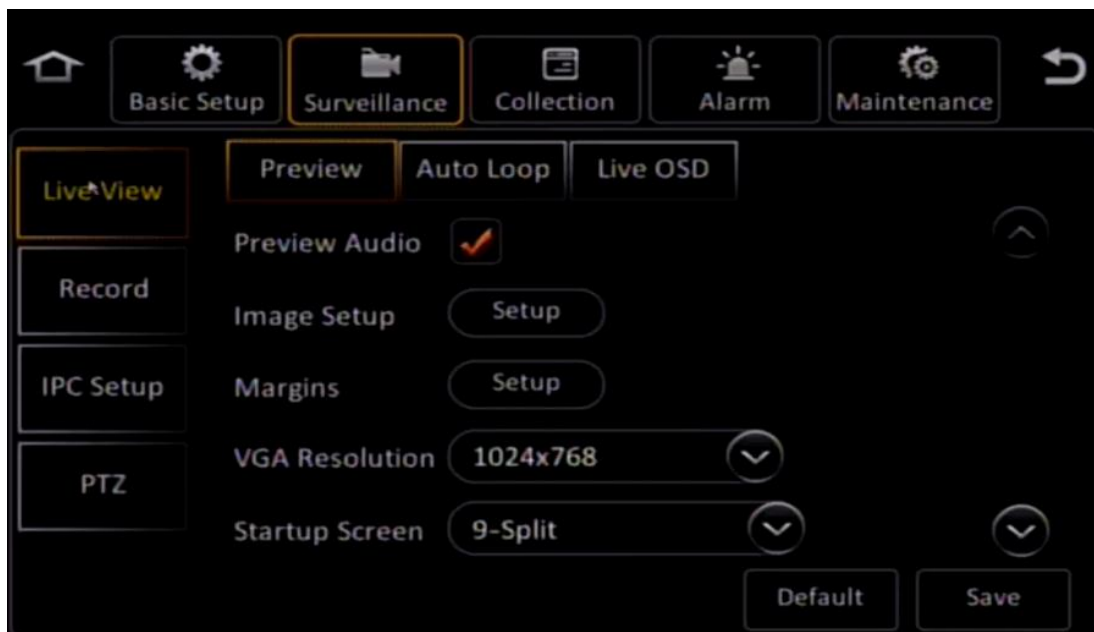
- **Preview Audio**: Indicates whether to enable the audio in live preview.

● **Image Setup**:

● The buttons in the upper right corner are used to rotate cameras vertically and horizontally. The system supports IPC and analog cameras.

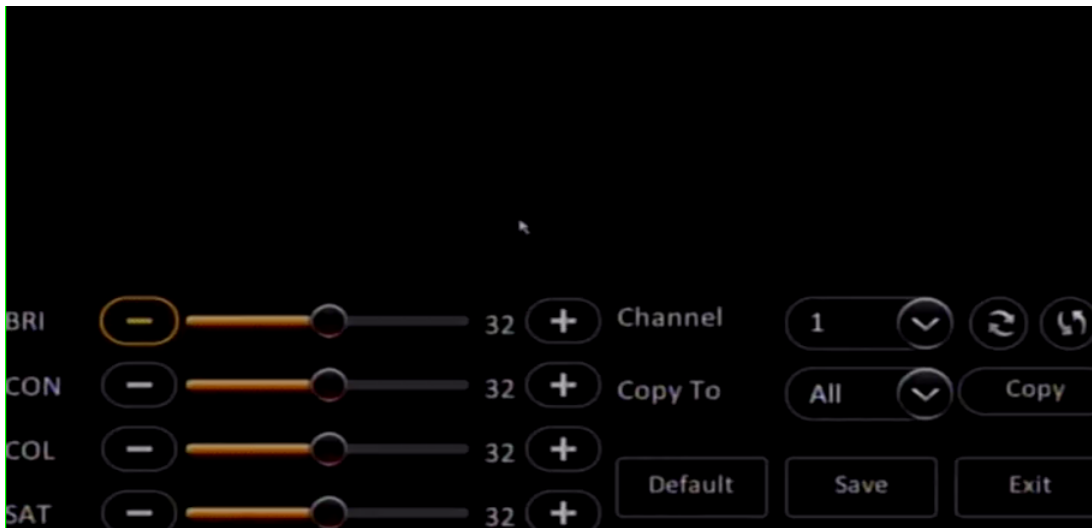● Startup screen: You can select the single screen, four-pane screen, and nine-pane screen modes and the corresponding channels. For example, if a device has four analog cameras and two IPC cameras and only two IPC cameras are connected in actual situations, you can configure the four-pane screen to view all channels.
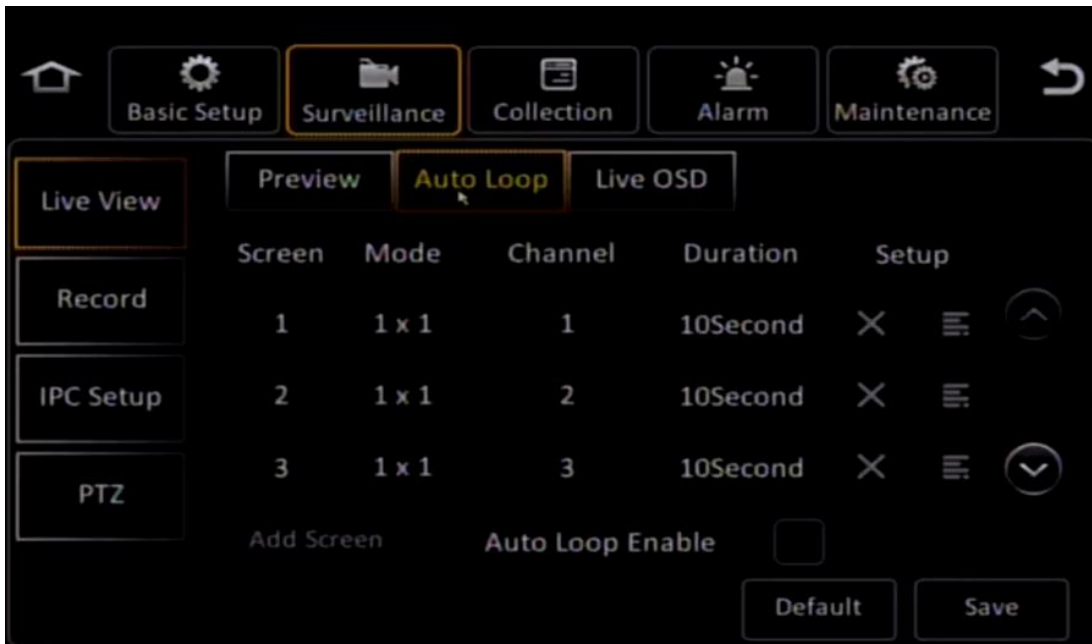
● **Auto Loop** indicates that the system can automatically switch over among channels in direct mode preview mode. You can set the channels to the displayed for each switchover as well as the display mode.

- **Mode**: Indicates the **Single** (1 x 1), **Quad** (2 x 2), and **9-Split** (3 x 3) screen modes. You can also set the channels to be displayed on each screen and the switchover duration.
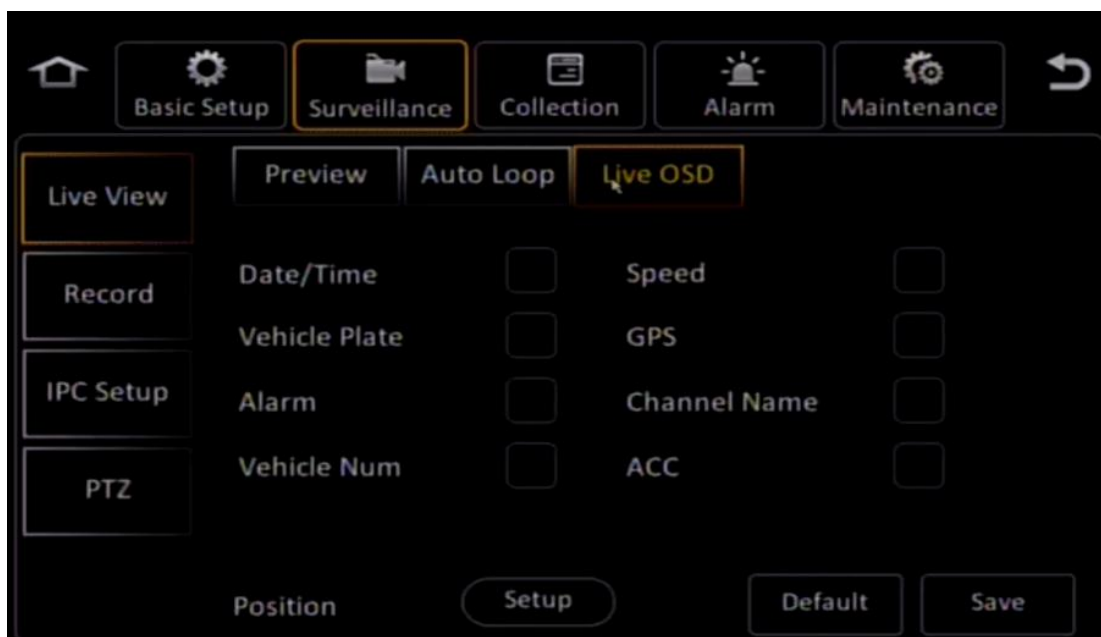
- **Live OSD**: Different from the record OSD overlapping, the live OSD overlapping does not support position adjustment. All overlapping positions are fixed by default.

1.9.9 Surveillance – Record

Program systems vary with color encoding and decoding modes and field scanning frequencies. China (excluding Taiwan), India, Pakistan, and some countries adopt the PAL system, while the United States, Japan, Taiwan, and Korea adopts the NTSC system.

● Overwrite: By Capacity

1. For HDDs, when the available capacity is smaller than 2 GB, the system starts to overwrite the earlier files. Files with a capacity of 256 MB will be deleted at a time.

2. For SD cards, when the available capacity is smaller than 2 GB, the system starts to overwrite the earlier files. Files with a capacity of 128 MB will be deleted at a time.

3. If files are deleted based on channel numbers, only 250 MB files of a channel can be deleted at a time. If the occupied capacity of the current channel is less than 100 MB, the system finds another channel with a longer use time.

● Overwrite by day is not applicable to mirrored records. Such records can only be overwritten by capacity, since such records are overwritten before the specified deadline.

● Locked records can only be overwritten and deleted after the protection time is due.

● The overwrite mode is irrelevant from the memory. If you select the **Never** mode, the main code stream, mirrored code stream, sub code stream, and alarm code stream will not be overwritten, but the system stops recording after the memory is full.

● The overwrite by day or overwrite by capacity mode is applicable only to main code stream records.

● Pre-recording

1) For a common record, when an alarm is generated, the system cuts out a segment from the previous common record generated prior to the pre-recording

21

time in the alarm linkage and marks this segment as an alarm record. Assume the segment from T1 to T3 is a common record. After an alarm is generated at T3, the segment from T2 to T3 is marked as an alarm record, and segments after T3 are marked as alarm records.
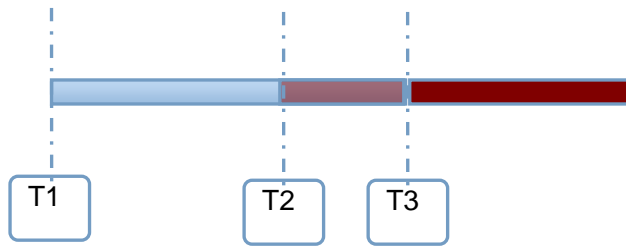
2) If there is no common record and the pre-recording is enabled, the system starts to establish the pre-recording stream segment upon startup. When an alarm is generated at T3, the system marks the pre-recording stream segment from T2 to T3 as the alarm record.
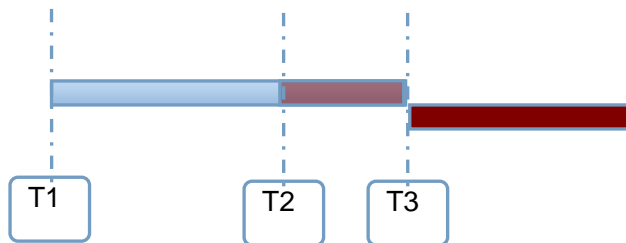
3) If a non-alarm record is in the IFrame format, the system establishes two stream segments upon startup, that is, IFrame stream segment and pre-recording stream segment. When an alarm is generated, the system marks the pre-recording stream segment from T2 to T3 as the alarm record.
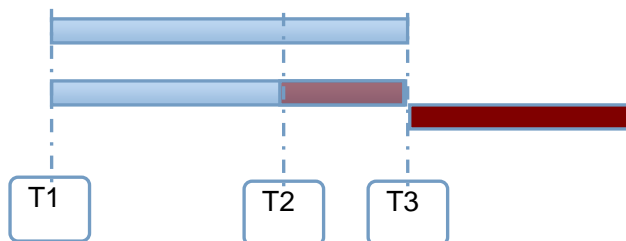
- **Dual Stream**: In this recording mode, you can select the memory. Currently, for dual-stream recording, the system supports only two memories, namely, built-in SD card and external SD card.

- **Record Mode**: Includes the following modes:

  - **Sub Record**: The MDVR encodes two code streams, that is, main code stream and sub code stream. In this mode, the system stores the sub code stream.

  - **Mirror Record**: The system backs up the complete data in the hard disk to an SD card.

  - **Alarm Backup**: The system stores the record only when an alarm is generated.

  - **None**: For dual SD cards, it means record loop.

1.9.10 Surveillance – IPC Setup
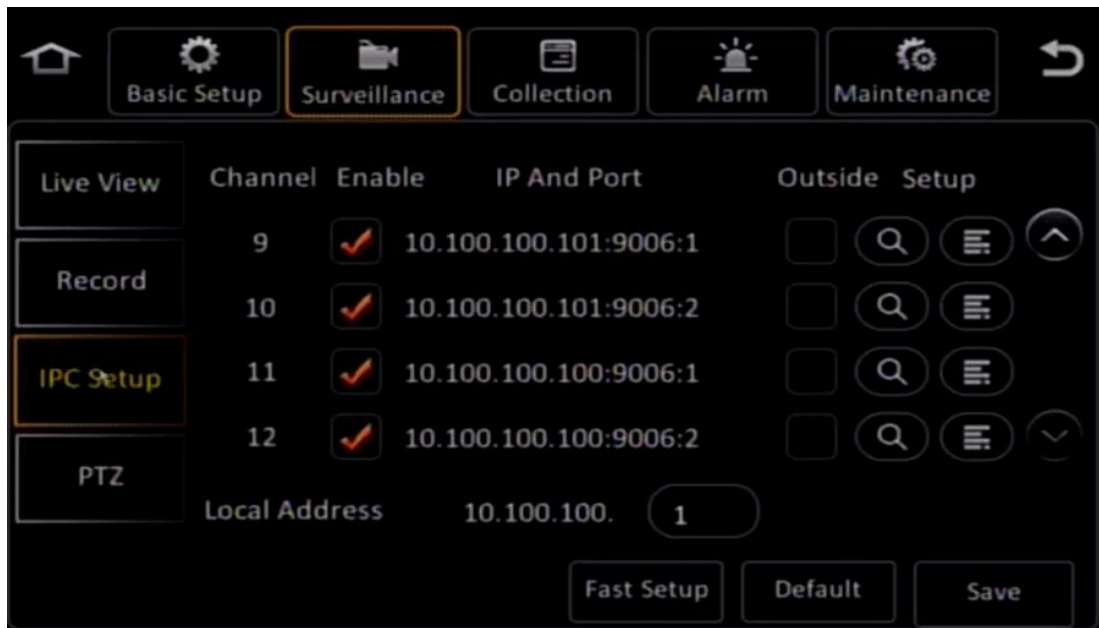
- **IPC Setup**: You can enable the quick settings for the IPC.

    1) MDVR connected to the PON port: It does not support quick settings for the IPC (PON ports of X1 and X3) but adopts the automatic discover function. That is, after the MDVR is connected to the IPC, the MDVR automatically allocates an IP address to the IPC. The MDVR does not save this IP address in the parameter. After re-plugging, another IP address will be allocated.

    2) MDVR connected to the POE port: Since an external switch is required, you need to manually perform quick settings. After the quick settings function is triggered, the MDVR automatically searches for the IPC and allocates an IP address, starting from 10.100.100.100, to the IPC. The MDVR skips the IP address of the local device on the IPC network segment. After the IPC is found during quick settings, you are required to enter the channel setup screen to bind the channel.

- After the IPC channel is enabled, the corresponding analog channel automatically becomes invalid.

- You can manually configure and modify parameters of the corresponding IPC channel. You can also manually configure a known IPC as the channel.

- Each channel is required to support IPC search and display the list of searched IPCs. The IP address modification in **IPC Search** is to modify the IPC, which the IP address modification in **Setup** is to select an IPC for the specified channel.

- The system supports the configuration of local IP address in the IPC network segment. If the local IP address is specified, the system skips this IP address during automatic search and IP address configuration.
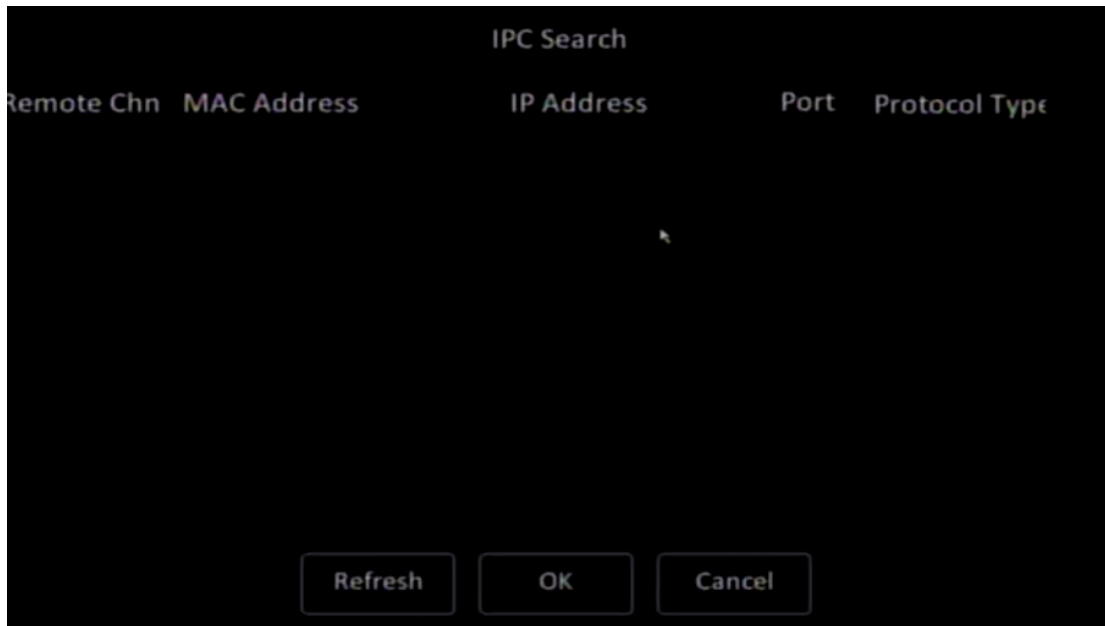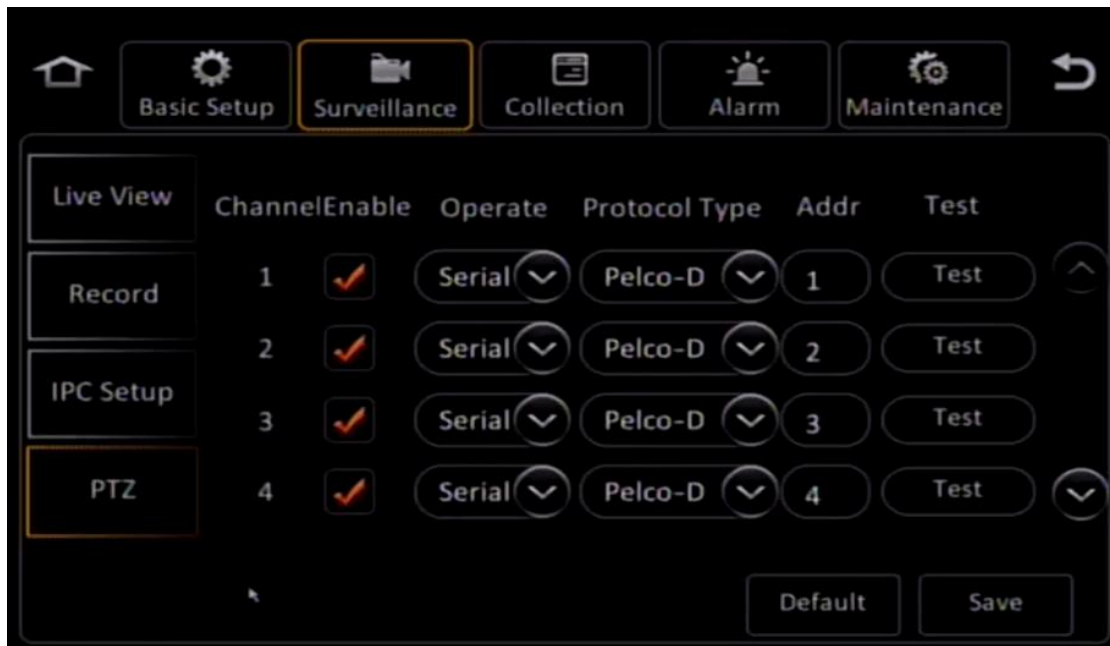
- You can modify the IP address of the IPC displayed on the **IPC Search** screen.


- The above figure shows the screen displayed after you click **Edit**. The channel is bound with the IPC. The IP address here is not the IP address configured on the IPC modification screen, but is bound with another IPC.
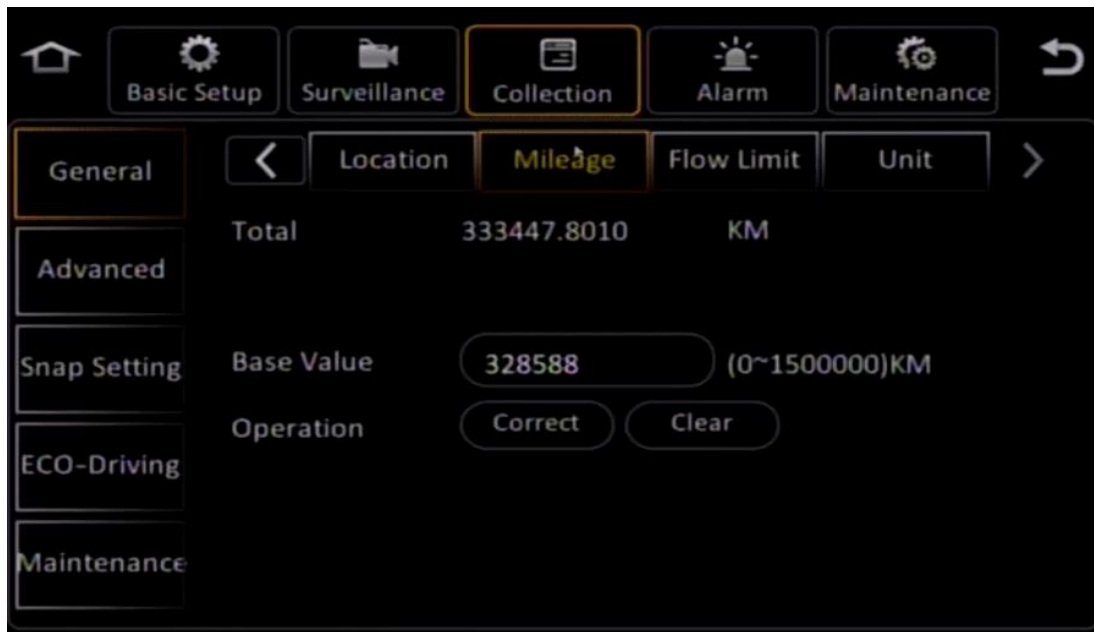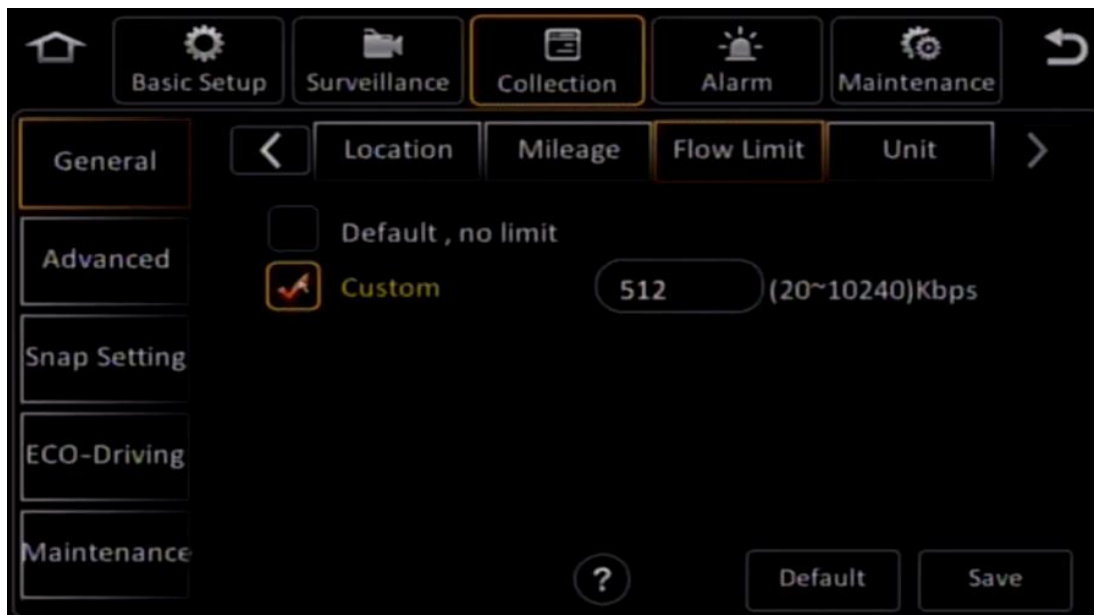
1.9.11 Surveillance – PTZ

- Operate: Indicates the operation mode, including **Serial**, **ONVIF**, and **N9M**. The ONVIF and N9M modes are mainly for IPC control. The major control function is not zoomed.
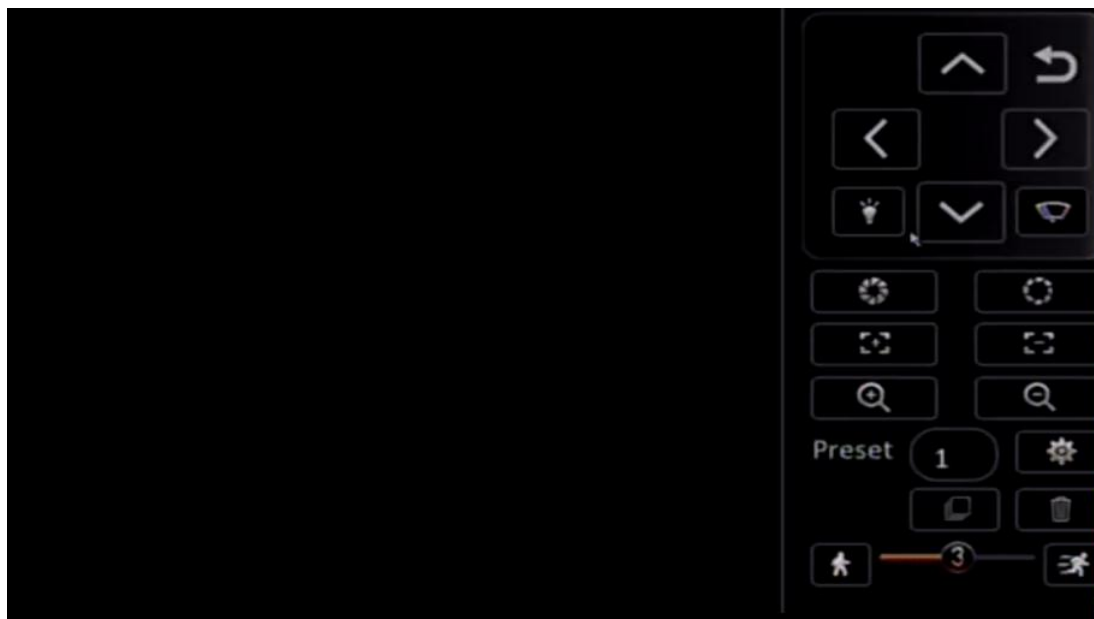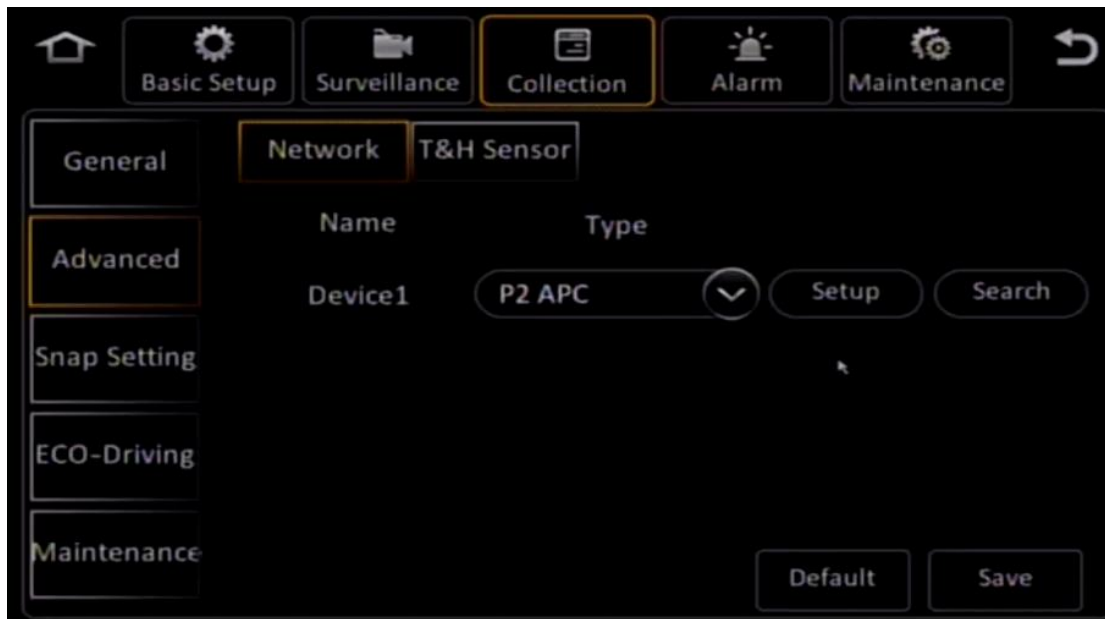
1.9.12 Collection – General

- **Mileage**: Indicates the calibration function. You can set an initial value for the total mileage on this screen for calibration.
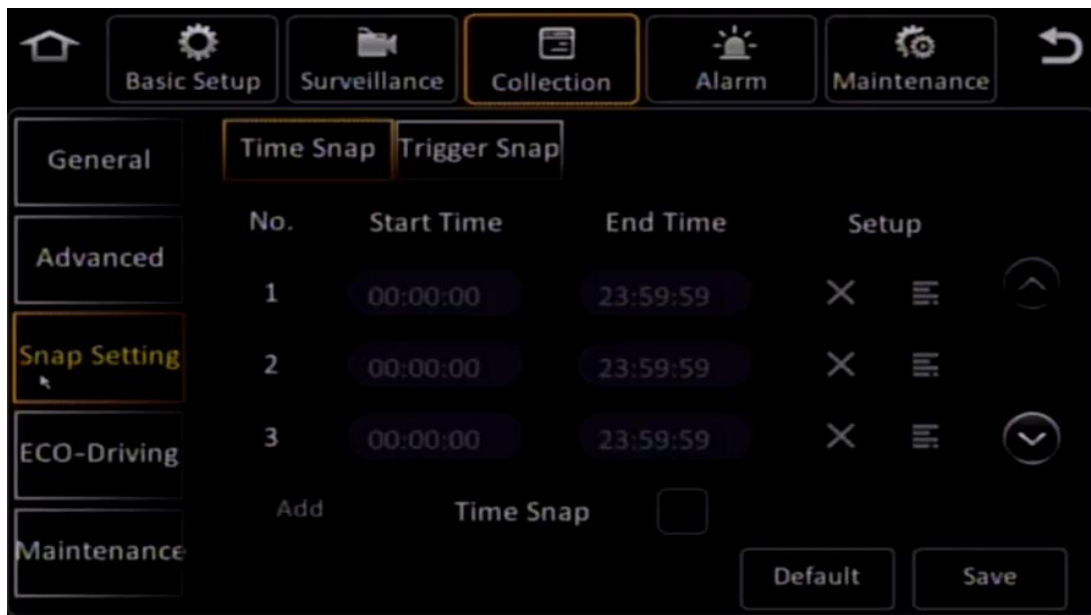

- **Flow Limit**: Indicates the transmission rate limit for uploading data to the platform.
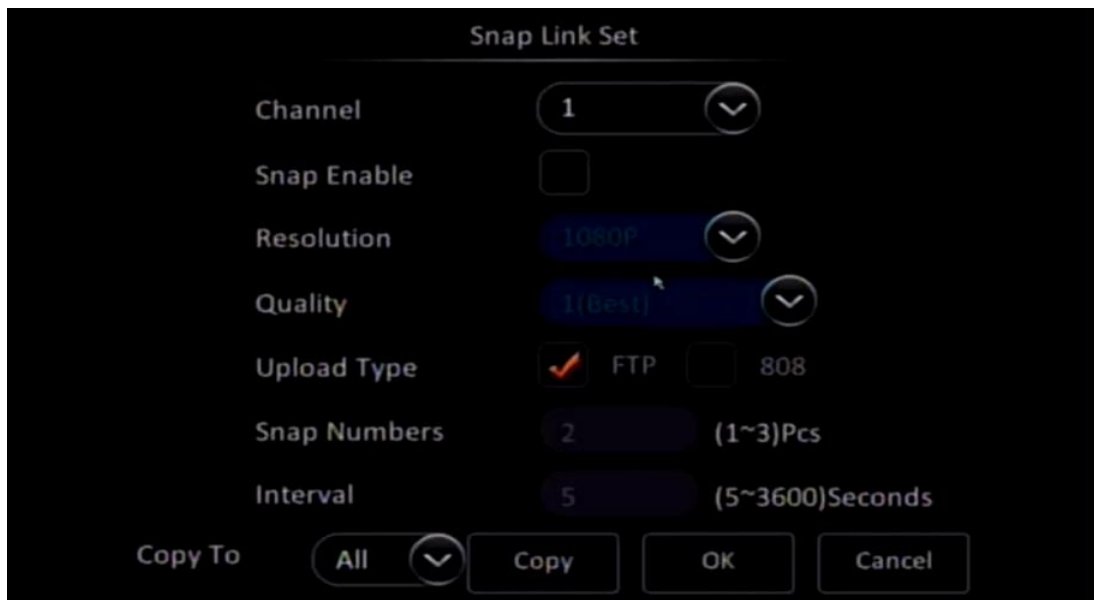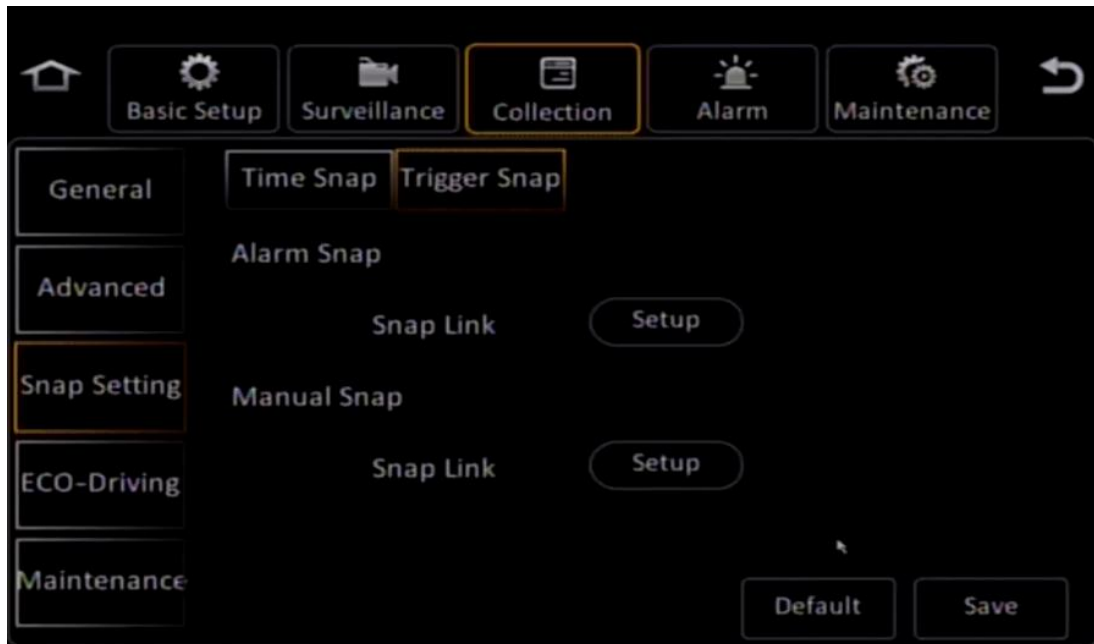
1.9.13 Collection – Advanced

- **Network**: Allows you to set the external P2 traffic measurement meter and set the external temperature and humidity sensor.

1.9.14 Collection – Snap Setting

- Snap types include **Time Snap** and **Trigger Snap** (manually triggered and linked with the alarm).

- **Upload Type**: Indicates the type of the server to which the captured images are sent, including **FTP** and **Central Server**.

  1) FTP server: You can directly log in to the FTP server and view the uploaded files under paths similar to those in the Windows OS.

  2) Central server: Indicates the CEIBA2 server. You can play back the images.

1.9.15 Collection – ECO-Driving
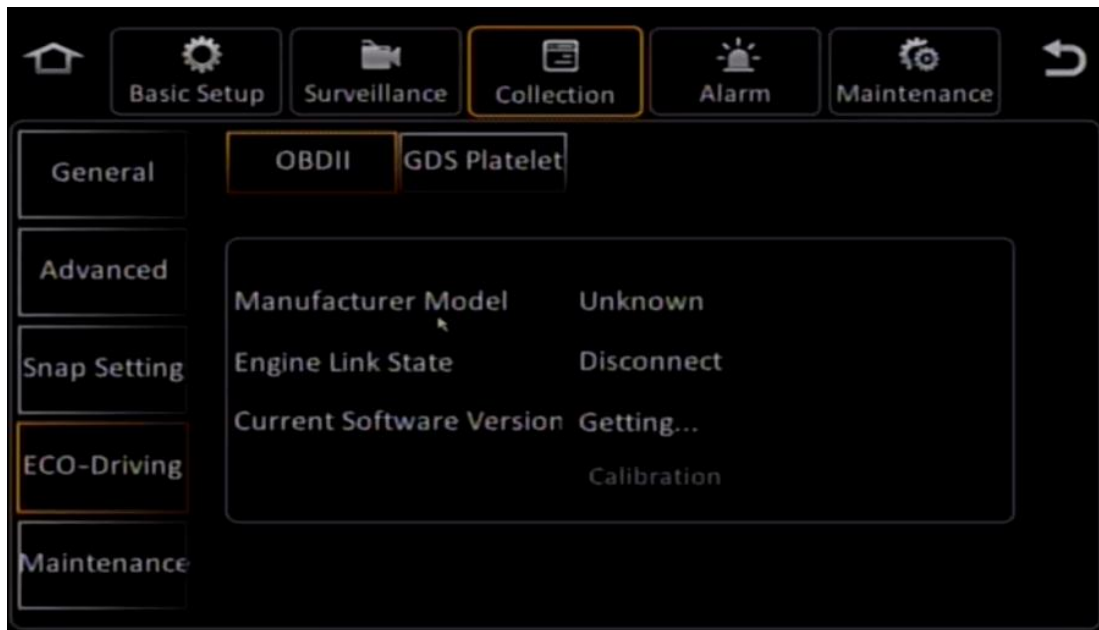
● The system supports the following calibration modes:

➢ Remote calibration

    1) The platform sends the vehicle information, including the vehicle license plate No., engine model, and OBD upgrade file to the MDVR. (Note that the engine model must be bound with the OBD upgrade file in advance.)

    2) The MDVR compares the version number of the OBD upgrade file in the GDS box and the version number delivered by the platform. If the version numbers are inconsistent, the MDVR upgrades the new OBD program.

    3) The MDVR compares the pre-configured engine model with the engine model delivered by the platform. If consistent, no configuration is required. If inconsistent, the MDVR configures the engine model in the OBD box. This process is known as "calibration".

➢ Local calibration

    1) Import the vehicle information table to the device through a USB flash drive. (The vehicle information table includes the vehicle license plate No., version number of the OBD upgrade file, and the CAN bus standard.)

    2) Manually configure the engine model on the screen.

    3) Click **Calibrate** on the screen.

    4) The program automatically compares the current vehicle license plate No. with those in the vehicle information table. If a matched record is found, the program continues to compare the version No. If the version No. is inconsistent, the system performs upgrade.

    5) The program compares the engine model manually configured on the screen with the engine model in the OBD upgrade file. If inconsistent, the

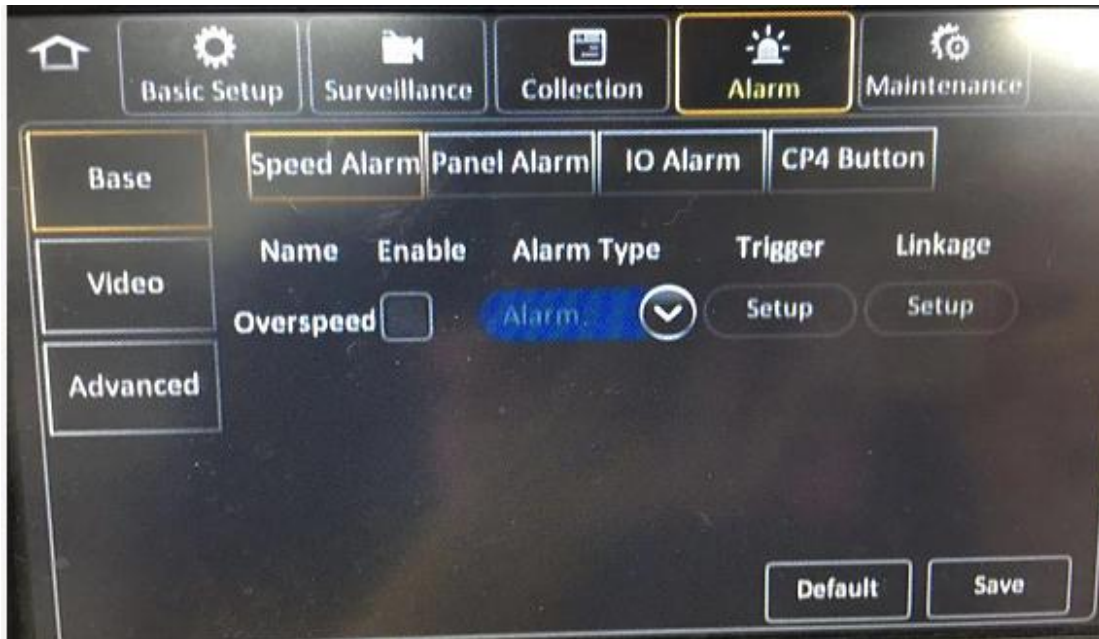program incorporates the newly configured engine model into the OBD upgrade file.


1.9.16 Collection – Maintenance

● **Maintenance**: Allows you to set the parameter thresholds.

1.9.17 Alarm - Base

- Speed alarms can be triggered by speed, duration, and warning speed difference. The combination of the speed and duration can be used to trigger an over-speed alarm, indicating that the vehicle is considered over-speed after the speed exceeds the speed limit for a certain period of time. The warning speed difference indicates the warning speed value. Assume that the speed limit is 80 km/h and the warning speed difference is 5 km/s. When the speed reaches 75 km/h, a voice warning is generated.

- For panel alarms, the "any button trigger duration" indicates that an event is considered as an alarm after a button is triggered for a certain period of time. The "alarm validity period" indicates the duration after which the alarm is automatically cleared.

1.9.18 Alarm - Video
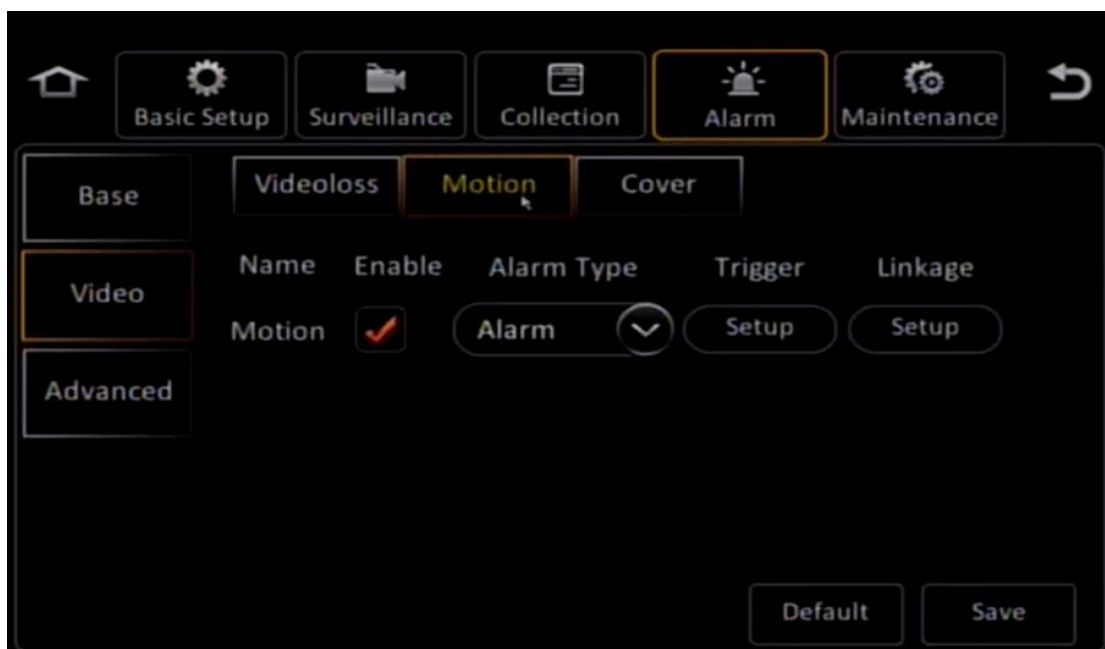
- Video alarms are classified into video loss alarm, motion detection alarm, and video occlusion alarm. These types of alarms have the same trigger condition, that is, the same alarm is generated within the specified period of time after the previous alarm is cleared when the alarm validity period is due. The system records the alarm in one log and reports it to the platform once only.
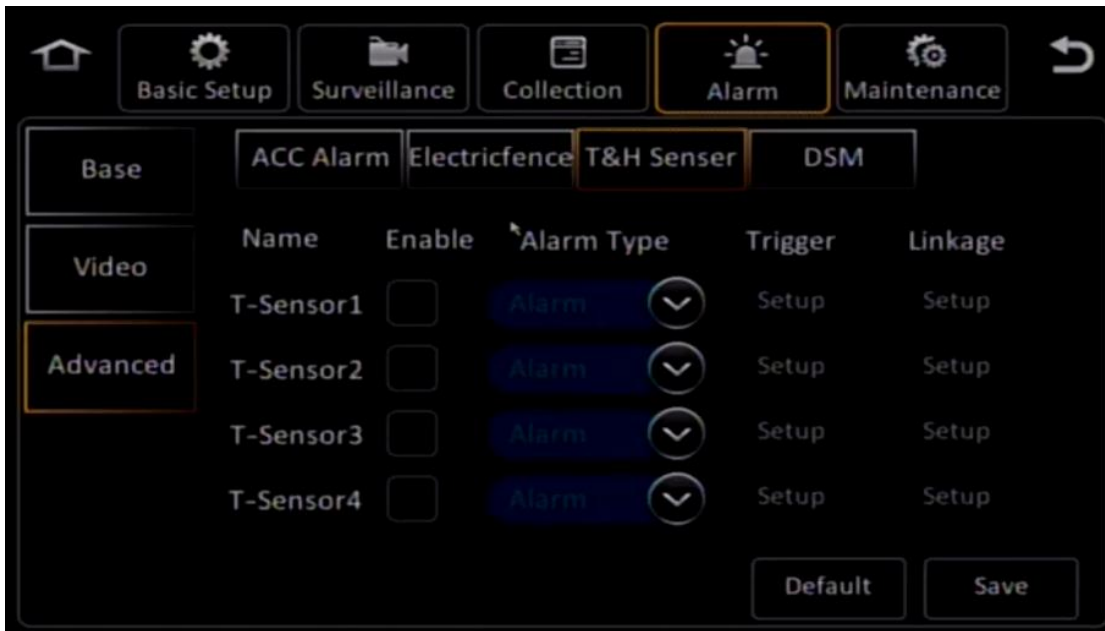
1.9.19 Alarm - Advanced

- **ACC Alarm**: The device is built in with a triaxial accelerometer, which can generate alarms upon collision or location changes, and can associate with the screen settings.
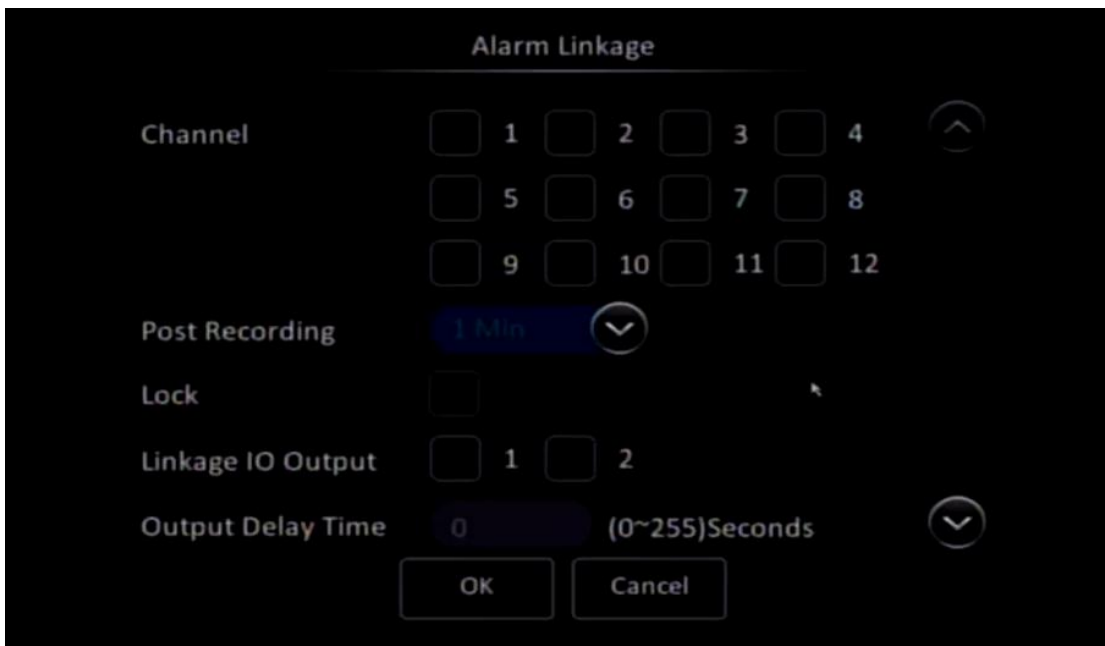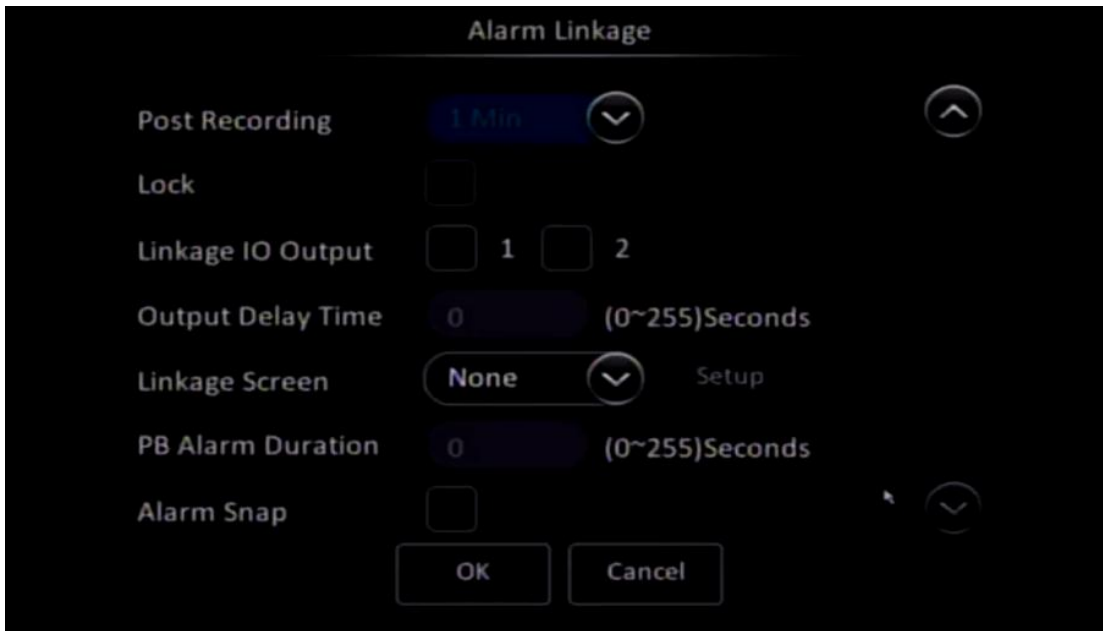

- **Electric fence**: Enables or disables the electronic fence.

- **T&H Sensor**: Allows you to set the alarm trigger conditions and associates with the screens.

1.9.20 Alarm – Alarm Linkage

- **Channel**: Indicates the channel corresponding to a generated alarm. After the alarm is generated, the records corresponding to the channel are marked as alarm record.

- **Post Recording**: Indicates the duration for continuing the recording after the alarm is cleared.

- **Lock**: Locks or unlocks alarm records.

- **Linkage Screen**: Indicates the screen displayed in direct mode preview mode after an alarm is generated.

1.9.21 Alarm – Advanced – DSM
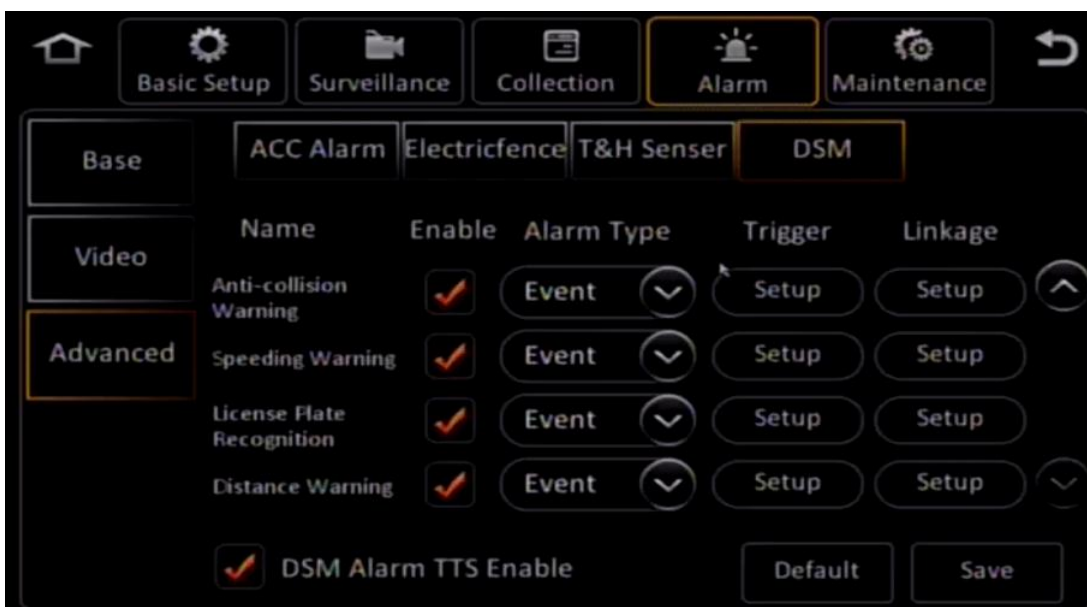
- On this screen, you can set the AI functions of the AD suite, trigger conditions, and linkage content.

Note: To report evidence images, select **Alarm Snap** on the **Alarm Linkage** screen and then set the corresponding parameter on the **Snap Setting** screen in **Data Collection**.
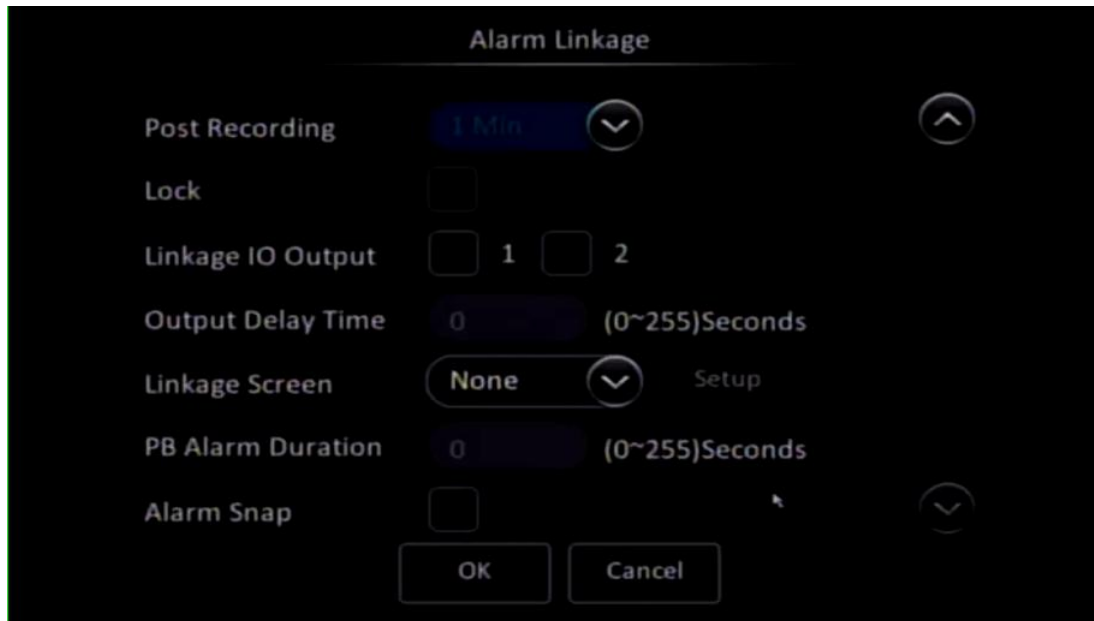

1.10 Serial Port Settings

1.10.1 Installation and Configuration of the RS-485

- Among four serial ports, two RS-485 serial ports can connect to RS-485 buses and then connect to Streamax standard RS-485 peripherals. One RS-485 bus can be mounted to multiple RS-485 peripherals. Each Streamax standard peripheral has a fixed code.

- If a RS-485 bus is connected to multiple peripherals in compliance with the same standard, for example, multiple temperature and humidity sensors, you can use Streamax tool to write an address code to each peripheral. For example, if a RS-485 bus is connected to three sensors, you can number these sensors by address codes.
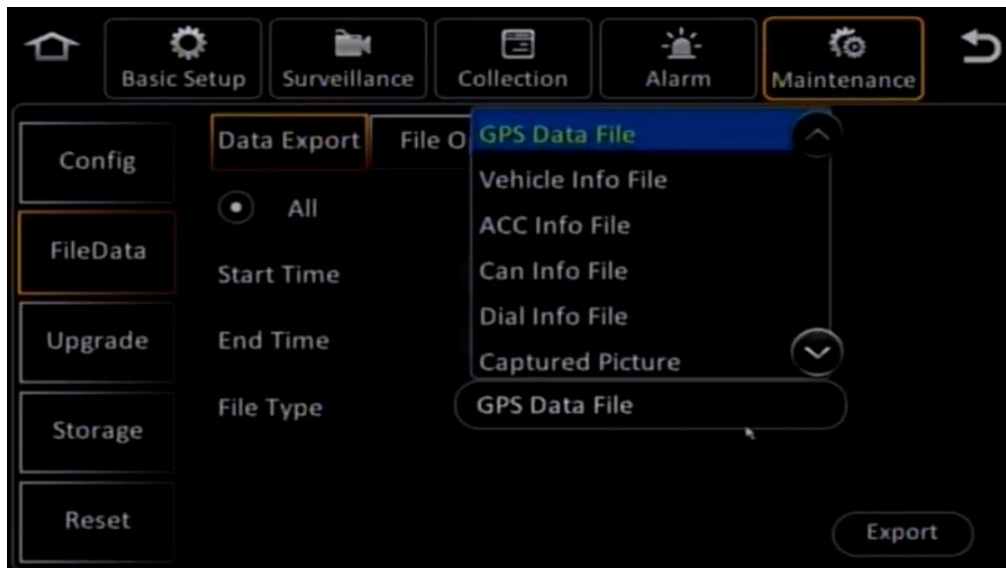
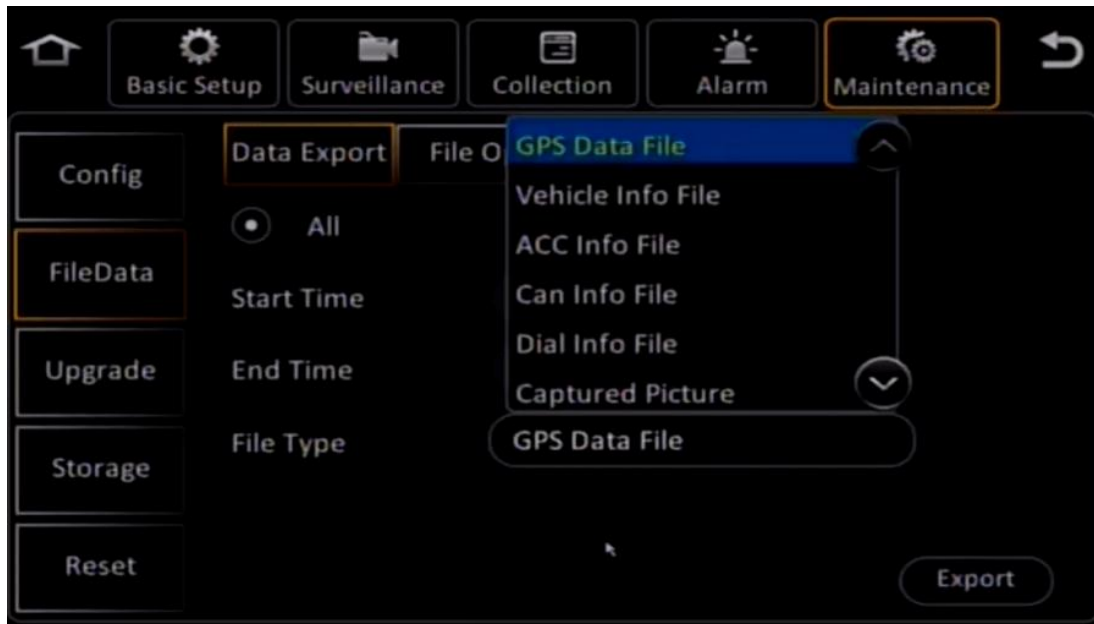## 1.11 Maintenance

1.11.1 Maintenance – Config
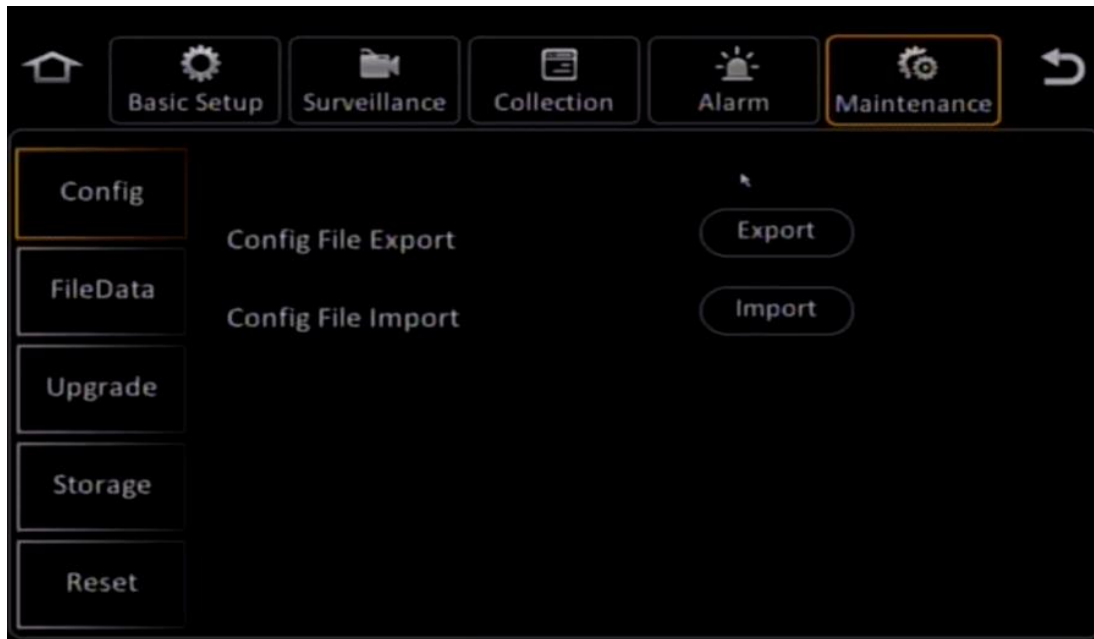
● To export or import parameter configuration files, insert the USB flash drive into the device. The operation is convenient and eliminates the configuration process.
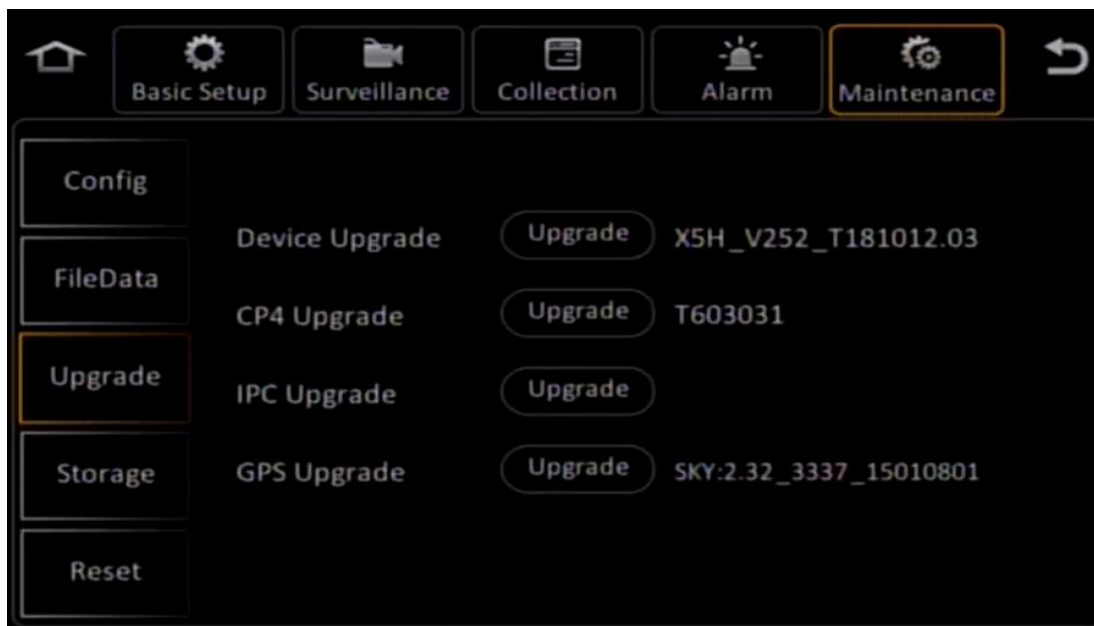
1.11.2 Maintenance – FileData

● In case of a problem, you can export the device file for analysis and troubleshooting. You can set the range of files to be exported.
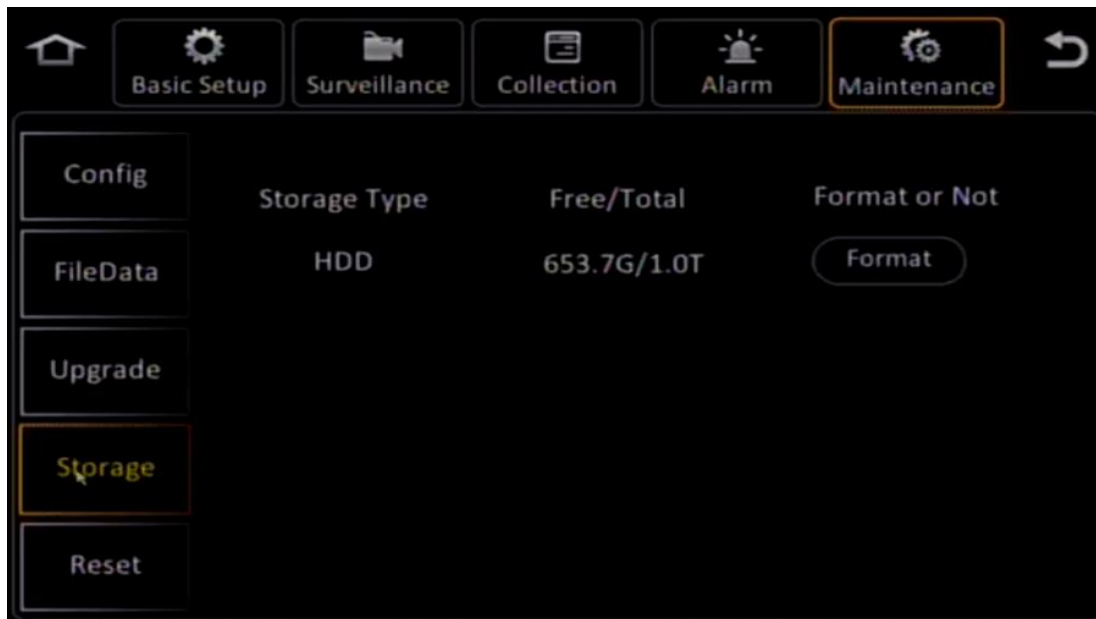
- You can import or export the electronic fence and eco-driving configuration files.

1.11.3 Maintenance – Upgrade

1.11.4 Maintenance – Storage

1.11.5 Maintenance – Reset