



Intelligent Cargo Camera

Z5

Product User Manual

(Version 1.0)



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Preface

About This Product Manual

This product user manual provides detailed information about the components and functions of the Z5 product. All content, including text, images, and graphics, is the property of Shenzhen Streamax Technologies Co., Ltd. No part of this document may be reproduced, extracted, or modified without prior written consent from the company. Unless otherwise stated, this manual does not offer any form of warranty.

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Product Overview

Product Introduction

Z5 is a highly integrated AI device designed for efficient cargo management and video monitoring. It is equipped with a high-speed processor, advanced operating system, and H.265 compression technology, supporting dual-channel video recording with resolutions up to 4K and 1080p. The Z5 is equipped with GPS positioning, 4G connectivity and Bluetooth functions, and can connect to external sensors to ensure real-time alarm transmission and cargo door status monitoring. Additionally, the Z5 is equipped with advanced AI visual recognition technology that can intelligently identify the cargo loading rate, helping users track the cargo location and loading status in real-time. The device can intelligently switch modes to optimize power consumption and extend battery runtime while collecting cargo data and detecting anomalies. Its robust, minimalist design offers high impact resistance, stability, and ease of use, making it ideal for complex cargo transportation environments.

Product Features

- **Dual-channel video monitoring:** Supports one channel for 4K images for cargo interior monitoring and one channel for 1080p for cargo exterior monitoring.
- **AI visual recognition:** Features cargo loading rate recognition, providing real-time analysis of cargo loading conditions.
- **Local storage:** Supports one Micro SD card for local recording, with a maximum capacity of 512GB.
- **Efficient compression technology:** Supports H.265/H.264 compression technology, saving storage space.
- **Wireless connection:** Support WiFi to facilitate connecting equipment for operation and maintenance; support BT5.1 to facilitate connecting sensor peripherals
- **Mobile network:** Supports 3G/4G network connection with a Nano SIM card.
- **Solar Charging:** Supports external solar panels, providing solar charging capability.
- **GPS positioning:** Supports GPS tracking for real-time location monitoring.
- **Low power and sleep modes:** Supports two power-saving modes. In low power mode, the device can detect door status but cannot be remotely awakened through the platform. In sleep mode, the device can detect door status, stay 4G on line, and can be remotely awakened through the platform.
- **Smart cargo management:** Supports cargo management algorithms and various anomaly detection and alarm functions.
- **Remote management:** Supports remote control, data visualization, and report generation through the FT platform.

AI Features

Z5 revolutionizes trailer transport management with advanced AI and high-definition video technology. Leveraging big data and AI deep learning, the Z5 can monitor cargo volume in real time and analyze loading rates, providing users with accurate loading data insights. The device integrates AI cameras and high-precision sensors, ensuring full visibility of the cargo and enabling intelligent management of the loading process. Additionally, the Z5 features an illegal door opening detection function, effectively preventing security risks during transport and safeguarding the cargo. The Z5 offers a smarter and more efficient solution for cargo transportation, helping users optimize transport efficiency and reduce operational costs.



**Cargo Loading Rate
(Volume Measurement)**



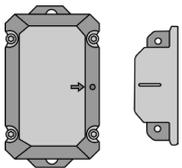
**Loading/Unloading
Timeout**



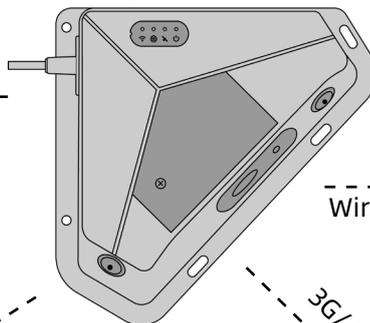
**Loading/Unloading
Timeout**

Main Products

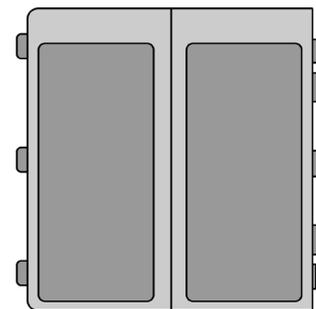
Door sensor: Used to detect the opening and closing status of the cargo compartment door.



Z5: Built-in one channel for the in-cargo camera and one channel for the external cargo camera. Integrated volume measurement (loading rate) algorithm



ABS Box: Built-in rechargeable battery, GPS antenna, 4G main/auxiliary antennas, and solar charging panel



Bluetooth

Wired connection

WiFi

3G/4G, WiFi



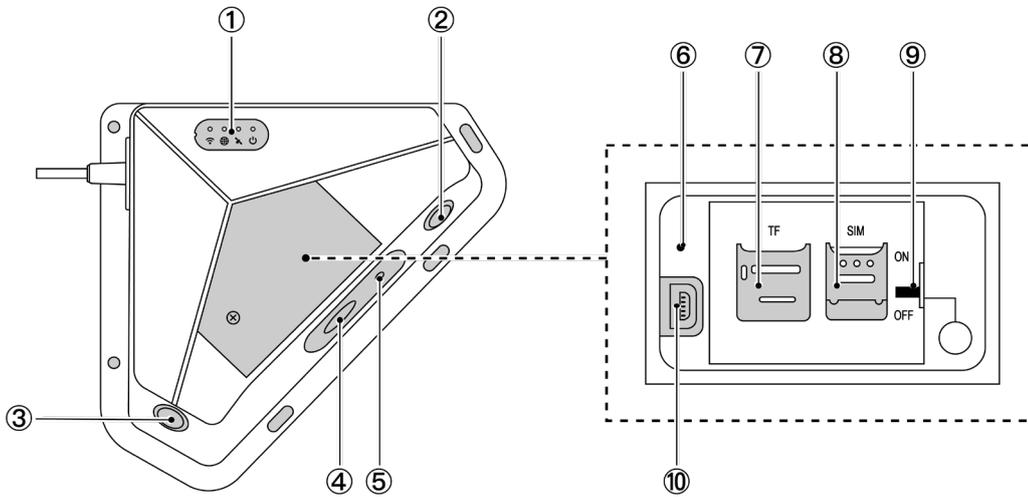
Veyes App: Mobile/Tablet Operations and Maintenance App: Used for function parameter configuration, calibration, and other tasks



FT Cloud: Professional SaaS video service platform for PC

Product Images and Component Names

Z5

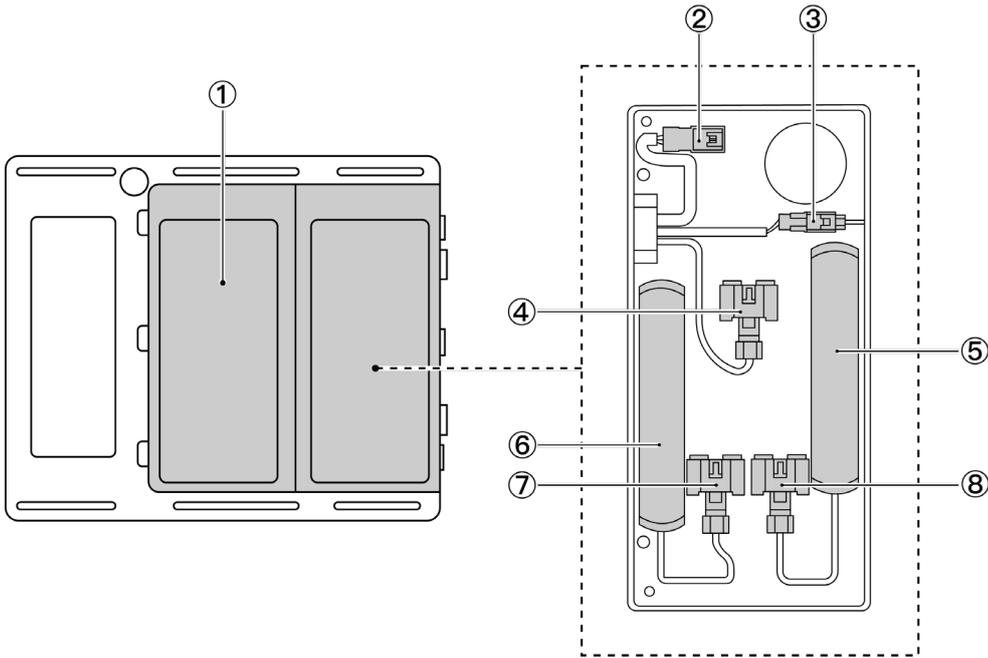


- ① Status Indicator Light
- ② In-Cargo Box Camera
- ③ External Cargo Box Camera
- ④ White LED Light
- ⑤ Brightness Sensor
- ⑥ AP Hotspot Toggle Button
- ⑦ Micro SD Card Slot
- ⑧ Sim Card Slot
- ⑨ Power Switch
- ⑩ Micro USB Port

Status Indicator Light

Indicator Light	Icon	Off	On ● / Flashing ○
WiFi Status Indicator		In disable or client mode	<ul style="list-style-type: none"> ● In AP mode ● WiFi error
Network Status Indicator		In sleep or low-power mode	<ul style="list-style-type: none"> ● Server connection successful ● Server connection error
GPS Signal Indicator		In sleep or low-power mode	<ul style="list-style-type: none"> ● Positioning successful ● Positioning error
Power Indicator		In sleep or low-power mode	<ul style="list-style-type: none"> ● Power supply normal ● Power disconnected Battery level above 10% ○ Power disconnected Battery level below 10%

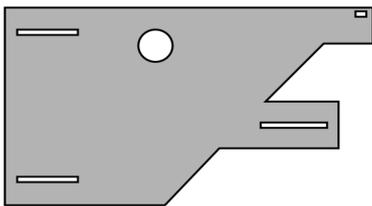
ABS Power Box



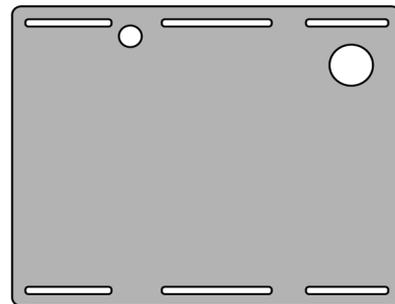
- | | |
|-------------------------|-----------------------------|
| ① Battery | ⑤ 4G Main Antenna |
| ② 232/VBAT Interface | ⑥ 4G Auxiliary Antenna |
| ③ Solar Power Interface | ⑦ 4G Auxiliary Antenna Port |
| ④ GPS Antenna Interface | ⑧ 4G Main Antenna Port |

Z5 and ABS Power Box Installation Stickers

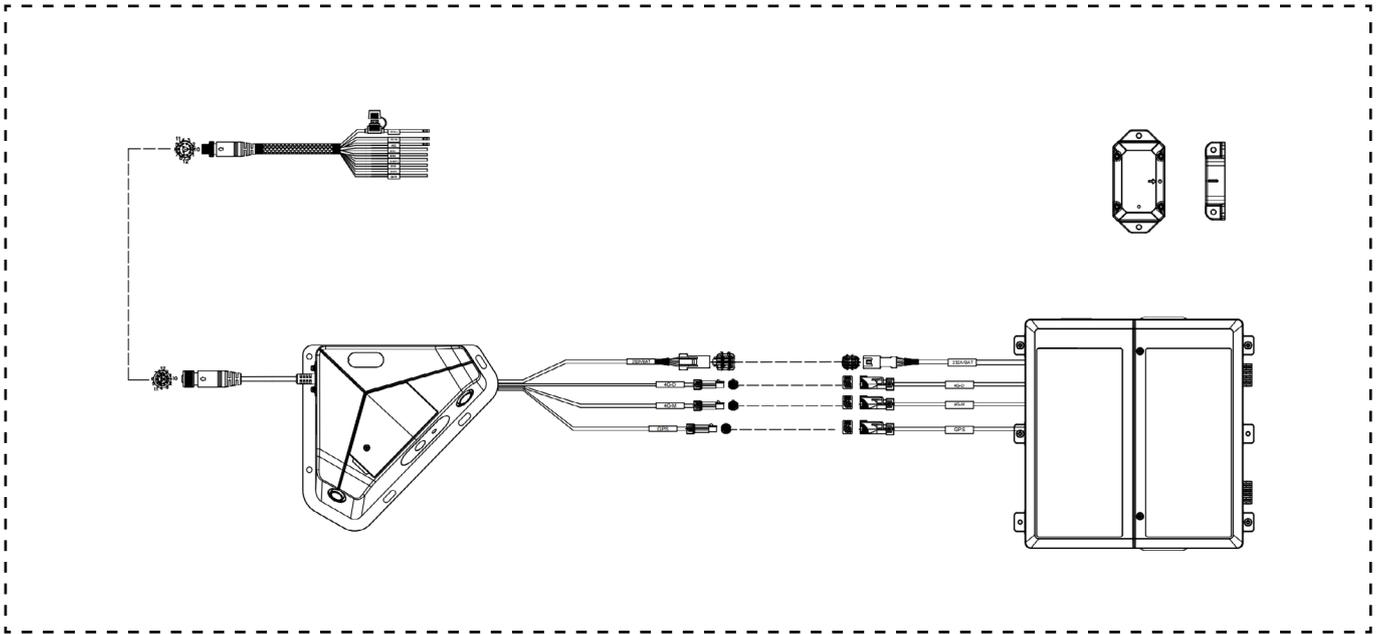
Z5
Sticker



ABS Box
Sticker

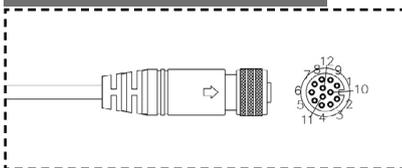


System Connection Diagram

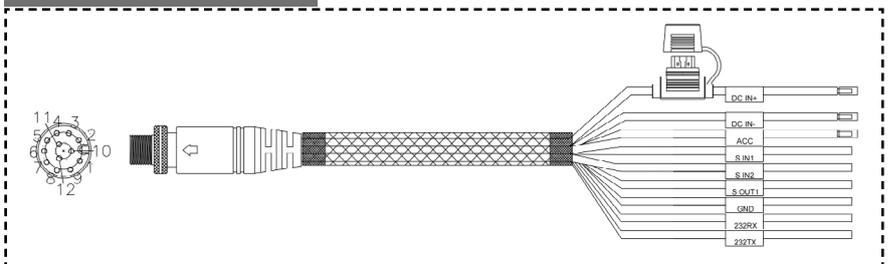


Cables

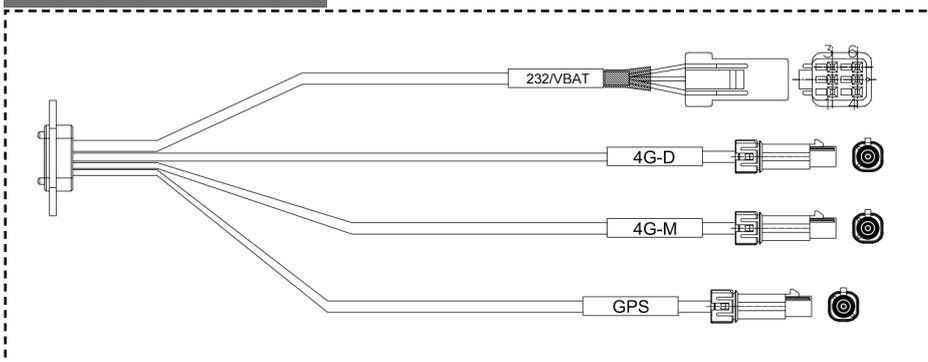
**Z5 Tail Wire
(Signal Output A)**



Signal Input Wire



**Z5 Tail Wire
(Signal Output B)**



Device Login

Note

AP mode: To connect to the device's WIFI hotspot, the device must be in AP mode. It will automatically enter AP mode within the first 3 minutes after start-up. You can also manually enter AP mode at any time by double-clicking the AP hotspot toggle button on the device.

Mobile App Installation (Please make sure you are using the latest version for the best experience.):

- For Android users, search for Veyes on Google Play to download and install.
- For iPhone users, search for Veyes on the App Store to download and install.

Connected 00F0000436

Address 192.168.240.1 9006

Username admin

Password

Remember

Search

Login

1. Click **[Search]** to enter the WIFI interface, select the hotspot of the device and connect to it. The initial hotspot name is based on the device's **Serial Number**, which can be found on the device label.
2. Enter the username and password (default: **admin/admin**)
3. Click **[Log in]** to enter the following operation interface.

[00F0000436]

General Preview Playback Preferences

Server Status Sensor Status OBD Data 6 Axis Data

Central Server 1	Connected Status	Disconnected
Network Type	Communication Module	
Protocol Type	N9M	
Server Address	uat-saas.streamax.com	
Port	21083	

Preferences

- About
- Acceptance
- Share Log
- AES Key
- Logout

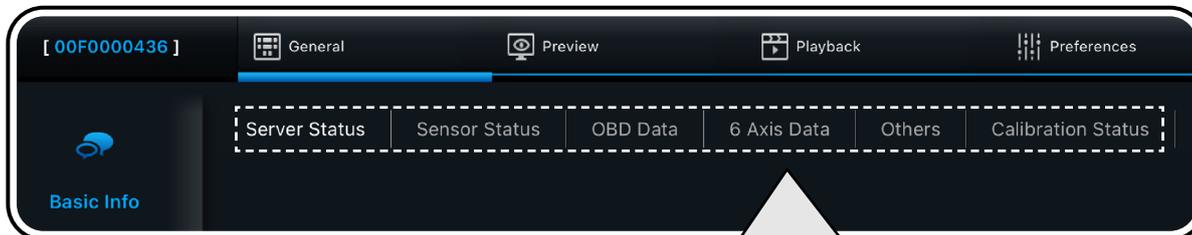
Click the upper right corner to view information such as the APP version.

Note

[Acceptance]: Acceptance mode. Used for testing or accepting the device in a static environment. All alarms are triggered based on preset vehicle speed

General Information Viewing

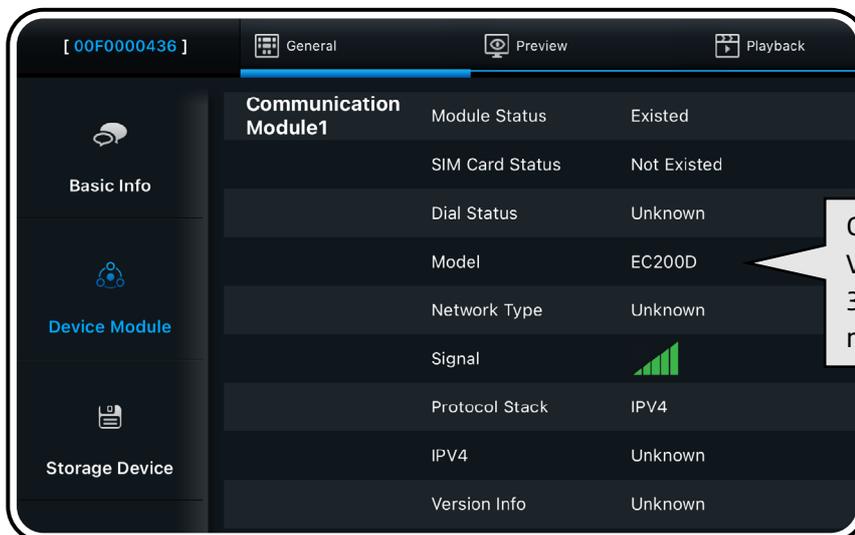
Basic Information



Click **[General]** → **[Basic Info]**, to view the basic information of the device:

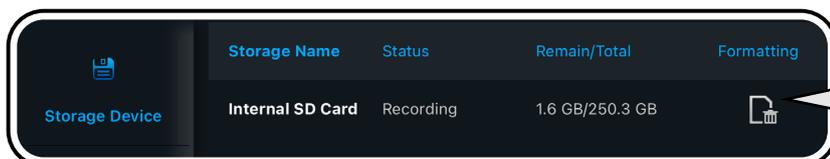
- **[Server Status]**: Check the server connection status.
- **[Sensor Status]**: Check the high and low voltage status and purposes of the two channels of IO.
- **[OBD Data]**: Since the Z5 does not support reading in-vehicle data, this option is invalid.
- **[6 Axis Data]**: Check the six-axis data of the G-Sensor.
- **[Others]**: Check the ACC status, pulse status, and device status.
- **[Calibration Status]**: Check the calibration status of the AI algorithm (Currently not supported).

Module Information



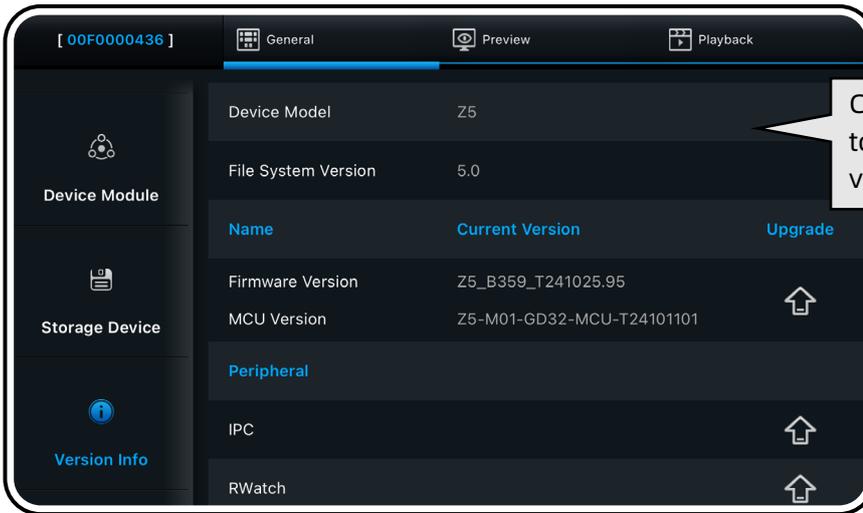
Click **[General]** → **[Device Module]**:
View the information of the device's 3/4G, WiFi, positioning, and eSIM modules

Storage Information



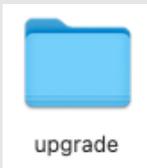
Click **[General]** → **[Storage Device]**:
View the storage status and perform formatting operations

Firmware Information

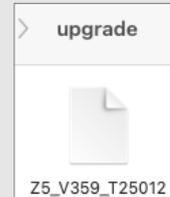


Firmware Update

1. Prepare a USB drive and create a folder named "upgrade" in the root directory.



2. Place the upgrade package into this folder.



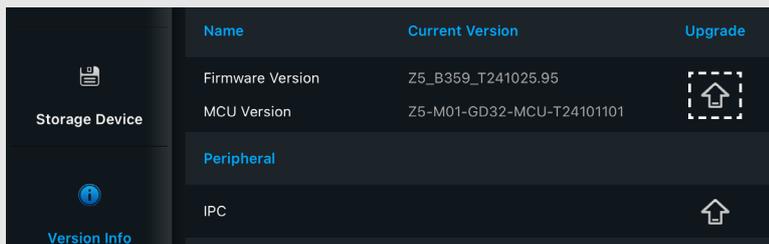
3. Connect the USB drive to the device using the maintenance cable (Note: The maintenance cable must be purchased separately).



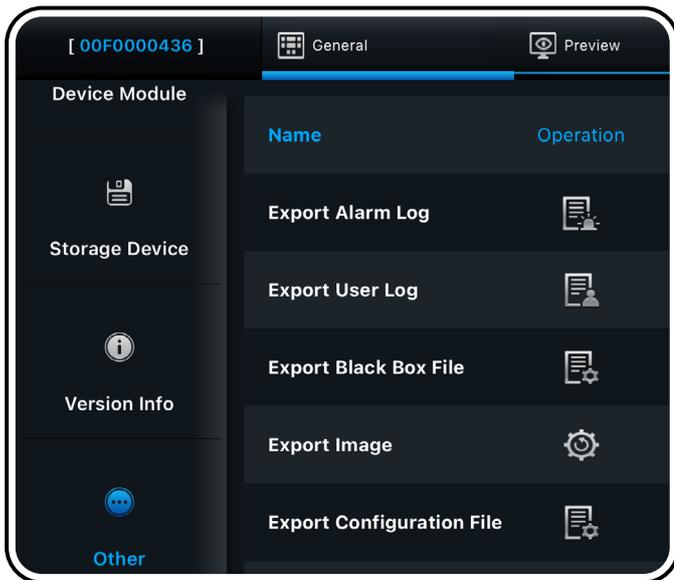
Note

The above steps outline the local upgrade process via Veyes. The device also supports online upgrades through the FT platform. For details, please refer to the platform documentation or consult relevant personnel.

4. Return to the Veyes app and click Upgrade to proceed.

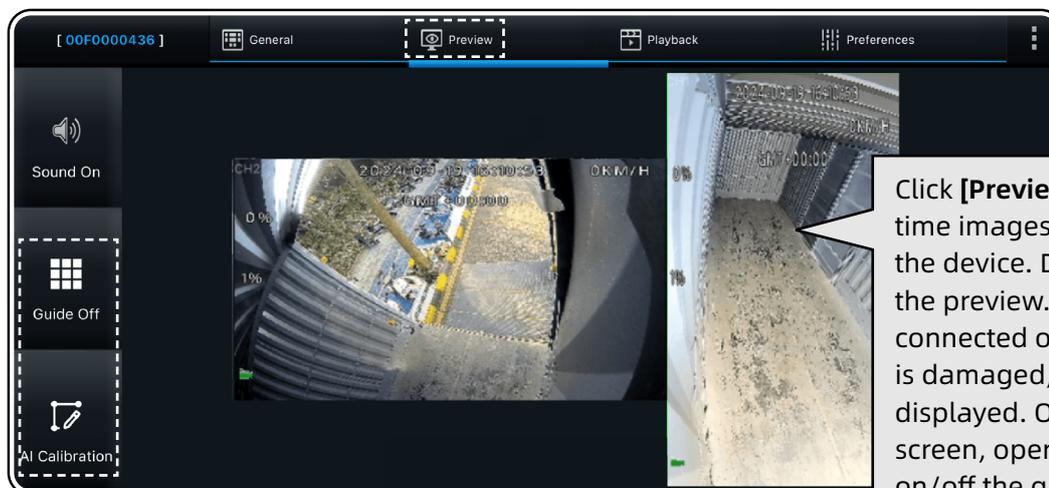


Data Import / Export



Click **[General]** → **[Other]**: It supports operations such as importing and exporting data and configuration parameters (requiring an external USB drive), resetting to factory defaults, and rebooting the device.

Live Preview

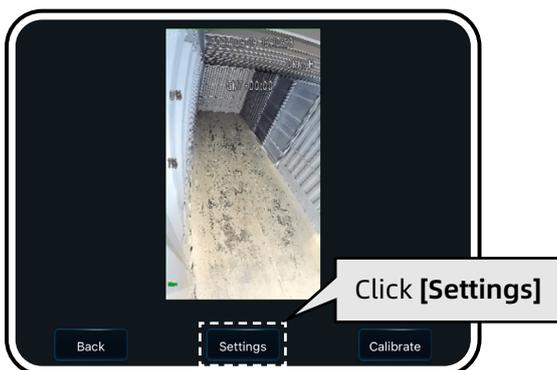
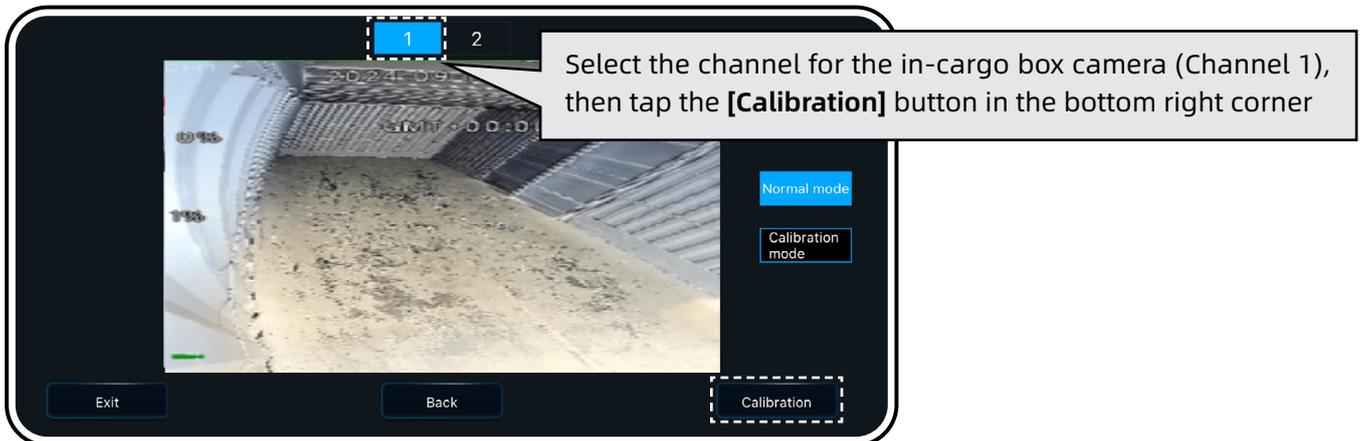
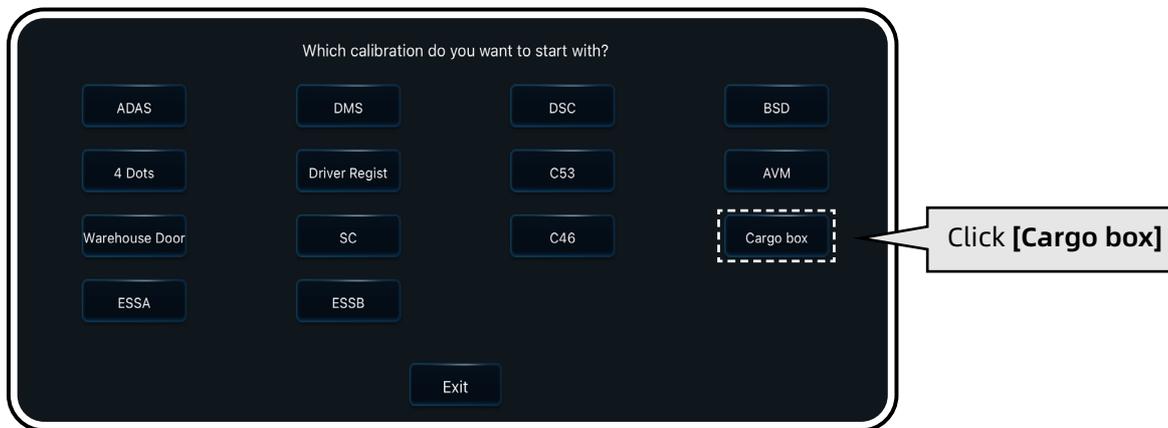
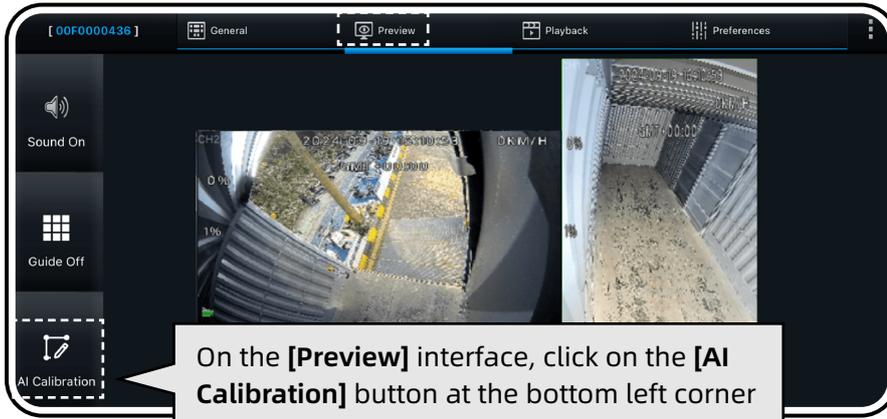


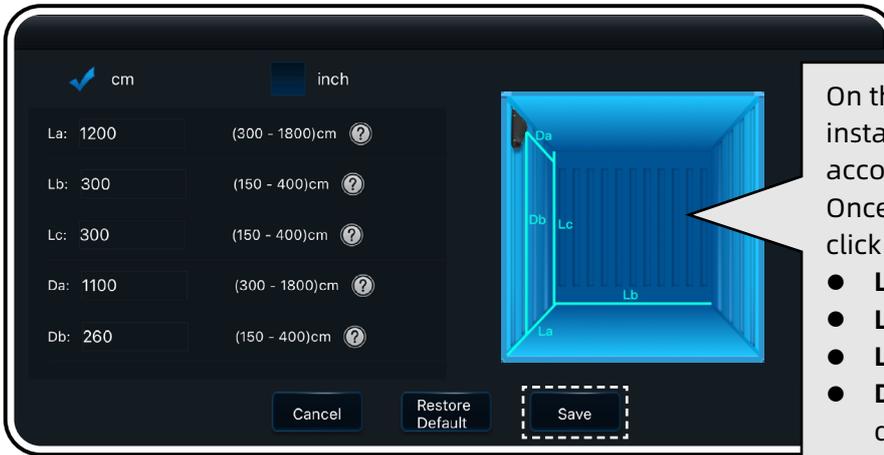
Click **[Preview]**: View the real-time images of each channel of the device. Double-click to enlarge the preview. If the camera is not connected or the camera channel is damaged, "Video Loss" will be displayed. On the left side of the screen, operations such as turning on/off the grid and AI calibration are supported.

Note

Since the Z5 does not have a recording function, the [Sound On] option is not functional.

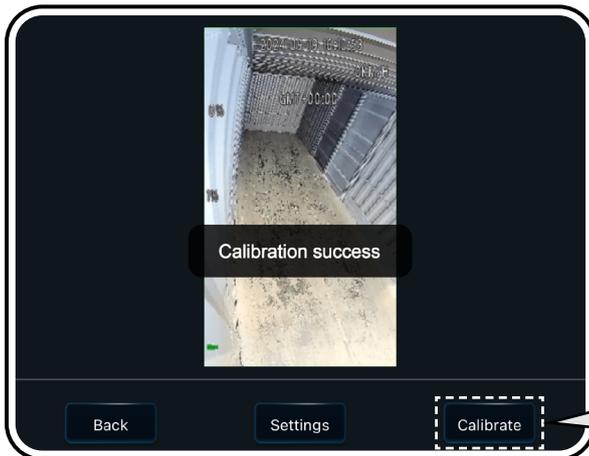
AI Calibration





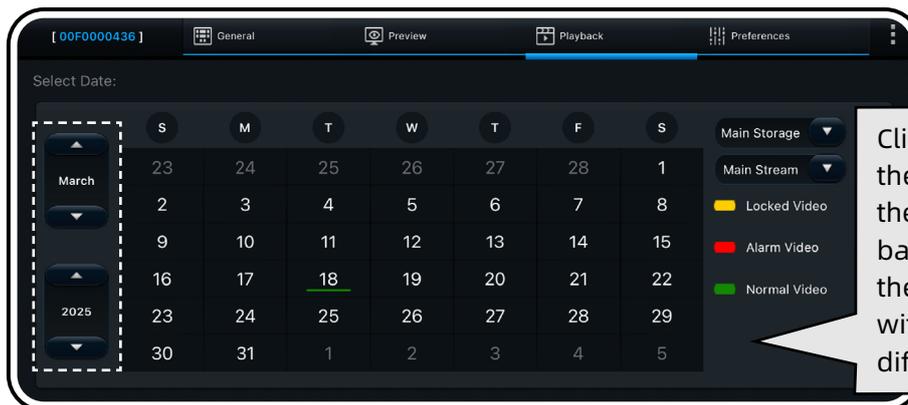
On this interface, enter the device installation position parameters according to the reference diagram. Once the information is filled in correctly, click **[Save]**

- **La:** Length of the cargo box
- **Lb:** Width of the cargo box
- **Lc:** Height of the cargo box
- **Da:** Horizontal distance from the device to the frontmost point of the cargo box
- **Db:** Vertical distance from the device to the bottom of the cargo box



Click **[Calibrate]**. Once the message "Calibration success" appears, click **[Back]** to exit

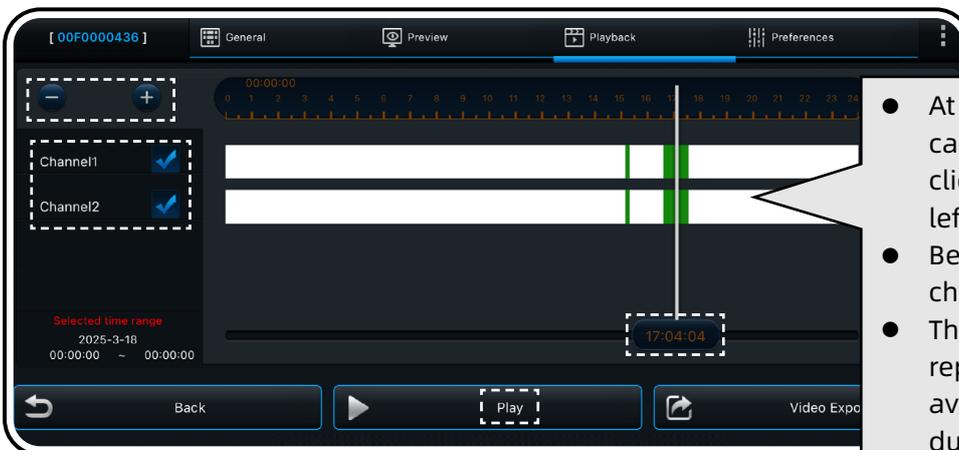
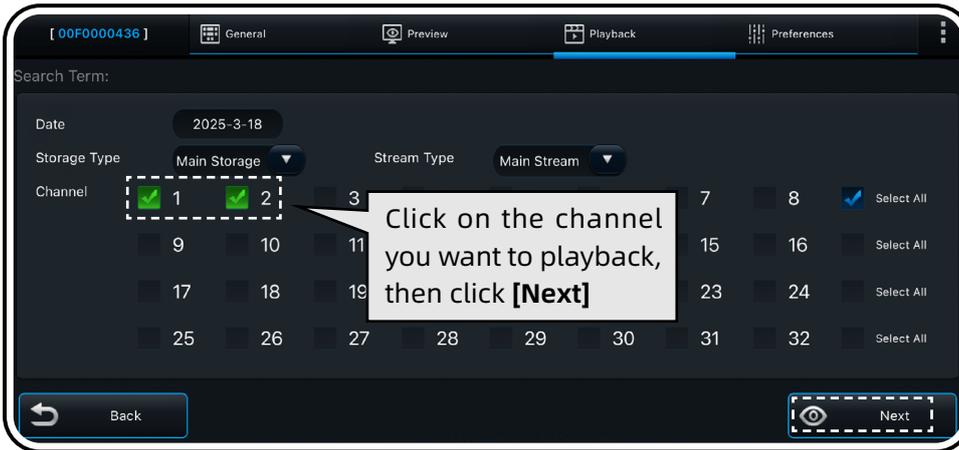
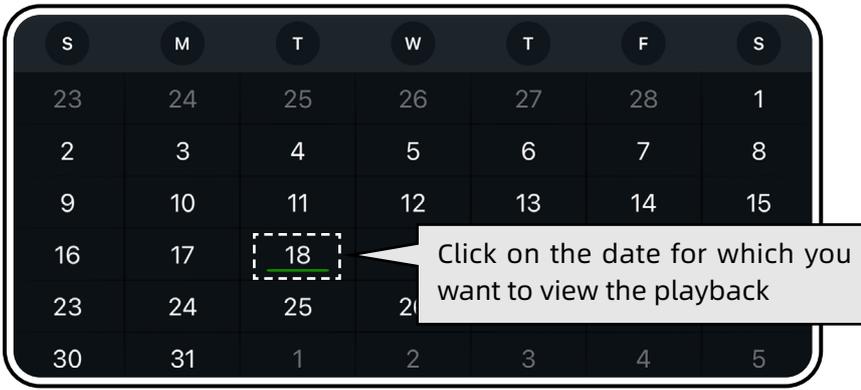
Video Playback



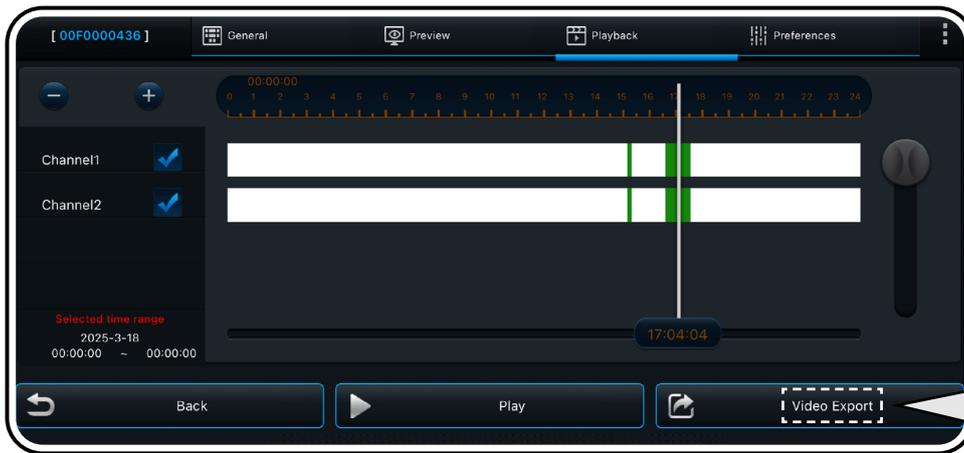
Click **[Playback]**, and you can select the year and date on the left side of the screen. On the calendar, the color bar below the date indicates that there is video recording on that day, with different colors representing different types of videos

Note

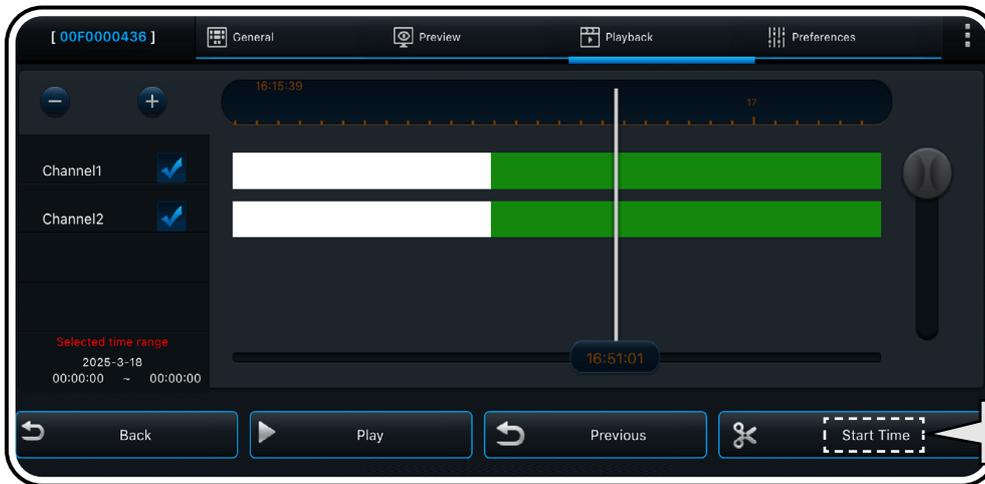
Since the Z5 can only be equipped with one Micro SD card and is limited to storing main stream video, the **[Main Storage]** and **[Main Stream]** options on this interface cannot be modified.



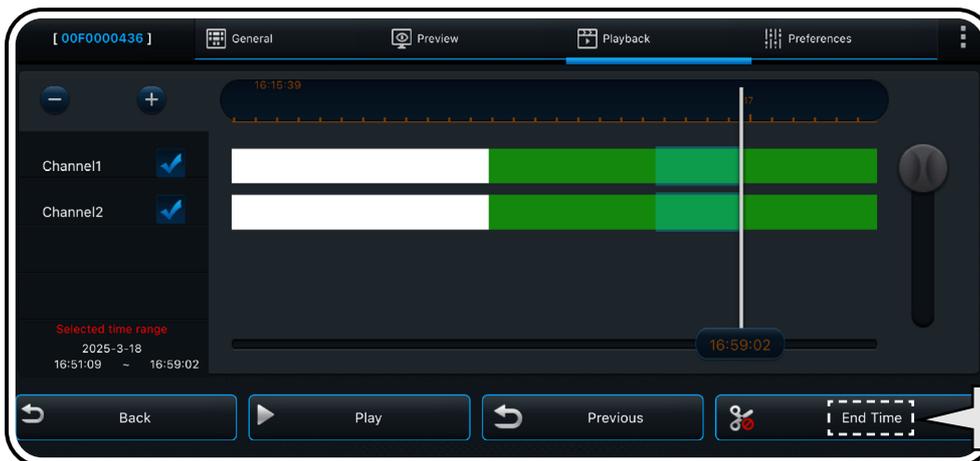
Video Export



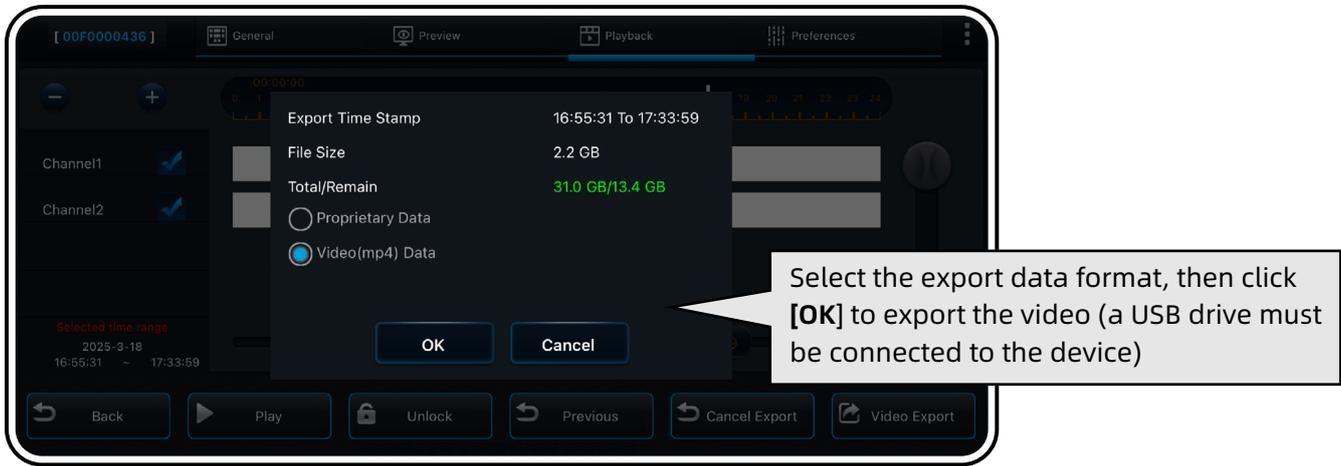
Refer to the last page diagram in the previous section, and click **[Video Export]**



Select the start time



Select the end time



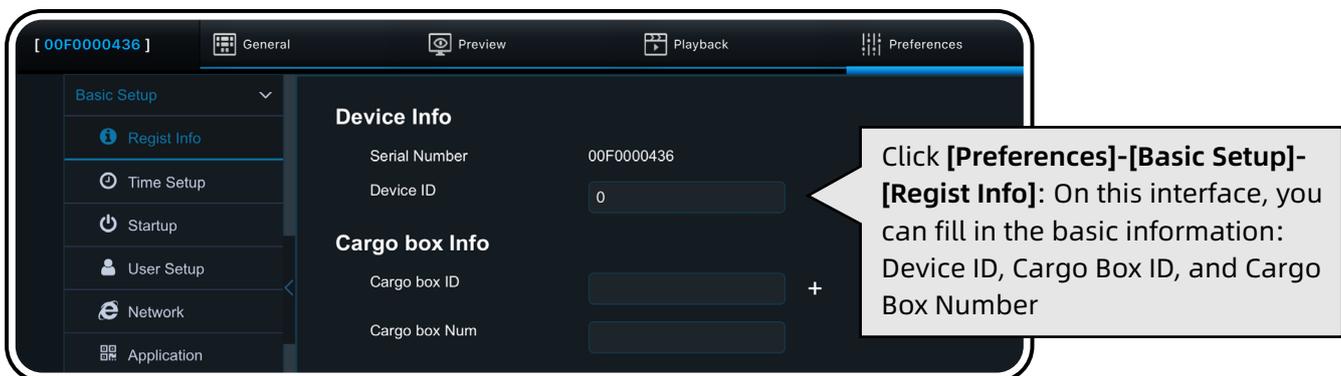
Note Videos exported in MP4 format can be played with standard media players. Videos exported in H264 format (Proprietary Data) require a dedicated player (e.g., CEIBA2 client). The H264 format contains more raw data, which is helpful for troubleshooting.

Basic Configuration

Note On all configuration parameter interfaces, after modifying the parameters, click the **[Save]** button at the bottom of the interface to save the changes. Click **[Default]** to restore all parameters on the current interface to their default settings.

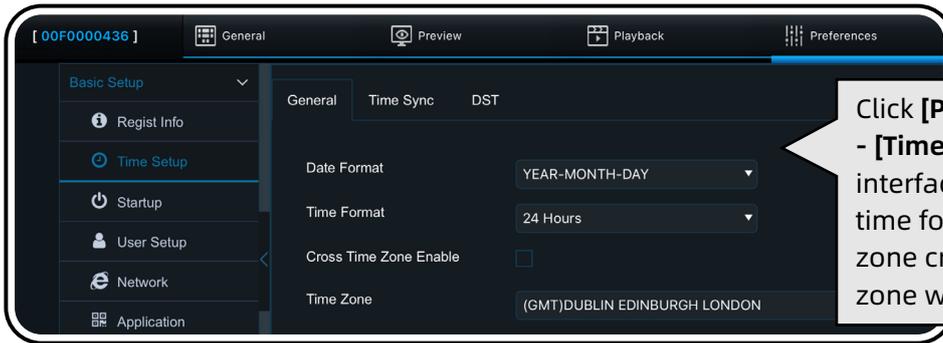
Warning Due to the extensive features of this product, this user manual only covers the setup of commonly used functions. For any additional questions, please contact us.

Registration Information



Note If the cargo box number is entered here, the device's Wi-Fi hotspot name will automatically change to match the entered cargo box number. At this point, you will need to reconnect to the Wi-Fi and log back into Veyes. (The default Wi-Fi hotspot name is the product's serial number.)

Time Settings



Click **[Preferences] - [Basic Setup] - [Time Setup] - [General]**: On this interface, you can set the date and time format, enable/disable time zone crossing, and select the time zone where the device is located



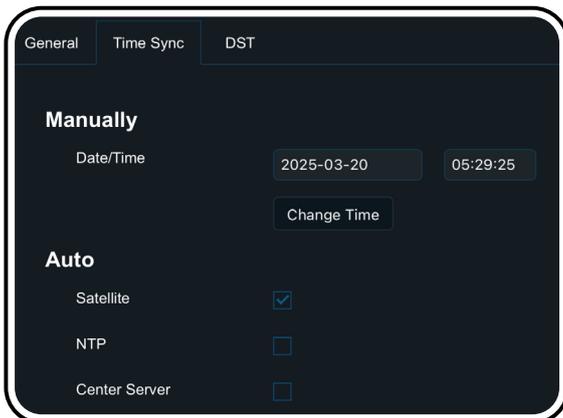
Note

The **[Date Format]** and **[Time Format]** settings are only reflected in the overlays during live preview and video playback.



Note

[Cross Time Zone Enable]: When the vehicle and the platform are in different time zones, enable this function to ensure proper communication between the device and the platform. Once enabled, the **[Time Zone]** setting becomes unavailable, and all interactions between the platform and the device are conducted using UTC (zero time zone). An additional setting, **[Local TimeZone]**, is provided to define the time zone used for video overlay.

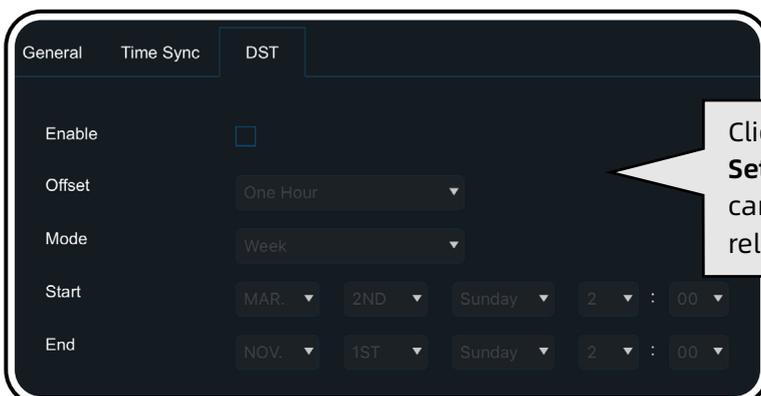


Click **[Preferences] - [Basic Setup] - [Time Setup] - [Time Sync]**: On this interface, you can manually or automatically set the date and time. Automatic setting supports selecting the time synchronization method



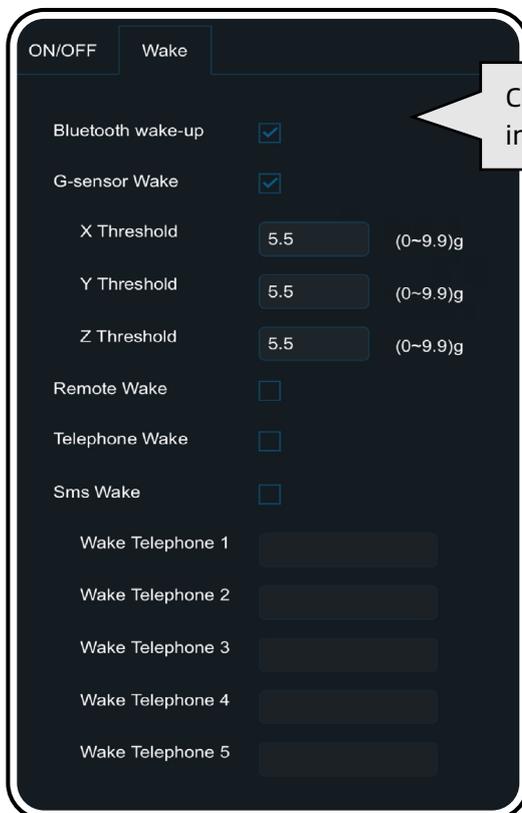
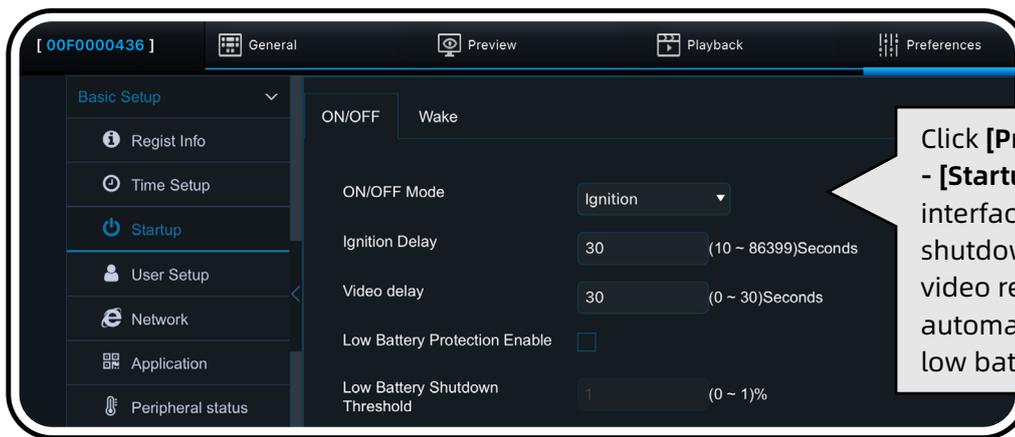
Note

If multiple time synchronization methods are selected, the system will follow the priority order of **[Satellite] > [NTP] > [Center Server]**. Once a higher-priority method successfully synchronizes the time, the lower-priority methods will not be executed.



Click **[Preferences] - [Basic Setup] - [Time Setup] - [DST]**: On this interface, you can configure daylight saving time (DST) related parameters.

Startup Settings



Note

- **[Bluetooth Wake]**: Wakes up the device when the door sensor detects a change in door status (open/close).
- **[G-Sensor Wake]**: Wakes up the device when motion exceeds the set threshold.
- **[Remote Wake]**: Wakes up the device via a remote command sent from the platform.
- **[Telephone Wake]**: Wakes up the device by calling it. A pre-configured phone number that supports wake-up must be set in advance.
- **[SMS Wake]**: Wakes up the device by sending an SMS with the content "WAKEUP". A phone number that supports wake-up must be pre-configured.

Warning

The Telephone Wake and SMS Wake functions require the SIM card in the device to support both voice call and SMS services.

User Settings

The screenshot shows the 'Basic Setup' menu on the left with 'User Setup' selected. The main area displays 'Language' set to 'English' and 'User Management' with an 'Add' button. A table lists users:

User Name	User Group	Setup
admin	Admin	[Menu Icon]
user	Normal User	[X] [Menu Icon]

Below the table is a 'Check Password' checkbox and a help icon. A callout box points to the 'Setup' column of the 'user' row, stating: 'Click [Preferences] → [Basic Setup] → [User Setup]: Configure language and user accounts.'

An 'Edit' dialog is shown below, with fields for 'User Name' (user), 'User Group' (Normal User), 'New Password', and 'Confirm New Password'. It has 'Cancel' and 'OK' buttons.

Note

The interface language of the Veyes App automatically switches according to the phone's system language and is not affected by the **[Language]** setting.

Note

- **Admin:** There is only one administrator account. It has the permissions to add/delete normal user accounts and configure settings. A maximum of two normal users can be added.
- **Normal User:** A default normal user account is provided. It only has permission to view settings.

Network Settings

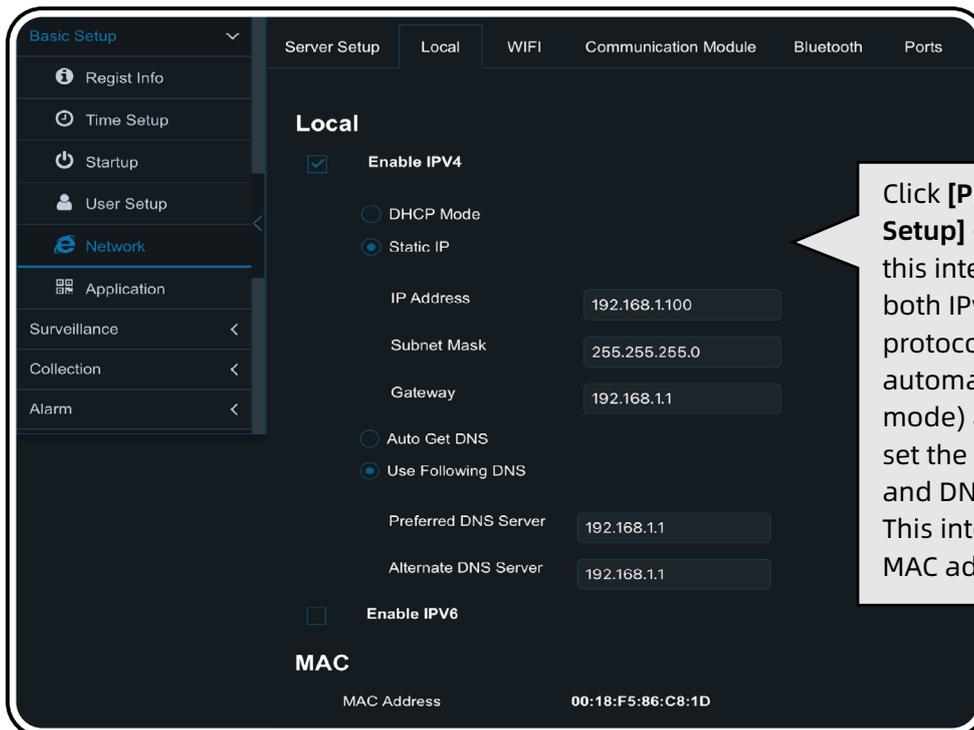
The screenshot shows the 'Basic Setup' menu on the left with 'Network' selected. The main area is titled 'Server Setup' and has tabs for 'Local', 'WIFI', 'Communication Module', 'Bluetooth', and 'Ports'. It displays three server tabs: 'Server1', 'Server2', and 'Server3'. A '+' and 'x' button are at the top right. The settings for 'Server1' are:

- ON:
- Protocol Type: N9M
- TLS Enable:
- Enable Network: Module1
- Register Server IP: uat-saas.streamax.com
- Register Server port: TCP 21083, TLS 6556
- Media Server IP: uat.saaS.streamax.com
- Media Server port: TCP 21083, TLS 6556

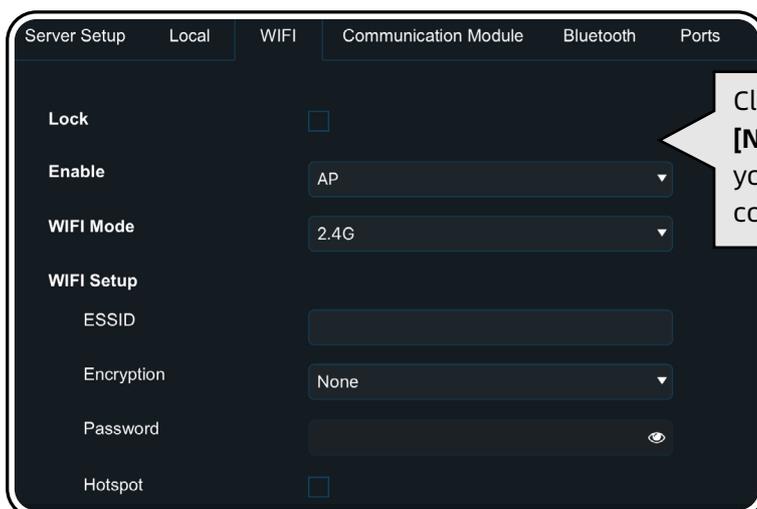
A callout box points to the interface, stating: 'Click [Preferences] - [Basic Setup] - [Network] - [Server Setup]: On this interface, you can add/delete servers and configure server parameters, with support for up to 4 servers to be enabled simultaneously'

Note

- **[Enable Network]:** Options include Wired Network, Wi-Fi, Communication Module, and Adaptive. Adaptive means the system will automatically select the available network to connect to the platform, with the priority order being Wi-Fi > Wired Network > Communication Module.
- During normal device operation, interaction data between the device and the platform can be transmitted using TLS encryption to ensure data security (TLS encryption is not available in sleep mode).
- The addresses and ports for the registration server and media server must be the same.
- Modifying server parameters via SMS is supported; for specific usage instructions, please consult the relevant personnel.



Click **[Preferences] - [Basic Setup] - [Network] - [Local]**: On this interface, you can configure both IPv4 and IPv6 network protocols. Users can enable automatic IP acquisition (DHCP mode) and DNS, or manually set the IP address, gateway, and DNS. This interface also displays the MAC address information.



Click **[Preferences]-[Basic Setup]-[Network]-[WIFI]**: On this interface, you can select the WIFI mode and configure related settings.

Note

[Lock]: When enabled, the related parameters on this interface cannot be imported, modified, or reset to factory defaults.

Note

[Enable]: Allows selection of Wi-Fi mode based on requirements.

- **Disable:** Wi-Fi is disabled. The device defaults to AP mode for 3 minutes after startup (configurable). If no Veyes connection is made within 3 minutes, AP mode exits and the Wi-Fi module enters sleep.
- **Client:** Allows the device to connect to nearby valid Wi-Fi hotspots and automatically reconnect when re-entering the area. The device defaults to AP mode for the first 3 minutes after startup (configurable). If no Veyes connection is made, it switches to Client mode. Up to 8 external Wi-Fi names and passwords can be set, and the device connects based on signal strength. Wi-Fi info can be imported, manually configured, or added via search.
- **AP:** The device always stays in AP mode after startup. You can modify the device's hotspot name and password. When [Hotspot] is enabled, mobile devices can access the internet through the device's hotspot. A **[Whitelist]** can be configured to allow access only to specified IP addresses (up to 5 entries).

Server Setup Local WIFI Communication Module Bluetooth

Lock

Server Type No Service

Network Type Mix

Dialing Parameter

APN

User Name

Password

Number

Certification None

Carrier Auto

Protocol Type IPV4

Active Mode Always

Number1

Number2

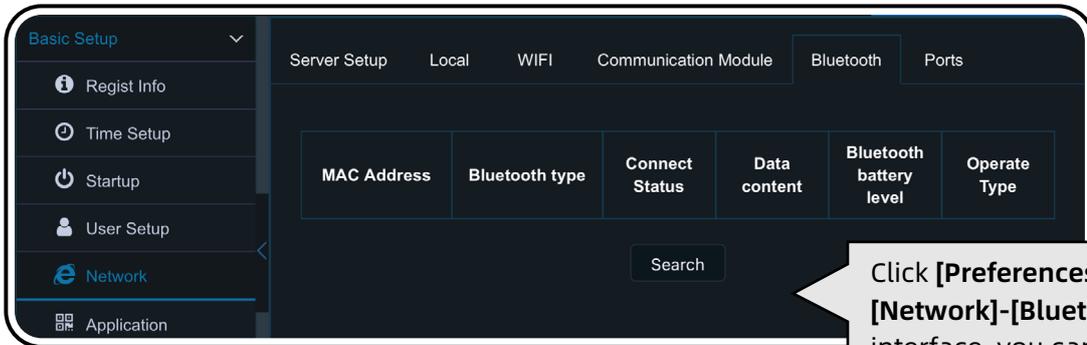
Number3

MTU value of SIM card 1500 (100~1500)

Click **[Preferences]-[Basic Setup]-[Network]-[Communication Module]**: On this interface, you can configure the settings related to the communication module.

Note

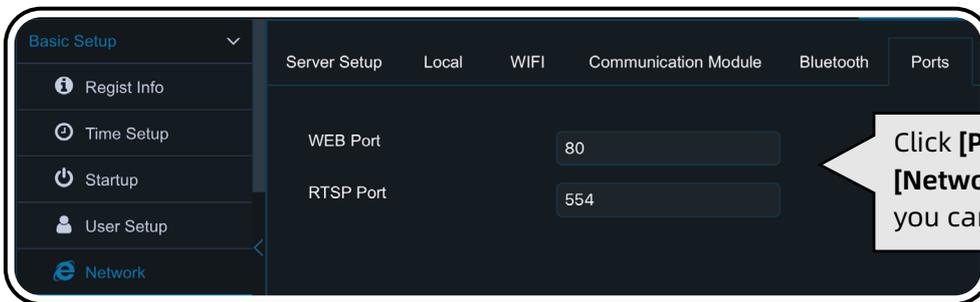
- **[Lock]:** When enabled, parameters on this interface cannot be imported or modified, and are not affected by factory reset.
- **[Server Type]:** Automatically detects the type after a SIM card is inserted; displays "No Service" if no module is present.
- **[Dialing Parameter]:** Allows input of parameters provided by the SIM card provider; defaults to empty, using standard dialing parameters if left blank.
- **[Active Mode]:** Supports three network dialing activation methods: **Always** (continuous connection), **Phone/SMS** (activated by call or SMS from up to 3 specified numbers), **Sensor** (triggered by IO sensor)
- **[MTU value]:** Default is 1500; configurable.



Click **[Preferences]-[Basic Setup]-[Network]-[Bluetooth]**: On this interface, you can search for and connect to Bluetooth sensors

Note

To ensure proper operation of the Z5, the device must search for and connect to the corresponding door sensor on this interface during installation. For detailed steps, please refer to the Z5 Installation Guide.

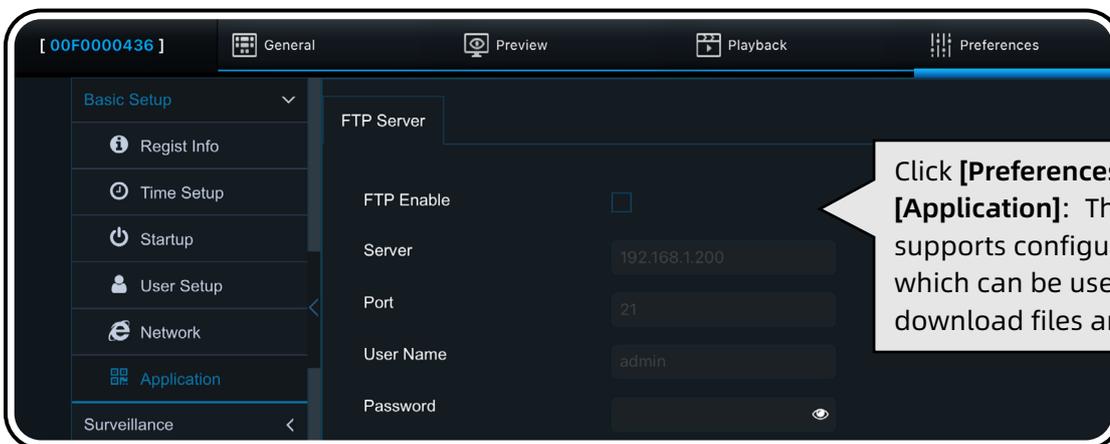


Click **[Preferences]-[Basic Setup]-[Network]-[Ports]**: On this interface, you can change the port number

Note

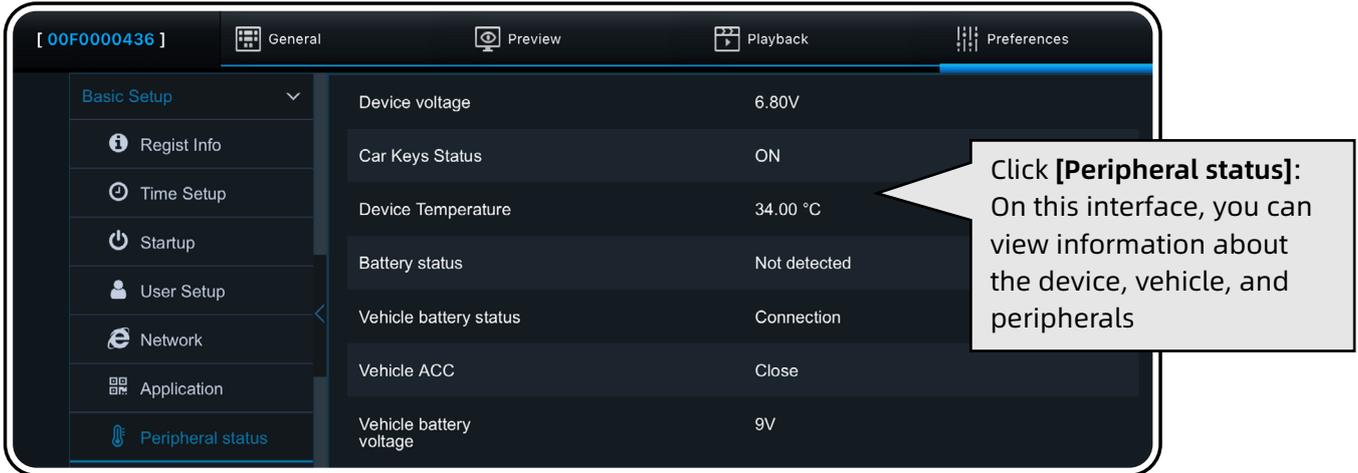
- **WEB Port:** Default is 80, used for access via Internet Explorer.
- **RTSP Port:** Default is 554, supports real-time preview and playback via RTSP using a fixed IP. RTSP Stream Format `rtsp://user:pwd@IP:554/mainstreamX` (X = channel number, starting from 0)
Example: `rtsp://admin:admin@10.20.112.17:554/mainstream0`

Application Settings



Click **[Preferences]-[Basic Setup]-[Application]**: This interface supports configuring the FTP server, which can be used to upload or download files and images

Status Information



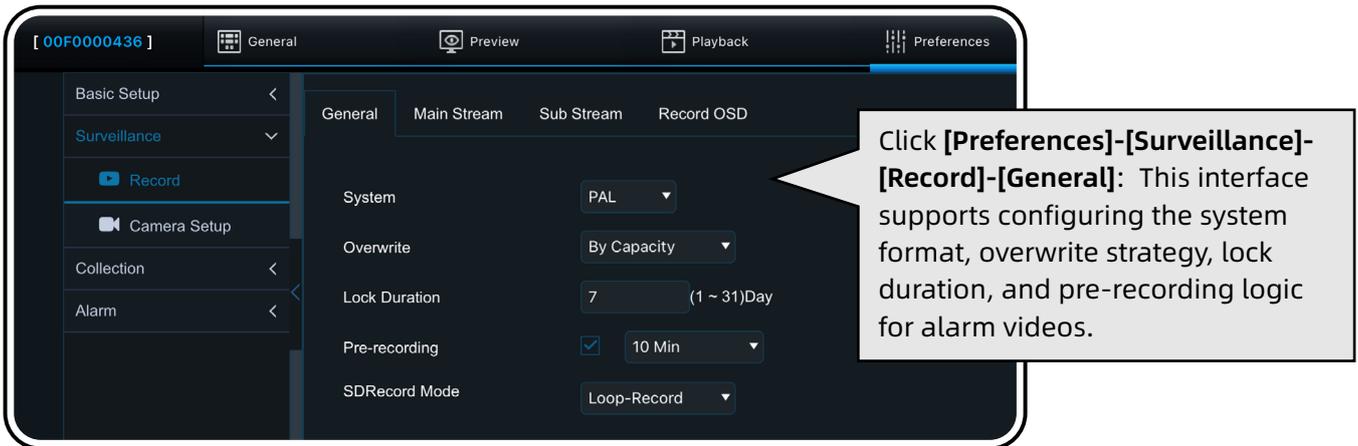
The screenshot shows the 'Status Information' interface. The top navigation bar includes 'General', 'Preview', 'Playback', and 'Preferences'. The left sidebar has 'Basic Setup' expanded, with 'Peripheral status' selected. The main content area displays the following status information:

Device voltage	6.80V
Car Keys Status	ON
Device Temperature	34.00 °C
Battery status	Not detected
Vehicle battery status	Connection
Vehicle ACC	Close
Vehicle battery voltage	9V

A callout box points to the 'Peripheral status' option in the sidebar, containing the text: "Click [Peripheral status]: On this interface, you can view information about the device, vehicle, and peripherals".

Recording

Recording Settings



The screenshot shows the 'Recording Settings' interface. The top navigation bar includes 'General', 'Preview', 'Playback', and 'Preferences'. The left sidebar has 'Surveillance' expanded, with 'Record' selected. The main content area displays the following settings:

System	PAL
Overwrite	By Capacity
Lock Duration	7 (1 ~ 31)Day
Pre-recording	<input checked="" type="checkbox"/> 10 Min
SDRecord Mode	Loop-Record

A callout box points to the 'Record' option in the sidebar, containing the text: "Click [Preferences]-[Surveillance]-[Record]-[General]: This interface supports configuring the system format, overwrite strategy, lock duration, and pre-recording logic for alarm videos."

Note

- **[System]:** Video system formats include PAL and NTSC.
- **[Overwrite]:**
 - **[By Days]:** Overwrites recordings by day, keeping only the most recent n days. If the SD card was full more than n days ago, it will start overwriting earlier.
 - **[By Capacity]:** Overwrites based on available storage; when free space is below 1%, old recordings are overwritten automatically.
 - **[Never]:** No overwriting; recording stops when the storage is full.
 - **[By Minutes]:** Same logic as **[By Days]**, but based on minutes instead.
 - **[Lock Duration]:** Time protection for locked recordings. To set recording lock, refer to the **Alarm** section.
- **[Pre-recording]:** During alarm-triggered recording, it includes footage from a configurable period before the alarm to aid in event analysis.
- **[SDRecord Mode]:** This option is invalid for Z5 as it supports only one SD card.

Channel	Enable	Resolution	Frame Rate	Quality	Encode Standard	Channel Name
1	<input checked="" type="checkbox"/>	1080P	10	3	H264	CH1
2	<input checked="" type="checkbox"/>	1080P	20	3	H264	CH2

Click **[Preferences]-[Surveillance]-[Record]-[Main Stream]**: This interface supports configuring the video resolution, frame rate, video quality, video compression standard, channel name, recording mode, video quality during alarms, and video encoding method for the main stream recording of each channel. Since the Z5 does not support audio, the audio-related settings on this page are invalid.

Note

- **[Resolution]**: Selectable video resolution. Z5 supports up to 2160P on Channel 1 and up to 1080P on Channel 2.
- **[Frame Rate]**: Selectable video frame rate.
- **[Quality]**: Selectable video quality level, from 1 (highest) to 8 (lower).
- **[Encode Standard]**: Selectable video compression standard: H.264 or H.265.
- **[Channel Name]**: Allows modification of the channel name.
- **[Record Mode]**: Selectable recording mode: Boot Recording / Scheduled Recording / Alarm Recording
- **[Alarm Quality]**: Selectable recording quality during alarms, from 1 (best) to 8 (lower).
- **[Encode Mode]**: Selectable video encoding method: CBR (Constant Bitrate) or VBR (Variable Bitrate).

Note

Since the Z5 supports only one SD card and can only record the main stream, all settings under **[Preferences] > [Surveillance] > [Record] > [Sub Stream]** only affect real-time preview and do not apply to recording.

General Main Stream Sub Stream Record OSD

Watermark Mode

Time Speed

Cargo box ID GPS

Channel Name Loading rate

Time Zone Alarm position

Position

Click **[Preferences]-[Surveillance]-[Record]-[Record OSD]**: Supports overlaying the selected information onto the recording video, which can be displayed during platform preview.

Record OSD Position

Cargo box ID YYYY-MM-DD HH:MM:SS Speed Position

Channel Name

Time Zone position

Click **[Setup]**, Supports drag-and-drop to set the overlay position for each type of information

Camera Settings

Basic Setup <

Surveillance >

Record

Camera Setup

Collection <

Alarm <

2024-09-19 16:40:53

GM 00:00:00

DKMWH

Install Angle 0°

Mirror Yes No

Flip Yes No

back

1 2

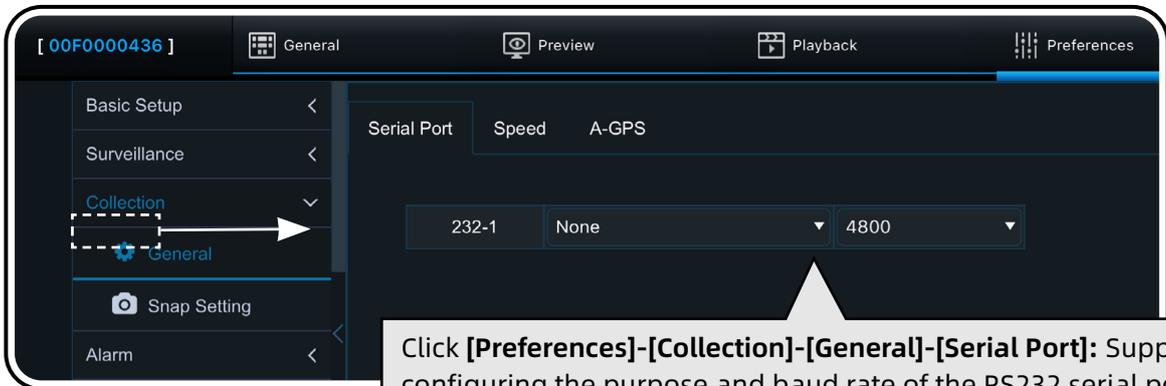
Click **[Preferences]-[Surveillance]-[Camera Setup]**: You can perform rotation, mirroring, and flipping operations on the video image

Warning

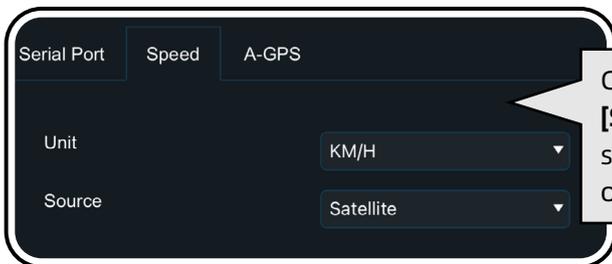
In general, the device is preset at the optimal viewing angle by default. Please do not adjust the angle or apply mirror/flip settings without a valid reason. The company is not responsible for any issues with video display or AI detection functions caused by unauthorized modifications.

Data Collection

General Settings

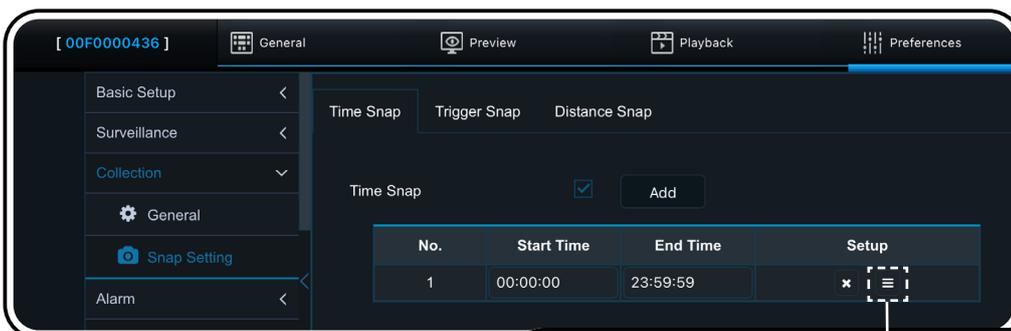


Click **[Preferences]-[Collection]-[General]-[Serial Port]**: Supports configuring the purpose and baud rate of the RS232 serial port (the baud rate is automatically set but also supports manual adjustment)

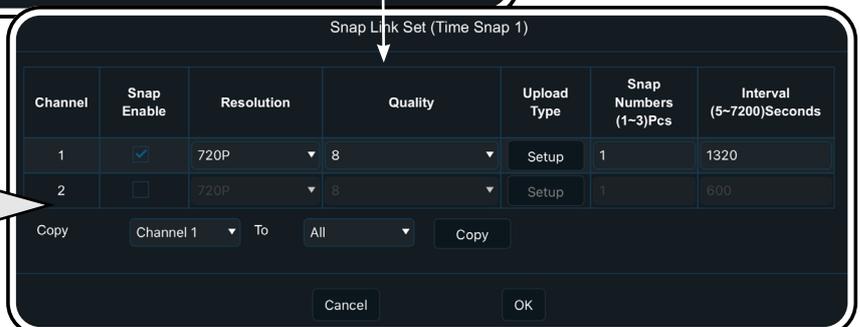


Click **[Preferences]-[Collection]-[General]-[Speed]**: This interface supports configuring the speed unit and speed source (currently, the Z5 only supports satellite as the speed source)

Snapshot Settings



Click **[Preferences]-[Collection]-[Snap Setting]-[Time Snap]**: Supports configuring timed capture strategies. Each time period can have separate capture parameters: channel, resolution, quality, upload method, number of captures, and capture interval. A maximum of 8 time periods is supported.



Time Snap Trigger Snap Distance Snap

Alarm Snap

Snap Link

Setup

Click **[Preferences]-[Collection]-[Snap Setting]-[Trigger Snap]**: Supports configuring ordinary alarm captures, with the same parameters as **[Time Snap]**

Snap Link Set (Alarm Snap)

Channel	Snap Enable	Resolution	Quality	Upload Type	Snap Numbers (1~3)Pcs	Interval (5~3600)Seconds
1	<input type="checkbox"/>	D1	1(Best)	Setup	1	5
2	<input type="checkbox"/>	D1	1(Best)	Setup	1	5

Copy Channel 1 To All Copy

Cancel OK

Warning

This interface is only related to standard (non-AI) alarms, such as IO alarms, GPS signal loss alarms, etc. Snapshots are triggered upon alarm activation. AI alarms have separate snapshot logic and a dedicated interface, which is independent of the settings on this page.

Time Snap Trigger Snap Distance Snap

Distance Interval

1000 (0.1KM)

Snap Link

Setup

Click **[Preferences]-[Collection]-[Snap Setting]-[Distance Snap]**: Supports configuring distance-based captures, with parameters largely the same as **[Time Snap]**. The only difference is that distance-based captures do not have a time interval setting

Snap Link Set (Distance Snap)

Channel	Snap Enable	Resolution	Quality	Upload Type	Snap Numbers (1~3)Pcs
1	<input type="checkbox"/>	CIF	1(Best)	Setup	1
2	<input type="checkbox"/>	CIF	1(Best)	Setup	1

Copy Channel 1 To All Copy

Cancel OK

Warning

The snapshot function consumes system resources. All channels share a limit of no more than 3 snapshots within 5 seconds. The company is not responsible for any system issues caused by exceeding this limit due to frequent snapshots.

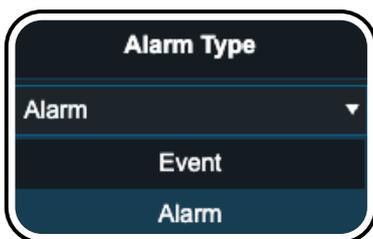
Working Mode Description

Working Mode	Z5 Judgment Logic	Power Saving Strategy in This Mode
Loading Mode	Vehicle speed = 0, cargo door is open, and the system determines the loading rate is increasing.	<ul style="list-style-type: none"> ● Sleep: See Industry Setting chapter ● Wake-up: See Startup Setting and Industry Setting chapters. Also, platform wake-up is supported
Unloading Mode	Vehicle speed = 0, cargo door is open, and the system determines the loading rate is decreasing.	
Freight Mode	Vehicle speed > 0	<ul style="list-style-type: none"> ● Sleep: Cargo door closed, enters sleep mode after 5 minutes of inactivity ● Wake-up: Based on Startup Setting and Industry Setting chapters; platform wake-up supported (G-Sensor wake-up not supported due to vehicle being in motion)
Sleep Mode	Vehicle speed = 0, cargo door closed, battery level ≥ 20%	<ul style="list-style-type: none"> ● Sleep: Fixed 5-minute delay before entering sleep mode ● Wake-up: Based on Startup Setting chapter; platform wake-up supported
Low Power Mode	Vehicle speed = 0, cargo door closed, battery level < 20%	<ul style="list-style-type: none"> ● Sleep: Fixed 5-minute delay before entering sleep mode ● Wake-up: Based on Startup Setting chapter; platform wake-up not supported

Note

- Vehicle speed is detected via GPS.
- Cargo door status (open/closed) is detected by the door sensor.
- The device does not record video while in sleep mode.

General Alarm Configuration Descriptions



Note

All alarms can be set to one of two **[Alarm Type]** options. To avoid redundant descriptions, the definitions are provided here for unified reference:

- **Alarm:** When set to Alarm, the device will record the alarm data and upload it to the platform.
- **Event:** When set to Event, the device will record the alarm data but will not upload it to the platform.

Trigger

Effective Time	<input type="text" value="10"/>	(0 ~ 10)Seconds
Do not refresh the alarm timer	<input checked="" type="checkbox"/>	

Linkage

Channel	<input type="checkbox"/> 1 <input type="checkbox"/> 2
Post Recording	<input type="text" value="1 Min"/>
Lock	<input type="checkbox"/>
Linkage IO Output	<input type="checkbox"/> 1
Output Delay Time	<input type="text" value="0"/> (0 ~ 255)Seconds
Linkage Screen	<input type="text" value="None"/>
Alarm Snap	<input type="checkbox"/>

Note

All alarms (including both AI and non-AI alarms) can be configured with **[Trigger]** and **[Linkage]** options. Some of these are common configuration items. To reduce repetitive explanations, the following unified descriptions apply:

- **[Effective Time]**: Specifies a time window during which multiple alarms of the same type are treated as a single alarm.
- **[Do not refresh the alarm timer]**:
 - Unchecked (default): Multiple alarms of the same type triggered within the effective time are considered as one, and the effective time will reset with each trigger
 - Checked: Multiple alarms of the same type within the effective time are still considered a single alarm; however, the effective time will not reset. This means if the total duration exceeds the defined effective time, the alarm will end when the time expires. A new alarm will be logged once the previous one ends, starting from that point in time.
- **[Channel]**: After the alarm ends, the selected channel(s) will be marked as having alarm recordings.
- **[Post Recording]**: After the alarm ends, video from the selected channel(s) will continue to be recorded for a defined duration and marked as alarm footage.
- **[Lock]**: Locked alarm recordings cannot be overwritten until the protection period ends or they are manually unlocked – even if the storage is full.
- **[Linkage IO Output]**: When the alarm is triggered, IO outputs can be activated to link with external devices.
- **[Output Delay Time]**: Sets the duration for which the IO output remains active after the alarm is triggered.
- **[Linkage Screen]**: This option is not supported on the Z5, as it does not support an external display.
- **[Alarm Snap]**: Available only in non-AI alarms. When enabled, it triggers image capture based on the logic configured in the **[Snap]** section.

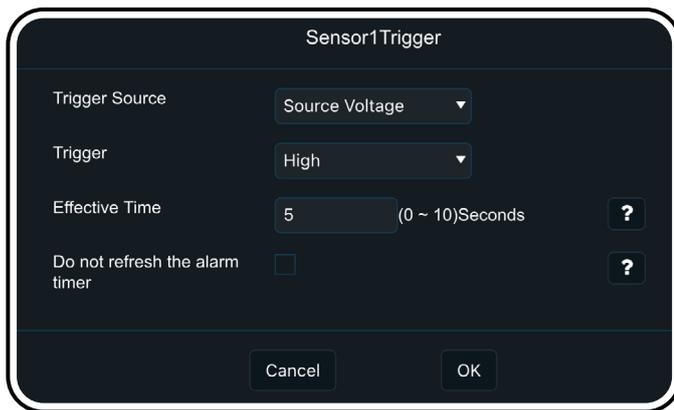
General Alarms

IO Alarms



Click **[Preferences]-[Alarm]-[Base]-[IO Alarm]**: Please select **[Sensor Uses]** according to the specific wiring method, such as left/right turn signals, reverse signals, etc.

Note The Z5 tail cable includes two Sensor IN wires.

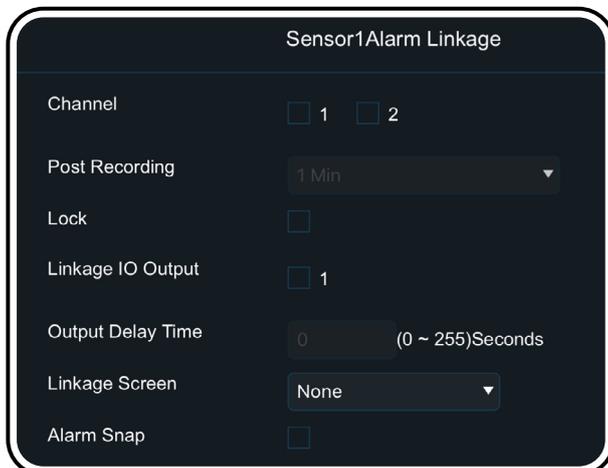


Click **[Trigger]**: Supports configuring the input source of the IO signal, with options for **[Voltage]** or **[Pulse]**. For description of other options, please refer to the **[General Alarm Configuration Descriptions]**

Note

IO Signal Input Sources:

- **High Level:** Normally low; triggered when the signal switches to high level
- **Low Level:** Normally high; triggered when the signal switches to low level
- **Pulse:** Normally low; triggered by a transition from low to high (pulse signal)



Click **[Linkage]**: For descriptions of all options, please refer to the **[General Alarm Configuration Descriptions]**.

Note

The Z5 tail cable includes one Sensor OUT wire

Overspeed Alarms

IO Alarm Speed Alarm **GPS Alarm** Cargo box alarm

Name	Enable	Alarm Type	Trigger	Linkage
Overspeed	<input type="checkbox"/>	Alarm	Setup	Setup

Click **[Preferences]-[Alarm]-[Base]-[Speed Alarm]**: Supports configuring parameters related to overspeed alarms

Overspeed Trigger

Preload Speed Difference: (0 ~ 200)KM/H

Speed: (1 ~ 200)KM/H

Duration Time: (0 ~ 255)Seconds

Click **[Trigger]**, when the vehicle speed exceeds the configured **[Speed]-[Preload Speed Difference]**, a warning will be triggered; when the vehicle speed exceeds the configured **[Speed]**, a voice reminder will be activated, and if the driver does not decelerate within the **[Duration Time]**, the alarm will be reported to the platform

Overspeed Alarm Linkage

Channel: 1 2

Post Recording:

Lock:

Linkage IO Output: 1

Output Delay Time: (0 ~ 255)Seconds

Linkage Screen:

Alarm Snap:

Click **[Linkage]**: Supports configuring the linkage function for overspeed alarms. For descriptions of all options, please refer to the **[General Alarm Configuration Descriptions]**

GPS Alarms

IO Alarm Speed Alarm **GPS Alarm** Cargo box alarm

Name	Enable	Alarm Type	Trigger	Linkage
GPS Alarm	<input checked="" type="checkbox"/>	Alarm	Setup	Setup

Click **[Preferences]-[Alarm]-[Base]-[GPS Alarm]**: When the GPS signal is lost, this alarm will be triggered

GPS Alarm Alarm Linkage

Channel: 1 2

Post Recording:

Lock:

Linkage IO Output: 1

Output Delay Time: (0 ~ 255)Seconds

Linkage Screen:

Alarm Snap:

GPS Alarm Trigger

Effective Time: (0 ~ 10)Seconds

Click **[Trigger]** and **[Linkage]**: For descriptions of all options, please refer to the **[General Alarm Configuration Descriptions]**

Cargo Box Alarms

Name	Enable	Alarm Type	Trigger	Linkage
Abnormal door opening alarm	<input checked="" type="checkbox"/>	Alarm	Setup	Setup
Loading/Unloading overtime alarm	<input checked="" type="checkbox"/>	Alarm	Setup	Setup
Abnormal loading/unloading alarm	<input checked="" type="checkbox"/>	Alarm	Setup	Setup
Low loading rate alarm	<input checked="" type="checkbox"/>	Alarm	Setup	Setup

Click **[Preferences]-[Alarm]-[Base]-[Cargo box alarm]**: Includes alerts for abnormal door opening, loading/unloading timeout, abnormal loading/unloading activities, and low loading rate, with the capability to configure related parameters.

Abnormal Door Opening Alarms

Abnormal loading/unloading alarm Trigger

Loading rate remains unchanged (0 ~ 60)Minute

Effective Time (0 ~ 10)Seconds

If the cargo compartment door is opened while the vehicle is in motion, an alarm will be triggered. Click **[Trigger]: [Duration Time]** to set the threshold for detecting the duration of abnormal door opening. If set to 0, it means an alarm will be triggered immediately upon detecting the cargo compartment door opening while the vehicle is in motion. For descriptions of other options, please refer to the general instructions.

Abnormal door opening alarm Alarm Linkage

Channel 1 2

Post Recording

Lock

Linkage IO Output 1

Output Delay Time (0 ~ 255)Seconds

Linkage Screen

Alarm Snap

Click **[Linkage]**: For option descriptions, please refer to the **[General Alarm Configuration Descriptions]**.

Loading/Unloading Timeout Alarms

Loading/Unloading overtime alarm Trigger

Loading overtime (30 ~ 255)Minute

Unloading overtime (30 ~ 255)Minute

Effective Time (0 ~ 10)Seconds

Click **[Trigger]**, the preset duration for loading/unloading operations can be configured. If the duration of a single loading/unloading operation exceeds the specified time, this alarm will be triggered. For descriptions of other options, please refer to the **[General Alarm Configuration Descriptions]**

Loading/Unloading overtime alarm Alarm Linkage

Channel 1 2

Post Recording

Lock

Linkage IO Output 1

Output Delay Time (0 ~ 255)Seconds

Linkage Screen

Alarm Snap

Click **[Linkage]**: For option descriptions, please refer to the **[General Alarm Configuration Descriptions]**.

Abnormal Loading/Unloading Alarms

Abnormal loading/unloading alarm Trigger

Loading rate remains unchanged (0 ~ 60)Minute

Effective Time (0 ~ 10)Seconds

Click **[Trigger]** The duration during which the loading rate remains unchanged for a single loading/unloading operation can be configured. If this duration is exceeded, an alarm will be triggered. For descriptions of other options, please refer to the general instructions. can be configured. If this duration is exceeded, an alarm will be triggered. For descriptions of other options, please refer to the general instructions.

Abnormal loading/unloading alarm Alarm Linkage

Channel 1 2

Post Recording

Lock

Linkage IO Output 1

Output Delay Time (0 ~ 255)Seconds

Linkage Screen

Alarm Snap

Click **[Linkage]**: For option descriptions, please refer to the **[General Alarm Configuration Descriptions]**.

Low Loading Rate Alarms

Low loading rate alarm Trigger

Loading rate (1 ~ 100)%
Duration Time (1 ~ 255)Seconds

Click **[Trigger]**, the loading rate threshold can be configured. If the loading rate after a single loading operation is lower than this threshold, an alarm will be triggered. For descriptions of other options, please refer to the general instructions.

Loading/Unloading overtime alarm Alarm Linkage

Channel 1 2
Post Recording
Lock
Linkage IO Output 1
Output Delay Time (0 ~ 255)Seconds
Linkage Screen
Alarm Snap

Click **[Linkage]**: For option descriptions, please refer to the **[General Alarm Configuration Descriptions]**.

Video Blocking Alarms

The screenshot shows the main interface with the 'Preferences' tab selected. On the left, a sidebar menu has 'Alarm' expanded to 'Video' and then 'Cover'. The main area displays a table with the following data:

Name	Enable	Alarm Type	Trigger	Linkage
Cover	<input checked="" type="checkbox"/>	Alarm	Setup	Setup

Click **[Preferences]-[Alarm]-[Video]-[Cover]**: When the algorithm detects that the camera is obstructed, this alarm will be triggered, and it supports configuring related parameters.

The 'Cover Trigger' configuration page includes the following settings:

- Channel: 1 2
- Sensitivity: Low
- Duration Time: 5 (0 ~ 255)Seconds
- Effective Time: 10 (0 ~ 10)Seconds
- Do not refresh the alarm timer:
- Speed Range: \geq 0 KM/H

Click **[Trigger]**, the channels to be detected for obstruction, sensitivity, duration threshold for continuous obstruction, and speed threshold can be configured. For descriptions of other options, please refer to the **[General Alarm Configuration Descriptions]**.

The 'Cover Alarm Linkage' configuration page includes the following settings:

- Channel: 1 2
- Post Recording: 1 Min
- Lock:
- Linkage IO Output: 1
- Output Delay Time: 0 (0 ~ 255)Seconds
- Linkage Screen: None
- Alarm Snap:

Click **[Linkage]**: For option descriptions, please refer to the **[General Alarm Configuration Descriptions]**.

Aggressive Driving Alarms

Click **[Preferences]-[Alarm]-[Advanced]-[Driver Behavior alarm]**: This alarm is detected and triggered by the G-Sensor, commonly referred to as the G-Sensor alarm. The G-Sensor can be set to either automatic calibration or manual calibration.

Click **[Trigger]**: You can adjust the **[Offset]** value to modify the sensitivity of each alarm: the smaller the offset value, the more sensitive the alarm detection. You can also select the vehicle type to use the corresponding inertial sensor model, thereby achieving optimal detection performance. For descriptions of other options, please refer to the **[General Alarm Configuration Descriptions]**

Alarm Name	Enable	Offset	Speed
Harsh Braking	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Hard Acceleration	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Harsh Left Turn	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Harsh Right Turn	<input checked="" type="checkbox"/>	0.5 (0.001 ~ 1)	20 ~ 50 (0~200)KM/H
Shock	<input type="checkbox"/>	X: 1 (0.1 ~ 8) Y: 1 (0.1 ~ 8) Z: 2 (0.1 ~ 8)	

Effective Time: 10 (0 ~ 10)Seconds

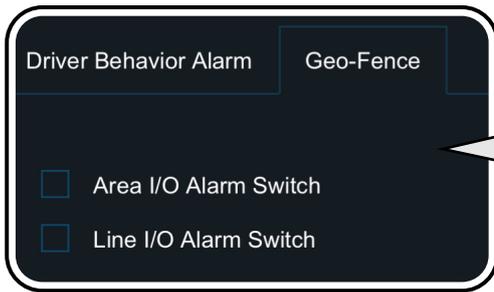
Recommended Setting: Light Duty (≤ 6 tons), Medium Duty (≤ 14 tons), Heavy Duty (> 14 tons)

Click **[Linkage]**: For option descriptions, please refer to the **[General Alarm Configuration Descriptions]**.

Note

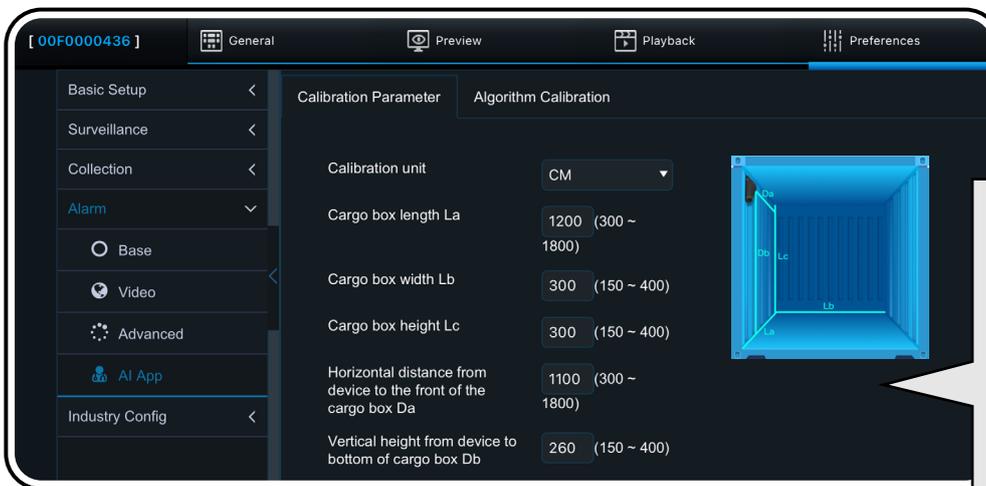
The Z5 does not support audio, so the **[MP3 Voice]** option is not functional.

Electronic Fence Alarms



Click **[Preferences]-[Alarm]-[Advanced]-[Geo-Fence]**: In this interface, you can select the strategy for handling entry/exit of fences or routes. This feature requires coordination with the FT Cloud platform.

Calibration Parameters



Click **[Preferences]-[Alarm]-[AI App]-[Calibration Parameter]**: In this interface, you can precisely fill in the calibration parameters based on the installation position of the device.

Warning

The calibration parameters on this interface are used for display on the device's web interface. You may ignore this interface and directly follow the steps outlined in the [Algorithm Calibration] section to fill in the parameters and perform algorithm calibration. The parameters in both places are synchronized.

Industry Settings

Loading/Unloading Mode Settings

The screenshot displays the 'Industry Settings' interface. The top navigation bar includes 'General', 'Preview', 'Playback', and 'Preferences'. The left sidebar lists various settings categories: 'Basic Setup', 'Surveillance', 'Collection', 'Alarm', 'Industry Config', and 'Industry Config'. The main content area is titled 'Loading/Unloading mode setup' and contains the following settings:

- Upload Interval of Loading Rate:** 60 (20 ~ 3600)Seconds
- Loading/Unloading mode sleep and wake-up enable:**
- Sleep trigger setup**
 - G-sensor trigger Sleep parameter**
 - Threshold:** 0.2 (0.01 ~ 9.9)g
 - Loading conditions:** Load rate varia (0 ~ 100)%
 - Duration time:** 5 (1 ~ 255)Minute
- Wakeup trigger setup**
 - G-sensor trigger Wake-up parameter**
 - Threshold:** 0.2 (0.01 ~ 9.9)g
 - Timed Wake-up interval:** 30 (5 ~ 255)Minute

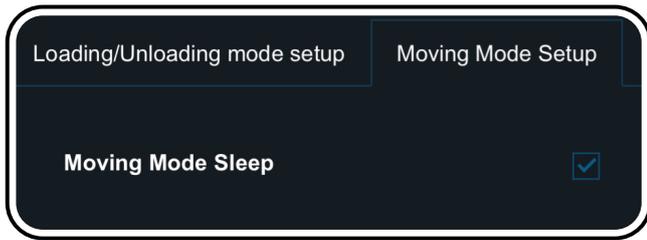
Click **[Preferences]-[Industry Config]-[Industry Config]-[Loading/Unloading mode setup]**: In this interface, you can configure the loading rate reporting interval and the sleep-wake logic in loading/unloading mode.

Note

Using the values in the above figure as an example:

- **Sleep - [Sleep Trigger Setup]:** When the G-sensor value is below 0.2g and the load rate change is less than 5% (or "No Cargo" is selected, indicating a no-cargo status - 0% loading rate), and both conditions persist for 5 minutes, the device will enter sleep mode.
- **Wake-up - [Wakeup Trigger Setup]:** A device that enters sleep mode during loading/unloading mode will follow other standard wake-up methods (see the **Startup Setting** section). In addition, the G-sensor wake-up on this interface supports configurable parameters (different from the G-sensor wake-up in the **Startup Setting** Section) and also allows for scheduled wake-up settings.

Freight Mode Settings



Click **[Preferences]-[Industry Config]-[Industry Config]-[Moving Mode Setup]**:
In this interface, you can choose whether to enable sleep mode in freight mode.

Note

In freight mode, if **[Moving Mode Sleep]** is selected, the device will enter sleep mode after 5 minutes. While in sleep mode, the device follows the standard wake-up methods (see the **Startup Setting** section). However, due to continuous vehicle movement, G-Sensor wake-up is not supported.