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PRODUCT USER MANUAL

0-870-63 (MDVR Connected)

0-870-64 (Standalone Module)

Low Bridge Detection Kit

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Content

1. Overview

This 0-870-63/64 Product Instruction Manual aims to better understand the functions of the equipment system, and guide users to better understand and apply these functions.

Note that the specification is only for the product operation instructions written by the browser, and the device setup operation is limited to professional operation & maintenance personnel.

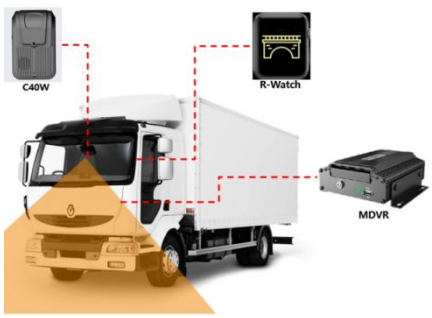
We have the right to finally interpret this document and reserve the right to correct or change the information and description; any change will occur without notice.

1.1.The system introduction

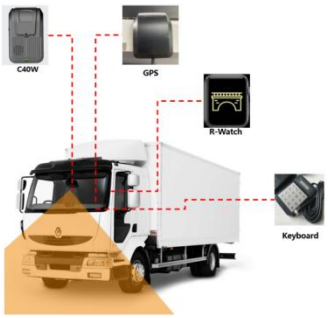
The 0-870-63/64 is an intelligent IPC installed in the front windshield of the vehicle to monitor the road conditions in front of the vehicle, to support the identification of bridge holes and height limit plates, road sign identification and detection, and standard ADAS functions. The built-in MIC and horn, a solution with MDVR, can realize the recording and forward traffic alarm warning in the cockpit; 0-870-63/64 also supports single work, the equipment can connect the vehicle, and access the vehicle status signal, GPS signal and R-watch prompt through the external power box, realizing real-time road condition detection and alarm reminder.

For the bridge height limit detection scenario, the device also supports external keyboard input and RFID wireless reading scheme, which is used for scenarios with variable vehicle height (such as agricultural machinery, warehouse and rail trucks, which will change with the load). The real-time vehicle height value of the vehicle can be searched and modified through the keyboard. Or through the RFID wireless reader with RFID tags to automatically update the height of the trailer car, save the tedious measurement work. The product has reliable quality, convenient installation, simple use and high cost performance.

1、Fixed vehicle height scenario：

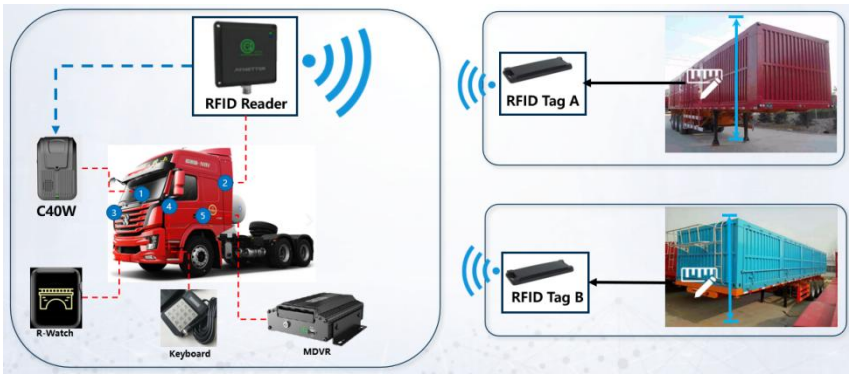


System diagram (slave version)



System diagram (standalone version)

2、 Variable vehicle height scenario：



System diagram (slave version)

System diagram (standalone version)

Introduction to the system composition:

0-870-63/64: built-in intelligent camera with bridge hole height limit, road sign detection and standard ADAS function, used for road condition monitoring at the front side of the vehicle;

R-Watch 0-870-23 intelligent prompt device: provide real-time auxiliary driving information display for the driver through the illustration with sound reminder or warning;

Keypads Keyboard 0-870-66 (*not included as standard*): a keyboard with digital information input function, used to adjust the relevant parameters of the 0-870-63/64 camera;

GPS (stand-alone version): to provide positioning information for 0-870-63/64

Power module box: expand the 0-870-63/64 external interface and enable it to

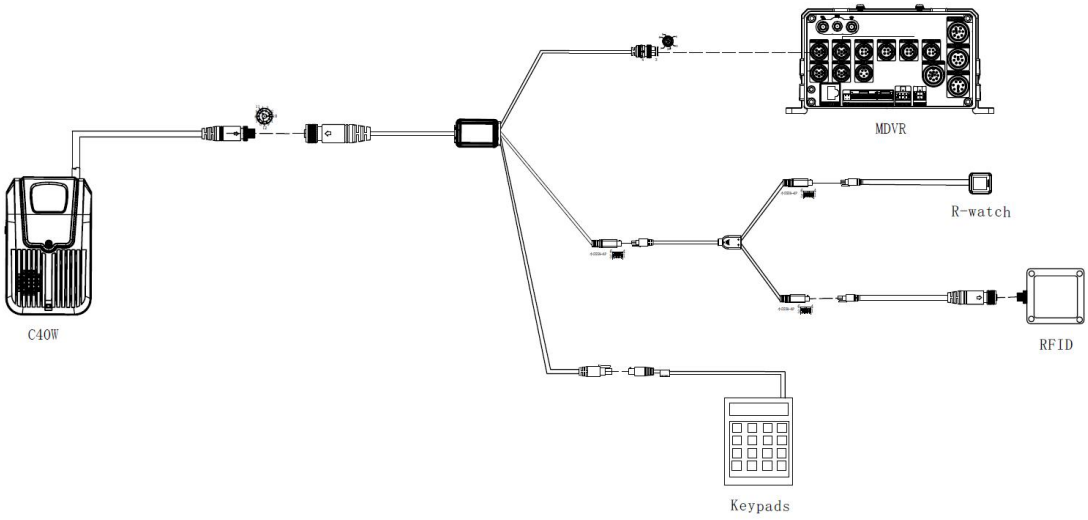
support vehicle power supply and signal communication.

RFID tag: write the measured trailer box information through the dedicated RFID card writer.

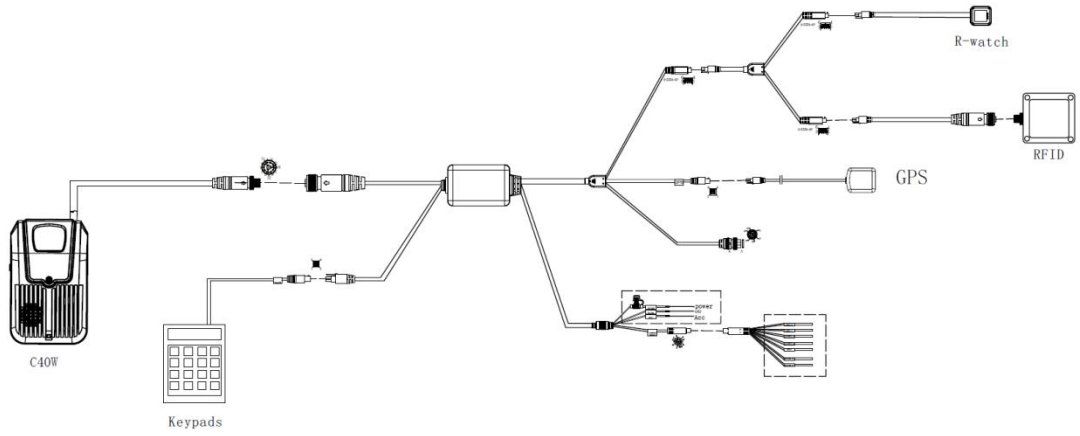
RFID wireless card reader: can read the car height information in the RFID tag to the 0-870-63/64, adjust the calibration related parameters.

1.2. The system composition

1. The wiring mode of the following figure is as follows: the wiring scheme of the 0-870-63 slave version.



2. The wiring mode shown in the following figure is as follows: the wiring scheme of the 0-870-64 stand-alone version.



1.3 Function overview

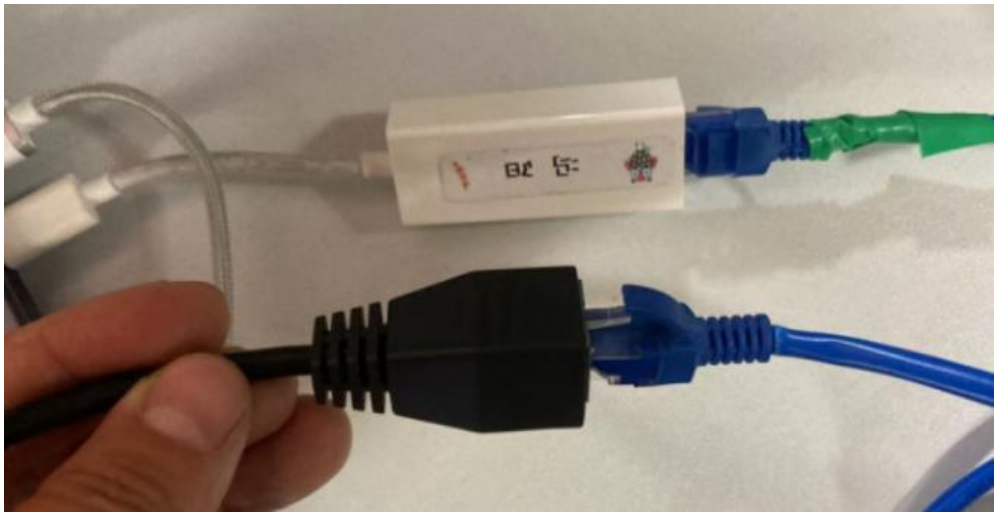
The 0-870-63/64 is an intelligent IPC installed in the front windshield of the vehicle to monitor the road conditions in front of the vehicle, to support the identification of bridge holes and height limit plates, road sign identification and detection, and standard ADAS functions. Its functional features are as follows:

- Support the bridge standard ADAS function and the bridge tunnel height limit detection function
- Resolution: 2688 * 1520 @ 25 fps or 30 fps
- Support the H.264 / H.265 code and support the N9M 2.0 protocol
- Single machine version (vehicle electric power supply) and slave version (PON power supply) are optional, and ADAS function only supports slave machine
- Intelligent black light scheme, the night image effect is significantly better than similar products
- Multiple lens sizes available; default with 8.5mm lens, HFOV 52°
- The height limit function can be adapted to models with a front windshield inclination of 43°~90° (which may vary according to the specific lens)
- The standard ADAS feature is models with a front windshield tilt of 20 ° to 95 °
- Built-in MIC and speaker, realize the audio collection and voice alarm reminder in the car
- Support out and out, can be flexibly adapted to a variety of models
- For the detection scene of bridge height limit: the external keyboard is supported to query and modify the height information of the car in real time, and the RFID wireless reading scheme is implemented to update the height information of the trailer car, and the comprehensive judgment of map data and image fusion is supported.

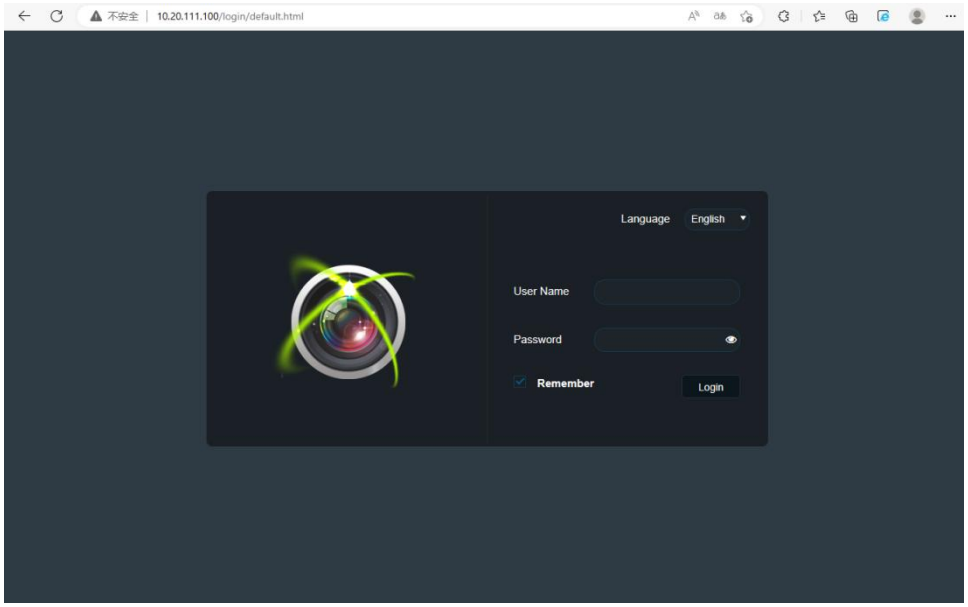
2. Functional use instructions

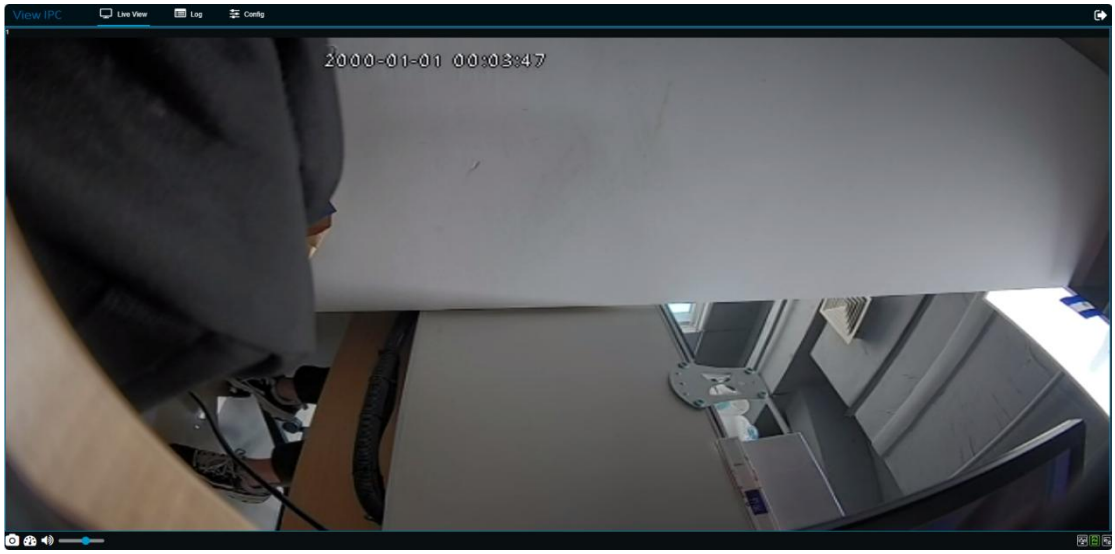
2.1.Interface login

After the equipment is powered on, the tail line of 0-870-63/64 is connected with the foundation expansion line or the expansion power box, and the expanded 6 PIN M12 aviation head is connected with the network port transfer connection, and connected to the computer.



Search for the device IP on the IP search software, and then copy the searched IP to the browser. After the page is opened, enter the account number / password: admin / admin, and enter the operation interface after login.

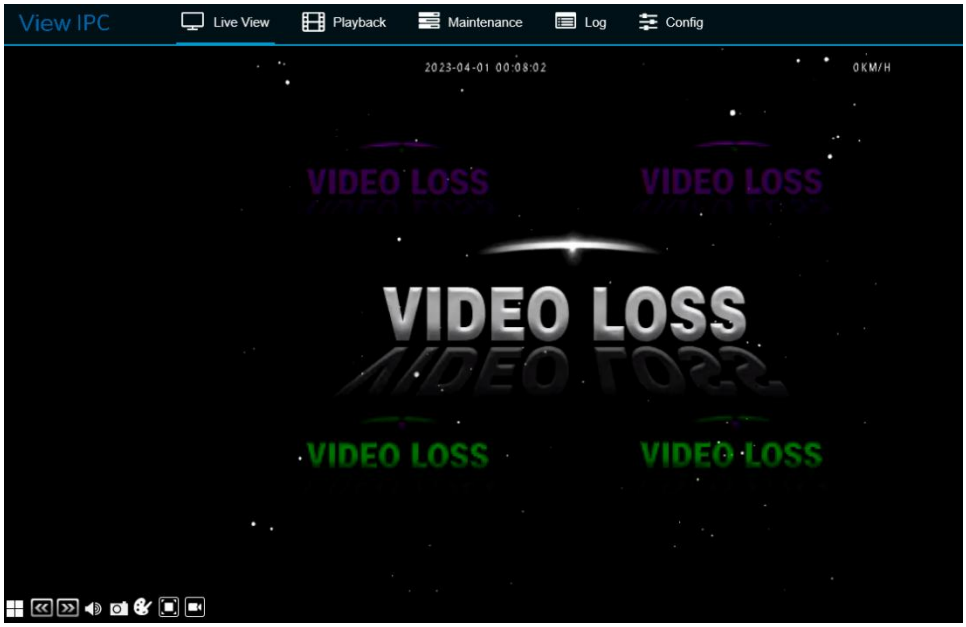




2.2. A preview of the survey

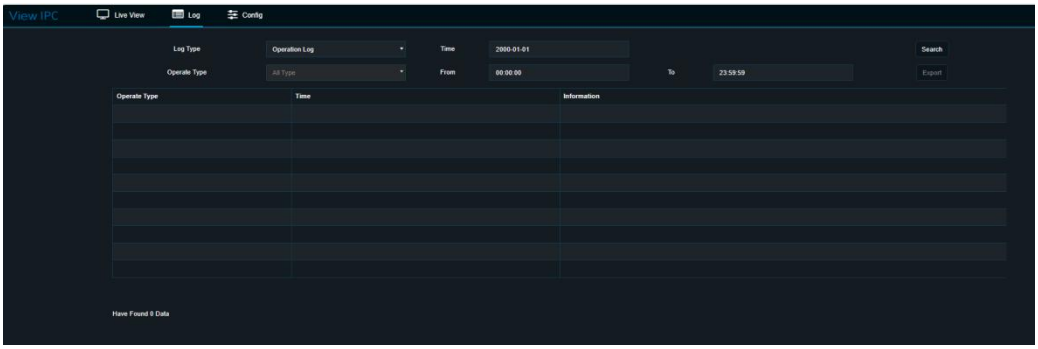
The preview interface can view the real-time screen, click the lower left button to perform on / off sound, screenshot, adjustment and other operations; click the lower right button to perform the main / subcode stream switch of the image preview.

If the camera is not connected or the camera has damaged the channel, the Video LOSS will appear.



2.3. Log book

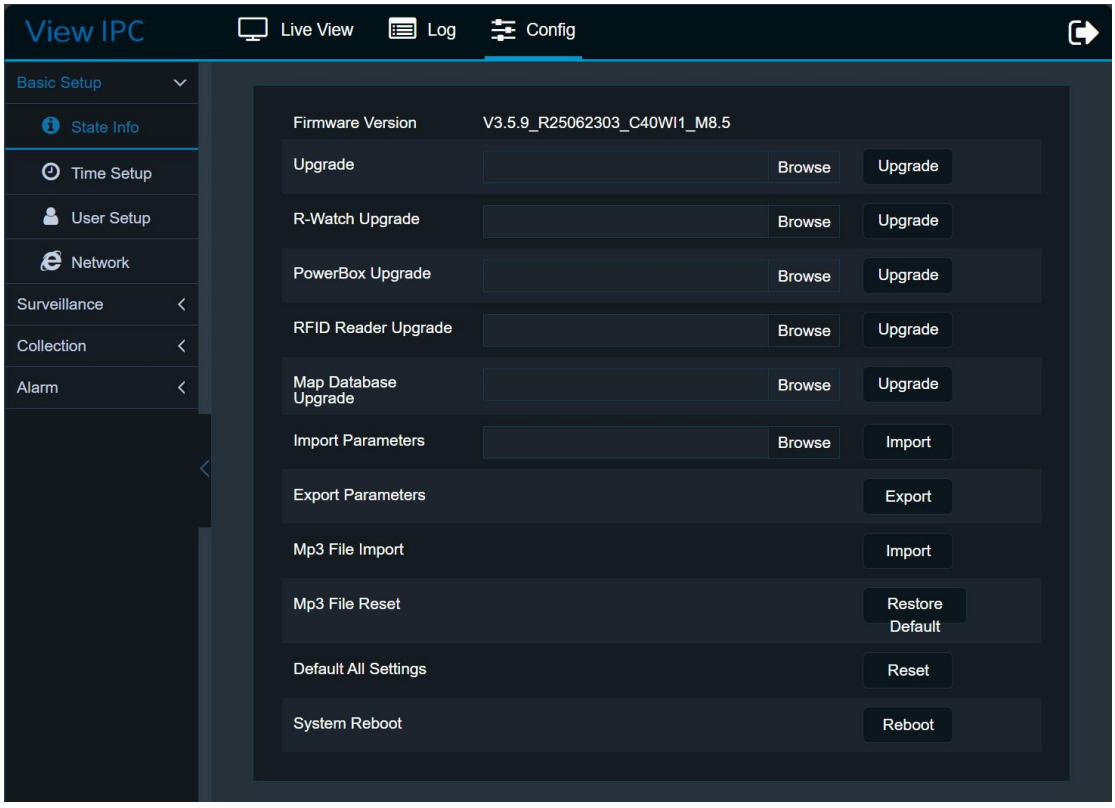
Click on the [Log] interface to view the data recorded by all the logs, and export the log data for the required time period as required.
In the log query interface, you can view the [alarm log], [operation log];



Click the [Export] button to export the current log type.

2.4.Basic configuration

Click the [Config / Configuration] tab to enter the configuration interface



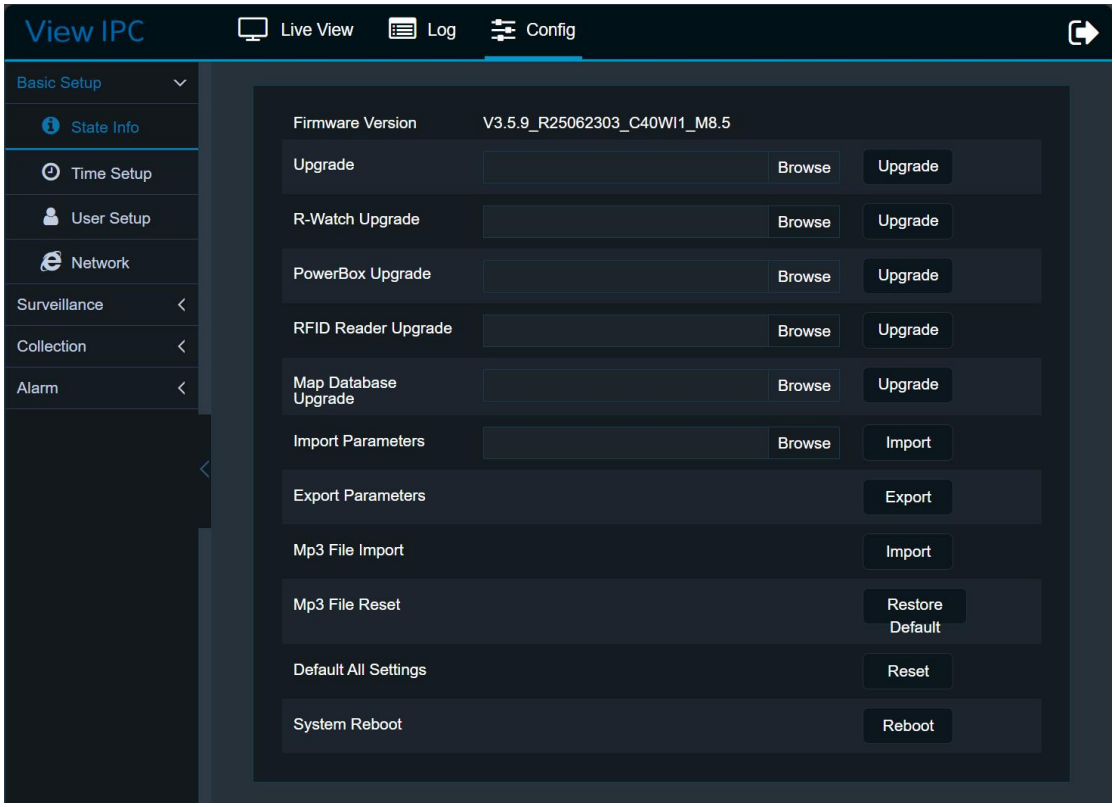
2.4.1 Status information

In the [State Info] interface, you can query the firmware version number of the

device software, and realize the functions of device software, MP3 broadcast voice upgrade, import/export parameters, restore factory Settings and system restart.

Firmware upgrade of cascaded R-Watch, power box and RFID wireless reader can be realized.

The built-in Map Database of the device can be upgraded through [Map Database Upgrade].



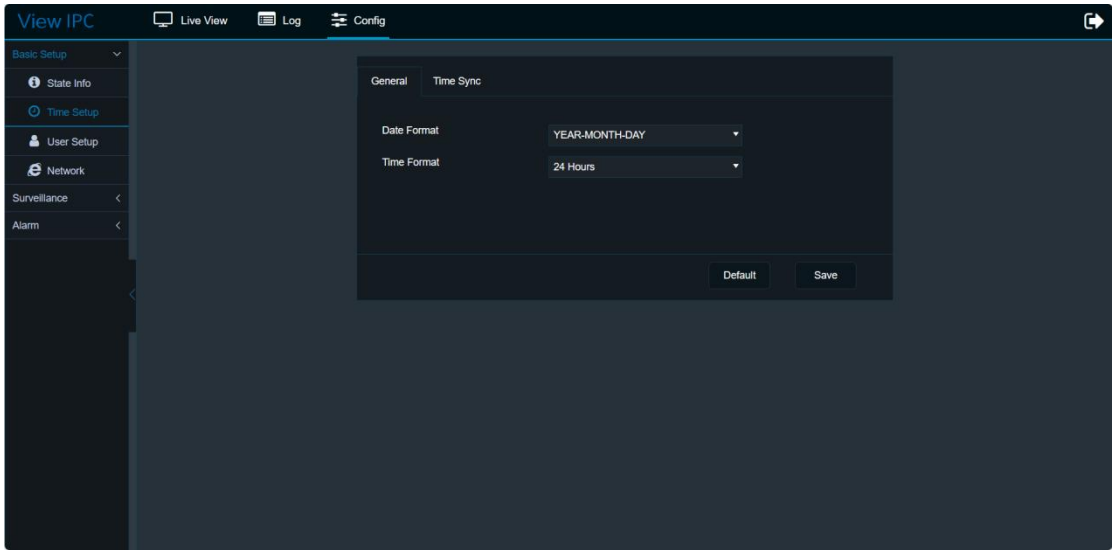
2.4.2 Time Setup

In the [Time Setup / Time Settings] column, the user can set the relevant information about the system time.

Date time format: The time setting column can set the time display format and the time zone.

1、 Date format: optional year / month / day, month / day / year, day / month / year; reflected in direct and video OSD;

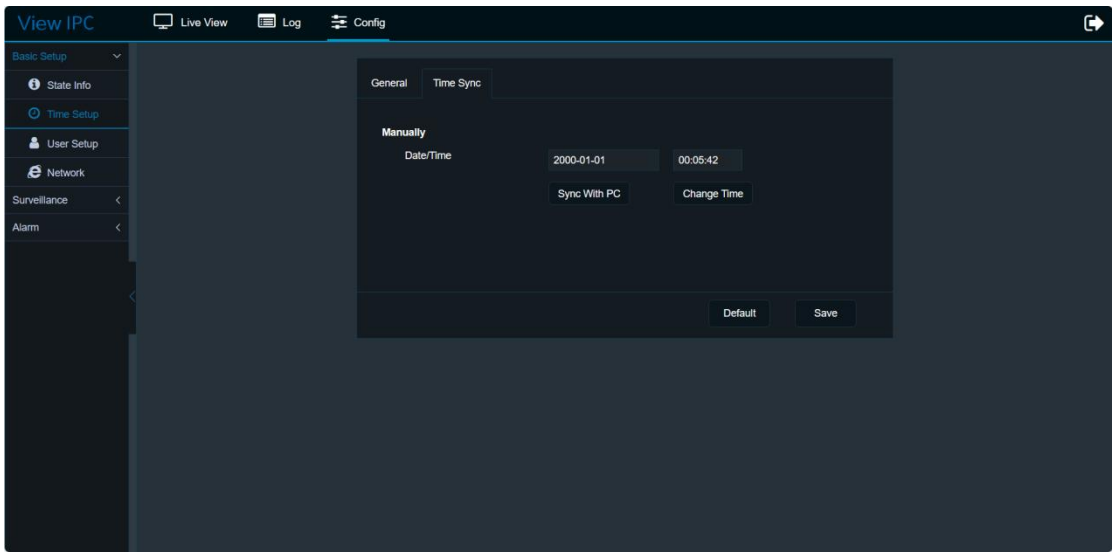
2、 Time format: optional 24 hour and 12 hours; reflected in direct and video OSD.



—— Time mode:

1、 The date and time can be modified manually, click [Charge Time / Modify System Time] to modify;

2、 You can also click [Sync With PC] to synchronize the OS time to the device.

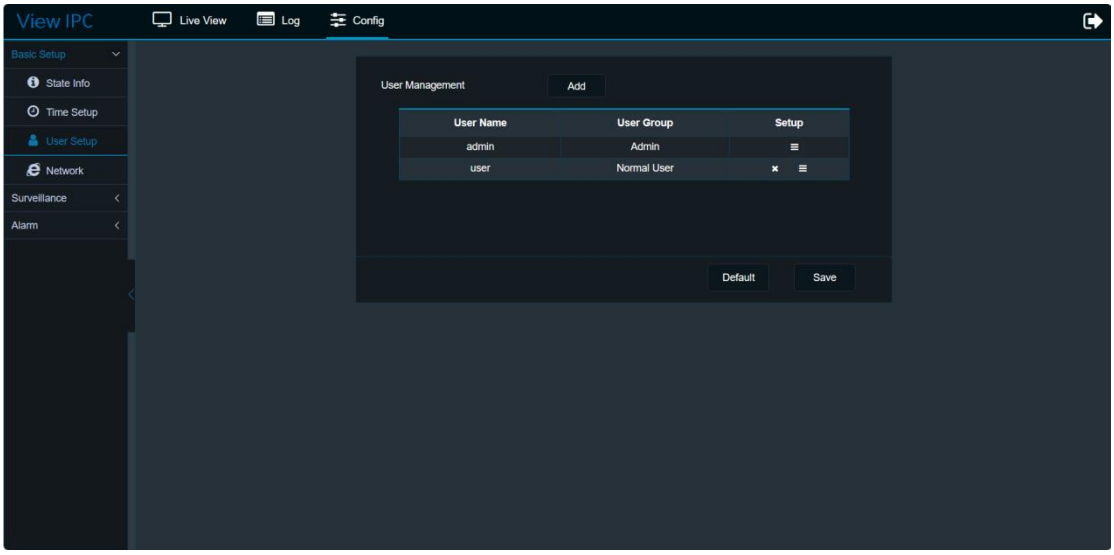


Note: The time system of the current stand-alone version 0-870-64 shall be subject to the initial setting time. In the subsequent official version, the stand-alone version will add GPS module for calibration, and the solution version will automatically trigger the time calibration after each device starts and reaches certain conditions.

2.4.3 User Settings

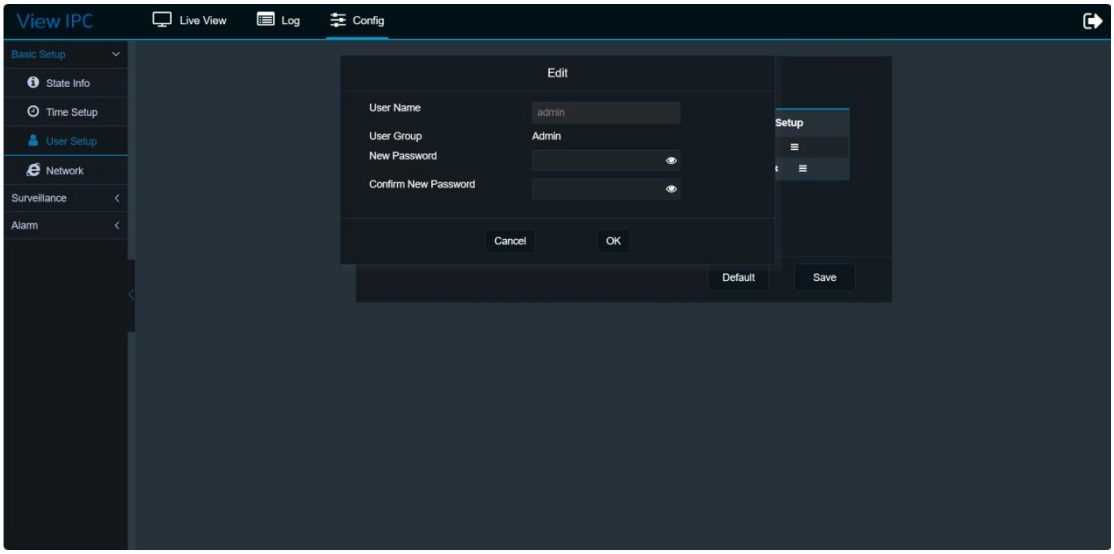
Click [Config / Configuration]> [Basic Setup / Basic Settings]> [User Setup / User Settings], and the user can adjust the user's name and password through this

interface.as illustrated in following figure:



1、 Click the [Add / Add] button to add users;

2、 Click the button of the user setting column to set the user login account password; 



3、 admin (Administrator): default with an administrator account. With add / delete ordinary user rights (as shown below), set parameter rights, and add up to two ordinary users. The default password for the admin account is admin

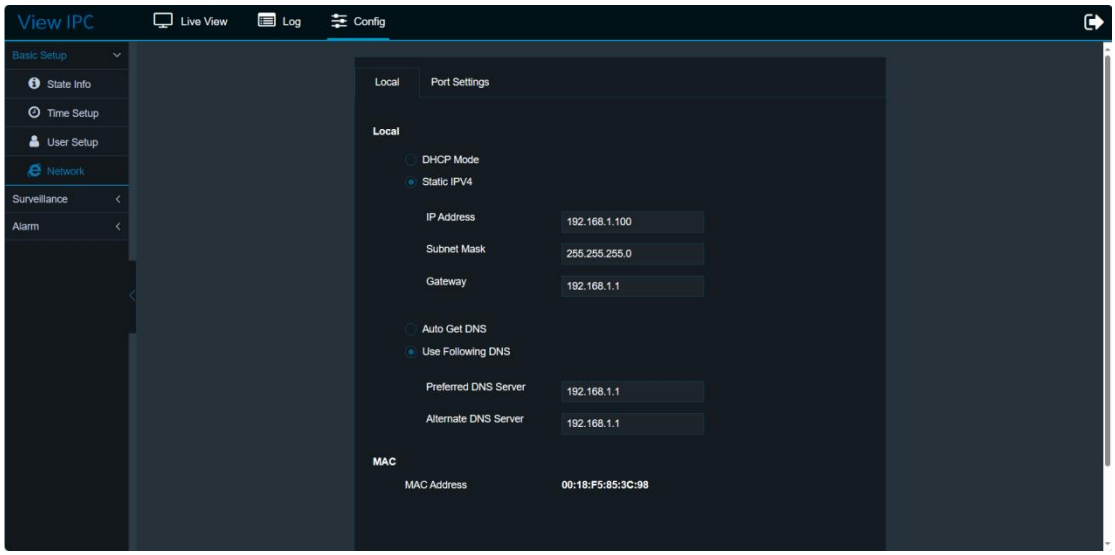
4、 User (ordinary user): Only the query setting permissions.

2.4.4 Network Settings

Users can enter the [Network / Network Settings] interface to set the wired

network parameters of the device

Click [Config / Configuration]> [Basic Setup / Basic Settings]> [Network / Network Settings]> [Local / wired network], the interface is as follows:



1. [D HCP]: To automatically obtain the IP address. After checking, the network automatically assigns a dynamic IP address, and DNS can be both dynamic and static formulation;

2. [Static IP]: The static IP address. Using the set static IP address, the DNS must be statically specified;

3. MAC address: The MAC address of each machine is unique

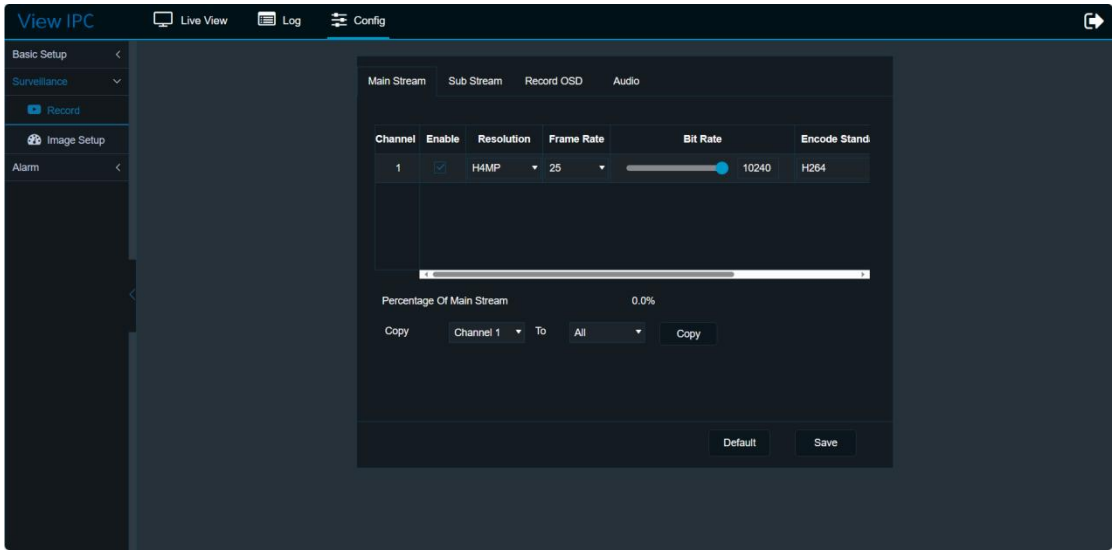
4. Port Settings: Direct connection port Settings: the default is 80, and this port will be used during IE access.

2.5. Video surveillance

2.5.1 Video recording Settings

2.5.1.1 Main code stream settings

The interface can set the video recording mode, video recording parameters and sound recording parameters for each channel. Click [Config / Configuration]> [Surveillance / Video Monitoring]> [Record / video setting]> [Main / Main code stream], the interface is as follows:



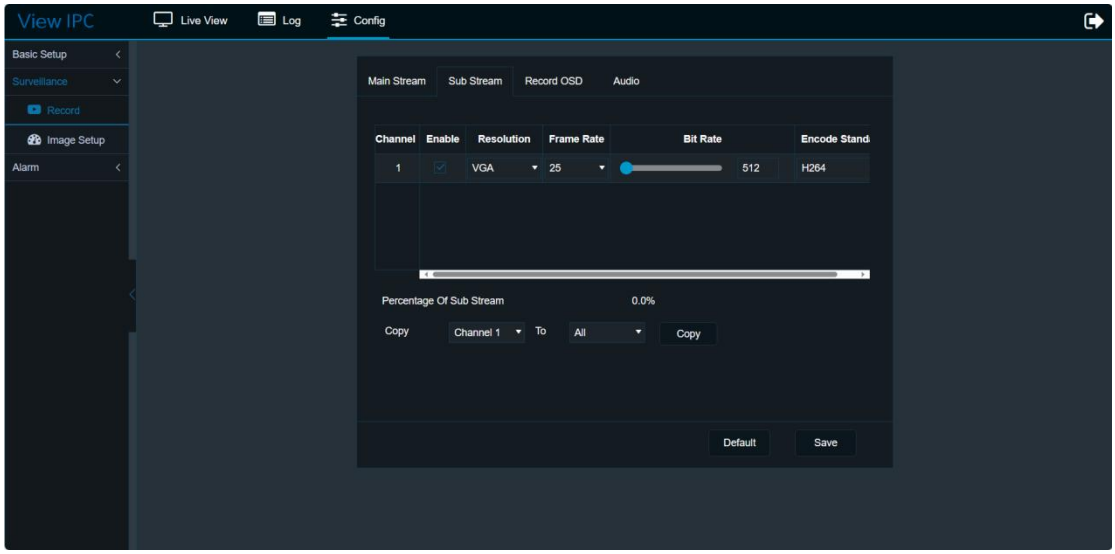
⚠ Note: each channel can be set separately for video recording;

1. [Enable video function]: Check the main code stream video function will be enabled.
2. [Resolution setting]: If the analog camera is connected, choose 720P / 1080P.
3. [Frame rate]: Video frame rate, that is, the number of frames played in one second. N system optional 1-30 frames, P system optional 1-25 frames;
4. [Picture quality]: video picture quality, optional 1-8, the smaller the number, the better the picture quality, the picture quality 1 is the best;
5. [Coding standard]: optional H264 and H265, default H264;
6. [Channel name]: You can customize the channel name;
7. **[Coding mode]: optional VBR (variable rate) and CBR (fixed rate) video coding format;**

2.5.1.2 Subcode flow setting

The interface can set the sub stream video recording parameters and recording parameters for each channel.

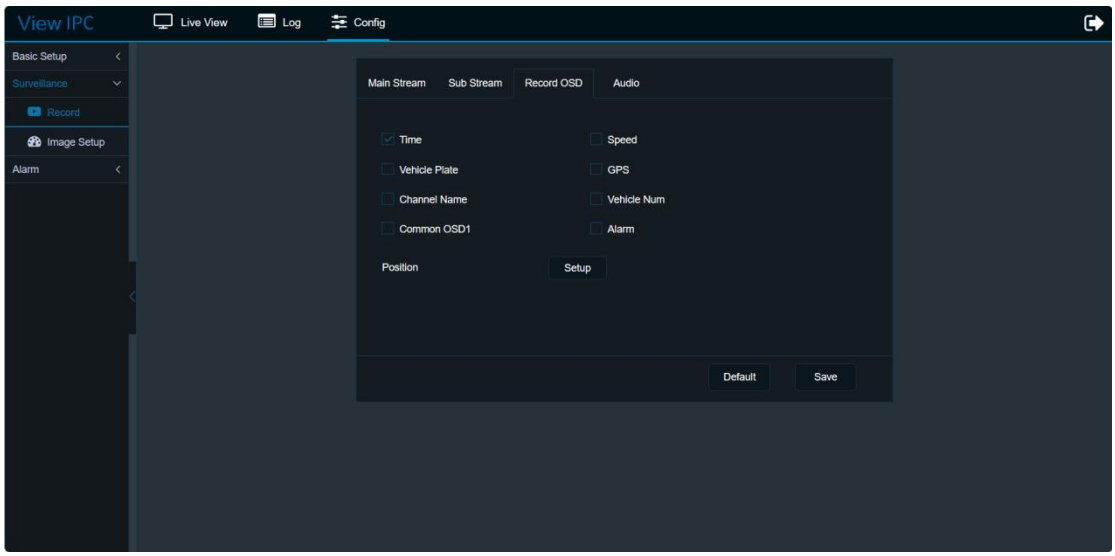
Click [Config / Configuration]> [Surveillance / Video Monitoring]> [Record / Video Settings]> [Sub Stream / Sub stream], the interface is as follows:



The detailed parameters are the same as the main code stream and are not listed individually here.

2.5.1.3Video OSD stack

Click [Config / Configuration]> [Surveillance / Video Surveillance]> [Record / Video Settings]> [Record OSD / Video Settings OSD] to enter the video superposition setting interface, the interface is as follows:



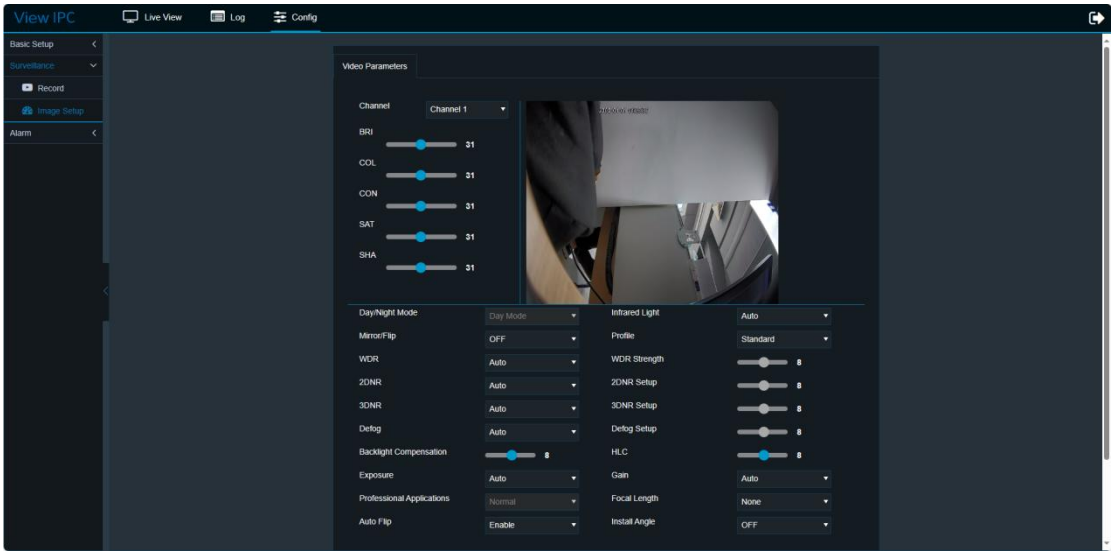
The OSD here is the function of video recording to overlay the selected information on the video recording display.

Click the [setup / Settings] button in the [Position / Settings location] bar to customize the position of each stack box in the video.

Each stack checked is displayed in the main stream video and the sub stream video.

2.5.2 Image Settings

In the image Settings, the image can be mirror, flip setting. Click [Config / Configuration]> [Surveillance / Video Monitoring]> [Image Setup / Image Settings], the interface is shown below:



After setting the parameters, click Save to take effect.

2.6.The data acquisition

2.6.1 Basic data acquisition

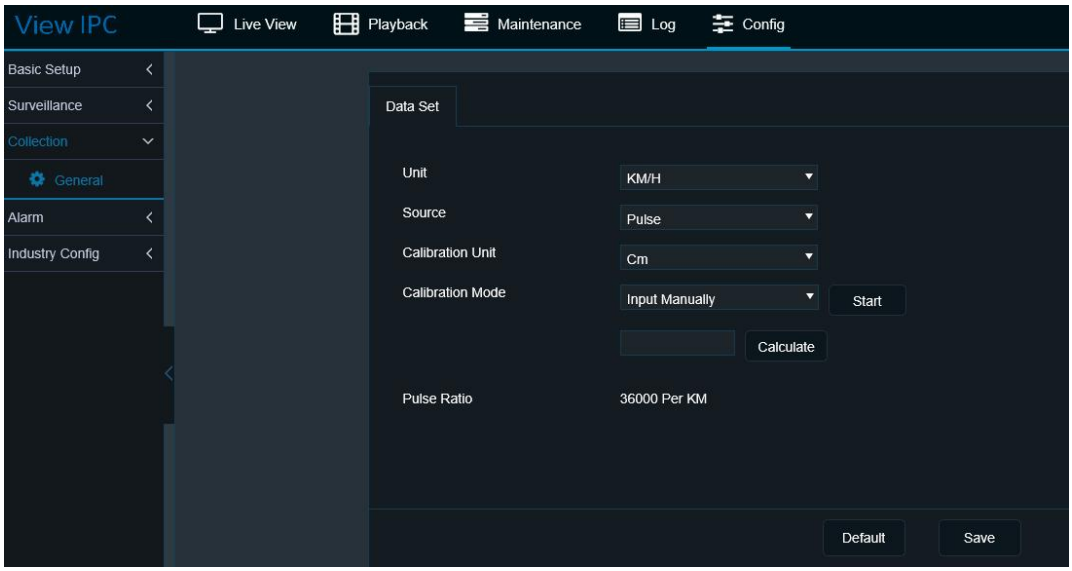
Click [config / Settings]> [Collection / Data Collection]> [General / Basic Data]> [Dataset / Data Settings] interface, which can be set as follows:

[Speed unit] Support for KM / H and MPH;

[Signal type] Support for GPS speed;

[Calibration units] Support for cm and metres;

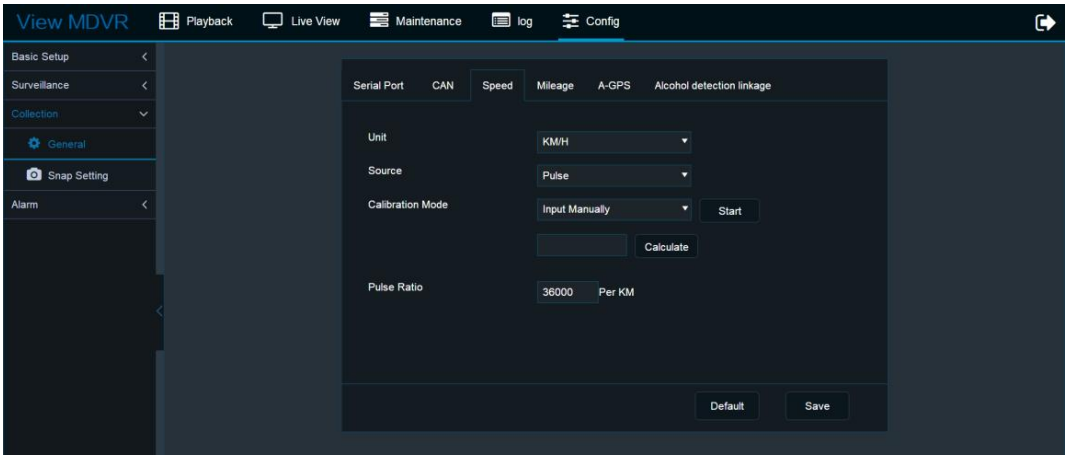
[Pulse calibration method] input mileage calibration, automatic calibration and manual input calibration.



2.6.2 Support pulse speed measurement (same as MDVR logic)

The vehicle speed source may come from satellite positioning or pulse signals. Satellite positioning requires external GPS module; the pulse signal requires docking tag SPEED IN on the serial line.

In the direct access interface, click [config / Settings]> [Collection / Data Collection]> [General / Basic Data]> [Data set] The interface is shown in the following figure:



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

When selecting the calibration mode as [input mileage mode]:

1） Need to manually input the initial mileage of the odometer, the system will calculate the initial mileage of the odometer;

2） Click to start learning; (MCU will automatically record the number of pulses);

3） At any time, click the end of learning, record the mileage of the odometer again to calculate the mileage difference;

4） Then input the difference mileage, click the calculation, the pulse coefficient will automatically display the calculation results; (the calculation result unit is consistent with the speed unit)

5） The initial learning state will be automatically saved, and the power off restart device will not clear this state;

The pulse velocity is involved in the hybrid speed source, and the pulse speed calibration is the same as the pure pulse speed source, which will not be described here.

2.7. Alarm setting-ADAS calibration

The 0-870-63/64 supports the standard ADAS function, and the ADAS algorithm calibration is required after completing the installation of video cameras and other equipment according to the device installation guide.

There are two calibration methods of ADAS, namely automatic calibration and manual calibration. It is recommended to use automatic calibration first.

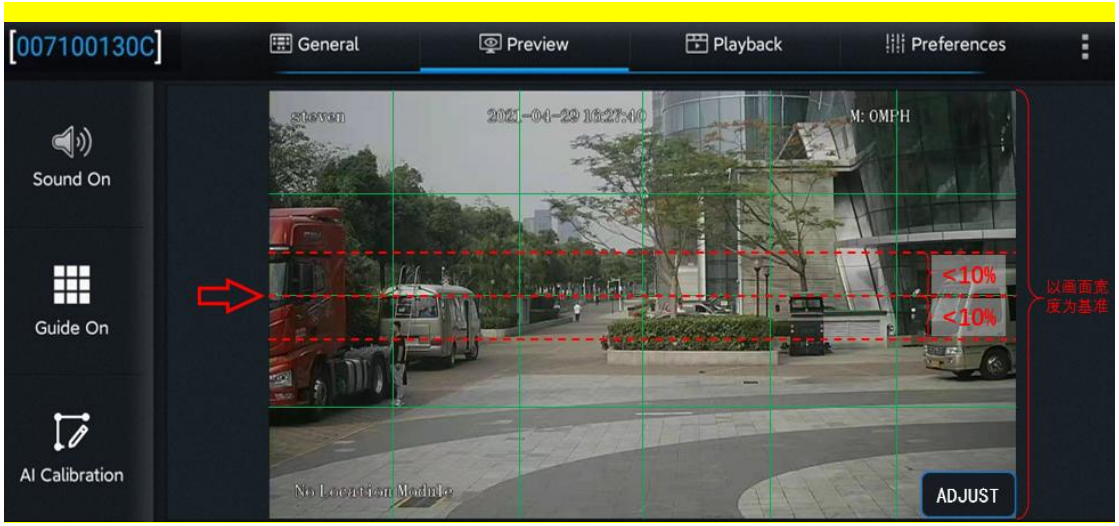
2.7.1 Automatic calibration

1. Lens adjustment

After the ADAS camera is installed, open the back cover of the ADAS camera, as shown below, and adjust the Angle of the ADAS lens, so that the picture meets the following conditions:

① After opening the auxiliary line, adjust the ADAS Angle of the lens, so that the heaven and earth line is located in the middle of the picture;

② The upper and lower deviation distance of the heaven and earth line from the auxiliary line in the middle of the picture should be less than 10% of the width of the picture, as shown in the figure below.



After adjusting the angle of the ADAS lens, tighten the ADAS adjustment angle of the screw and the rear cover screw. Then start measuring the mounting height of the ADAS lens.

Use a tower ruler or tape measure to measure the vertical height of the ground to the ADAS lens (accurate to cm / inch) as the mounting height of the ADAS lens.

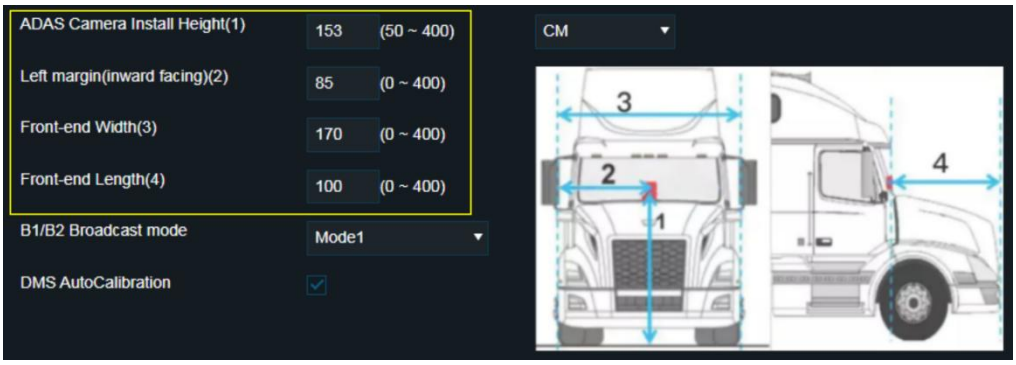
pay attention to:

—— When measuring the vertical height from the ground to the ADAS lens, it is necessary to keep the tower ruler or tape measure vertical to the ground before reading the height value

—— The measurement point is at the lens, not at the upper or lower edge of the ADAS shell).

2. data-in

Enter the ADAS installation height input page, as shown below:



Where ADAS calibration height is optional centimeter or inch. In the parameter input box, fill in the read installation height of the ADAS lens. Click [Save] after the input is complete.

2.7.2 Manual calibration

There are two manual calibration methods for ADAS:

1, long-distance calibration method: suitable for the open installation site, with at least 30m smooth road surface site;

2. Close distance calibration method: it is applicable to the installation site with limited conditions and only smooth road surface within 5m.

The calibration steps of the two calibration methods will be introduced below. In order to ensure the calibration effect and the ADAS identification effect, if conditions permit, please choose the "remote calibration method for calibration".

2.7.2.1 Remote calibration method (20m / 30m / 40m)

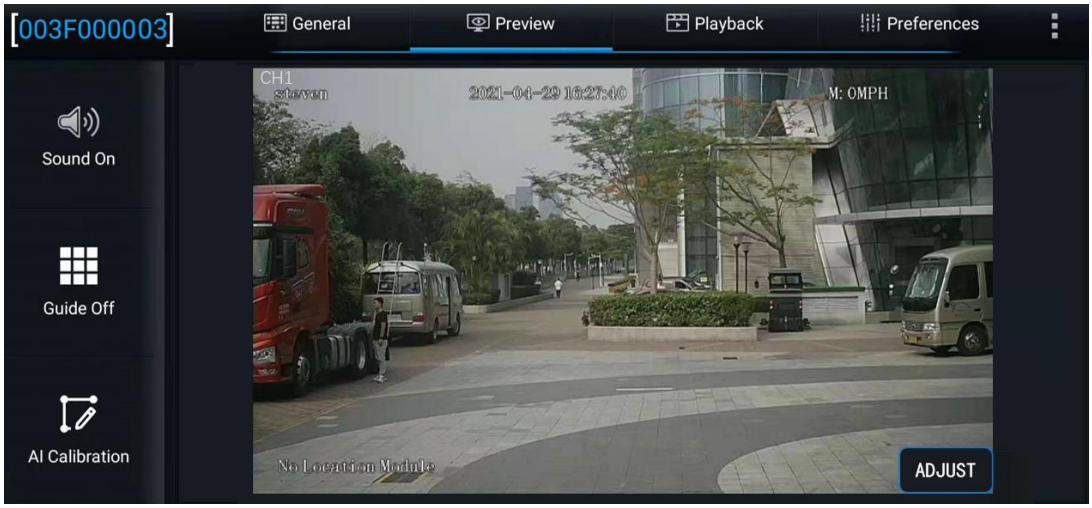
1. Application scenarios:

The installation site has at least 30m open smooth road, and this method is the preferred method to ensure the accuracy of calibration.

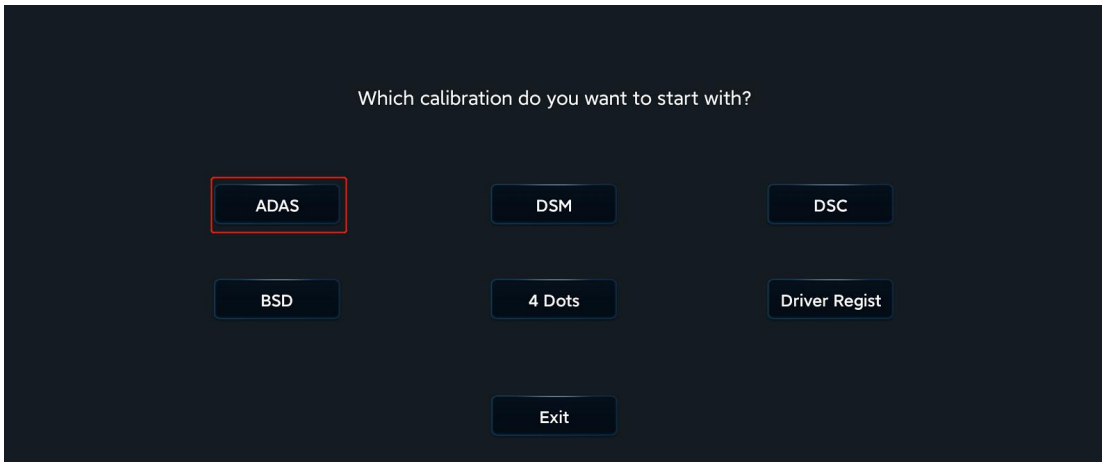
2. Specific calibration steps:

Log in and go into the ADAS calibration mode.

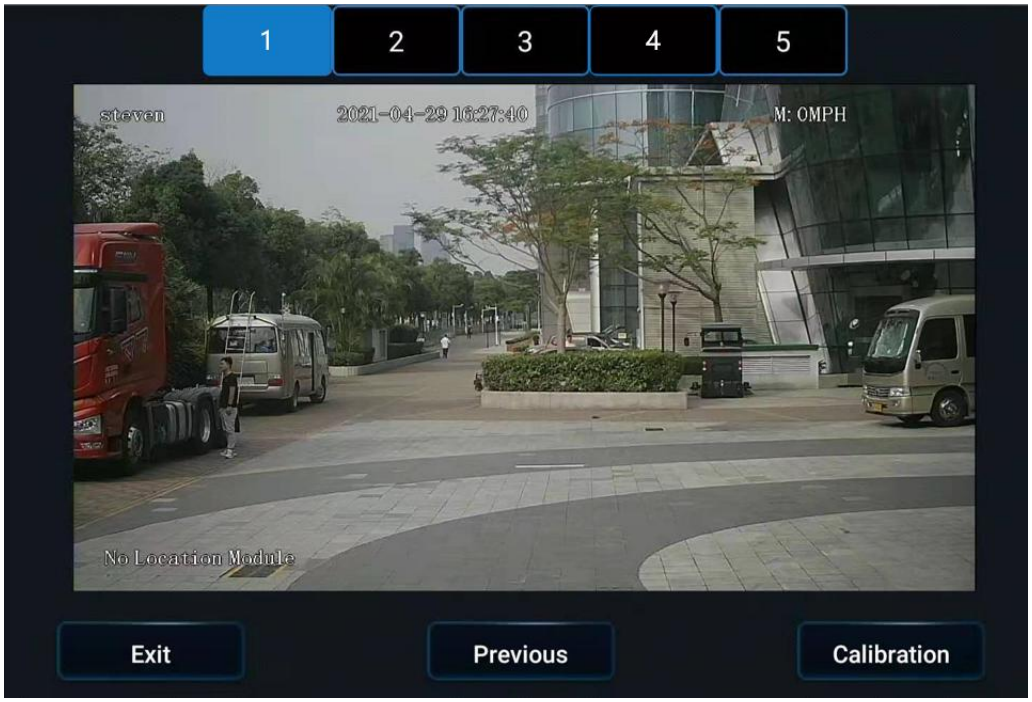
1. Enter the calibration and selection



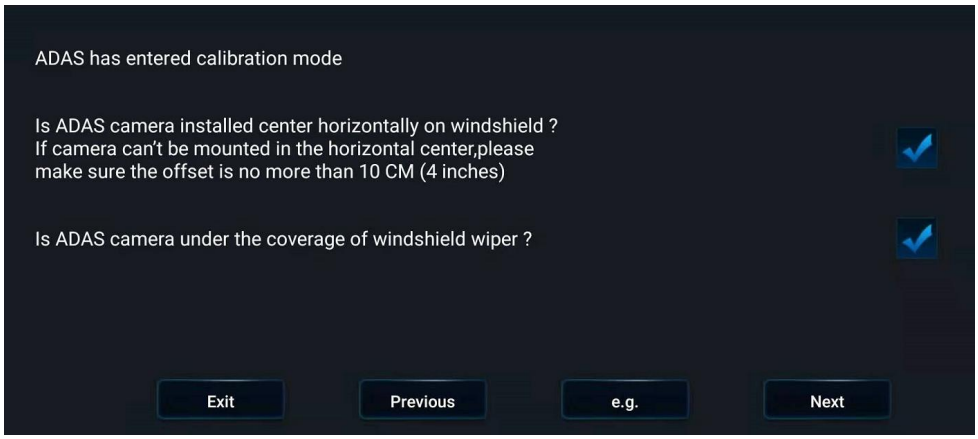
Enter the real-time preview interface, double-click the ADAS channel screen to enter the main code stream; click the "AI Calibration" button in the lower left corner of the screen to enter the AI calibration selection interface for ADAS calibration;



2. Select the calibration channel. ADAS cameras are installed in channel 1. select channel 1. Then click the "Calibration" in the lower right corner of the screen to enter the calibration process;



3. Ensure that the ADAS is installed in the reasonable position of the front windshield and within the wiper working range, and then click [Next];



4. In the manual calibration of ADAS process, measure the installation height of ADAS (note the height of the lens for the ground, accurate to cm / inch, and the measurement mode is consistent with the automatic calibration), and input the value in the interface. At the same time, in order to ensure the accuracy of ADAS algorithm recognition, three other parameters need to be entered in the interface, which are the left distance of the ADAS lens, the width of the front and the length of the front.

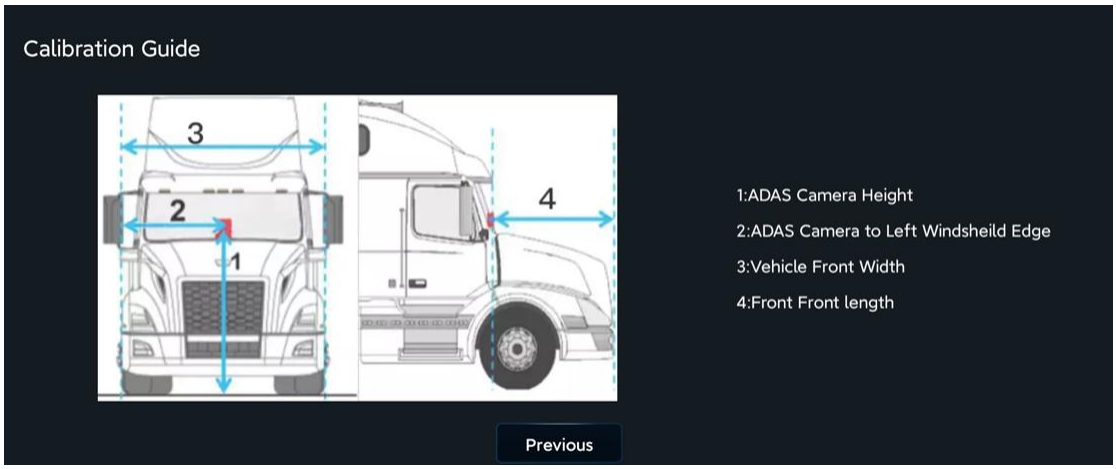
The above three parameters are measured by the following methods, respectively:

Left distance of the ADAS lens: horizontal distance of the ADAS lens to the outermost

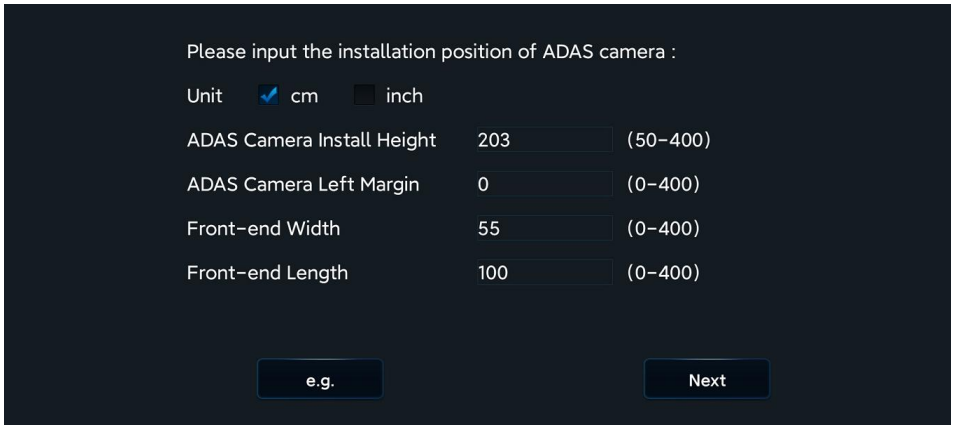
edge of the left tire of the vehicle (the outside of the standing car to the left of the front);

Front width: the distance between the outermost edge of the two tires;

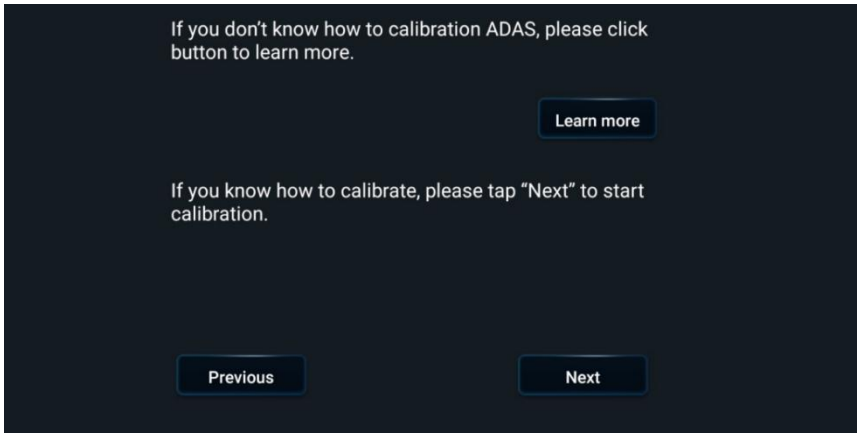
Front length: the horizontal distance from the ADAS lens to the license plate. Distance quantity to take the example refer to the following figure



Enter the 4 parameter values in the transport Wei treasure interface, and then click [Next];



5. Enter the following interface. In this interface, you can view the ADAS calibration tutorial, etc. If you know how to calibration, continue to click [Next];

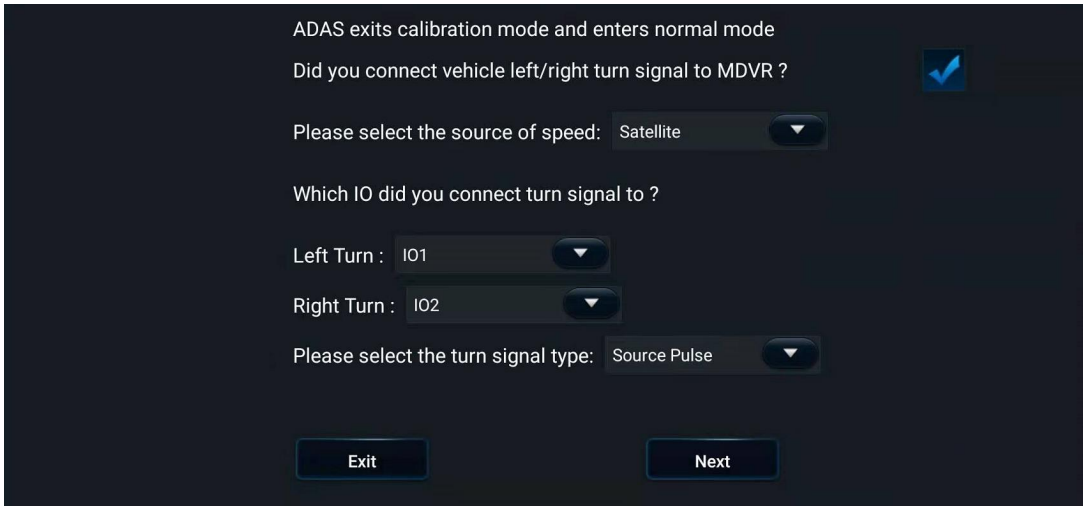


Use the tape measure, pull the line from the ADAS lens to the point (C point) on the ground to the direction parallel to the body, and make significant marking points at 20 meters and 30 meters respectively. It is recommended to use conspicuous rod as the mark;

Click [Next] to enter the following interface, and start the manual calibration of the ADAS lens.

Open the back cover of the ADAS camera, adjust the Angle of the ADAS lens, so that the 20m calibration line in the ADAS calibration screen coincides with the mark point at 20m on the ground, and make the 30m calibration line in the ADAS calibration screen coincide with the mark point at 30m on the ground.

6. After completion, click Next, select the speed source, set the left and right turn signal parameters according to the actual installation situation, and then click Next. In the following interface, check whether the left and right turn signal is valid. After checking, click [Finish] to exit the calibration interface.



7. Return to the real-time preview interface of the ADAS channel (double-click the

ADAS channel to enter the main code stream), and check that there is no calibration line superposition at this time, which means that the ADAS channel has been restored to normal mode at this time.

At this point, tighten the ADAS to adjust the Angle of the screw and the rear cover screw, the remote calibration end.

2.7.2.2 Close range calibration method (20m / 30m / 40m)

1. application scenarios:

Installation site space is limited, but with at least 5m flat pavement area. Although 3m or 5m can be selected for close calibration, but in order to ensure the calibration accuracy, 5m is preferred for close calibration. The following is a close 5m calibration.

2. Principle of close-range calibration:

When using the long-distance calibration method, the points will be marked 20 m / 30m / 40m forward from the ground of the ADAS lens (point A below) (point C) in the figure below), and the 20m / 30m / 40m in the ADAS screen matches the corresponding mark points on the ground.

For close calibration, due to the limited installation site environment, it cannot be marked at 20m / 30m / 40m. According to the similar triangle principle, erect the tower ruler at 3m / 5m (point F below) and find the alignment line of the 20 m / 30m / 40m and the H mark on the tower ruler at 3m / 5m. The calculation method is performed as follows:

As shown in the figure below, A is the lens position of the ADAS camera, point C is the projection position of the ADAS camera A on the ground, point F is the position of the tower ruler, and point K is the marking point of 20 or 30 meters in the long-distance calibration method.

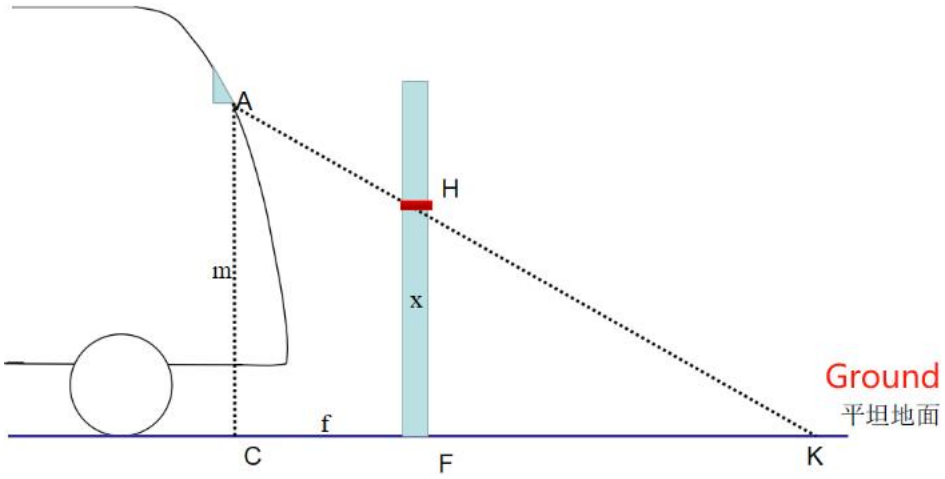
Take | CF | =5m and | CK | =20m as an example:

C, F, K in the same line, | CF | =5m, | CK | =20 m, | AC | by quantity can get specific data, here by | AC | =203cm, | HF | can be obtained according to the similar triangle formula.

|HF|/|AC|=|FK|/|CK|

Then | HF | = (| AC | * | FK |) / | CK |, after bringing the value of | HF|=152.25cm.

That means that when a tower ruler is set up 5m in front of the ADAS lens, and the height position and the angle of the ADAS lens is adjusted so that the 20m calibration line in the calibration picture overlaps the 152cm position on the tower ruler, the effect of pulling 20m calibration line on the ground can also be achieved

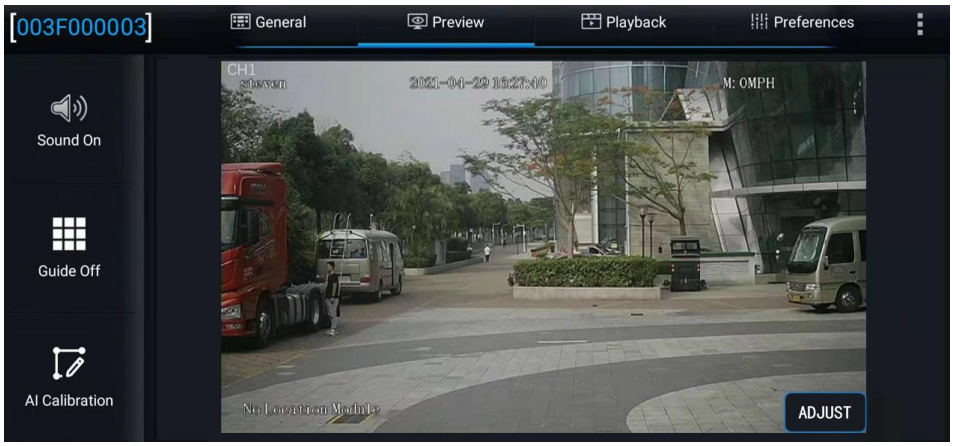


Note: the software will automatically calculate according to the above similar triangle principle when the ruler respectively placed in | CF | =3 m / 5m, 20 m / 30m / 40m calibration line should be on the ruler mapping height, as shown in the figure below.

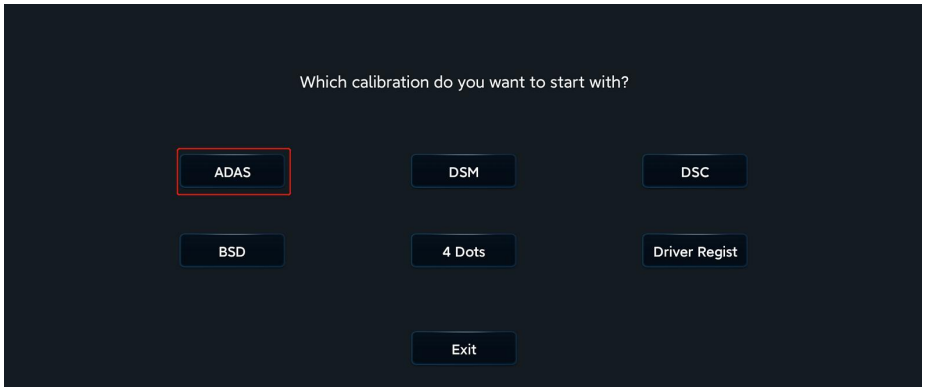
3. Calibration steps:

Log in to the Veyes, and enter the ADAS calibration process.

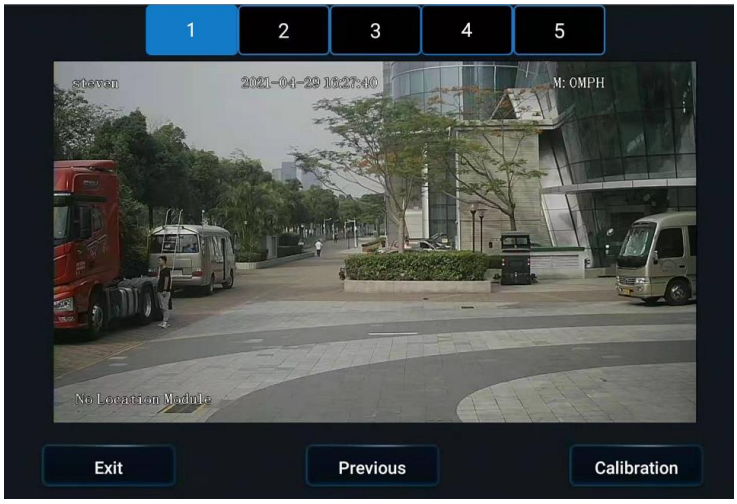
1. Click [Preview] to enter the preview interface, and click [AI Calibration] in the lower left corner of the screen to enter the calibration selection.



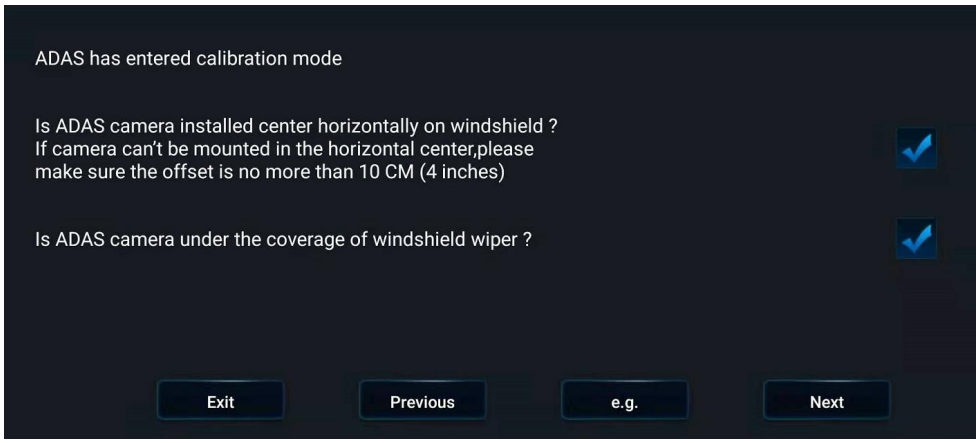
Enter the real-time preview interface, double-click the ADAS channel screen to enter the main code stream; click the "AI Calibration" button in the lower left corner of the screen to enter the AI calibration selection interface for ADAS calibration;



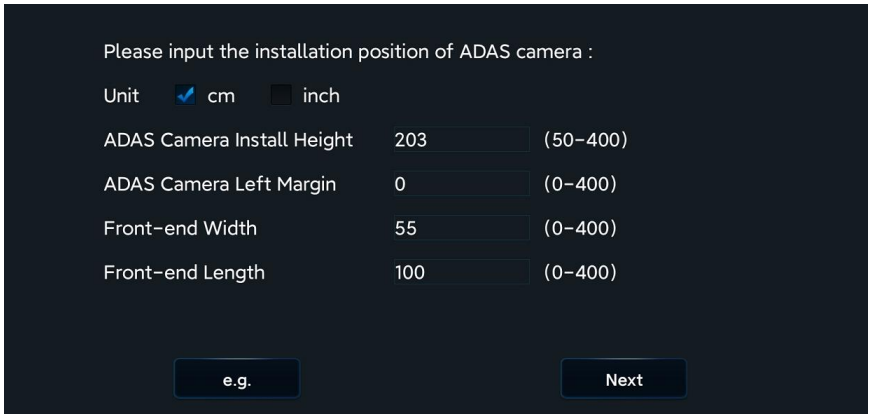
2. Select the calibration channel. ADAS cameras are installed in channel 1. select channel 1. Then click the "Calibration" in the lower right corner of the screen to enter the calibration process;



3. Ensure that the ADAS is installed in the reasonable position of the front windshield and within the wiper working range, and then click [Next];



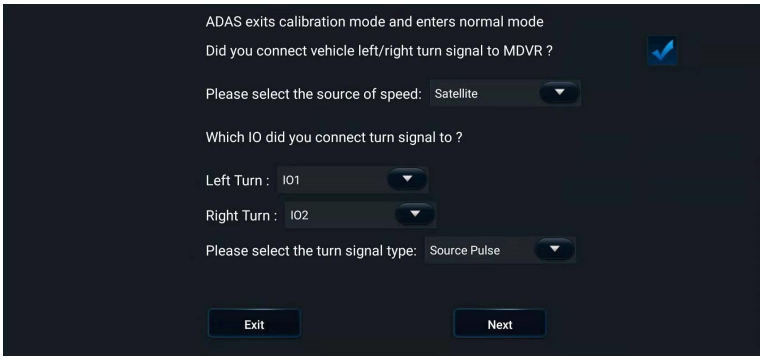
4. Measure the installation height of ADAS, the left distance of ADAS lens, front width and front length. The measurement method of these four parameters is the same as the measurement method in the distance calibration, and will not be described here. Enter the 4 parameter values in the transport Wei treasure interface, and then click [Next];



5. Pull a 5m line from the point of the ground to the direction parallel to the body, and stand the tower ruler with height scale vertically at 5m to read the value between the horizontal 20m calibration line and the vertical 5m calibration line in the ADAS picture, which is 152cm. Then make an obvious mark at 152cm on the tower ruler, and it is recommended to use a conspicuous rod as a mark;

6. Open the back cover of the ADAS camera, adjust the Angle of the ADAS lens, so that the 20m calibration line in the ADAS calibration screen coincides with the 152cm mark point on the vertical tower ruler at 5m;

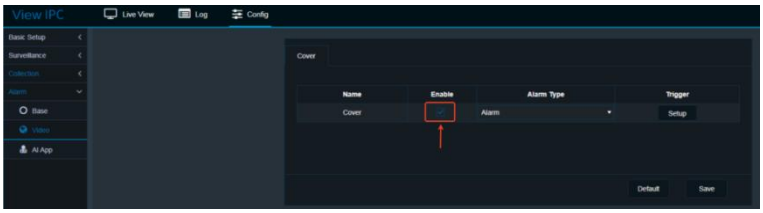
7. After completion, click Next, select the speed source, set the left and right turn signal parameters according to the actual installation situation, and then click Next. In the following interface, check whether the left and right turn signal is valid. After checking, click [Complete] to exit the calibration interface;



8. Return to the real-time preview interface of the ADAS channel (double-click the ADAS channel to enter the main code stream), and check that there is no calibration line superposition at this time, which means that the ADAS channel has been restored to normal mode.

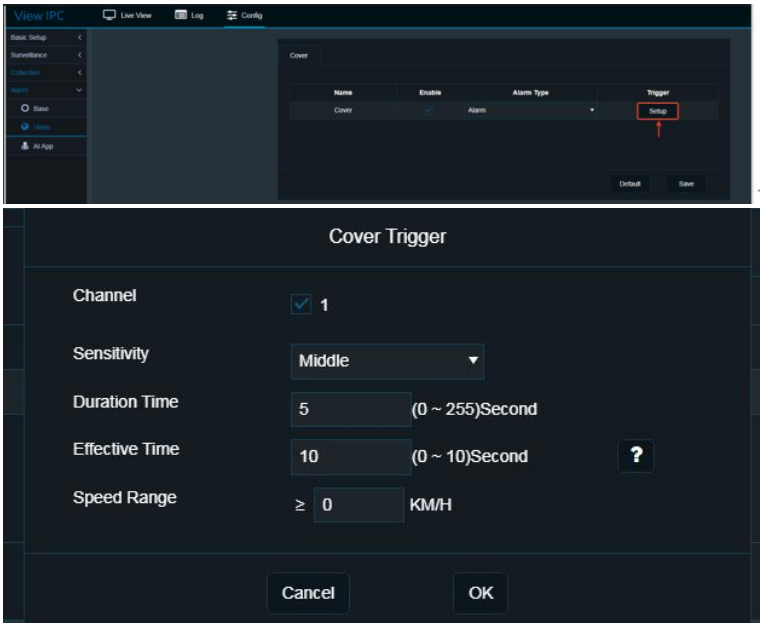
At this point, tighten the ADAS adjustment Angle of the screw and the rear cover screw, close calibration end.

2.8. Camera blocking alarm



In [Alarm] - [Video] - [Cover], the occlusion alarm enable of the 0-870-63/64 lens can be set. When the device detects that the screen is occluded, it will send out a linkage alarm to prompt the driver to check the state of the device lens and ensure the recognition accuracy of the device algorithm.

When the camera occlusion alarm is triggered, the cascaded R-Watch will constantly light up the icon logo above to remind.



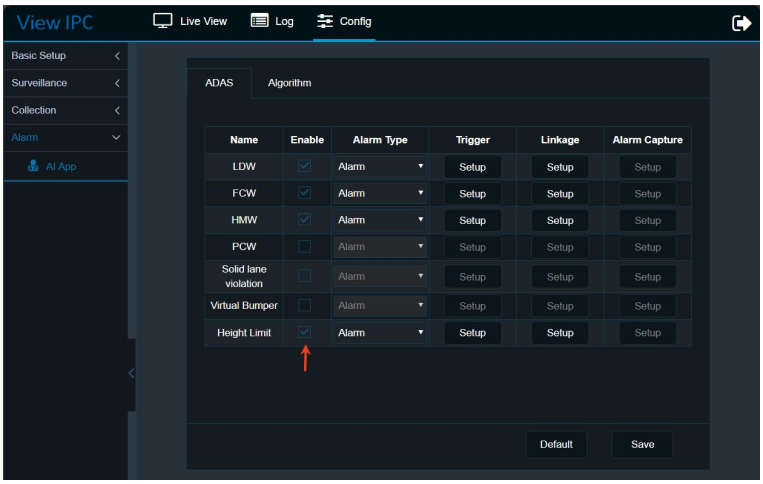
Click [Trigger] - [Setup] to set the trigger conditions of the occlusion alarm enable according to the driver's actual driving habits and driving scenes.

2.9. Alarm setting-Bridge height limit detection

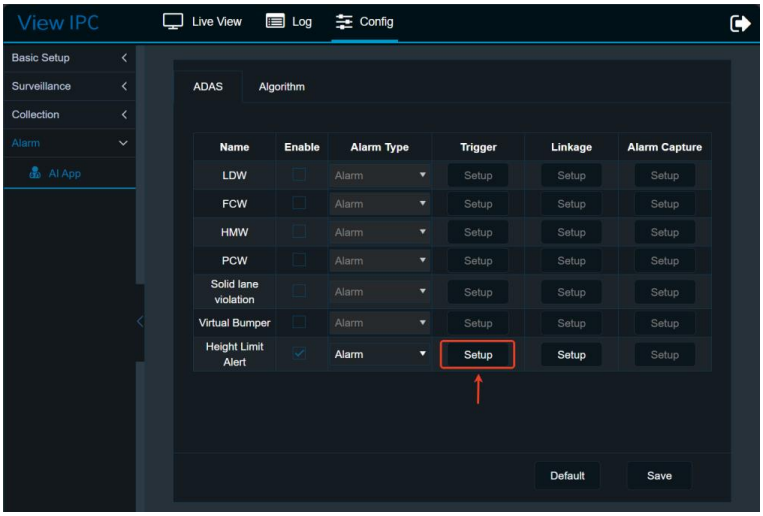
The 0-870-63/64 camera has the corresponding detection and alarm algorithm for the bridge height limit scene, which can provide sound or linkage alarm warning for the bridge height limit scene, so as to remind the driver whether the height of the vehicle can pass the bridge and bridge above the road ahead, so as to avoid the collision bridge event caused by the high body.

2.9.1 Function enabled / trigger

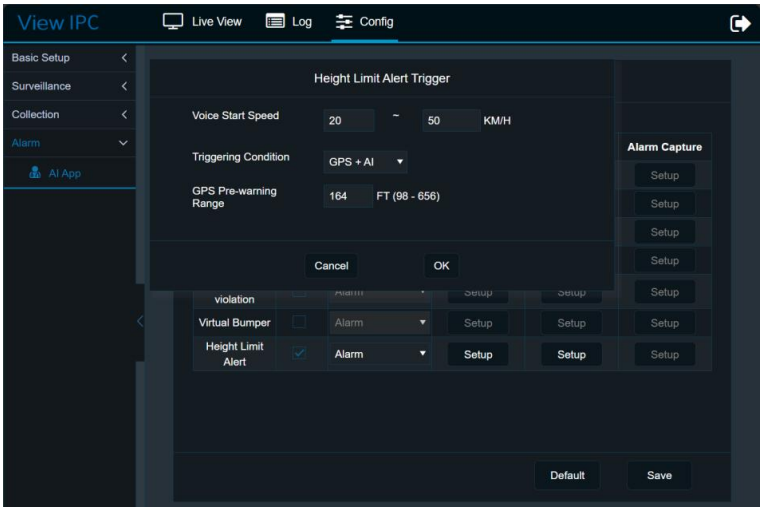
If you need to enable this function, check the box shown in the figure above in the [config]> [Alarm]> [AI App]> [ADAS] page.



Click [Setup] on the right to adjust the trigger condition speed of the corresponding voice alarm according to the drivers actual driving habits.

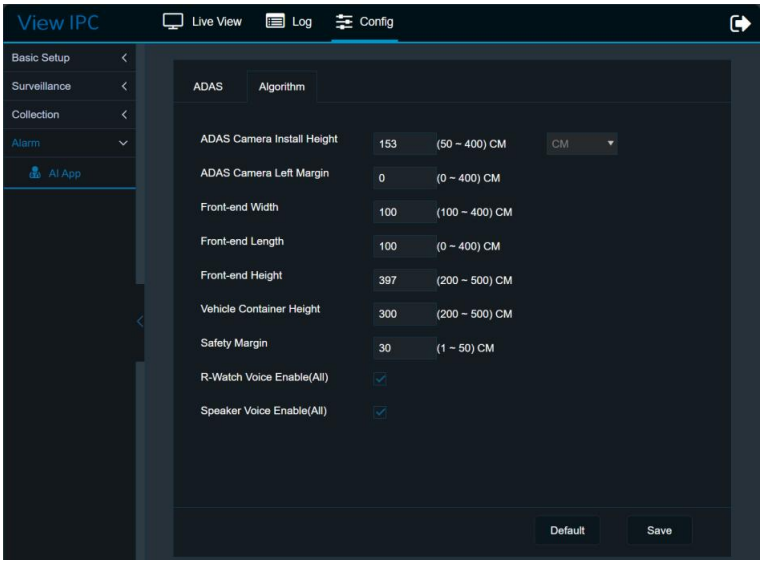


Click the "Setup" button on the right to set the trigger mechanism of alarm and reminder according to the driver's actual driving habits.

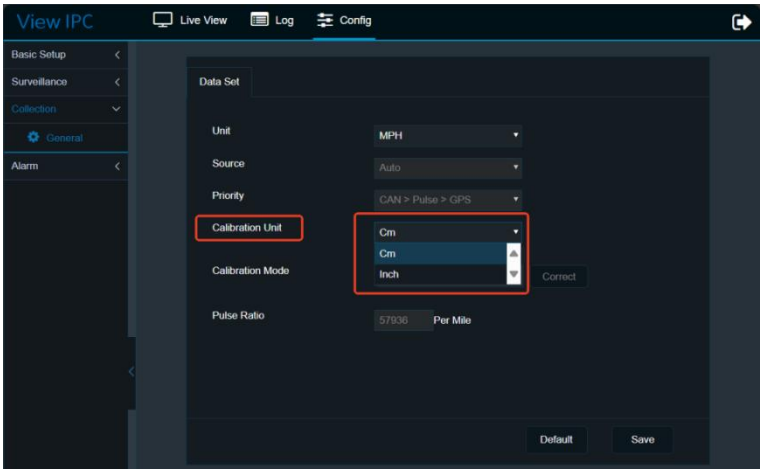


In the Triggering Condition, the trigger mechanism of bridge height limit alarm can be selected, the AI visual recognition can be selected, and the bridge map database information can also be updated in the Basic Setup - State Info + with G-MOUSE positioning device. The GPS positioning +AI visual recognition scheme was selected, and the comprehensive information was used for bridge height limit early warning/alarm trigger judgment.

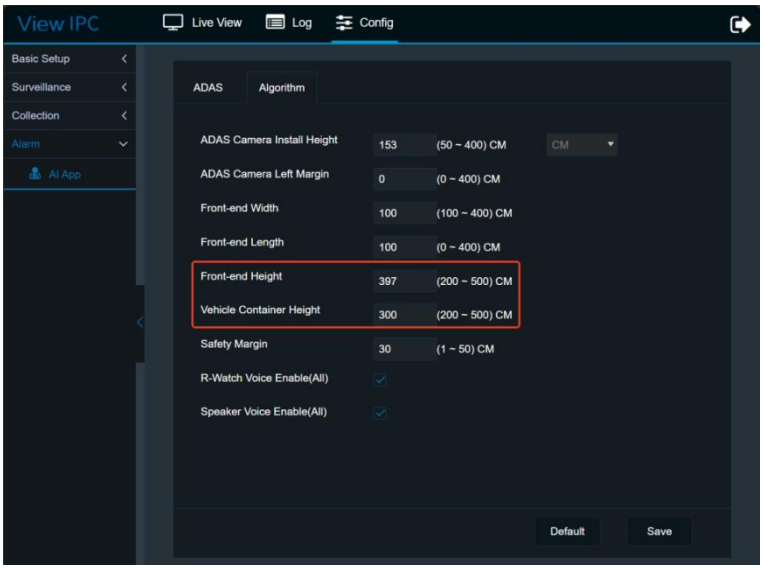
2.9.2 Algorithm calibration



The parameters of the bridge height limit algorithm can be calibrated in [config / setting]> [Alarm / alarm setting]> [AI App / Intelligent application]> [Calibration Parameters / algorithm parameters].



1. According to the usage habits of the applicable area of the equipment, the imperial system of parameter calibration can be switched in the options of [config/setting]＞[Collection]＞[General]＞[Data Set]＞[Calibration Unit].



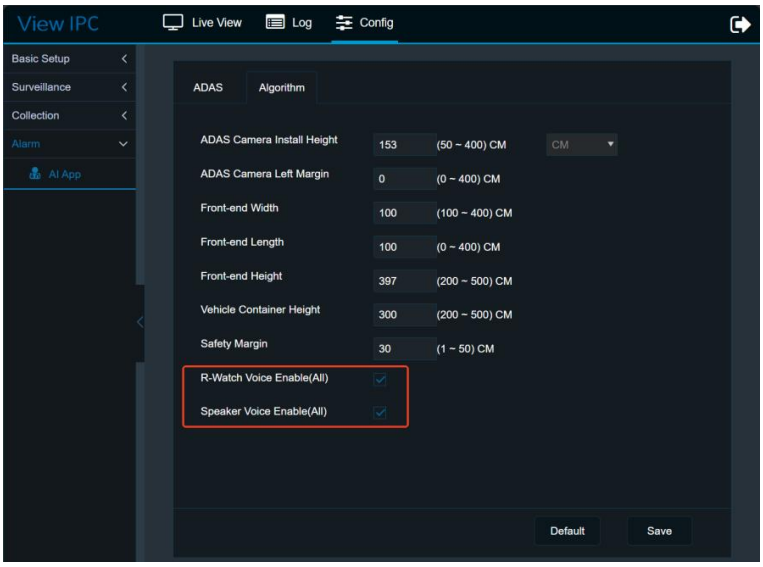
2. Measure the headway height of the actual driving vehicle and the height of the vehicle container, and fill in the [Front-end Height] and [Vehicle Container Height] options shown in the above figuree;

3. According to the drivers driving habits and actual needs, fill in the value of [height limit threshold], the interval of the effective value is 3~50 cm (1 "~1 8"), and the default value is 30cm (1).

Note: In addition to the above calibration parameters input through the equipment debugging interface, you can also change and view the height of the carriage through the external keyboard, see the contents in [3.1 Operation Keyboard] [3.2 RFID

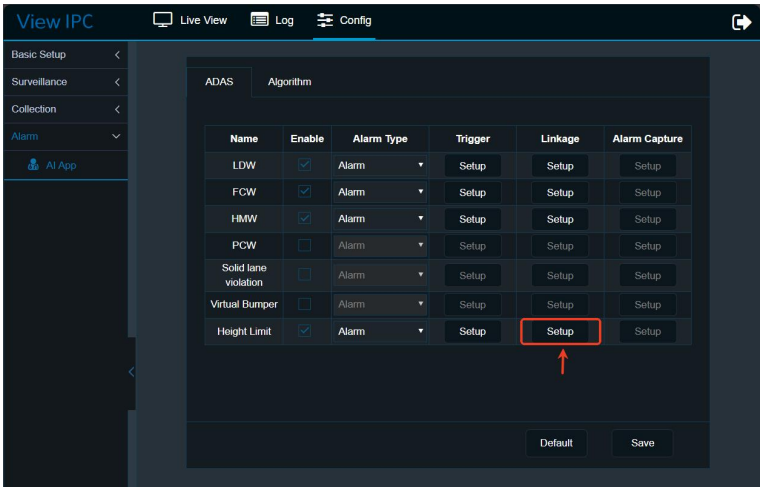
wireless card Reader] below for details.

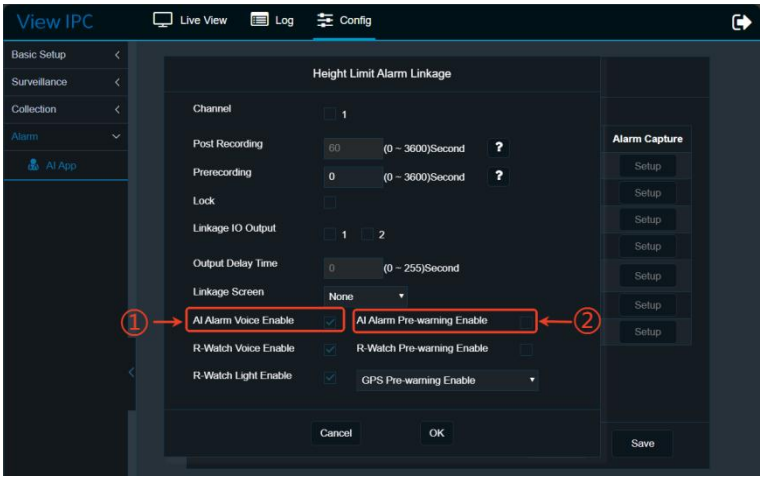
2.9.3 Alarm is triggered



In the interface of [config / Settings]> [Alarm / alarm Settings]> [AI App / intelligent application]> [Calibration Parameters / algorithm parameters], check the alert reminder mode corresponding to the bridge height limit alarm. After clicking the box and click Save, the corresponding alarm reminder function will be started.

2.9.3.1 0-870-63/64 Speaker voice





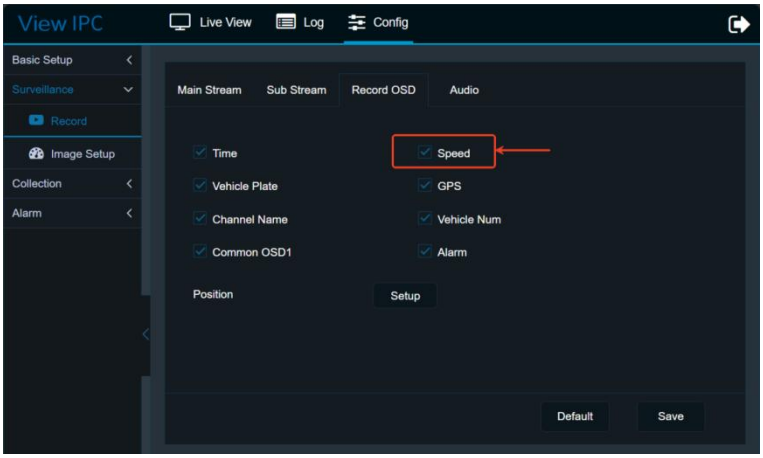
In the [Setup] of [Linkage] of [height limit], the broadcast voice content of 0-870-63/64 bridge height limit detection can be selected according to the demand;

① **[AI Alarm Voice Enable] :** after checking, the bridge height limit voice alarm function of 0-870-63/64 can be enabled. When 0-870-63/64 detects the bridge hole and the bridge height limit value < ([The maximum value of [Front-end Height] and [Vehicle Container height]] + [Safety Margin]), 0-870-63/64 will broadcast the bridge hole alarm sound in a cycle;

② **[AI Alarm Pre-warning Enable]** : after checking, the bridge height limit voice warning function of 0-870-63/64 can be enabled. When 0-870-63/64 detects the bridge hole, 0-870-63/64 will broadcast the bridge hole warning tone in a cycle.

Note: When the [AI Alarm Voice Enable] enable is not checked on this page, the [AI Alarm Pre-warning Enable] enable will not be enabled.

2.9.3.2 0-870-63/64 OSD vehicle height/bridge height information stack

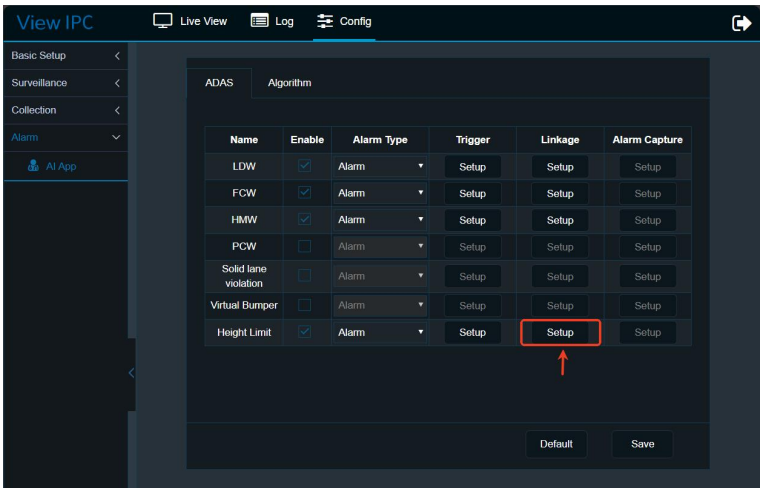


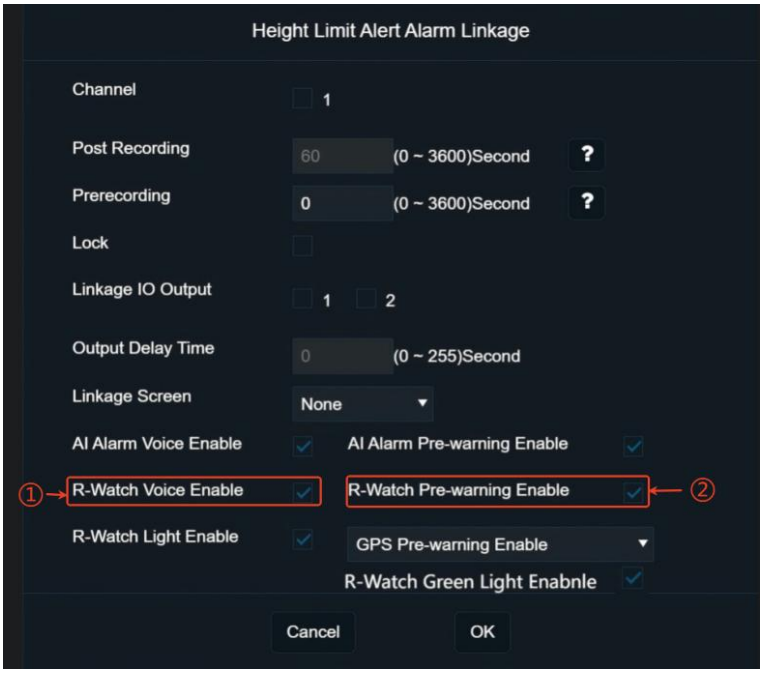
In the interface of [Config] > [Surveillance] > [Record] > [Record OSD], click [Speed] to superpose the calibrated car height information to the video material (content ① in the figure 2). When the bridge height information is identified by 0-870-63/64, the data will be superimposed into the video material (content 2 in the figure 2).

The display position of the vehicle height information and the identified bridge height information is below the [Speed] information. The superposition position of the vehicle height and the identified bridge height information can be adjusted by adjusting the superposition position of the superposition box of the [Speed].

2.9.3.3 R-Watch smart prompt device

0-870-63/64 is equipped with R-Watch smart prompt, and select [R-Watch Voice] option in the setting interface to start the prompt function of R-Watch smart prompt:





1. R-Watch linkage prompt sound

In the "setting" of "linkage content" of "height limit identification", the voice content of the bridge height limit detection of the connected R-Watch can be selected according to the demand;

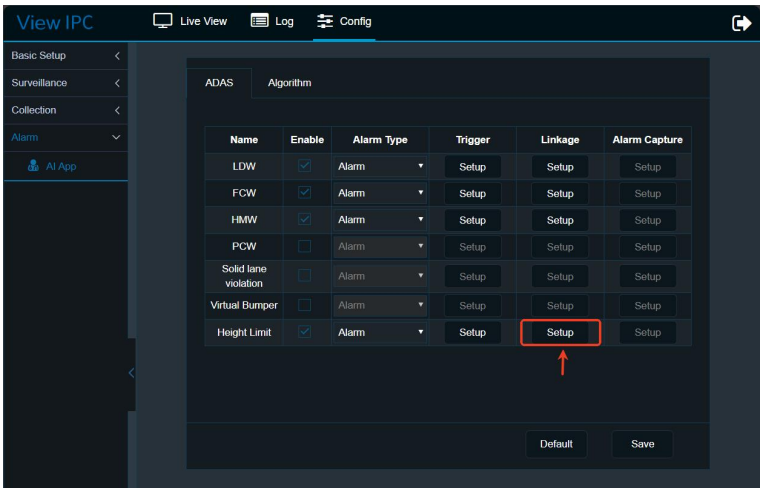
(1) **[R-Watch Voice Enable]** : after checking, the bridge height limit buzzer alarm function of R-Watch can be enabled. When 0-870-63/64 detects the bridge hole, and the bridge height limit value < ([The maximum value of [Front-end Height] and [Vehicle Container height]), the cascade R-Watch will cycle broadcast the bridge hole **alarm** beep prompt sound;

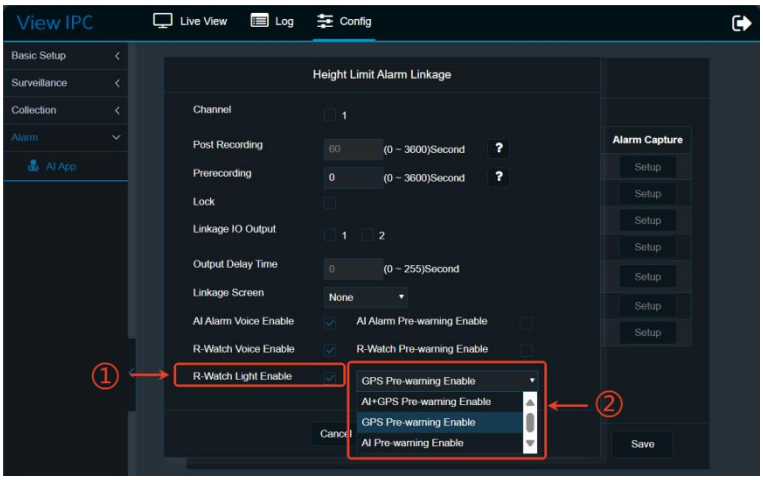
② **[R-Watch Pre-warning Enable]** : After checking, the bridge height limit voice warning function of R-Watch can be enabled. When the 0-870-63/64 detects the bridge hole, the cascade R-Watch will broadcast the bridge hole **pre-warning** beep in a circular way.

Note: When the [R-Watch Voice Enable] enable is not checked on this page, the [R-Watch Pre-warning Enable] enable will not be enabled.

2、R-Watch linkage icon display

When the bridge is not detected by the 0-870-63/64, the R-Watch does not display the bridge mark;





In the [Setup] of [Linkage] of [height limit], whether the connected R-Watch enables the bridge height limit icon prompt function and the trigger condition of the bridge height limit warning icon prompt can be selected according to the requirements.

(1) **[R-Watch Light Enable]** : When checked, R-Watch's bridge height limit icon reminder function can be enabled:

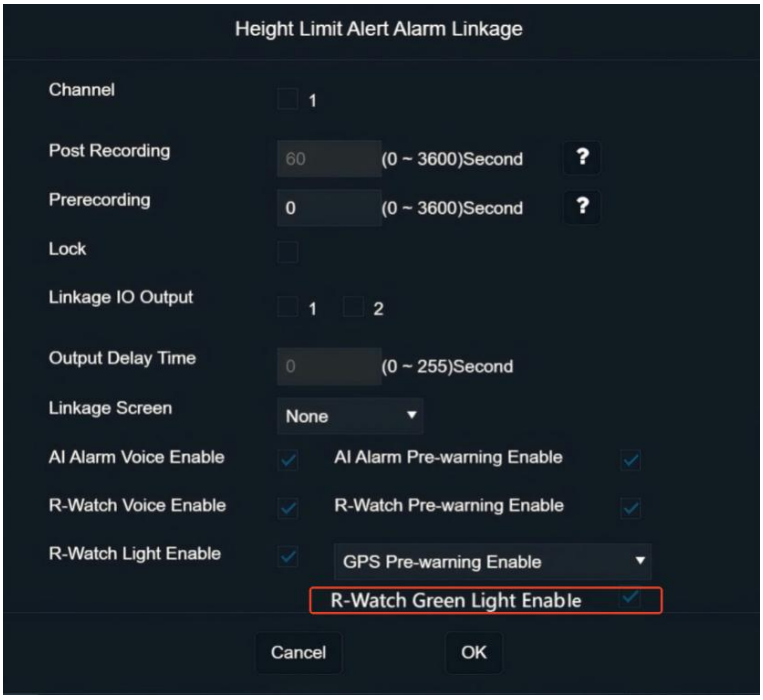
(2) **[Pre-warning trigger enable]** : The trigger precondition of R-Watch's bridge height limit warning prompt can be selected according to requirements. There are three trigger modes: [AI+GPS], [AI] and [GPS] for selection.

When 0-870-63/64 detects a bridge hole in front of it, R-Watch lights up the yellow bridge hole icon to indicate to the driver that there is a bridge nearby or that the vehicle is about to cross a bridge:

—— If the bridge height limit is ≥ ([The maximum value of [Front-end Height] and [Vehicle Container height]) , R-Watch will extinguidate the icon prompt, and the driver will judge whether it is safe to pass the bridge;

—— If the height limit of the bridge is < ([The maximum value of [Front-end Height] and [Vehicle Container height]), the R-Watch will display the red bridge hole icon, indicating that the driver cannot pass the bridge hole and needs to stop for inspection or detour.

Yellow bridge hole icon (Bridge alert) Red bridge hole icon (collision risk)



In [Setup]-[Linkage] -[height limit], enable/on demand. Turn off the cascaded R-Watch to identify the green indicator icon when the bridge height is higher than the car height.

When the above enable is enabled, the cascaded R-Watch will light up the icon above if the 0-870-63/64 detects the bridge height limit ⩾ ([body height] + height limit threshold).

3. Description of other accessories

3.1. Operating keyboard

Before the vehicle installed with 0-870-63/64 runs, if the maximum height of the cargo car changes, the [Vehicle Container height] can be queried and updated through the 0-870-63/64 special keyboard, 0-870-66. The user can input the real-time update or query whether the [Vehicle Container height] that has been entered is accurate through the external keyboard.

After the freight car height information is input and saved, [Front-end Height] and [Vehicle Container height] will be used to compare with “bridge hole height information” detected by the algorithm, and respond according to the alarm strategy.

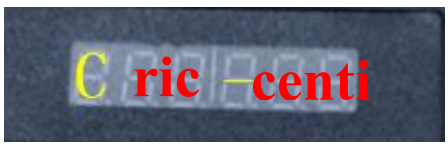
1.connect

The dedicated keyboard is connected and communicates with 0-870-63/64 through an RS232 interface.

2.Display mode:

In idle state, the display area of the operation keyboard will show the currently set vehicle height.

The first display "E" indicates that it is currently in imperial units, and "C" indicates that it is currently in metric units.



Imperial metric system

3.Specific operation:

1. Vehicle Container height setting: [Set button] ->Enter feet (meters) ->[Confirm button] ->inches (centimeters) ->[Confirm button];

Note: When the input vehicle container height data exceeds the valid range, the keyboard will display "-------" to indicate input error and return to idle state. The valid range of vehicle container height is 300cm~500cm (118.11 "~196.85").

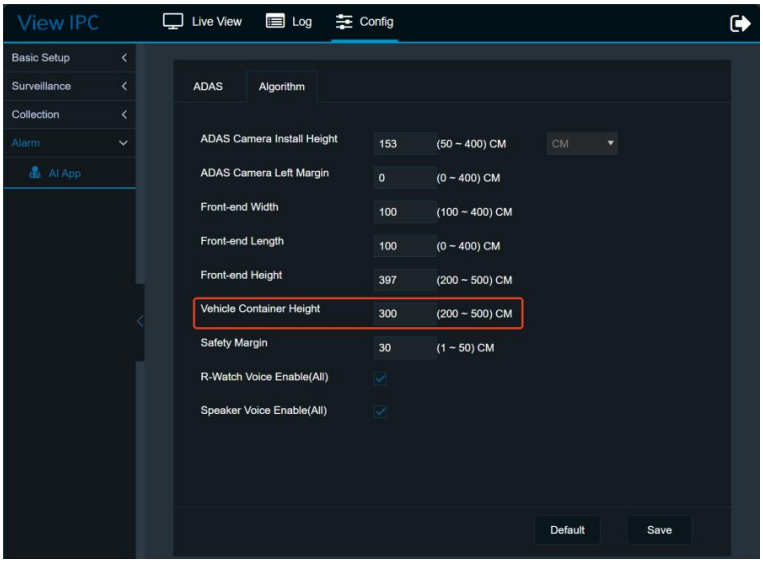
2. Modify input value: In the setting state, click the setting button again to re-enter the setting state and clear the values already entered on the keyboard;

3. Abandon modification: In the setting state, click the return button to return to the idle state.

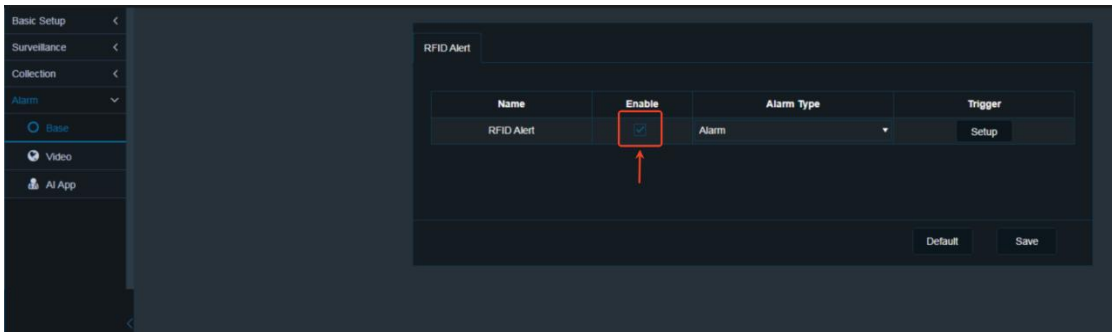
3.2. RFID wireless reading scheme

In the scenario of the trailer that needs to be replaced, the maximum height of the vehicle will change with the change of the height of the cargo car. At this time, RFID wireless reading scheme can be used:

1. Write the height information of the carriage into the RFID tag and post it to the head side plane of the corresponding carriage by the trailer;

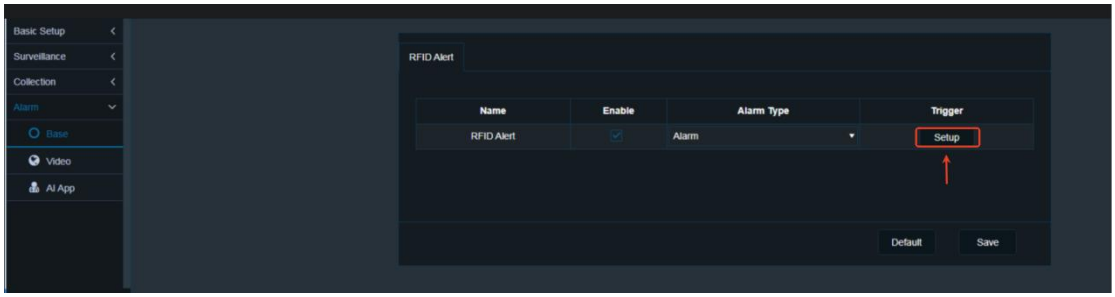


2. Cascading the RFID wireless reader with 0-870-63/64, the device will automatically read the RFID tags within the range after the device is normally powered on. When the RFID tag information written with the height information of the trailer box is read, the [Vehicle Container Height] information in the [algorithm] will be automatically updated. And by comparing with the calibration data of the [Front-end height] completed in the previous algorithm, it provides a comparison basis for the bridge height limit detection algorithm.



In [Alarm] - [Base] - [RFID Alert], the RFID signal failure alarm function can be started by checking the enable box. When abnormal conditions occur, the device cannot normally obtain the signal transmitted by the RFID wireless card reader, a linkage alarm will be issued to inform the driver of the fault state for timely system inspection.

When the alarm is triggered, the cascaded R-Watch will constantly light the above icon to prompt the driver until the fault problem is relieved.



Click [Trigger] - [Setup] to set the trigger condition of RFID signal failure alarm enabled according to the driver's actual driving habits and driving scenarios.