Operating Instructions

FHD 360° Vision System

Please read this manual thoroughly before operating the unit,
and keep it for future reference.

V1.2

Contents

1. Precautions

● Storage and Keeping

1) Do not expose the System to excessive heat or cold.The storage temperature of this device is -30°C ~ +80°C, and the operating temperature is -20°C ~ +70°C. The humidity is RH90%.
2) Never use this device near a bathtub, wash basin, kitchen, damp basement, swimming pool or similar places.
3) Never use this device in environments with excessive moisture, dust or smoke.
4) Avoid dropping or striking this device.
5) Avoid using this device in enclosed spaces,areas with excessive vibration or subject to severe impacts.
6) Never puncture, scratch or use abrasive cleaning materials on this device.
7) Do not place cables where they may be pinched or stepped on.
8) The Control Box is not designed to be waterproof.

● Operating Precautions

1) The device may be powered by a 10 or 32 volt automotive battery or vehicle electrical system.
2) Make sure all cables are connected properly. Observe polarity. Improper cable connections may damage the system. Remove the power cable connections when you do not intend to use the unit.

⚠ Warning！

1. The opening of the case should be by professionals.
2. Do not watch the video while driving unless you are monitoring the rear view camera display.

● Maintenance

1) Remove all the cable connections from the control box before cleaning the device.
2) Use a mild household detergent and clean the unit with a slightly damp, soft cloth.
3) Never use strong solvents such as thinner or benzine, as they might damage the finish of the device.

	Caution Risk of electric shock Do not open	
Caution: to reduce the risk of electric shock, Do not remove cover (or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.		

This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This symbol is intended to alert the user not to dispose of electrical and electronic equipment.

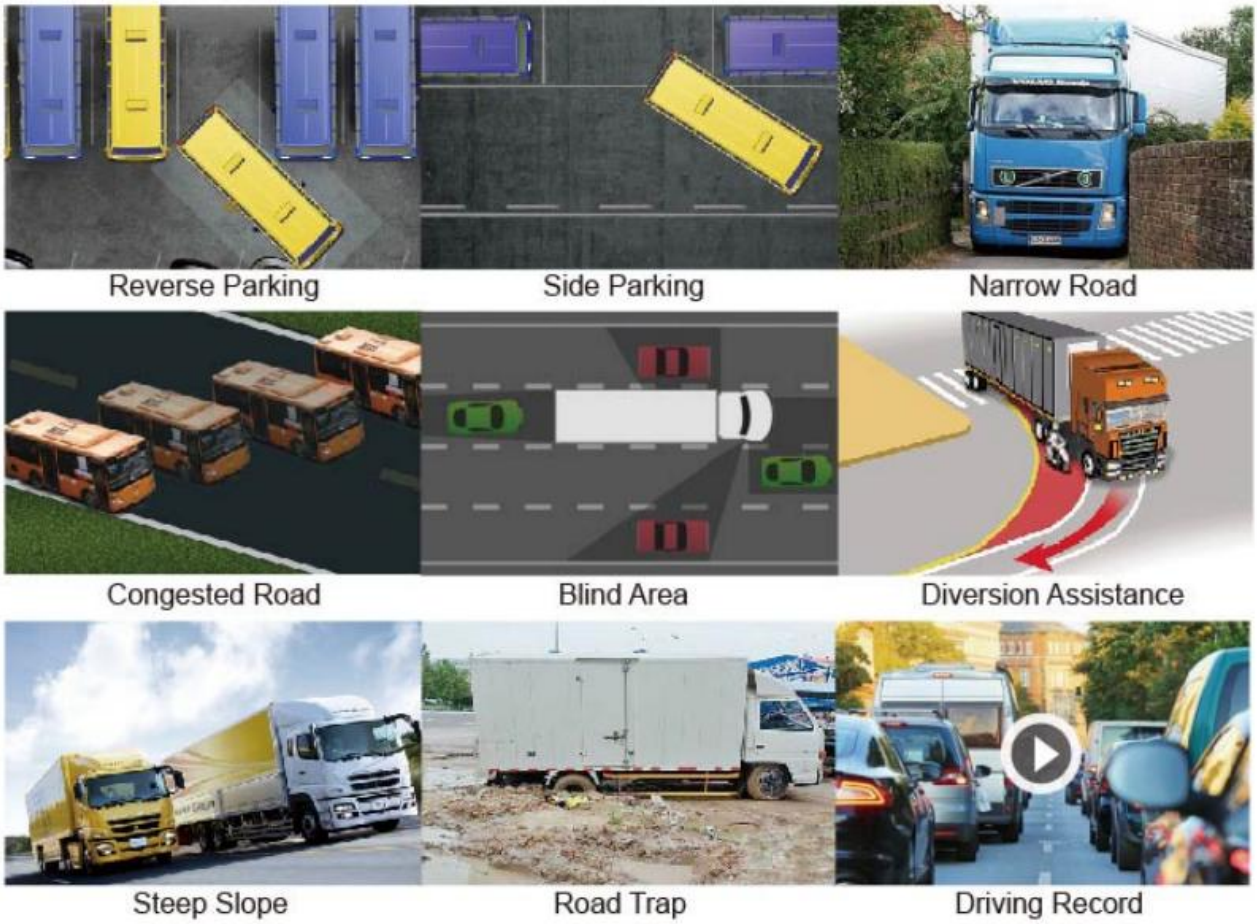
CAUTION:
You are cautioned that any changes or modifications not expressly approved in this manual could void your warrantee and neccessitate expensive repairs.

2. Product Features

2.1 Basic Features

1) Support 4 pcs 190° FHD 1080P wide-angle fisheye cameras inputs, horizontal view angle>170°, maximum support 4CH+1CH IPC input.
2) Techniques of quad-core ARM Cotex-A9 and SOC development of built-in high performance H.264 video encoding / decoding engineer core make it efficient to composite high accuracy seamless images.
3) Support 2 pcs x 128GB SD cards for storage.
4) Low-cost calibration tools, simplified calibration procedures.
5) Maximum 5CH 1080P video recording.
6) High definition 1080P video output and multiple formats of video signal output.
7) Camera internal and peripheral parameters are calibrated in one step without binding the camera to the host.

2.2 Applications



2.3 Features

1) Panoramic image.
2) Blending seamless stitching.
3) 360° view.
4) Auto switch to reversing image when reverse wire is triggered.
5) Auto switch to left / right image when left / right wire is triggered.
6) Installation guide with pictures.
7) Automatic plane correction.
8) Support drive recording.

3. Standard Configuration

Item	Configuration	Quantity
1	Control Box	1
2	FHD Fish-eye Camera	4
3	34-button remote control	1
4	Infrared extension cable	1
5	Main wiring harness 1	1
6	Main wiring harness 2	1
7	Power cable	1
8	20M extension cable	4
9	4P video output cable	1
10	Wi-Fi Extension Cable	1

4. Specification

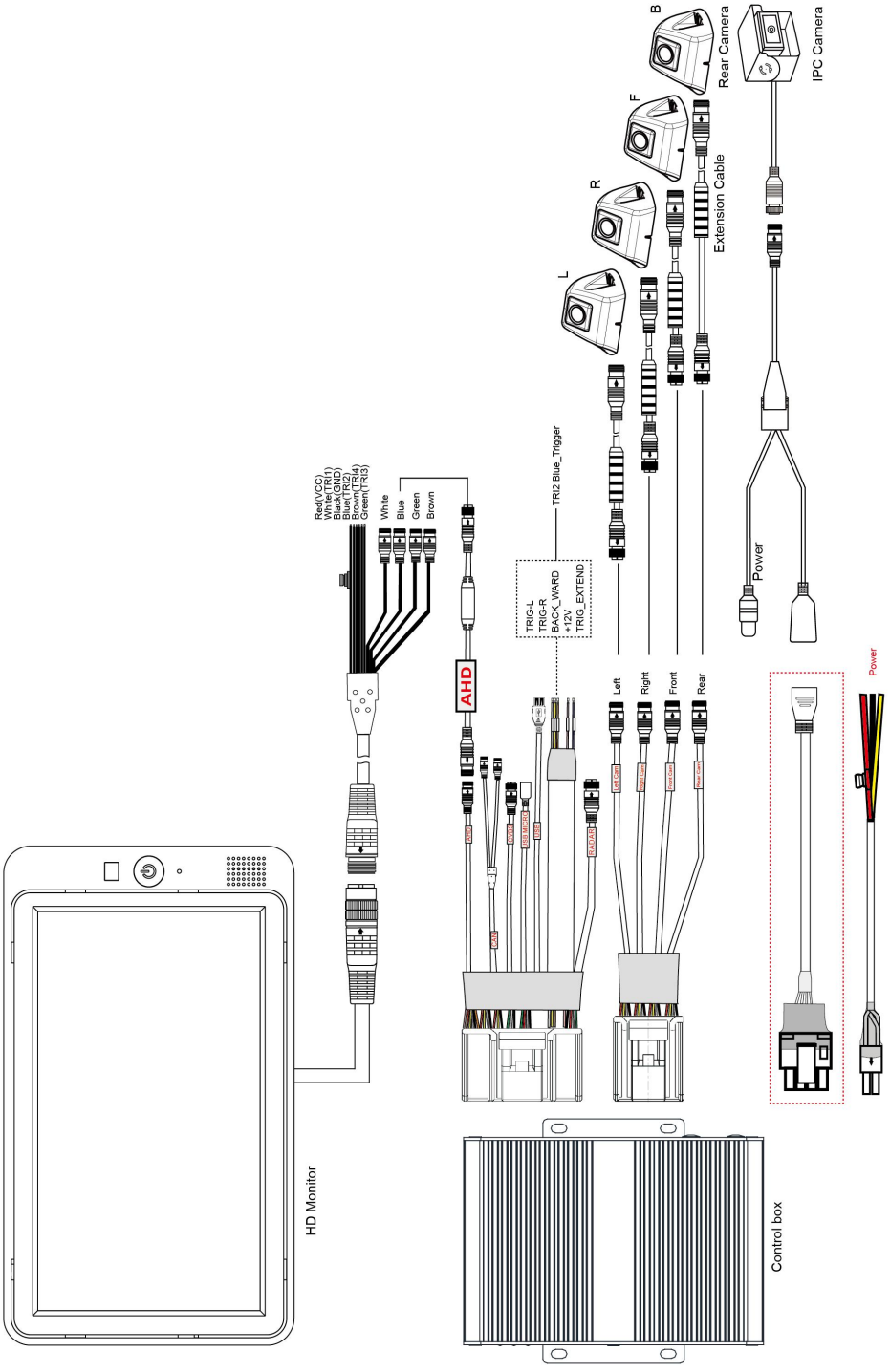
4.1 Main Control Parameters

Panoramic Video Parameter	Input Video		Max 4CH×1080P25f/30f +1CH IPC
	Display Mode		2D/3D
	HD Output	Resolution	1080P
		Refresh Rate	30f
	SD Output	Resolution	D1
		Refresh Rate	25 f / 30f
Recorder Parameter	Storage		Max. 2×512G SD card
	Compressed Encoding		Max. 4CH×1080P H.264 encode
	Decompression and decoding		Max. 4CH×1080P H.264 decode
	Video Stream		1M/ 2M / 4M
Working Voltage			10 ~ 32V
Working Voltage Range for External Trigger Signals			10 ~ 32V
Working Electric Current			<2A/12V
Working Temperature Range			-20°C ~ +70°C
Storage Temperature			-40°C ~ +85°C
Working Humidity			+10% ~ +95%

4.2 Camera Parameter

Image Device	1/2.9” 2Mega CMOS
Frame Rate	25 / 30
Resolution	1920 (H) x 1080 (V)
Pixel Size	2.8 μm x 2.8 μm
Compression	1080P
Video Output	1.0Vp-p, 75Ohm
White Balance	Auto
Viewing Angle	>170(H)
Power Supply	12V
Working Temperature Range	-20°C ~ +70°C, RH95%Max.
Storage Temperature	-30°C ~ +80°C, RH95%Max.
Waterproof Rating	IP69K

5. Wiring Diagram



Notice:

1.Both the red and yellow lines of the power supply need to be positive.

2.Trigger lines labeled V_CTRL and +12V cannot be connected to external power supplies.

3.The IPC power supply must not exceed the + 12V.

5.1 Wiring harness and definition

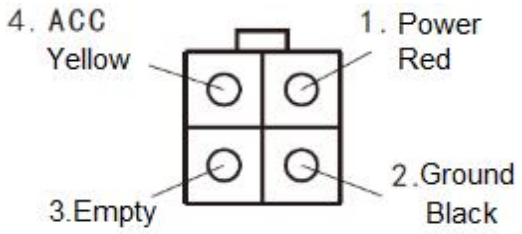
4P Yellow Aviation head Female (AHD)	Connection	Definition
2	Black/Block	Ground
4	Yellow	Video

4P Blue Aviation head Female (CVBS)	Connection	Definition
2	Black/Block	Ground
4	Yellow	Video

USB2.0 Female	Connection	Definition
3	Yellow	DM
2	Black	DP
1		GND
4	Red	5V

Small 5559	Connection	Definition
1	Pink	V_CTRL
3	Blue	TRIG_EXTEND
5	White	TRIG_L
7	Yellow	TRIG_R
8	Brown	BACK_WARD

4 P/ 4 . 5 Plug (power cord)	Connection	Definition
1	Red	Power
2	Black	Ground
4	Yellow	ACC



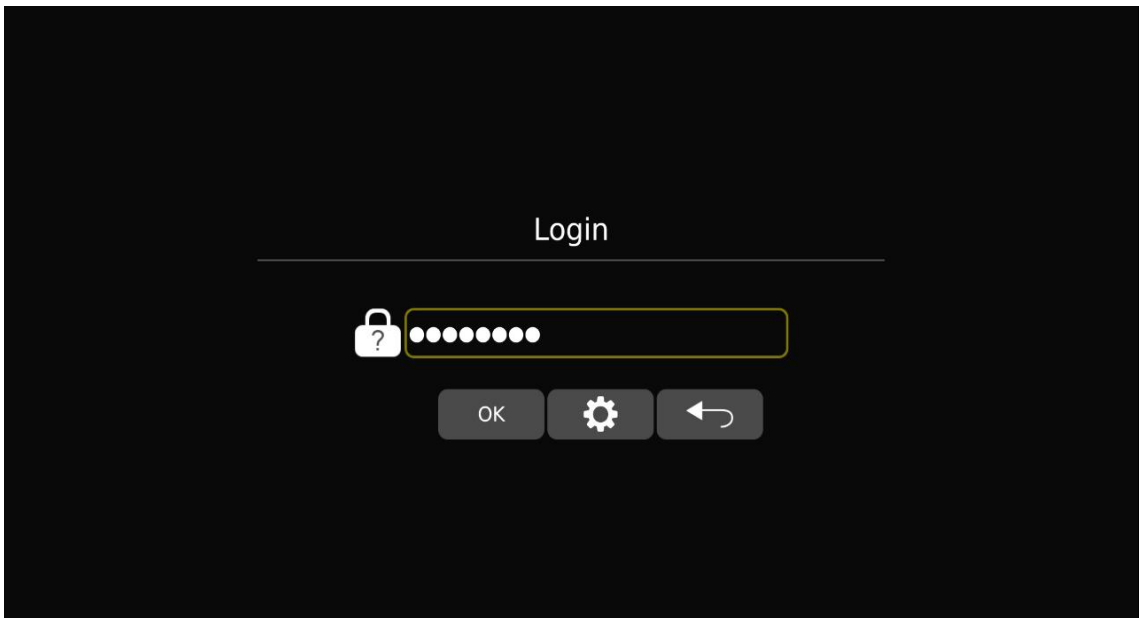
4P I N／4. 5 Plug front (side A)

6. Operation Instruction of Remote Control

- ENTER:Enter into main menu or confirm menu selection.
- ESC:Exit main menu interface / return to main menu interface.
- ◄ ►:Left and right keys are used to switch the left and right single view in the main interface; it is used to add and subtract settings in the menu page.
- ▲ ▼:Up and down keys, shift image channel to front/back view in the main interface; in the menu page, it is used to switch left and right options.
- SHIFT:Shift current display mode to quad-view in main menu interface; It's used for switching menu selection in menu interface.
- POWER:Turn on / off video display.
- Number button 0-9: Input box number input key / main interface view switch key.
- CLEAR:Delete button,delete a character each time.
- MULTI:Switch to full screen surround view in the main interface.
- PTZ:Enter decimal point.

7. Operation Instruction Of Main Menu Interface

7.1 User Administration Login



Feature Description:

 :Input password.(default password is 88888888)

 :Login confirmation.

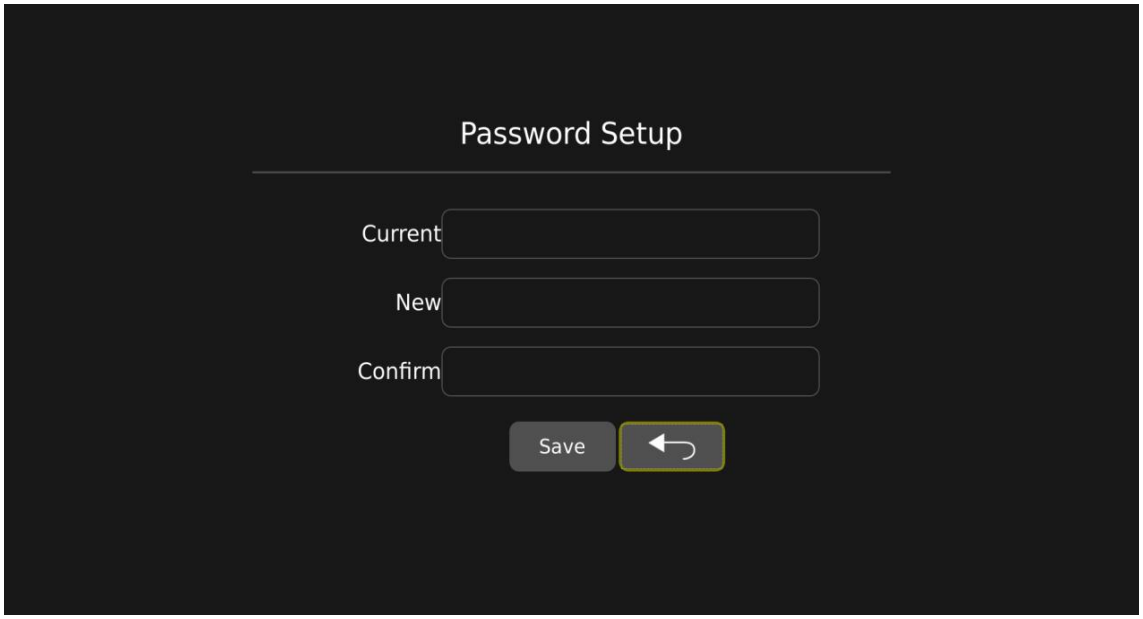
 :Modify password.

 :ESC key,return to the last menu.

Notice:

1) Initial password: 88888888. The password is composed of numbers and letters, and the password length supports up to 16 characters. If you forget the password, please contact the manufacturer to apply for the key, and you can do the initialization operation.
2) After the password is logged in, there is no need to re-enter the password within 10 minutes; once the timeout or restart of the device or wake up from sleep, the password must be entered again.

- Modify Password

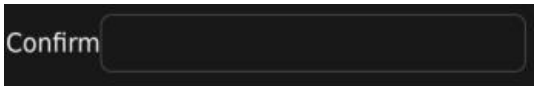


Password modification instructions:

Input old password one time, then input new password twice, click “save” button to save password.

:Input old password.

:Input new password.

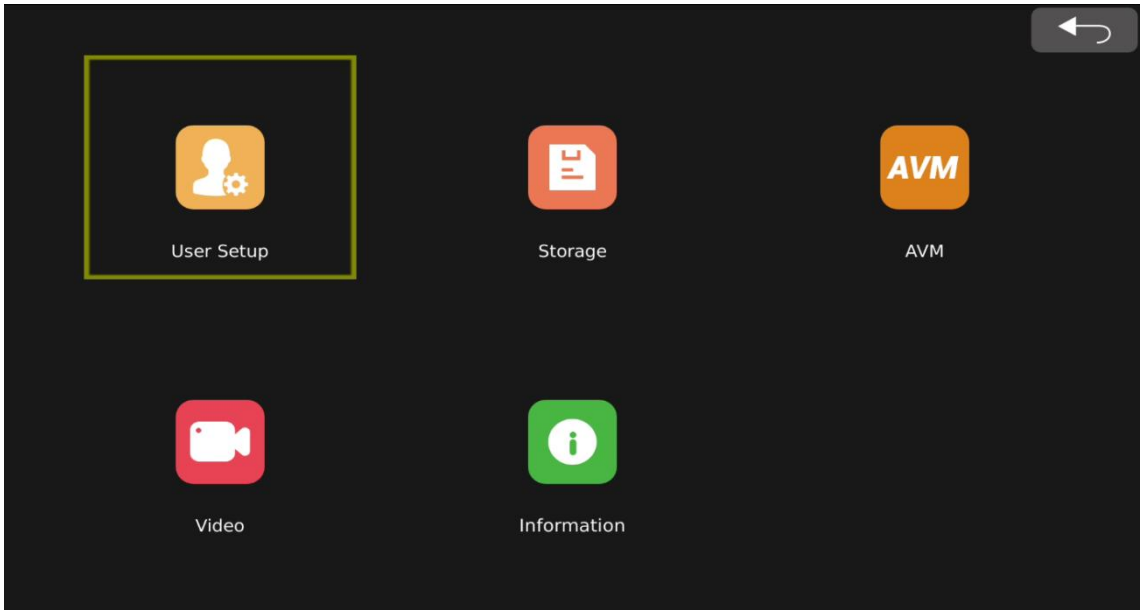


:New password confirmed.

:Save password.


:ESC key.(Click this to discard password changes)

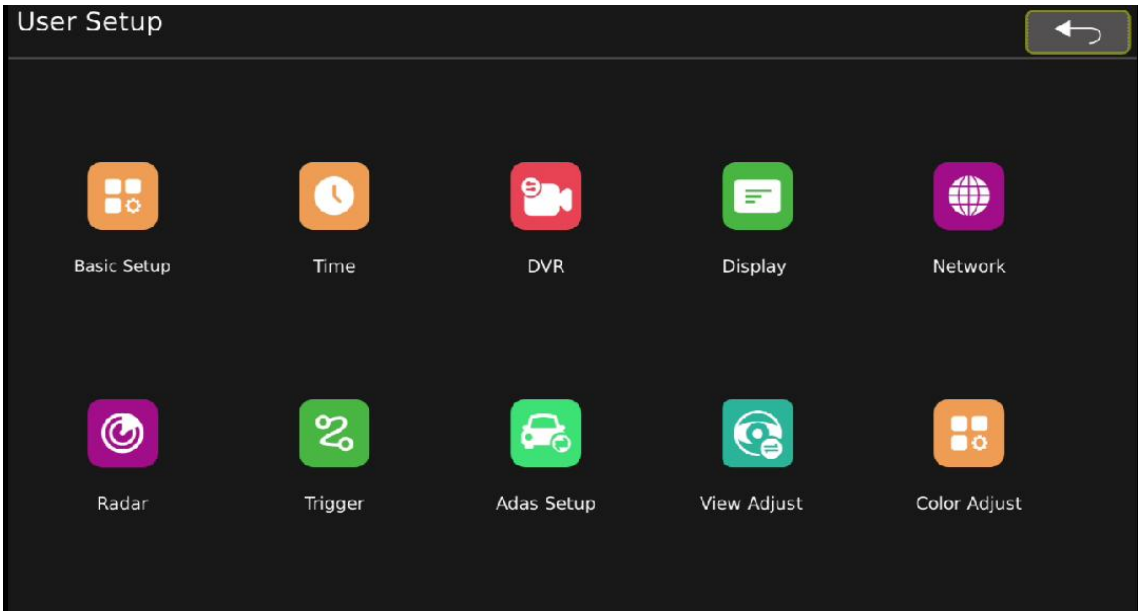
7.2 Main Menu Interface



Feature Description:

- User Setup: User setup including basic function setting, DVR setting, display setting, network setting.
- Storage: Storage management, you can view the SD card/U disk usage and format operations.
- AVM: Including calibration, calibration file import and export, vehicle model switching, view settings and other functions.
- Video: Record management, to check and export videos locally.
- Information: Information data, to check and upgrade the version of CPU, MCU.

7.3 User setup interface



Feature Description:

- Basic Setup: Basic setup interface.
- Time: Time setup interface.
- DVR: Basic recording setting and recording event setting interface.
- Display: Display mode setting.
- Network: Network setting interface.
- Radar: Radar setting interface.
- Trigger: Trigger Line Setting interface.
- Adas setup: Intelligence assistance setting.
- View Adjust: Fish eye correction.
- Color Adjustment: Color adjustment.

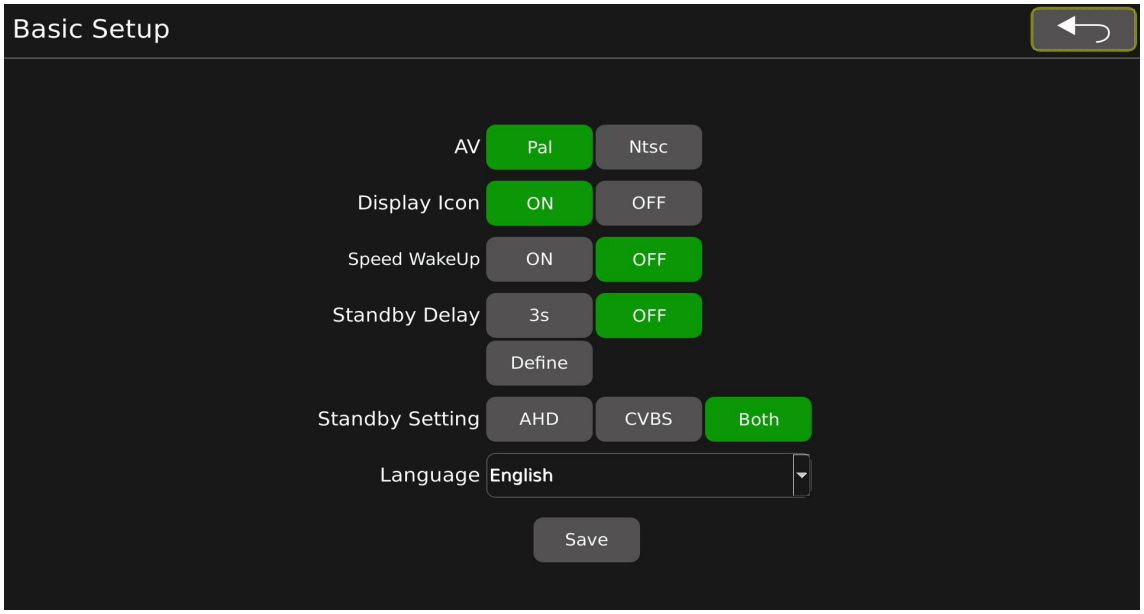
Remote control operation instructions:

1) SHIFT: Switch configuration item button.
2) Left / right: Modify the parameters of the current configuration item.
3) ESC: Exit the shortcut key and return to the main menu.

Notice:

1) It is normal for this system automatically restart after saving some modified configurations.

7.3.1 Basic Setup:Basic setup interface

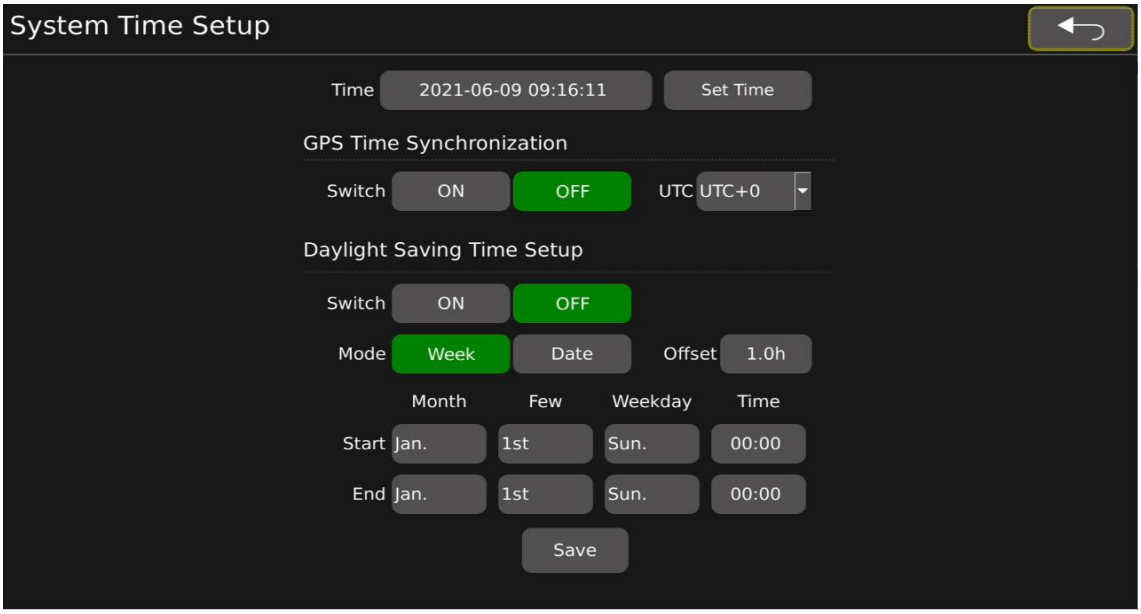


Feature Description:

- AV: The default of standard configuration is PAL. The PAL/NTSC optional configuration of this configuration item is only for CVBS output.

- Display Icon: icon hidden function is default to be ON.when set to ON, the main interface icon is displayed, when it is set to OFF, the main interface icon is hidden .(excluding the direction icon)
- Speed WakeUp: Speed wake-up function, the default is OFF. When set to ON, if the current vehicle speed is lower than the set speed value, the system will automatically wake up the display screen; if the current vehicle speed is higher than the set speed value, the system will automatically standby the display screen. Set to OFF, the speed wake-up function is turned off.
- Standby Delay: Automatic standby function, the default is OFF. When set to 3s, the system will automatically enter the standby state after 3s if there is no operation on the system; set to OFF, the system will always be on without any operation; set to Define to customize the configuration Standby time, the configuration range is 3-30s.
- Standby setting: Screen standby control function, the default is Both. When set to AHD, when in standby, only AHD output will enter the standby state; set to CVBS, when in standby, only CVBS output will enter the standby state; set to Both, when in standby, both AHD and CVBS outputs will enter the standby state.
- Language: Language function, both in English and Chinese.

7.3.2 Time:Time setting interface



Feature Description:

- Time: Time setting, caution; after modifying the time, you need to press the "Set Time" button to save the time.

  GPS Time Synchronization :
- Switch: GPS timing switch setting, the default is OFF. When set to ON, when GPS receives a signal, the system will automatically calibrate to the current time zone according to the time zone configured in UTC after GPS receives signal; when set to OFF, the system will not perform GPS

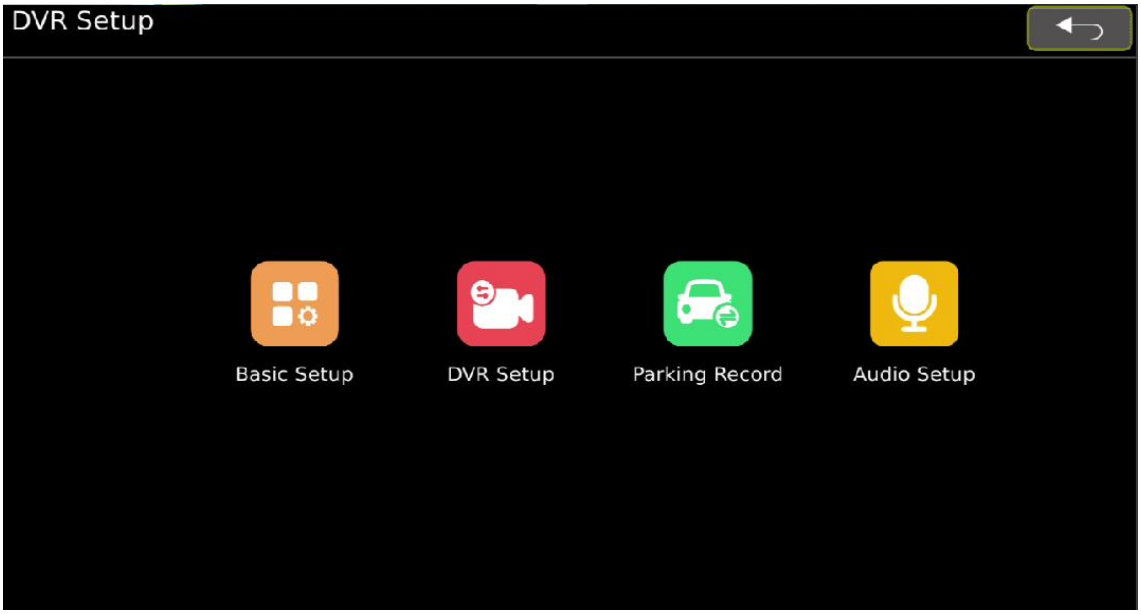
timing.

- UTC: Time zone settings, the default is UTC+0. UTC-1 to UTC-11, UTC+0 to UTC+12, a total of 24 options.

Daylight Saving Time Setup:

- Switch: The summer time switch setting, the default is OFF. When it is set to ON, and the current time is within the setting interval of [start--End], it is required to be within the normal time + the set Offset value (For example: Offset is 1.0h, it requires +1 at normal time, and so on). When set to OFF, the daylight saving time function is not turned on.
- Mode: Daylight saving time range configuration mode, the default is Week. When set to week, the configuration mode of the daylight saving time range [start--End] is: month/week/hour/minute. When it is set to Date, the configuration method of the daylight saving time range [start--End] is:the hour and minute of the month and day.
- Offset: Daylight saving time needs to increase the time length configuration. The up and down buttons of the remote control can modify the Offset value, and the step value is 0.5.
- Start: Configuration of the start time of daylight saving time.
- End: Configuration of the ending time of daylight saving time.
- Month: Configuration of months,1-12 month is optional.
- Few: The weekday configuration in the month configuration.
- Weekday: The configuration of the day of the week. Monday to Sunday is optional.
- Time: Configuration content is hour and minute.

7.3.3 DVR Setup:DVR Basic Setup

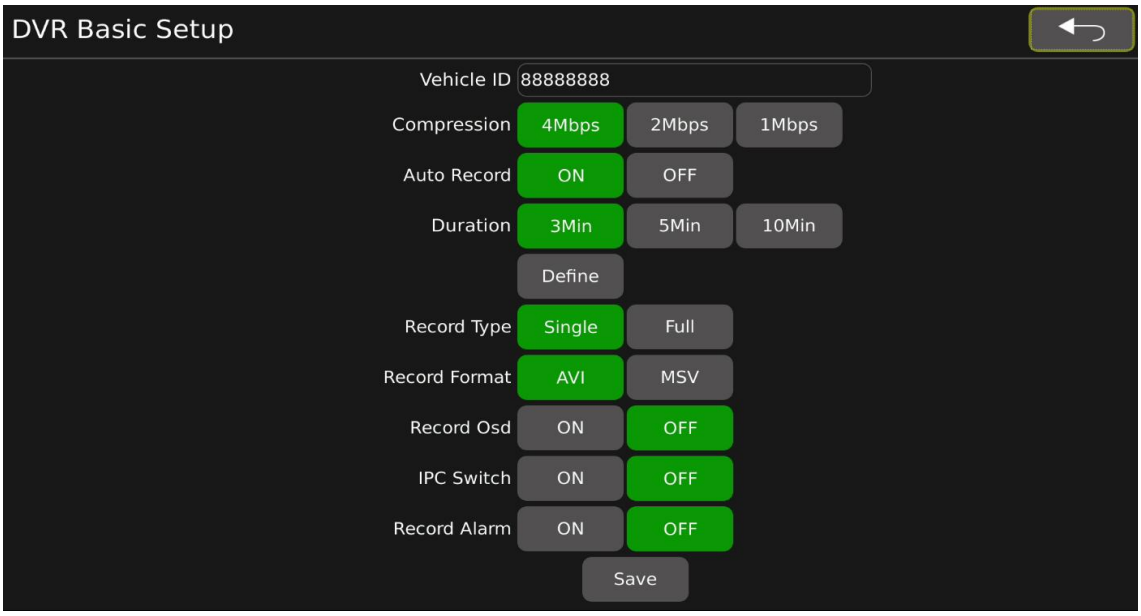


Function Description:

- Basic Setup: recording setup basic configuration.

- DVR Setup: Event video recording configuration.
- Parking Record: parking recording basic configuration.
- Audio Setup: Basic configuration of recording.

1) Basic Setup:recording setup basic configuration



Function Description:

- Vehicle ID: License plate number setting, default is 88888888, up to 10 characters can be set.
- Compression: Video compression setting, the default is 4Mbps. 4Mbps(high compression) and 2Mbps (normal compression) and1Mbps (low compression) can be set.
- Auto Record: Automatic recording switch, the default is ON. Set to ON, the video will start automatically after booting; set to OFF, the video will not start under any circumstances after booting.
- Duration: Video duration setting, default minute is 3. 3Min, 5Min, 10Min and user-defined video duration can be set (setting range 3-30min).
- Record Type: The default record type is Single. The system will record four single channel's image when set to be Single; it will only record one full screen when set to be FULL.
- Record Format: Default format is AVI.The video format can be set to AVI format or MSV format.
- Record Osd: Video screen information setting, the default is OFF. When set to ON, the recording will have time and channel name information; if set to OFF, the recording will have no time and channel name information.
- IPC Switch: IPC recording settings, the default value is OFF. Set to ON, IPC+four-channel single view will be recorded during recording; set to OFF, IPC will not be recorded during recording.
- Record Alarm: Recording abnormal alarm setting, the default is OFF. When set to On, if the recording stops abnormally, the main interface will display an alarm prompt; if set to OFF, when the recording stops abnormally, the main interface will not display the alarm prompt.

Notice:

a. When the recording type is set to Full, the recording quality will not be controlled by the Compression configuration, but will be controlled by the RTSP configuration. If the RTSP is set to 1080P, the recording quality is 8M; if the RTSP is set to D1, 720P, the recording quality is 2M.

b. It is normal phenomenon for the system will restart after modify some configuration items.

c. If any parameter is modified, it must be saved before exiting, otherwise the modification will be invalid.

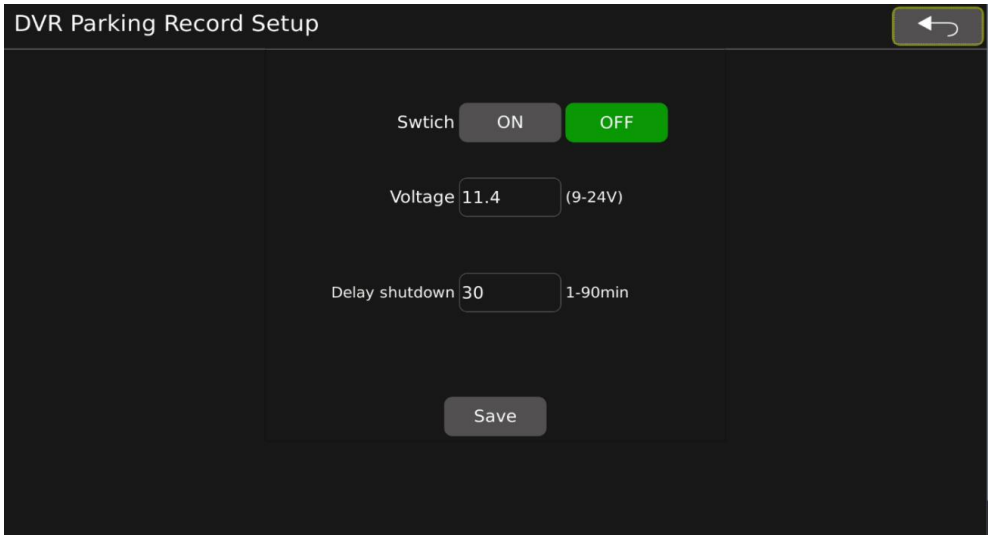
d. When the video quality is set to 4mbps, the video will be overwritten in a short period of time.

2) DVR Setup

Function Description:

- G-Sensor Setup: ON/OFF.
- Sensitivity: G-sensor sensitivity, HIGH/LOW.
- GPS Setup: ON/OFF.
- Speed: Over speed value limit setting, unit of which can be set in km/h or miles/h.

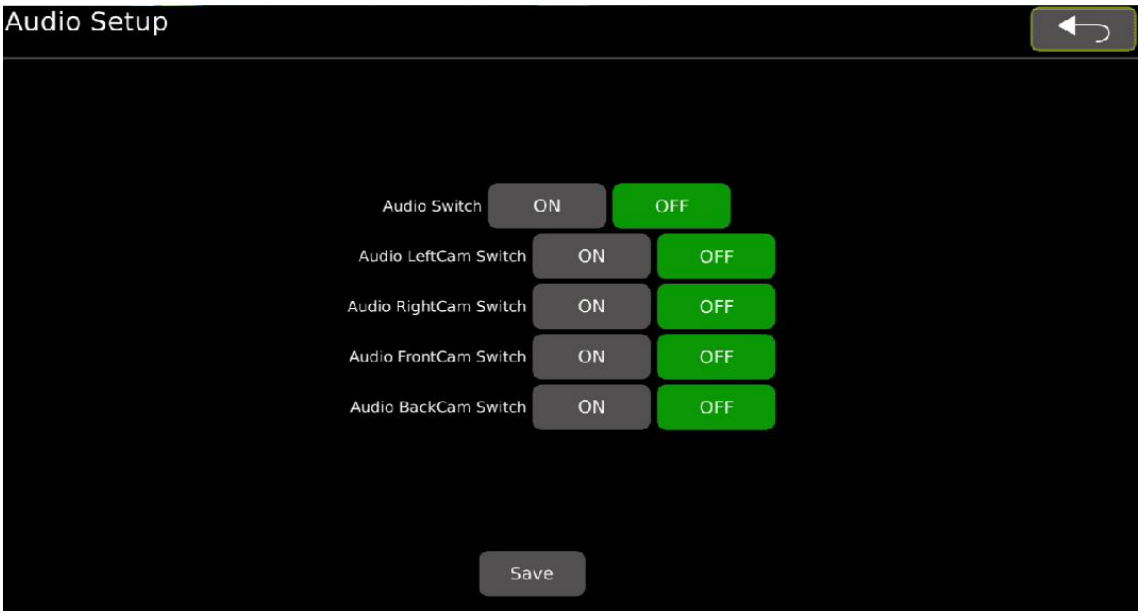
3) Parking Record:Parking Record Configuration



Function Description:

- Switch: parking video recording switch, the default is OFF. When it is set to ON and when you park the car, it will enter the shutdown state after the time in Delay shutdown configuration expire ; when it is set to OFF, it will enter the shutdown state immediately after parking.
- Voltage: Voltage configuration, the default is 11.4V. When the Switch is configured to be ON: it will immediately enter the standby state if the current voltage is lower than the configured voltage after stopping; if the current voltage is higher than the configured voltage, it will enter the shutdown state after the time in delay shutdown configuration expired. 9-24V is optional.
- Delay shutdown: parking recording time configuration, the default is 30min. 1-90min range can be set.

4) Basic configuration of recording



Function descriptions:

- Audio Switch: Recording switch.The default is OFF. When it is set to ON, access the camera with microphone to record, and when playing back on the PC, you can hear the sound.(Audio LeftCam Switch,Audio RightCam Switch,Audio FrontCam Switch,Audio BackCam Switch Not open yet)

7.3.4 Display:Display mode setup

Function Description:

- SD Screen Adjustment: CVBS,AHD output screen parameter adjustment. (Note: re-adjustment is required after switching between NTSC and PAL)

- Logo Setup: Replacement of the boot logo. Note: Currently, it is supported to import a 24-bit deep 1920x1080 BMP format logo image.
- Blending Region: Switch for whether the loop view overlap area is overlapped or not, the default is ON. Set to ON, the overlapping area overlaps; set to OFF, the overlapping area does not overlap.
- View Cut: Picture clipping. ON by default. When ON is selected, there is a certain crop on the left and right sides of the single view picture. When OFF is selected, the single view is not cropped, and the picture is consistent with four divisions. Any modification is prohibited without confirmation from the seller.
- View Mode: Display mode switching, the default is 2D. 2D mode or 3D mode can be set.When set to 2D, the screen display effect is 2D surround view + single view; when set to 3D, the screen display effect is 2D surround view + 3D ring view.
- Display Direction: Horizontal and vertical screens switching, the default is Horizontal. When set to Horizontal, the screen is rendered in a horizontal screen effect; when set to Vertical, the screen is rendered in a vertical screen effect.
- View Ratio: Set the loop view to single view / 3D picture scale, the default is 1:2. When set to 1:2, surround view occupies 1/3 of the entire screen, single view/3D occupies 2/3 of the entire screen; set to 2:3, surround view occupies 2/5 of the entire screen, single view/ 3D occupies 3/5 of the entire screen; set to 1:1, surround view occupies 1/2 of the entire screen, and single view/3D occupies 1/2 of the entire screen.
- Compatibility Mode: Compatibility mode settings, the default is ON. When set to ON, the compatibility of all screens is better; when set to OFF, the screen display effect is better.(High mode is temporarily unavailable) Any modification is prohibited without confirmation from the seller.
- Instant Rear View: Quick plot setting, the default is OFF. When it is set to OFF, the boot mode is to display the panoramic picture after the boot logo is displayed. When it is set to ON, the single view will be displayed after turning on for 3s, and then a panoramic picture will be displayed, requiring the back single view to be a mirror image.(that is, using the back single view screen instead of displaying the logo)
- Front Cursor: The front single view cursor switch configuration, the default is OFF. When set to ON, the front single view displays the cursor; when set to OFF, the front single view does not display the cursor.
- Back Cursor: The back single view cursor switch configuration, the default is OFF. When set to ON, the back single view displays the cursor; when set to OFF, the back single view does not display the cursor.
- Vehicle Model Offset: Quick drawing configuration, the default is OFF. When set to ON, the rear single-view screen will be displayed about 3s after power-on; if it is set to OFF, the boot logo will be displayed about 3s after power-on.
- Set Video Mode: Lock the camera resolution configuration, which is OFF by default. When it is set to

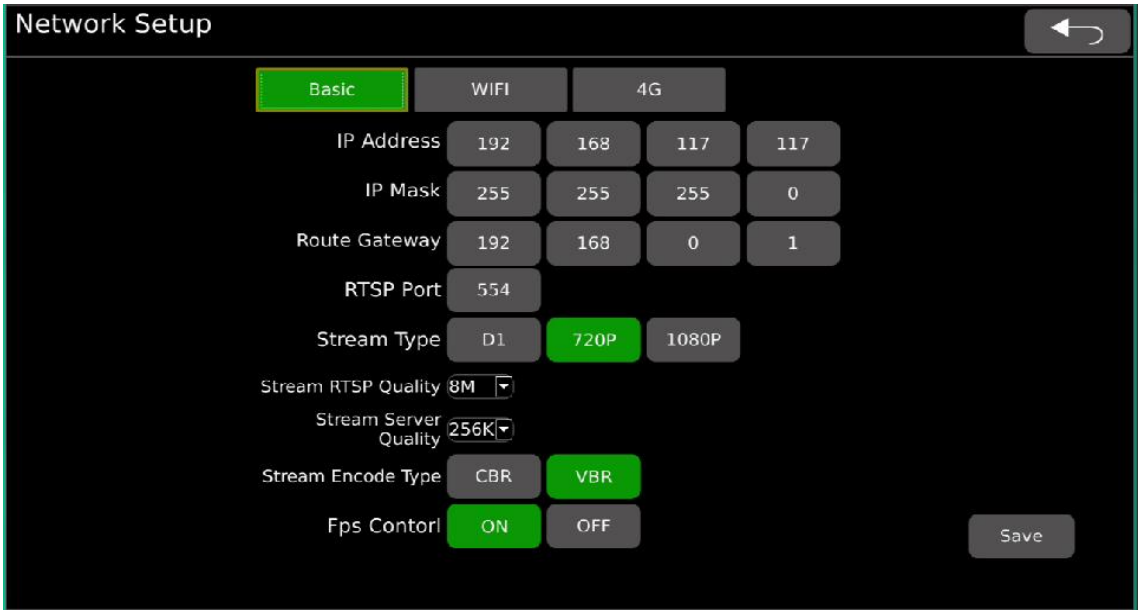
ON, you can choose 1080p30f, 1080p25f, 720p30f and 720p25f. After selecting the corresponding resolution, it will be abnormal to connect other types of cameras.

- OffscreenRender: Off screen rendering configuration, the default is ON.
- Svm Color Balance: Brightness balance setting, turned off by default.
- Color Balance OSD: Brightness balance parameter setting, which is turned off by default.Any modification is prohibited without confirmation from the seller.
- Color Balance Optimize: Brightness balance is optimized, and it is turned off by default.
- CalibrateChangeMode: The default is OFF, with a 4-way calibration; when set to ON, a 3-way calibration can be performed. The end can only be calibrin 3 ways.
- Color Balance Frame: Brightness balance frame setting, default to 5.
- Can Error Status: The default is OFF. When set to on, use can to send messages, send the wrong port rate, and the display will show 255 error.Any modification is prohibited without confirmation from the seller.
- Full View Curve: View around the prompt line. Default is ON; when set to ON, open the global pedestrian detection / A37 pedestrian detection switch and a complete prompt line appears around the view. When both the global and A37 pedestrian detection are opened, the prompt line is the red and yellow area of the global pedestrian detection, and the 3d view will also have a prompt line.
- Pedestrains OSD: OSD configuration of pedestrian incident video, turned off by default. When set to ON, the AI camera recognizes the recognition box of the pedestrian, and the recognition box for the pedestrian is in red.
- Vehicle OSD: The OSD configuration of the event video of the vehicle is turned off by default. When set to ON, the AI camera will appear the recognition box in the single view of the vehicle. The identification box of the identification car is in blue.
- Icon Version: Default is V1; display the old icon in the upper right corner; set V2 to display the new icon.
- Default View: Default value is Dual +Front.Configuration is Dual+2D_Left, Dual+2D_Right, Dual+2D_Front, Dual+2D_Back, Quad, Full Dual, Horizontal Full Dual, Dual+Quad, IPC View

Notice:

(1) It is normal phenomenon for the system will restart after modify some configuration items.

7.3.5 Network: Network Setup Configuration Setup



Function Description:

Basic:

- IP Address: IP Address Setting. Default value is 192.168.117.117.
- IP Mask: Subnet mask settings. The default is 255.255.255.0.
- Route Gateway: Routing gateway settings. The default is 192.168.0.1.
- RTSP Port: Port number setting. The default is 554.
- RTSP Type: Network playback video stream resolution setting,default value is 720P. D1 / 720P / 1080P selectable.
- Stream RTSP Quality: Network stream code rate. The default is 8M. 256K, 512K, 1M, 2M, 4M and 8M optional.
- Stream Server Quality: Server stream code rate. The default is 8M, with options of 256K, 512K, 1M, 2M, 4M, and 8M.
- Stream Encode Type: Network stream coding type setting. The default is VBR.
- Fps Contorl: When set to OFF, the FPS for push flow is 100, and FPS to ON. When set to ON, VLC can be used immediately.

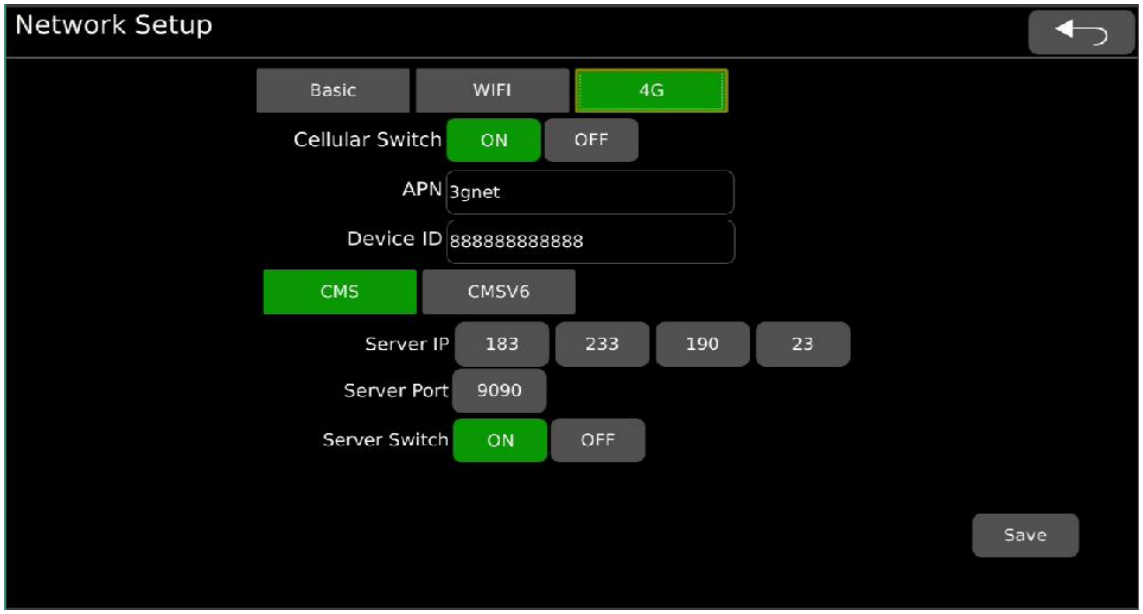
WIFI:

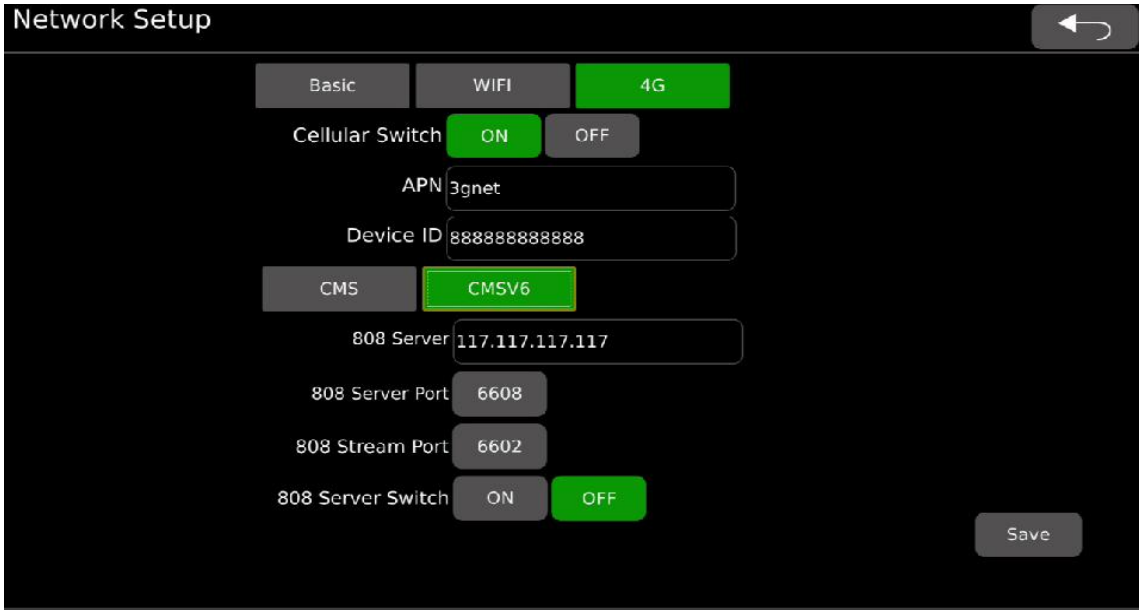
Function Description:

- Wifi Mode: Set to AP, panorama as the wifi hot spot; when set to STA, panorama as the site. When the wifi mode is set to the AP,
- Wifi _ AP switch: the setting of the WiFi switch, the default is ON. When set to ON, connect the system Wi-Fi; when set to OFF, Wi-Fi function is off and cannot be connected.
- Wifi _ AP Name: setting of WiFi name, default to FHD360_T5. Up to 50-bit characters can be set.
- Wifi _ AP Password: WiFi password setting, default to 88. A minimum of 8 characters must be set and 50 characters must be maximum.
- When the wifi mode is set to the STA,
- Wifi _ STA switch: Open the setting of the connection hot spot, and the default is ON. When set to ON, hot spots can be connected to OFF.

- Scan: This feature is not used temporarily.
- Wifi _ STA SSID: the setting of the hot spot name, with the default to FHD360 _ T 5 _ STA. Up to 50-bit characters can be set.
- Wifi _ STA Password: Hot spot password setting, default to 88. Minimum 8 characters must be set and 50 characters must be maximum.

4G:





Function Description:

- Cellular Switch: 4G module switch, OFF by default.
- APN: APN setting, the default is 3gnet.
- Device ID: Equipment number, the default is 888888888888.

CMS:

- Server IP: The IP address of the CMS server, and the default is 183.233.190.23.

- Server Port: CMS Server port number, the default is 9090.
- Server Switch: Server switch, the default ON.

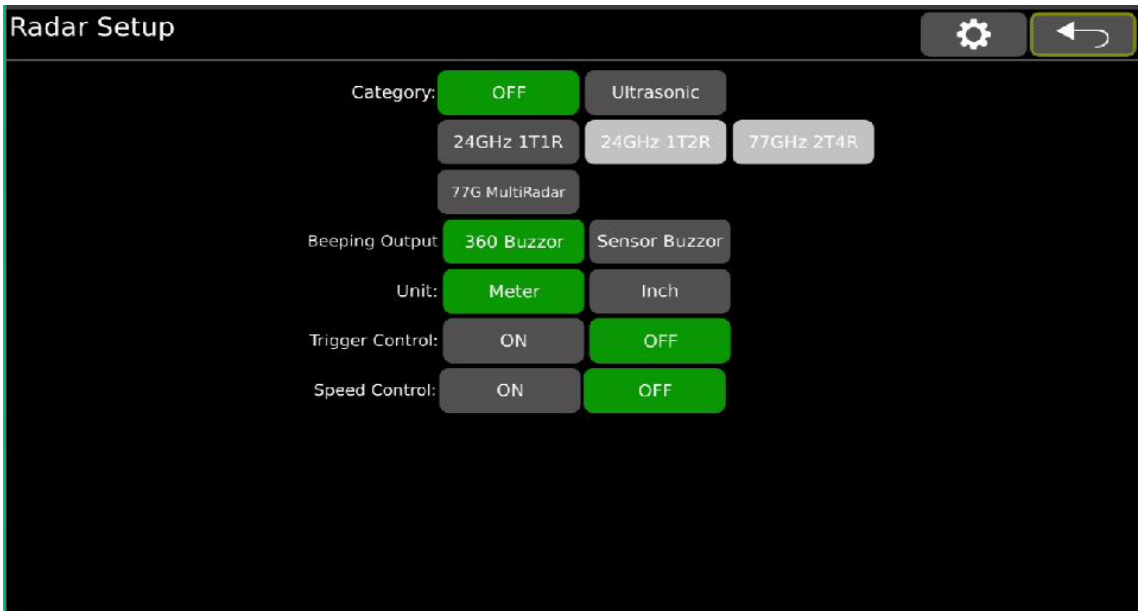
CMSV6：

- 808 Server IP: IP address, default is 117.117.117.117.
- 808 Server Port: Port number of the server, the default is 6608.
- 808 Stream Port: The port number of the network, the default is 6602.
- 808 Server Switch: Server switch, OFF by default.

Notice:

1) When the RTSP Type is set to 1080P, the Compatibility Mode (compatibility mode) needs to be set to OFF, otherwise it is prone to display defects such as blurred screens and horizontal stripes.
2) Please refer to A17 Panorama 4G function instruction document for details of 4G functions.

7.3.6 Radar:Radar setup interface

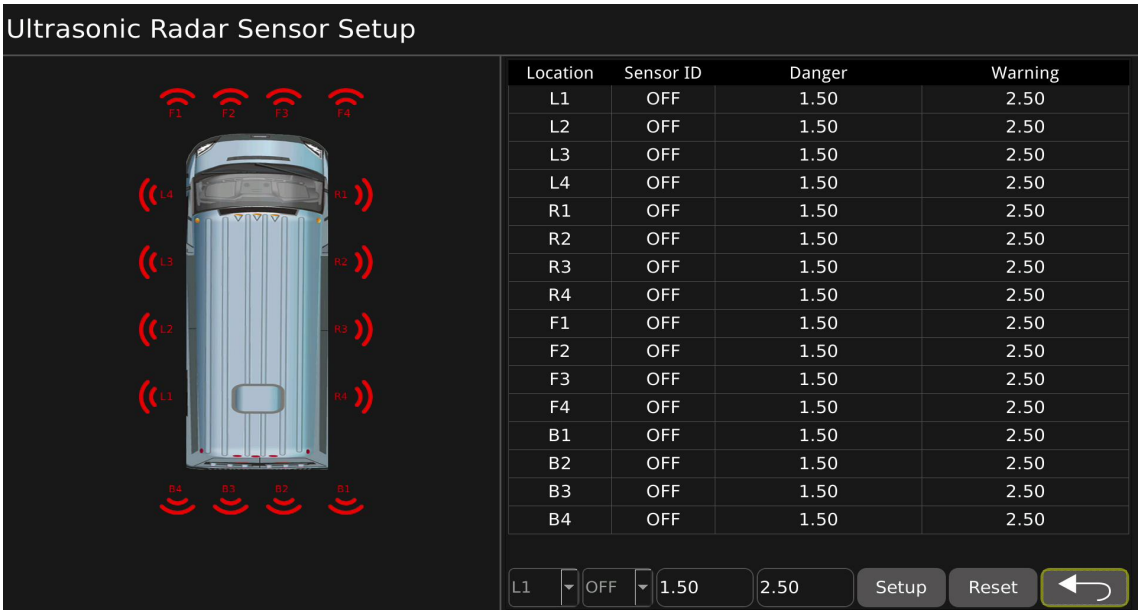


Function Description:

- Category: Radar configuration. When set to OFF, the radar is not available; when set to Ultrasonic, use with our BSA 09 radar.(Note: 24GHz 1T2R,77GHz 2T4R Currently unavailable)
- Beeping Output: Buzzer settings, 360 Buzzor / Sensor Buzzor selectable.
- Unit: Default value of unit parameter setting is Meter. Meter / Inch selectable.
- Trigger Control: Trigger control setting, the default is OFF. When it is set to ON, the radar will respond when triggered; when it is set to OFF, the radar will not respond.
- Speed Control: Speed control setting, the default is OFF. When set to ON, if the current vehicle speed is lower than the configured speed value, the radar responds; if the current vehicle speed is higher than the configured speed value, the radar does not respond. When set to OFF, the radar function is not controlled by vehicle speed.

- Ultrasonic radar priority setting: Priority configuration. When multiple channels of radar respond at the same time, a certain channel is displayed first. When set to 1st, the priority is the highest, and so on, 1st> 2nd> 3rd> 4th.(Note: This configuration item is only displayed when the radar is set to Ultrasonic, otherwise it is blanked)
- Osd Display: When set to 77G multiplex radar, the configuration appears and turns off by default. After the setting is turned on, the 77G radar responds, and the nearest probe ID and detection range are displayed in the lower right corner of the single view.
-  : Exit button.
-  : Enter radar sensor setup interface.

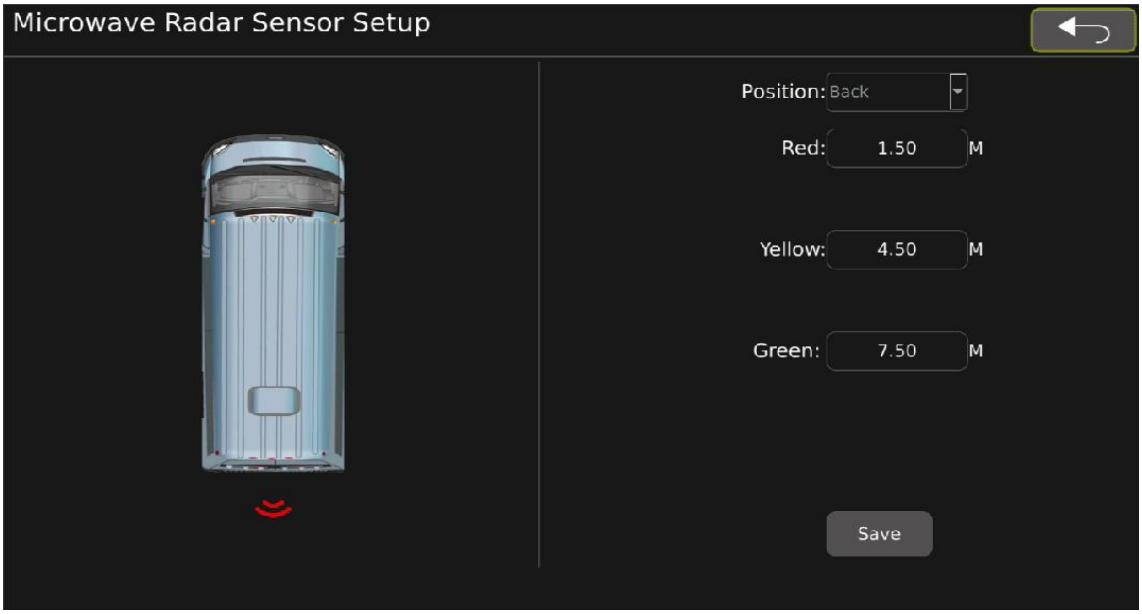
1) Ultrasonic Radar Sensor Setup



Function Description:

- Location: the installation position configuration of radar sensor, user can select sensors L1-L4, R1-R4, F1-F4 and B1-B4.
- Sensor ID: Sensor ID setting, OFF / 1-12 selectable.
- Danger: Dangerous distance setting.
- Warning: Warning distance setting.
- Setup: Save the setting parameters.(Notice: Click setup button to save the update each time after finished parameters of each sensor)
- Reset: Reset radar parameters.
-  : Exit.

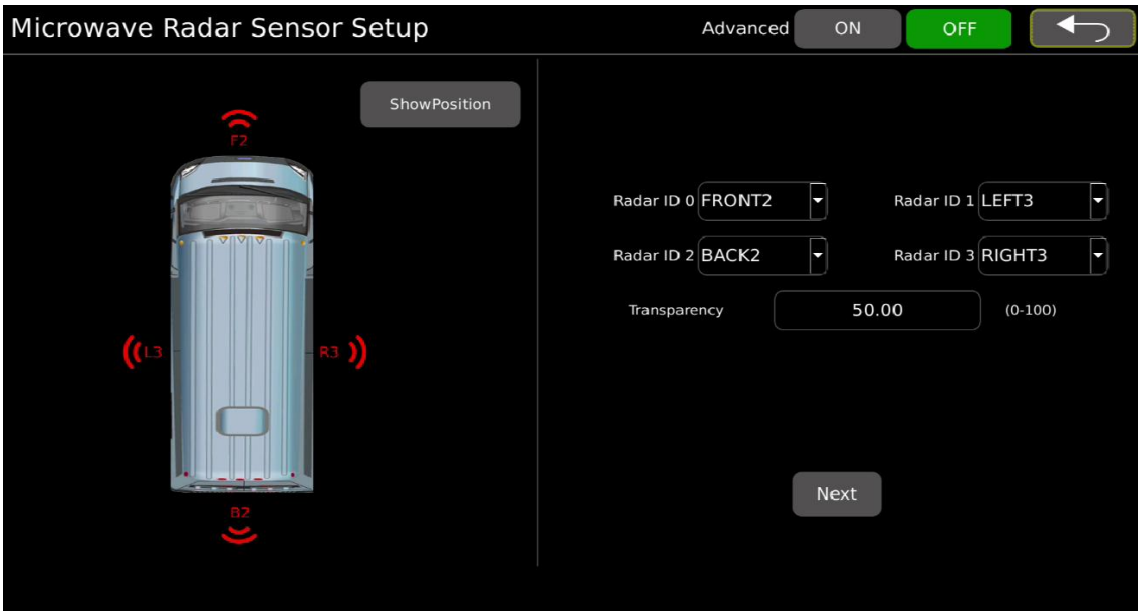
2) 24 GHZ 1T1R Microwave Radar Sensor Setup

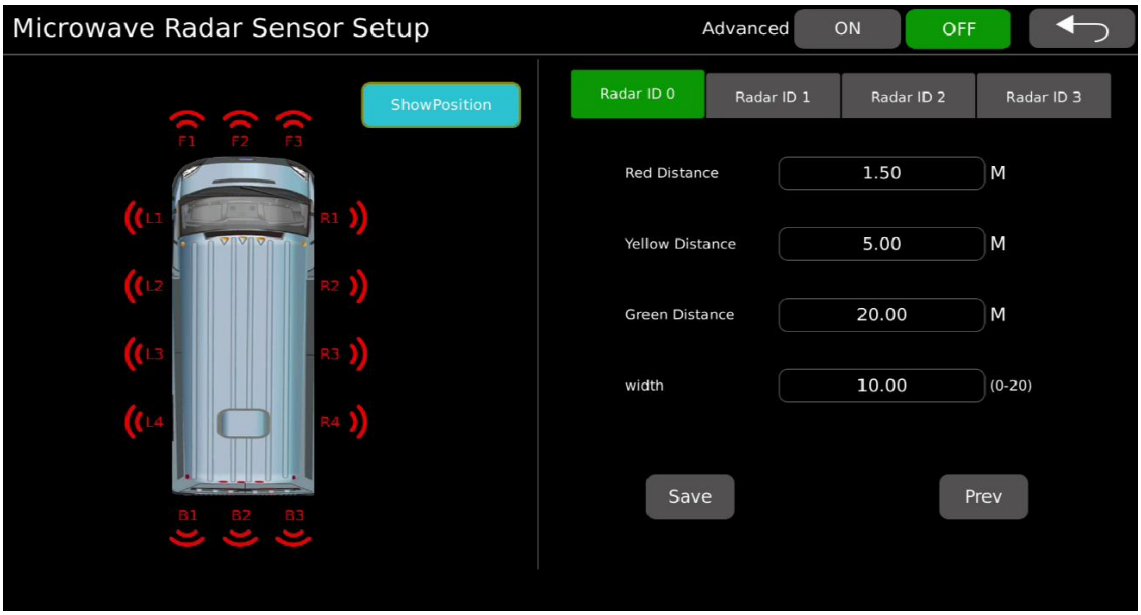


Function Descriptions:

- Position: the installation position configuration of radar sensor, user could select Left, Right, Front, Rear.
- Red: dangerous distance setup.
- Yellow: warning distance setup.
- Green: safe distance setup.
- Save: save the setup parameters.
-  : Exit.

3) Multiplex radar sensor setup

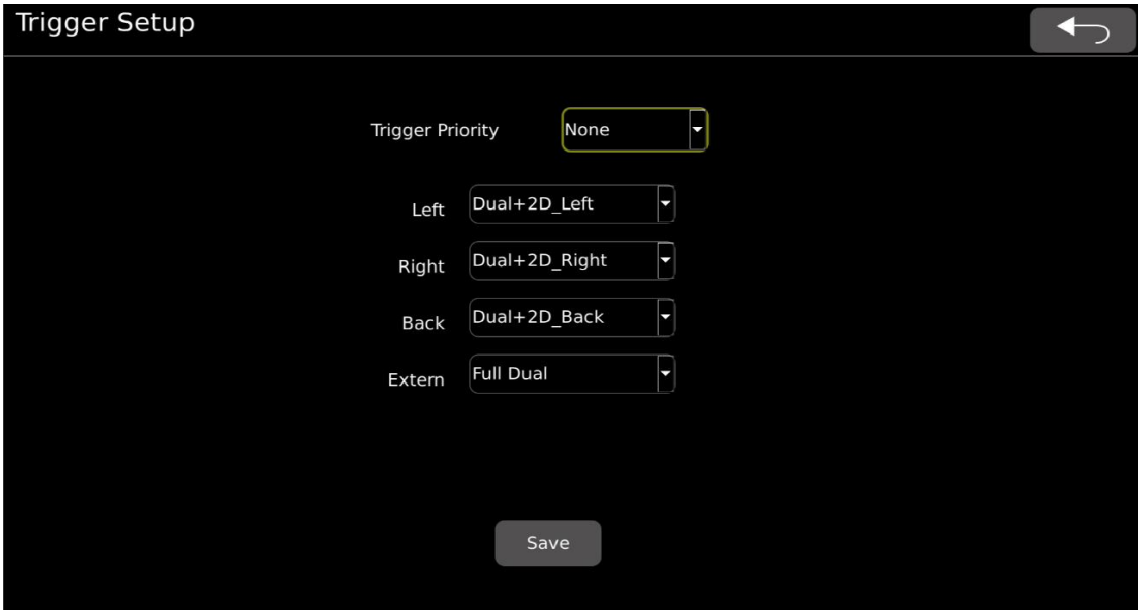




Function Descriptions:

- Show Position: Display the radar position.
- Advanced: Set to ON, the detection box is displayed when the target object is detected, set to OFF not to display.
- Radar ID: Display the installation position of radar, and users can choose FRONT1-FRONT3, LEFT 1-LEFT 4, BACK 1-BACK 3 and RIGHT1-RIGHT4.
- Transparency: When the color transparency is set to 0, the color block covers image; when set to 100, there is no color transparency.
- Next: next page.
- Red Distance: hazard distance setting. Light Red: The average of the Red and Yellow, the detection distance is less than the set distance, greater than the set distance of the Red, the red icon appears in the loop view, and the light red color block appears in the single view.
- Yellow Distance: Warning distance setting. Light Yellow: The average of Yellow and Green, the detection distance is less than the set distance, greater than the distance set by Yellow, in the Warning area, yellow icon in the loop view, and light yellow color block in the single view.
- Green Distance: Safe distance setting.
- Width: Detection width setting.
- Save: Save the setting parameters.
- Prev: Return to the previous page.
-  : Exit.

7.3.7 Trigger:The trigger line setting interface



Function Description:

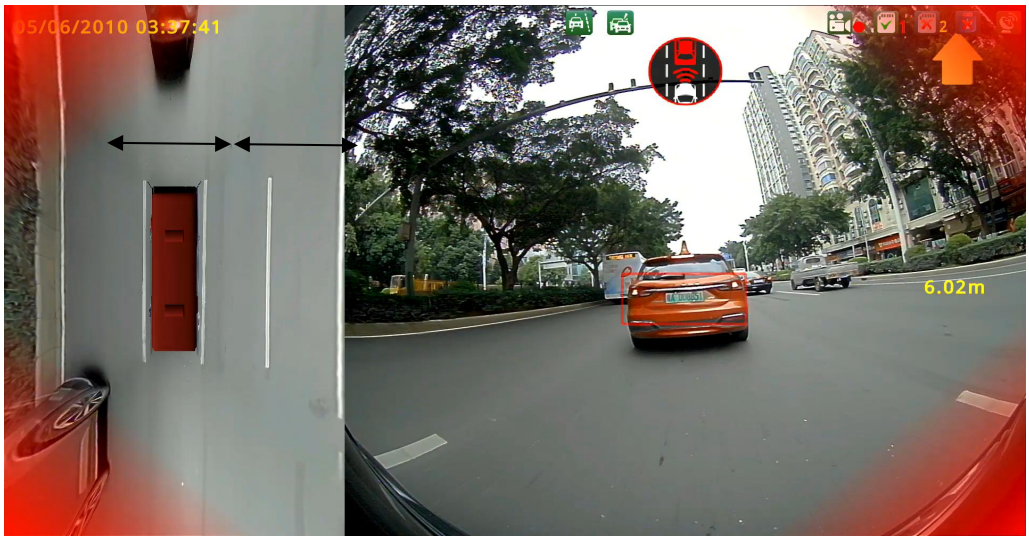
- Trigger Priority: Trigger priority, default value is None. When set to None: Panorama will display the first triggered view. For example, when the rear line is triggered, the rear view camera is displayed in a panoramic view. At this time, if the left road is also triggered, the back road camera is still displayed in the panorama. The left side camera will not be displayed until the back road trigger is completed. When set to Reverse: When the rear trigger line is triggered, the panorama will always display the rear camera view. If the current other road is triggered, the rear camera is also triggered, and the panorama will give priority to displaying the rear camera picture. Set to Left/Right in the same way.
- Left: After the yellow line is triggered, the configuration of the screen display effect is Dual+Right by default. Configurable: Dual+Left, Dual +Right, Dual +Front, Dual +Back, Scan, Dual +3D Left, Dual +3D Right, Quad, Full Dual, IPC.
- Right: After the white line is triggered, the configuration of the screen display effect, the default is Dual+Left. Configurable: Same as above.
- Back: After the brown line is triggered, the configuration of the screen display effect, the default is Dual+Back. Configurable: Same as above.
- Extern : After the red line is triggered, the configuration of the screen display effect, the default is Scan. Configurable: Same as above.
- Save: Save parameter adjustments.
-  : Exit.

7.3.8 Adas Setup:Adas assistance Setup

1) Front vehicle detection

Function Description:

- Detect Switch: the front vehicle detection switch is ON by default.
- Draw OSD: when set to ON, there is a frame when detecting front vehicle. It is OFF by default.Any modification is prohibited without confirmation from the seller.
- Detect Type: It is Normal by default.(Currently only Normal is available)
- Detect Speed: detection speed, when GPS speed is greater than the detection speed, the front vehicle detection function responds. The default value is 60km/h.
- Alarm Time: alarm time, when distance to front vehicle/GPS speed is less than or equal to the set time, it will give an alarm. The default value is 800ms.
- Filter Distance: distance filtering, the filtering is centered on the central axis of the vehicle, and the left and right sides are larger than the target of filter distance.Default is 80cm.
- Filter Width: width filtering, it is to filter objects whose width is less than set width. The default value is 120cm.
- Fake Speed: When not connected to GPS or no GPS signal, stimulate speed, (Set up the Fake Speed > Detect speed to open pedestrian detection function); When the GPS has a signal and the Fake Speed is 0, the actual vehicle speed is determined by the GPS.
- When this function is enabled, the icon appears on the upper right side of the main interface.  When the alarm is triggered, the display screen has a breathing light effect and a collision icon in front of the single view 
- Number on the left: the distance from the car in front of it.
- Save: Save.



2) Normal pedestrian detection

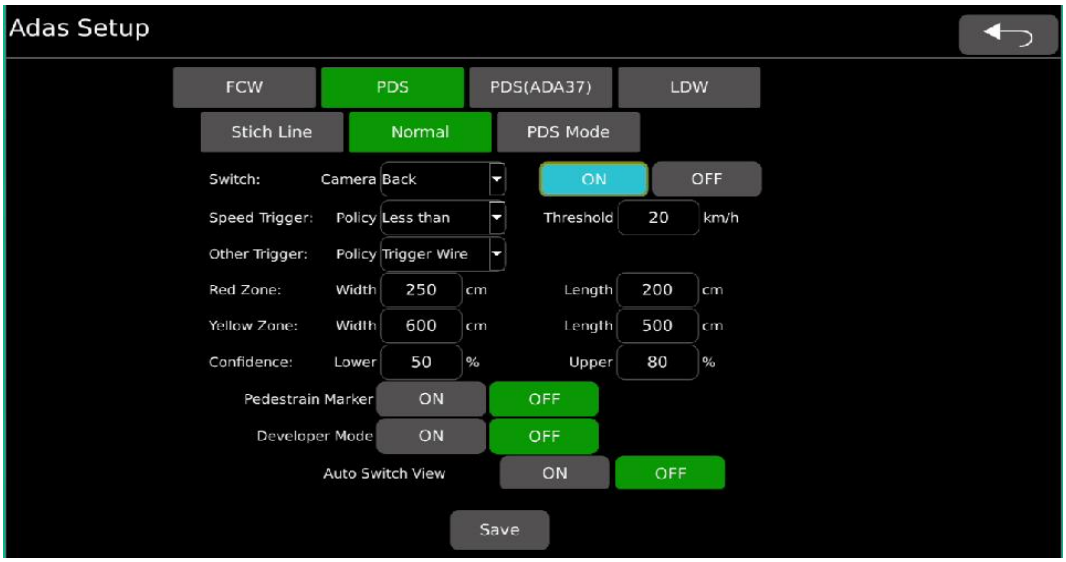
Function Descriptions:

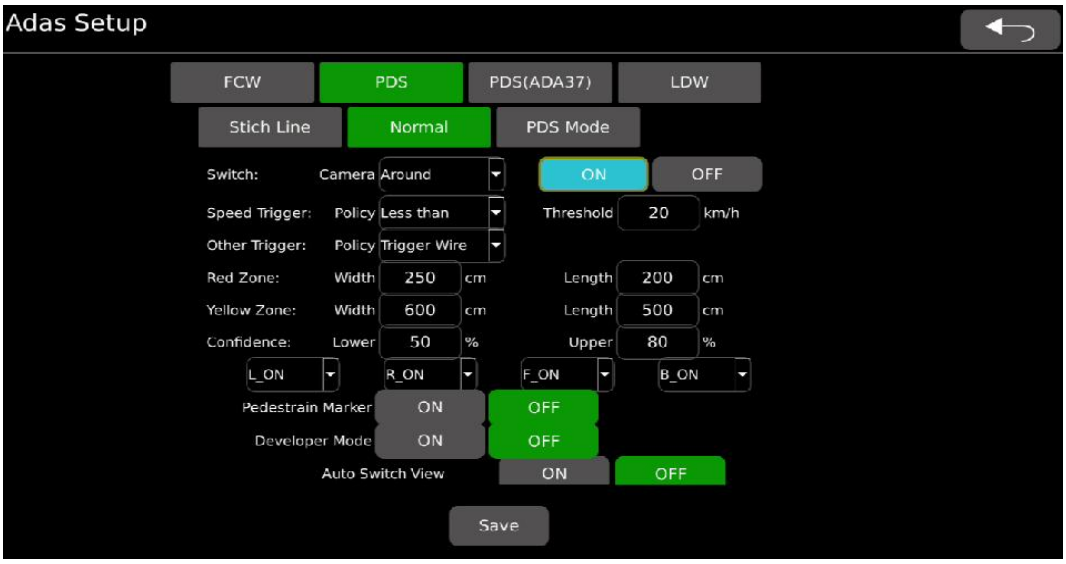
- Detect Switch: PDS was set, suture pedestrian detection open and OFF suture pedestrian detection closed
- Channel Select: Detection channel selection. Both: Left/Right/Front/Rear channel; LR: Left/Right channel.
- Dynamic Overlap:default ON,Open the dynamic overlap angle.
- Filter Height: Height filtering, default value is 100cm. That is to say, pedestrians targets will not be detected if their height less than 1m.
- Filter Width: Width filtering, default value is 30cm. That is to say, pedestrians targets will no be detected if their width is less than 0.3m.
- Filter Distance: Distance filtering, default value is 300cm. That is, filter out the target beyond 3m * 3m. Note: The maximum range of detection is also 3m * 3m.
- Confidence: Confidence filtering, default value is 90%. That is, pedestrian targets will not be detected if confidence is less than 90%.
- Max Speed: The maximal detection speed. The default value is 20km/h. The pedestrian detection

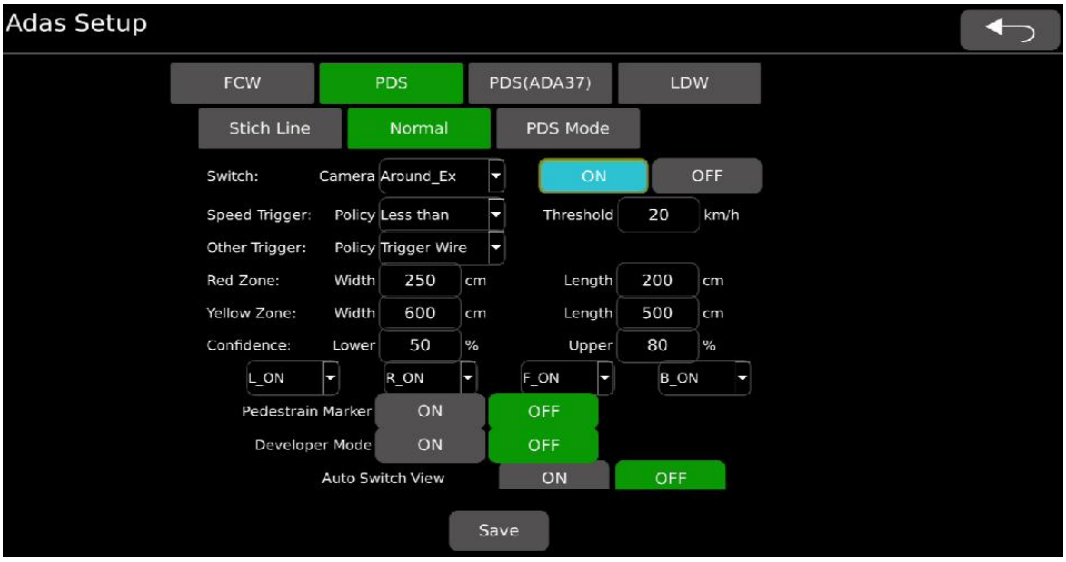
algorithm will be on only when GPS speed is lower than the set value; if set to 0km/h, pedestrian detection algorithm will close.

- The detection area switches of 4 corners are set to ON.

3) Post road pedestrian detection



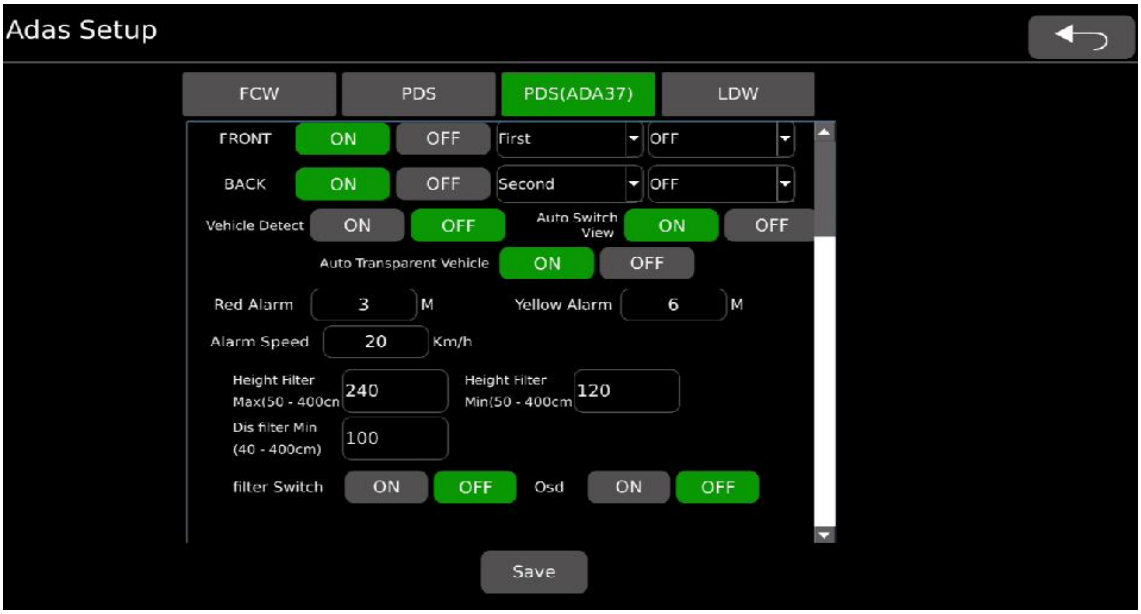




Function Descriptions:

- Switch: Detection type configuration,set to BACK,only the rear screen opens the pedestrian detection algorithm; set to Around, global detection, recommended for ordinary body, car and engineering vehicle; set to Around_Ex, it is recommended for long body, bus and train.
- Speed Trigger: Speed control switch. Set the algorithm to Less than, open the algorithm to Greater than when the speed is less than the set value, and open the algorithm when the vehicle speed exceeds the set value.
- Other Trigger: Other algorithms to open the type setting. Set to Always On, the algorithm is often open; set to Trigger Wire, the algorithm is triggered.
- Red Zone: Red detection area setting.
- Yellow Zone: Yellow detection area setting.
- Confidence: Confidence lower bound (Lower): the system will filter out the suspected target below this value, the value is too low, there will be a large performance overhead, too high value will lead to missed detection, default 50%; confidence upper bound (Upper): the target above this value, will be marked in the view, the default 80%.
- L _ ON, R _ ON, F _ ON, and B _ ON: The pedestrian detection switch of the front and rear, left and right cameras is set separately, and all the cameras are turned on by default.
- Pedestrain Marker: The switch of Pedestrain Marker can be switched. For ON, if a pedestrian is detected in the red or yellow zone, the box of corresponding color marks the pedestrian; not for OFF. **Any modification is prohibited without confirmation from the seller.**
- Developer Mode: **Any modification is prohibited without confirmation from the seller.**
- Auto Switch View: Default OFF, set to ON, when the pedestrian is in the red area, the screen is forced to switch to the loop + corresponding single view
- PDS Mode: **Any modification is prohibited without confirmation from the seller.**

4) Pedestrian detection (connect to AI camera)



Function descriptions:

- Switch: The 4CH switch setup of pedestrian detection, the default is OFF.
- Curve: When set to ON, the red and yellow prompt line appears in the ada37 lens screen.
- Vehicle Detect: The default is off, and the vehicle can be identified when set to ON.
- Auto Switch View: Default OFF, set to ON, when the pedestrian is in the red area, the screen is forced to switch to the loop + corresponding single view.
- Auto Transparent Vehicle: The default is ON. After turning on, the transparency of vehicle model will be automatically changed when the pedestrian is detected in the 3D state.
- Red Alarm: Red alarm distance, When the pedestrian detection distance is less than the distance set by red alarm, the red and yellow icon appears alternately on the ring view, the buzzer and display give an alarm, switching to ring view+corresponding single view. The default is 3m.If multiple channels are less than the distance set by Red Alarm, switching to the view with highest priority

according to the priority order of Front, Back, Left, Right.

- Yellow Alarm: Yellow alarm distance, when the pedestrian detection distance is less than distance set by yellow alarm, but greater than distance set by red distance, only yellow icon appears in ring view. The default is 6m.
- Front/BACK/LEFT/RIGHT: multiple channels are less than the distance set by Yellow Alarm, switching to the view with highest priority according to the priority order of Front, Back, Left, Right.
- Alarm Speed: Alarm speed, default 20 km/h, when the actual speed is higher than Alarm Speed, does not respond to pedestrian detection, lower than Alarm Speed, respond to pedestrian detection.
- Height Filter Max: Objects above this height are filtered out with a default value of 240.
- Height Filter Min: Target below this height will be filtered out, with a default value of 120.
- Dis filter Min: Starting from the center of each camera, when the distance to the target is less than this value, the height filtering will not be performed. No of the height of the target will be triggered. The default value is 100.
- Filter Switch:The AI identifies the filter switch and turns it on by default.
- OSD: debugging, if a target is detected, and a line, the bottom height of the line is Height Filter Min, and the top height of the line is Height Filter Max. When the top edge of the box intersects the line, the target will not be filtered, and when the target is within Dis filter Min, the Osd function will not be triggered. **Any modification is prohibited without confirmation from the seller.**
- Save: Save.

5) Alarm curve

Function descriptions:

- Detect Switch: Deflection way detection switch.
- Speed Control: Speed setting, the speed default speed is 60 Km /, the actual speed is greater than or equal to the set speed, this function is turned on.

- On the upper right icon 
- When the car changes lanes to the left and identifies the lane, display the icon in the single view and alarm, and the display shows the breathing light.
- When the car changes lanes to the right and recognizes the lane, display the icon in the single view and alarm, and the display shows the breathing light. The following picture is an alarm in the right lane.

7.3.9 Fish eye correction

Function descriptions:

- Select Camera: Select the camera to adjust. There are four channels, Left, Right, Front, Back. The

default is left.

- Fish Eye correction: The fish eye correction switch is OFF by default. The image of right camera is fish-eye state. When turning on, the right camera image is non-fish eye state.
- Camera Rotation Angle: The camera rotation angle is 0 by default. A negative value indicates counterclockwise rotation, and a positive value indicates clockwise rotation.

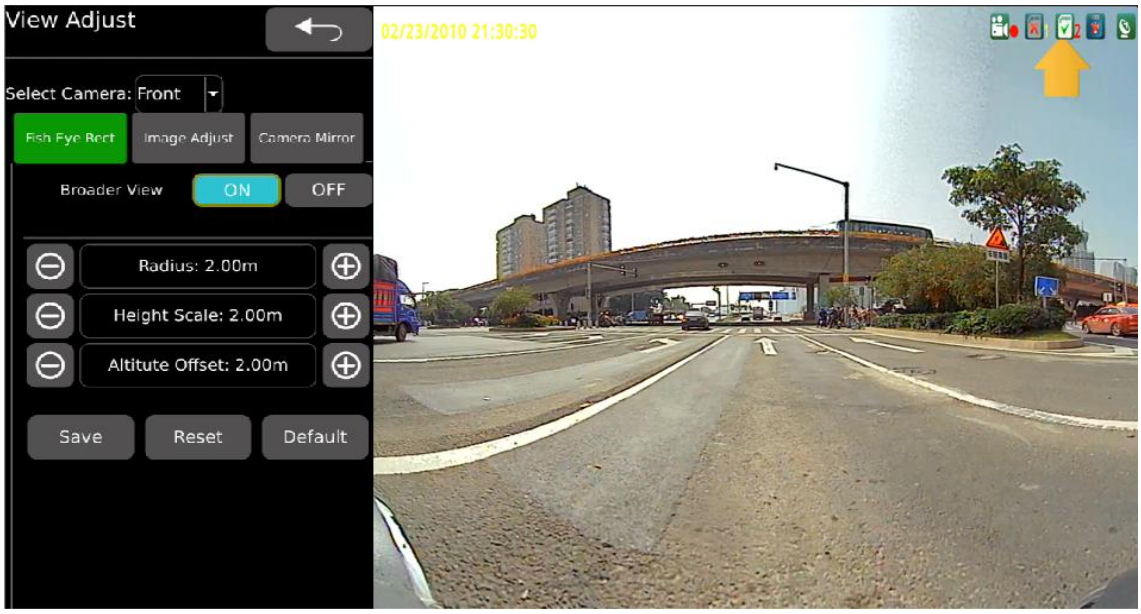
Note: when adjusting camera rotation angle, the display will delay.

- Angle Parameters: Angle parameter, W: Capture display width; H: Capture display height; (U, V) coordinates of the center point .(W defaults to 2200, H defaults to 1100, U defaults to 1100, V defaults to 550)
- Update: Update angle parameter, the right view corresponds to parameter values.
- Reset: Reset. Go back to the original View Adjust view.
-  : Back and confirm whether to save.If not, you will go back to the original View Adjust image even if you update.

Notice:

1) Fisheye corrected cameras will still display fisheye image in quad view, calibration interface, recording, playback, but will show non-fisheye image in single view.

Broader view:



Function description: (only the front and rear paths have this correction algorithm)

- Radius: The radius of the projection surface, the operation of the camera picture, increasing and reducing the radius will change the proportion and position of the picture.
- Height Scale: Reduce the value, stretch the picture, increase the value, compress the picture, take

the bottom as the benchmark, for the compression and stretch of the displayed picture

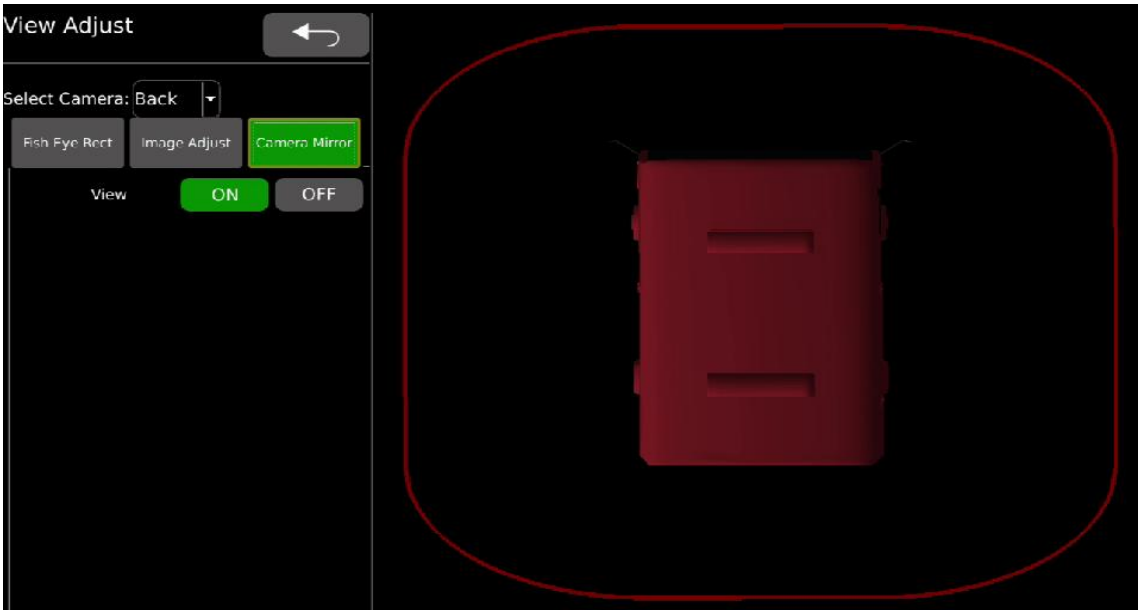
- Altitute Offset: Move the picture, reduce the value, move the picture up, increase the value, move the picture up, move will not change the picture proportion
- Save: Update the perspective parameters, and the picture on the right corresponds to the parameter value.
- Reset: Reset, back to the very beginning of the View Adjust screen.
- Default: Return the default value.
-  : Return, and confirm whether to save, if not save, even if Update, back to the beginning into the View Adjust screen.

Function descriptions:

Image Adjust:

- View: When selecting Dual, the right side is the ring view; When selecting Single, the right side is the corresponding single view of selected camera.
- Brightness: Brightness, the default value is 46. The value ranges from 0 to 127.
- Saturation: Saturation, the default value is 106. The value ranges from 0 to 127.
- Contrast: Contrast, the default value is 80. The value ranges from 0 to127.
- Sharpness: Sharpness, the default value is 0. The value ranges from 0 to 31.
- Hue: Hue, the default value is 42. The value ranges from 0 to 83.
- Save: Save.
- Default: Set to the default value.

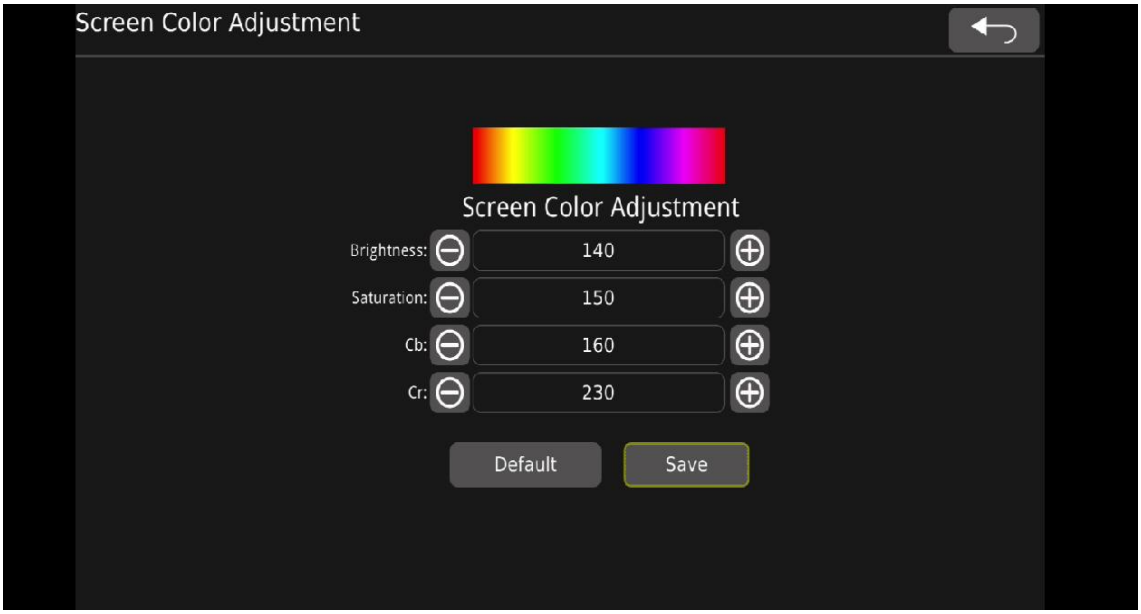
7.3.10 Mirror original image adjustment



Function description: camera mirror:

- View: Set the display mirror image, the default left and right front display screen is the original image, set to OFF, the rear mirror, set ON. This function only changes the display mirror image, and will not affect the calibration.

7.3.11 Color adjustment



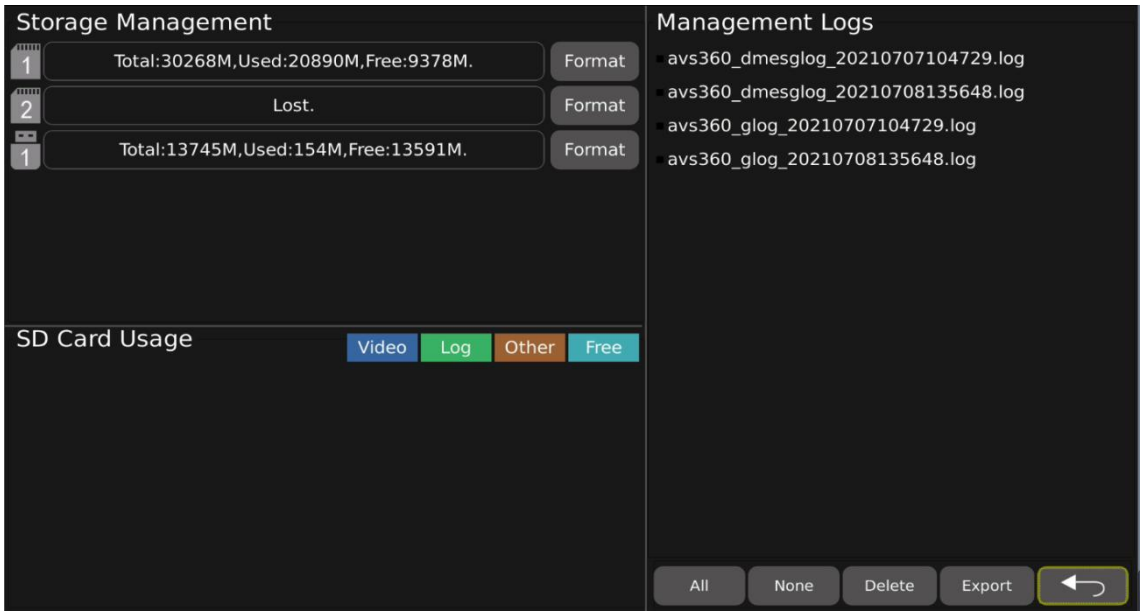
Function descriptions:

Screen Color Adjustment:

- Brightness: Screen brightness, the default value is 140. The value ranges from 0 to 255.
- Saturation: Screen saturation, the default value is 150. The value ranges from 0 to 255.
- Cb: Blue concentration offset, the default value is 160. The value ranges from 0 to 255.
- Cr: Red concentration offset, the default value is 230. The value ranges from 0 to 255.

- Default: Set to default value.
- Save: Save.

7.4 Storage management:Storage management interface



Function Description:

- Feature Description: recording function supports 2 SD cards, and the U disk is only used for program upgrades or file import/export.

Storage Management:

- Total: Total capacity of SD card/U disk.
- Used: the used capacity of the SD card/U disk.
- Free: The remaining capacity of the SD card/U disk.
- Format: format SD card or U disk.Optional formatting type: FAT 32, EXFAT. Requirements can be formatting successfully, after the formatting is correct type, can be upgraded.

SD Card Usage: Currently unavailable.

Management Logs:

- ALL: Select all logs.The selected log is displayed in blue.
- None: No logs are selected. Unselected logs, shown in white.
- Delete: Delete the selected log.
- Export: Export selected logs.
-  : Exit and return key.

Notice:

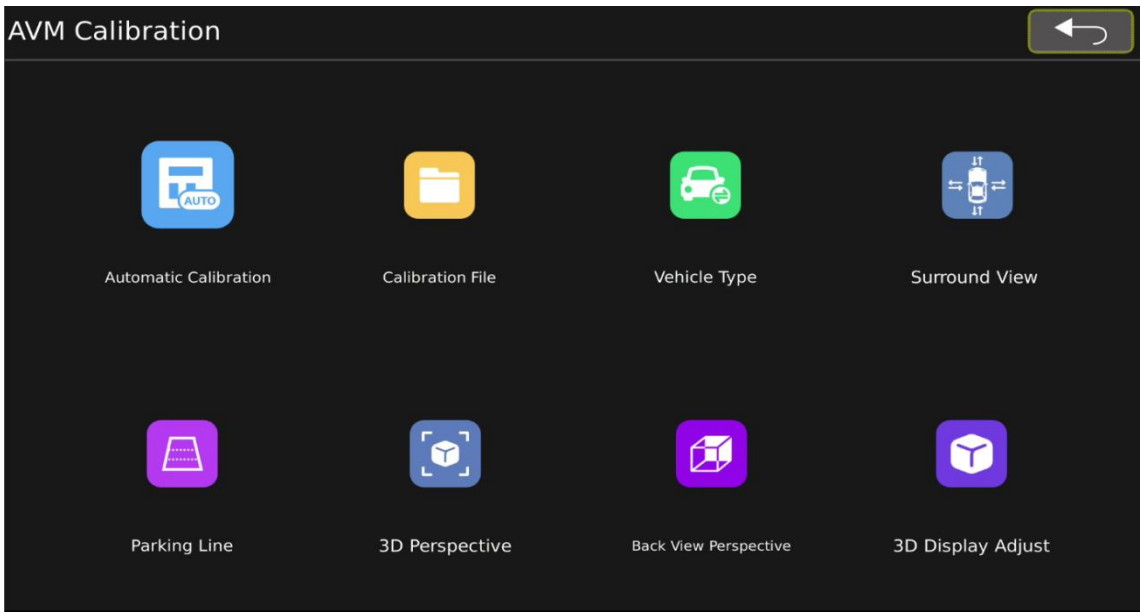
1) When the U disk and SD card work abnormally, there will be different icon prompts on the panoramic main interface and the storage menu interface.

2) Do not remove the USB flash drive when formatting, exporting system logs, and exporting splicing results.

3) When performing write operations related to the SD card, for example, do not remove the SD card without stopping recording, formatting the SD card or clearing the system log.

4) Support loop recording. When the available space of all SD cards in the system is less than 1024M, the earliest created 10 video files will be deleted for normal recording.

7.5 AVM Interface



Feature Description:

- Automatic Calibration: Automatic Calibration.
- Calibration File: Export calibration picture resources and import calibration files.(mainly used when in PC‘s calibration)
- Vehicle Type: Change the car model type page.
- Surround View: Overlap angle and surrounding visual range setting.
- Parking Line: Reversing cursor adjustment.
- 3D Perspective: 3D perspective view point setting.(This configuration item is displayed only when the view mode is configured as 3D; if the view mode is configured as 2D, the configuration item is in blanking state)
- Back View Perspective: 3D rear view view point setting.(This configuration item is displayed only when the view mode is configured as 3D; if the view mode is configured as 2D, the configuration item is in blanking state)
- 3D Display Adjust: 3D display setting.(This configuration item is displayed only when the view mode is configured as 3D; if the view mode is configured as 2D, the configuration item is in blanking state)

7.5.1 Automatic Calibration: Automatic Calibration.

1）calibration interface

Feature Description:

- Cancel: Cancel button, click this to exit calibration interface.
- Calibrate: Automatic calibration button, click to enter automatically calibration mode.
- Calibrate Log: Display of calibration log.
- Adjust: Click to enter adjustment interface.
- Mat Size: Calibration size, 78cm, 135cm optional.

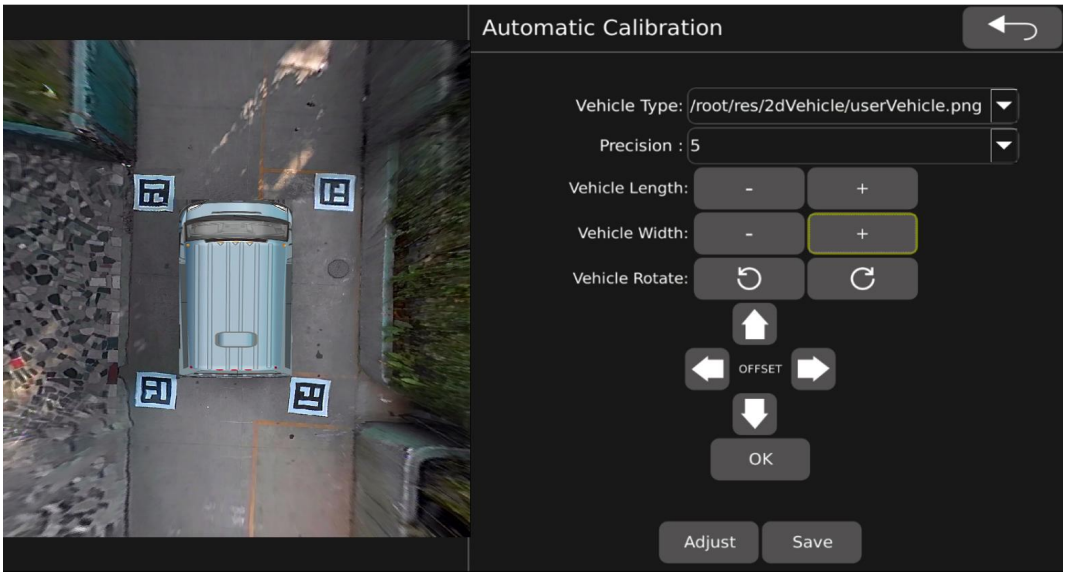
Precautions:

a. Each camera should fully see the 2 nearby calibration mats and cannot be blocked by objects.

b. The calibration mast in the camera screen cannot be severely distorted.

c. The calibration mats should not have serious reflected light.

2）Adjustment Interface



Feature Description:

- Vehicle Type: Used to modify the type of car model .(note that the car model here is only for auxiliary calibration reference and does not need to be saved)
- Precision: Accuracy adjustment of vehicle length, width and model movement,default value is 1. (optional values 1, 5, 10, 15 pixels)
- Vehicle Length: Used for vehicle length adjustment. Click“-”to decrease vehicle length; Click“+”to increase vehicle length.
- Vehicle Width: Used for vehicle width adjustment,Click“-”to decrease vehicle width;Click“+”to increase vehicle width
- Vehicle Rotate: Used for car model rotation. (turn left or right)
- 

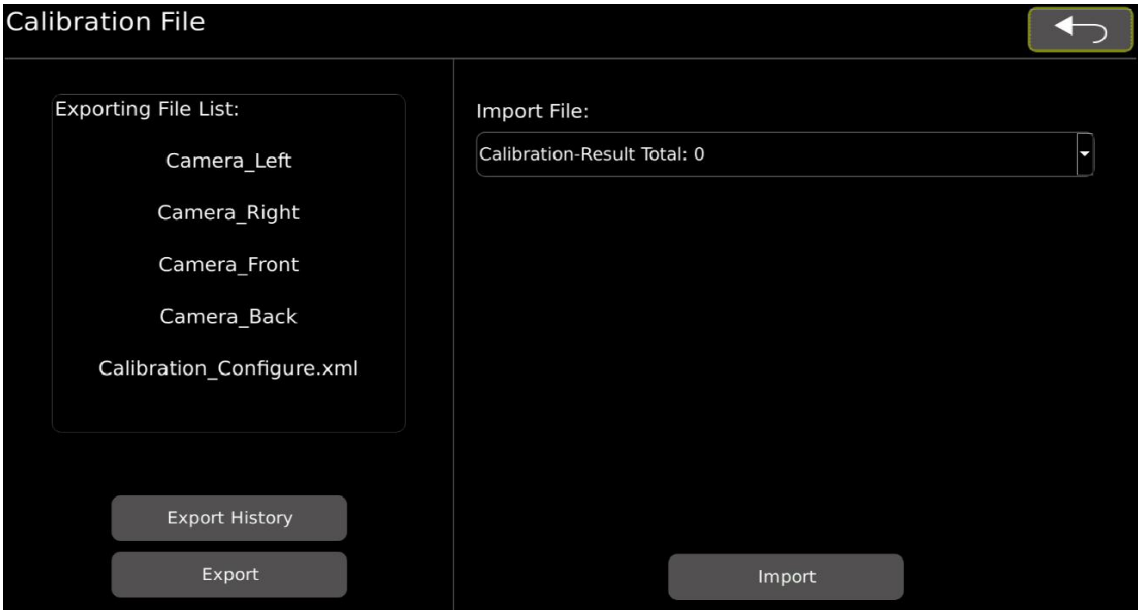
: For car model movement.(up/down/left/right)
- 

: Used to update the calibration effect button after adjusting the overall effect.
- Adjust : Used to jump to the calibration internal parameter adjustment interface.
- Save : Save the calibration results.

Kind Reminder:

1) It is recommended to use the quad screen of the display screen to monitor the installation effect in real time when the camera is installed. It is required that the car body can still be observed at the center of each screen.
2) When calibrating, it is recommended to stick zebra tape (or other marks) close to the periphery of the vehicle and adjust the parameters of the car model until you can see the zebra tape all around.

7.5.2 Calibration File: Calibration File



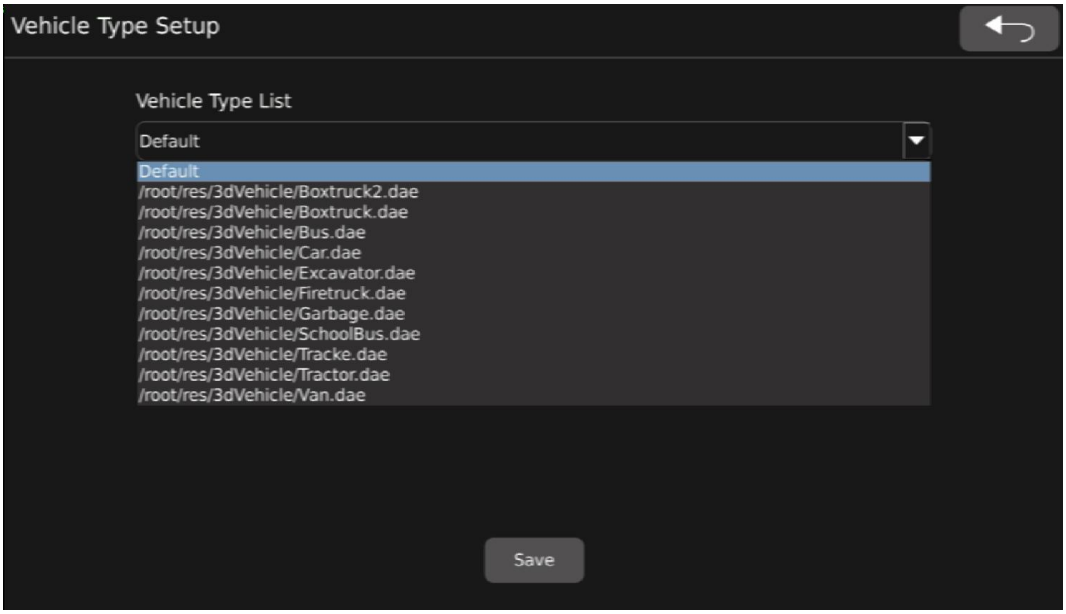
Feature Description:Used for export calibration picture and import calibration file.(mainly used in PC)

- Export: Export the calibration picture file to USB, the resources include: 4-channel image.(The resources will also include xml file if you already finished the calibration)
- Export History: Export the historical calibration file (board end calibration, there will be a historical calibration file), in the camera has not moved the position, and previously in the board end of the calibration, you can not re-spread the calibration cloth, directly export the historical calibration file, recalibration.
- Import File: List of calibration files. Click to expand the list, all calibration files in the U disk will be displayed in the list, and you can select the file to be imported.
- Import : Import selected calibration files.
-  : Exit.

Notice:

1) As files can only be imported into USB, User must first access the USB before entering this page.
2) It is normal phenomenon for this system to restart after the confirm of import calibration files.

7.5.3 Vehicle Type Setup:Change the car model type page



Feature Description:

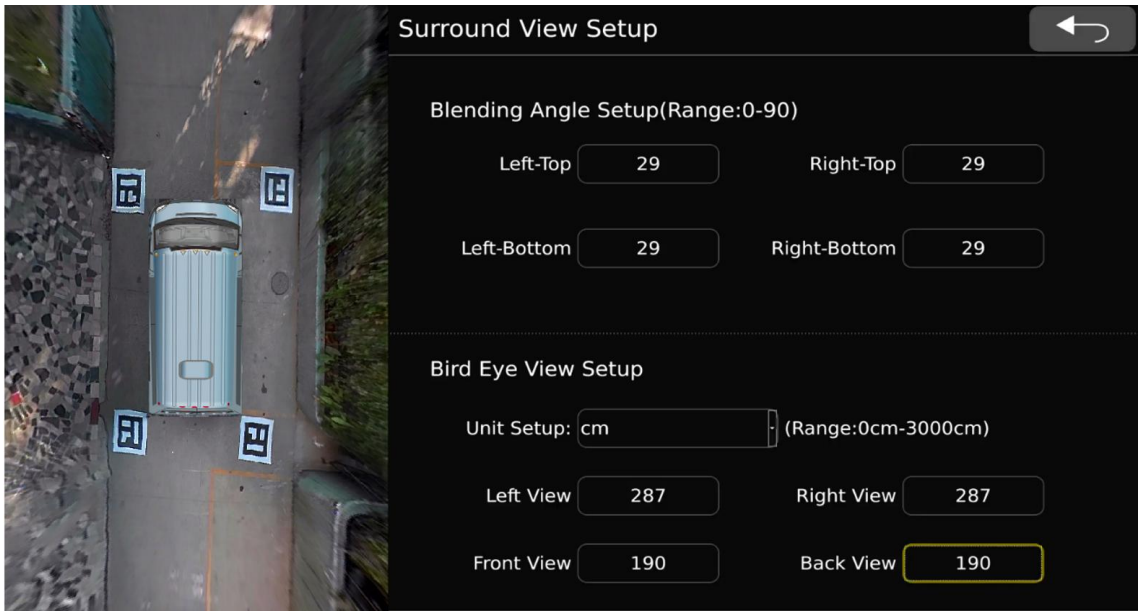
- Vehicle Type List: car model list.
- In 2D mode: The system comes with 3 car models.(Support importing custom car models)
- In 3D mode: The system comes with 15 3D car models.(Currently, the import of custom 3D car models is not supported, but custom 3D car models are supported)
- 

: Save button.
-  : Exit button.

Precautions for importing custom car models:

1) The car model picture must be a 32-bit deep, png format picture, otherwise there will be phenomena such as failure to import or bad car model pictures.The car model pictures need to be placed in the top directory of the U disk, otherwise the system will not be able to read the car model pictures.
2) The mode picture should be placed in the top directory of the U disk, otherwise the system will not read vehicle model picture.
3) Please join the U disk in front of entering the world,otherwise the system may not be able to read the picture of the vehicle mode normally.
4) The background of the model is transparent with vehicle mode facing up.

7.5.4 Surround view:Setting page for overlap angle and surround view range



Feature Description:

Blending Angle Setup:

- Left-Top: Setting of left-top overlap angle, the default value is 30, and the value can be set in the range of 0-90.
- Left-Bottom: Setting of left-bottom overlap angle, the default value is 30, and the value can be set in the range of 0-90.
- Right-Top: Setting of right-top overlap angle, the default value is 30, and the value can be set in the range of 0-90.
- Right-Bottom: Setting of right-bottom overlap angle, the default value is 30, and the value can be set in the range of 0-90.

Bird Eye View Setup:

- Unit Setup: Unit configuration, the default is inch. Can be set: inch/cm.(the unit is switched to CM, only for conversion display, not for permanent storage. After completely returning to the main interface, the unit will change back to the default value of inch)
- Left View: Set the visible width on the left side of the surround view.
- Right View: Set the visible width on the right side of the surround view.
- Front View: Set the visible width on the front side of the surround view.
- Back View: Set the visible width on the rear side of the surround view.

Notice:

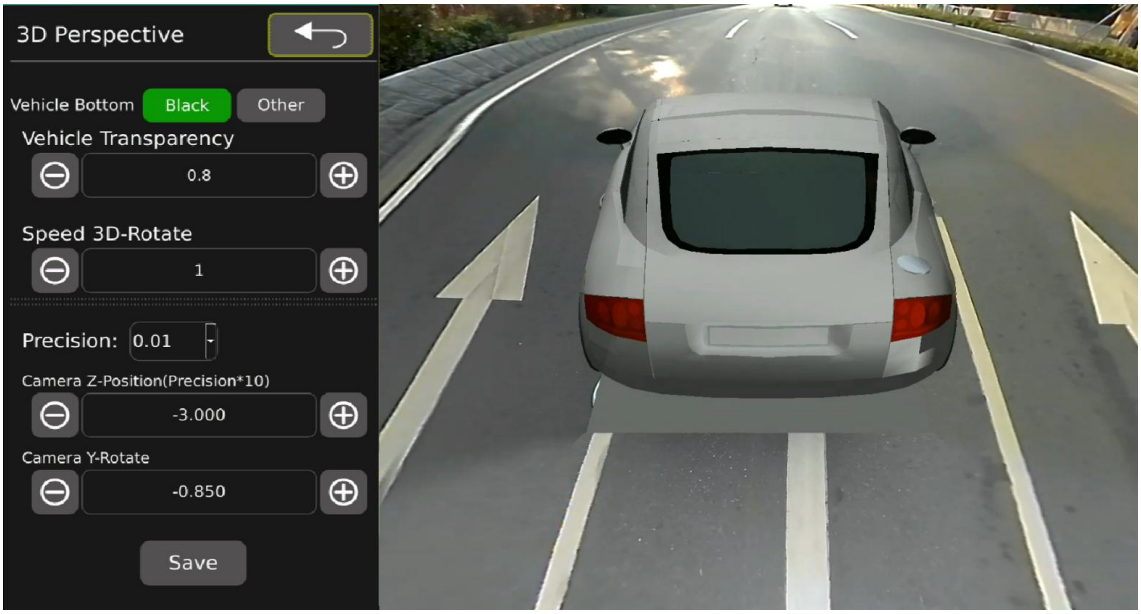
1) The parameters on this page will be reset after importing a new calibration file, If there are custom parameters, they need to be reconfigured.

7.5.5 Parking Line:Reversing cursor adjustment interface

Feature Description:

- Move: The reversing cursor moves up, down, left and right.
- Width Scale: Adjust the width of the reversing cursor.
- Height Scale: Adjust the height of the reversing cursor.

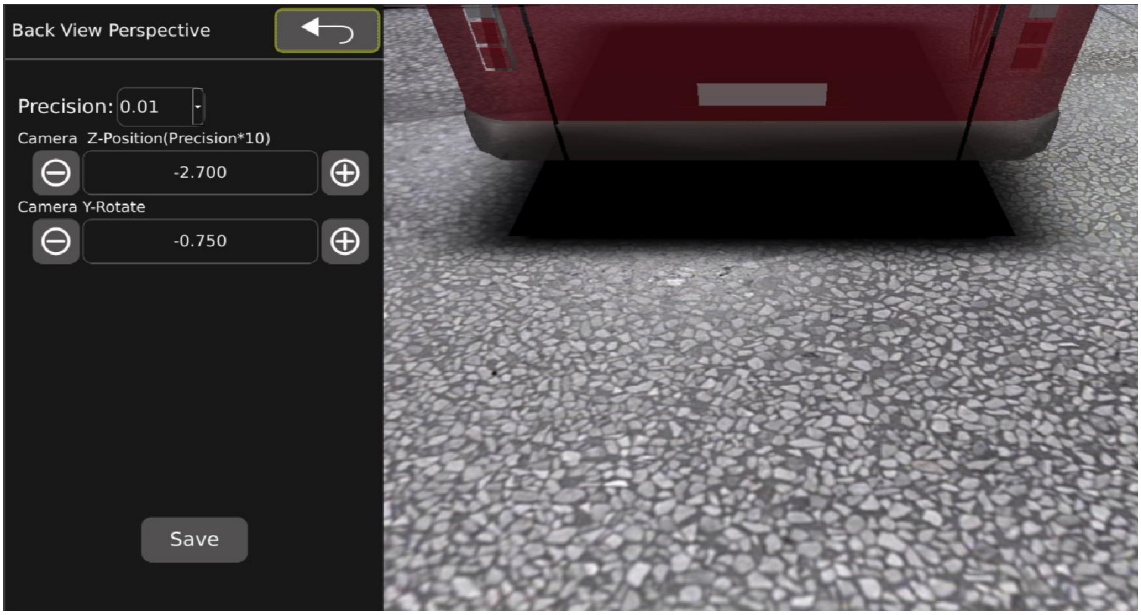
7.5.6 3D Perspective:3D view viewpoint setting page



Feature Description:

- Vehicle Bottom: The vehicle mode bottom area is black by default. When choosing other, the vehicle mode bottom area is similar to color nearby.
- Vehicle Transparency: Car model transparency setting, default value is 0.8 (range: 0.1-1).
- Speed 3D-Rotate: 3D vehicle model rotation speed, the default is 1. The value ranges from 0.5 to 2.
- Precision: Precision setting, default value is 0.01 (range: 0.01-0.1).
- Camera Z-Position: 3D view zoom setting. Default value is -3.000.
- Camera Y-Position: 3D view up/down rotation setting.Default value is -0.850.

7.5.7 Back View Perspective:3D rear view view point setting page

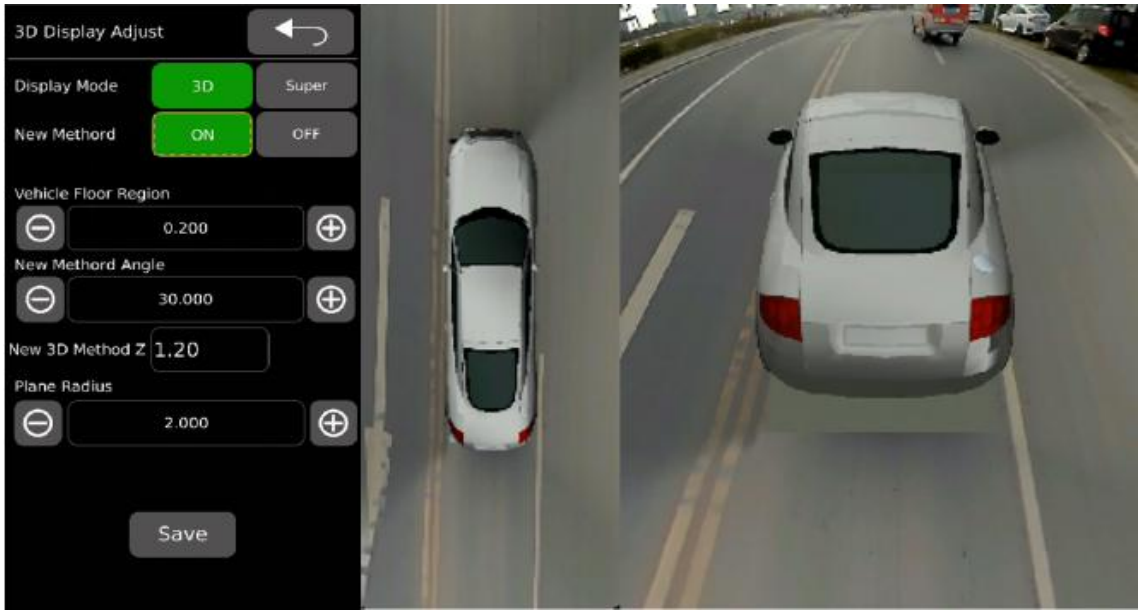


Feature Description:

- Position: Precision setting, default value is 0.01 (range: 0.01-0.1).
- Camera Z-Position: 3D view zoom setting.
- Camera Y-Rotate: 3D view up/down rotation setting.

7.5.8 3D Display Adjust:3D display setting interface

1) When Display Mode is set to 3D mode:



Feature Description:

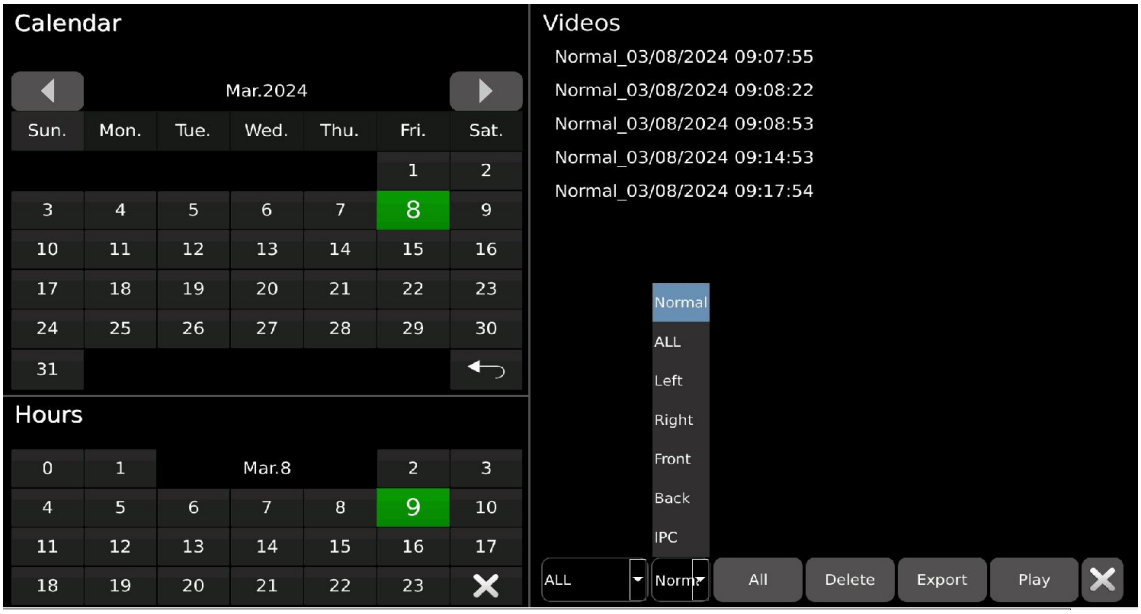
- Display Mode: 3D / Supper View selectable. The default value is 3D.
- New Method: New 3D rendering method, the default is OFF.
- Vehicle Floor Region: Set the size of the floor region under the vehicle model.The default value is 0.200.
- Plane Radius: Ground radius setting, the larger the radius, the smaller the 3D field of view.Default value is 2.000.

2）When Display Mode is set to Super View mode:

Feature Description:

- Vehicle Floor Region: Set the size of the floor region under the vehicle model.The default value is 0.200.
- Plane Radius: Ground radius setting, the larger the radius, the smaller the 3D field of view.Default value is1.500.
- Stereoscopic Effect: Object 3D effect settings, default is 10.000.
- Distortion correction Y-axis:The Y direction offset setting of the virtual projection camera.Default value is 0.000.
- Distortion correction Z-axis:The height offset setting of the virtual projection camera. Default value is 1.000.

8. Video management interface

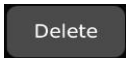


Feature Description:

- If there is the date or time period when the video file was recorded, the color will be displayed in green, otherwise the color will be displayed in gray.
-  : Toggle month button.Video management can only process videos that last for three months, which are this month and one month before and after.
-  : Exit and return key.
- 

:Select the video type, select all, normal, and event.
- 

:Selection of play channel, Normal play 4, ALL play all roads (up to 6),and left, right, front, back, IPC optional.
- 

: Select all/Unselect all.
- 

: Delete selected video.
- 

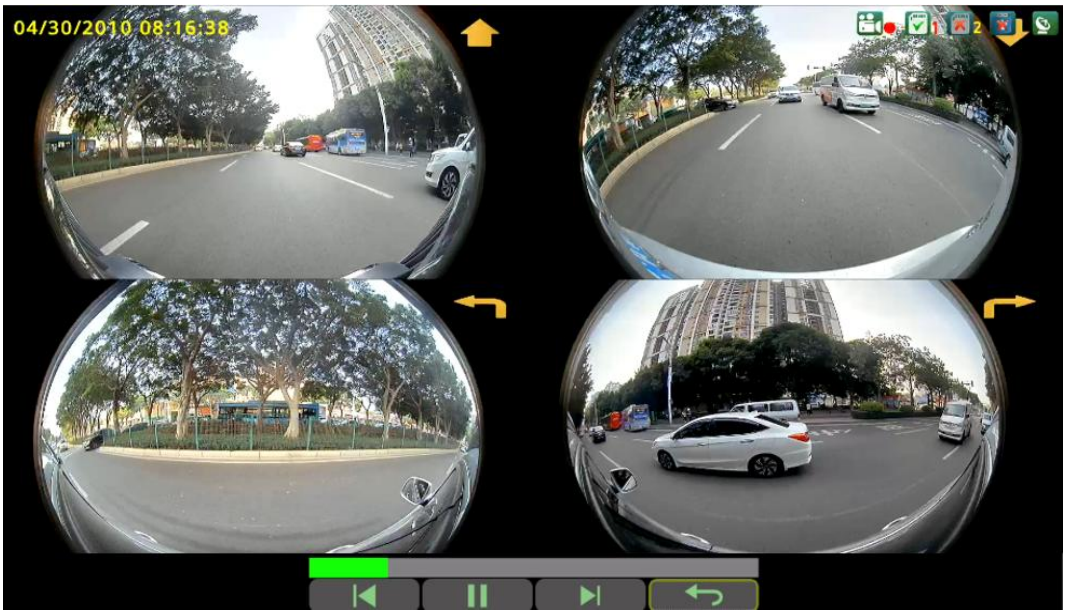
: Export selected video.
- 

: Replay the selected video locally.
- 
: Return to the last menu.

Notice:

1) Please do not remove SD card during the export and playing of recording video.

- Play interface:



Feature Description:

 :Click to play the previous video.

 :Pause the current video.

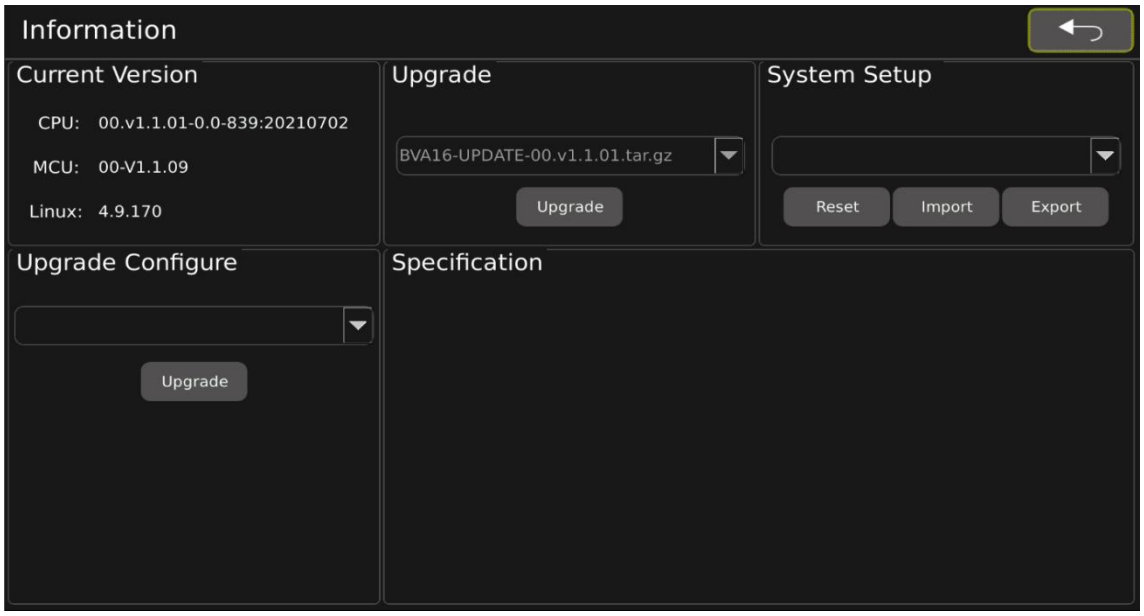
 :Click to play the next video.

 :Exit and return key.

Notice:

1) Click the CLEAR button of the remote control to hide the entire progress bar.

9. Information:Information data management page

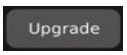


Feature Description:

Current Version:

- CPU:Current CPU flash version information.
- MCU:Current MCU version information.
- Linux:Current Linux system version information.

Upgrade:

- Version upgrade, select the version that needs to be upgraded and click 

button.

System Setup:

- Reset:Resume to default setting.
- import:Import the configuration file.
- Export:Export the configuration file.(currently the configuration file does not include AVM configuration parameters)

Upgrade Configure:

- Upgrade configuration file.

Notice:

1) Do not remove the SD card or U disk during the upgrade process.
2) Do not power-off system during the upgrade.

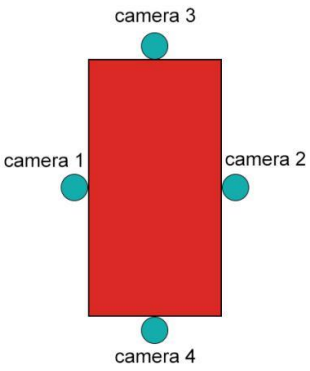
10. Installation of system hardware

Step 1:Cable connection in vehicle body

1) Please pay attention to the definition of the camera extension cord connector, do not connect in reverse.
2) The connection between the camera and the main box should be centralized.

Step 2_1:Camera Installation

1) HD410 camera installation position.

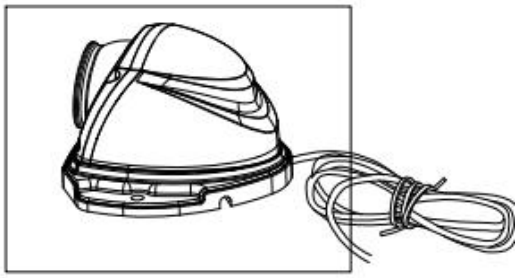


2) Accessories

① Regular accessories.

a. Phillips pan head combination screw ST4*20.

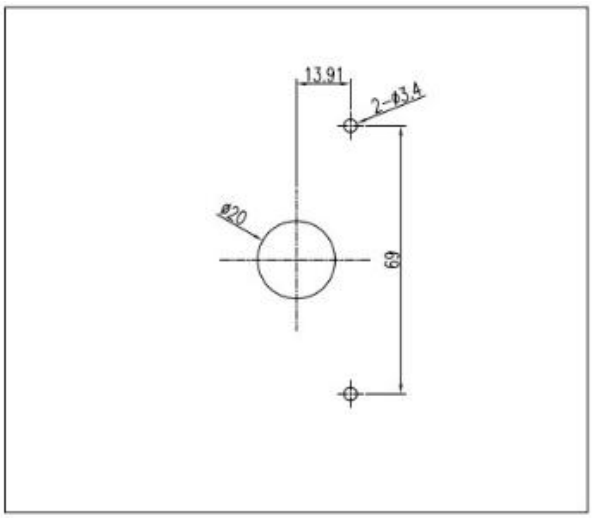
② Cameras.



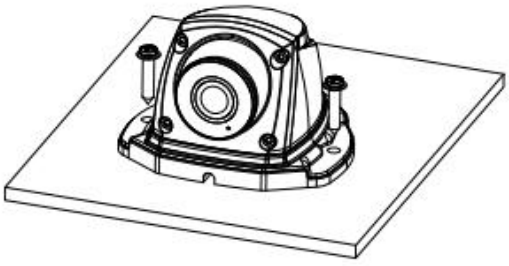
3) Installation

① Choose appropriate angles to install cameras.

② Drill suitable drill holes for regular accessories as shown above.



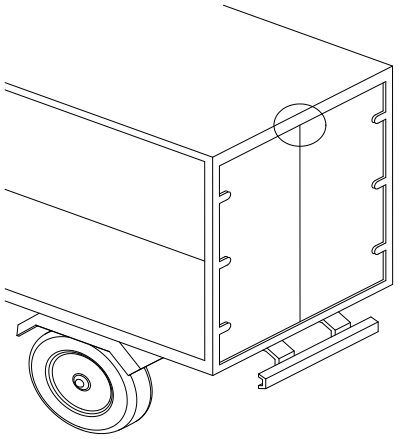
③ Install cameras.



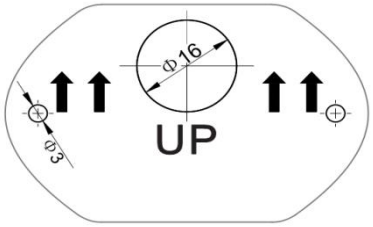
Step 2_2:Install cameras

1) HD808 cameras installation introduction.(Use rear view cameras as examples)

① Paste the hole map on a suitable position on the car, and drill holes according to the size marked in the picture .(Picture 1)



(Picture 1)



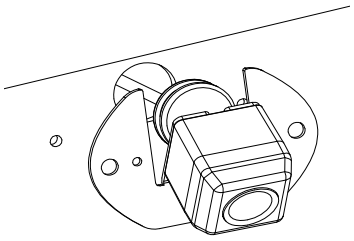
Hole Map

Notice:

a) The higher the installation, the better.

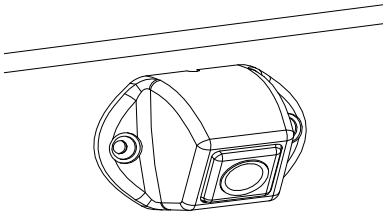
b) The installation of equal height is better than unequal height.

2) Adjust the base so that the hole position is consistent with the hole position on the car. When the hole position is consistent with the hole position on the car, stick the camera on the car.(Picture 2)



(Picture 2)

3) Put the shell on the base and ensure the cameras are fixed on the car with screws.



(Picture 3)

Step 3:Main Box

1) The main box is generally placed behind the control room or tool box.

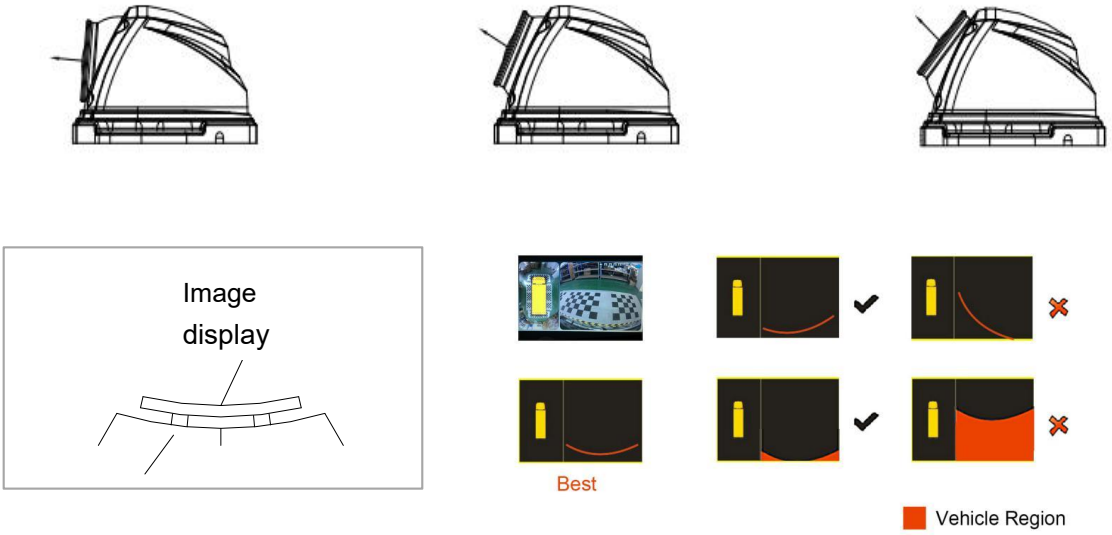
2) Connect the main box, please refer to "5. Connection diagram" for details.

3) Power on and test the wiring.

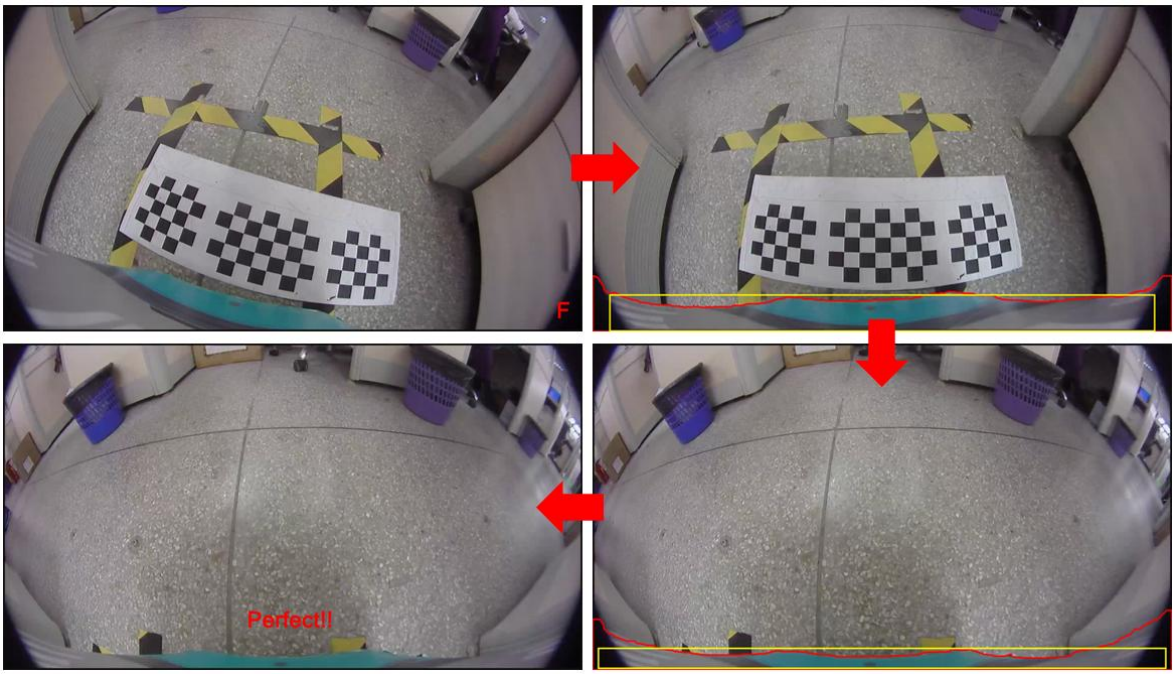
4) Perform basic functional tests. For details, please refer to "6. Remote control operating instructions" and "7. Main menu function operating instructions".

Step 4: Adjustments of camera viewing angles of HD410

1) Adjust the camera angle to ensure that the normal image mark (white dot on the camera) is correctly placed outside.



Adjustment example:



1) Cameras installation.

Step 5:Set up image stitching

1) Please refer to “step 2” to adjust the viewing angle of cameras used for calibration.
2) Please refer to “7.5 AVM interface” for more detailed information.

Step 6: Fasten cameras and cable.

1) Fix the main box and cable to make the camera installation stable.

11. The usage of Web

11.1 Web connection

- Wi-Fi must be built into the 360 control box, and a WiFi antenna should also be connected.
- It can be accessed by using Google Chrome or any other browser that supports html5.
- There are no restrictions on the operating system using WebUI, but the log files will not be exported through the IOS system.
- Mobile connection.

1) After the 360 control box is powered on, open the cell phone WLAN and search for the connection "FHD360", the password is 88888888.
2) Open the browser, enter "192.168.30.1" in the address bar, and enter the web interface.

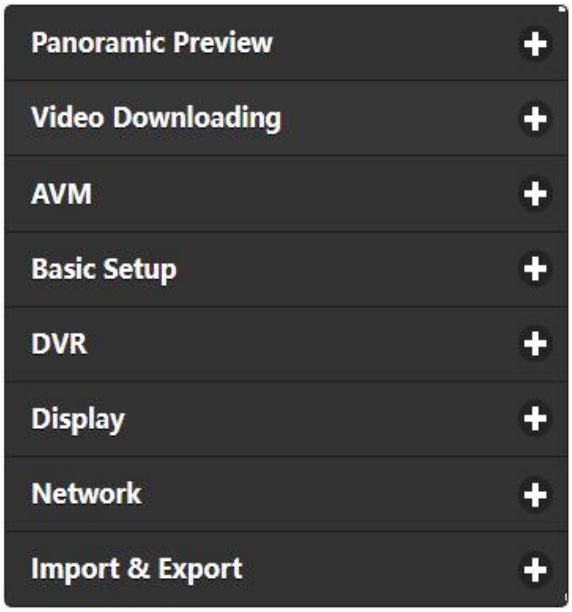
- PC Connection.

1) Connect the network cable.
2) Open the browser, enter IP Address in the address bar, enter the Web operation interface, adjust the browser interface to phone mode, and refresh the browser again.

Notice:

1) There may be some delays using the web APP, please do not press the control buttons quickly and frequently.

11.2 Web interface description

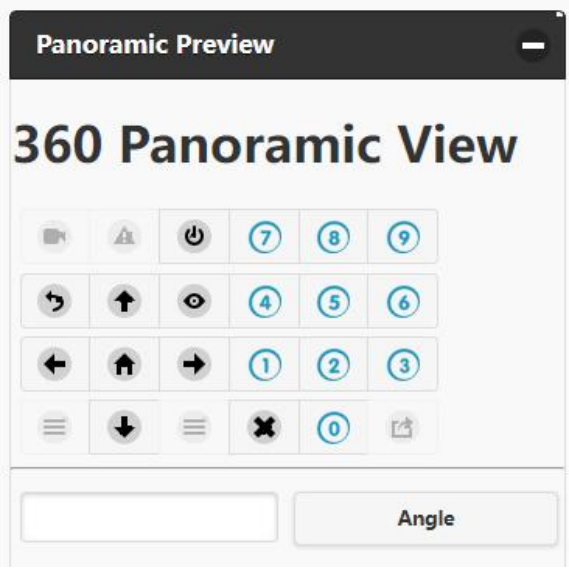


Function Description:

- Panoramic Preview: Main box operation and display interface.
- Video Downloading: Recording management interface.
- AVM: Calibration interface.

- Basic Setup: Basic setup interface.
- DVR: DVR interface.
- Display: Display interface.
- Network: Network interface.
- Import&Export: Update versions, import or export settings files.

11.2.1 Panoramic Preview



Function Description:

 : Switch.

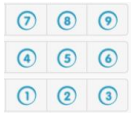
 : Return/Exit.

 : Yes/Enter main menu.

 : Switch to a single view of the left/right lane when in the main screen, and the up and down options in the menu screen.

 : single view of the left/right lane when in the main screen, and the left and right options in the menu screen.

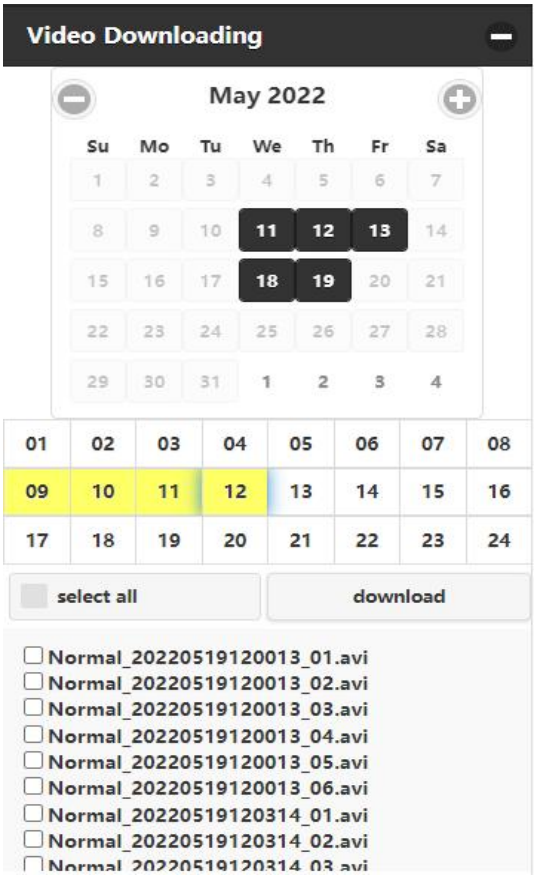
 : Switch to a single view of the front/rear lanes when in the main screen, and the left and right options in the menu screen.

 : Digital input button/view switch on the main screen.

 : Delete one character at a time.

: Overlapping angles, temporarily invalid.

11.2.2 Video Downloading

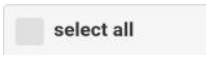


Function Description:

- 

: Download the video file. Select the "+" or "-" icon at the top right of the menu bar to open or close the video download page.
- Calendar: Select the grayed out date to view the available videos. Click ">" or "<" to switch.

- Time: Yellow dates indicate available video files.

- 

: Select all video files in the list.
- 

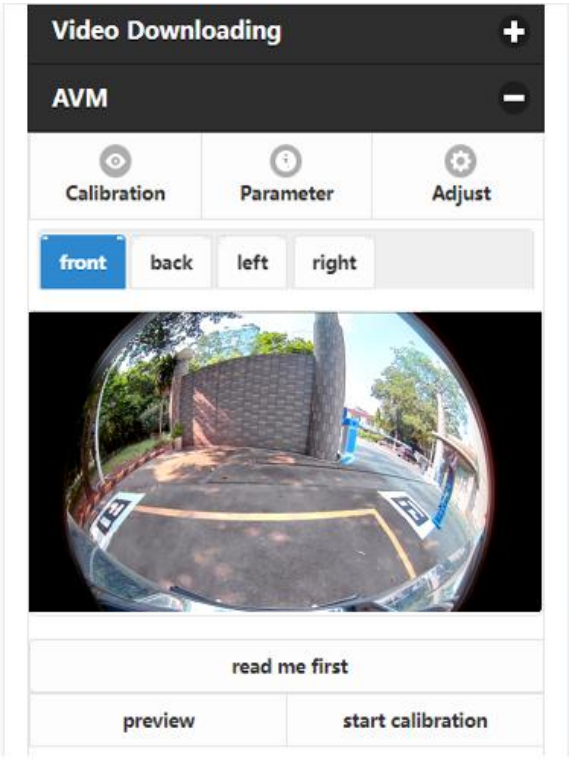
: Download all selected video files.

Notice:

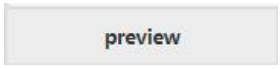
1) The download function is only available when a video file is available. In other words, the machine must have an SD card inserted and a video file on the SD card.

11.2.3 AVM

1) Calibration.

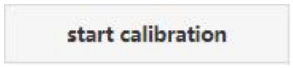


Function Description:

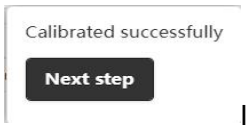


: Preview camera image.

: Select one of the cameras image.

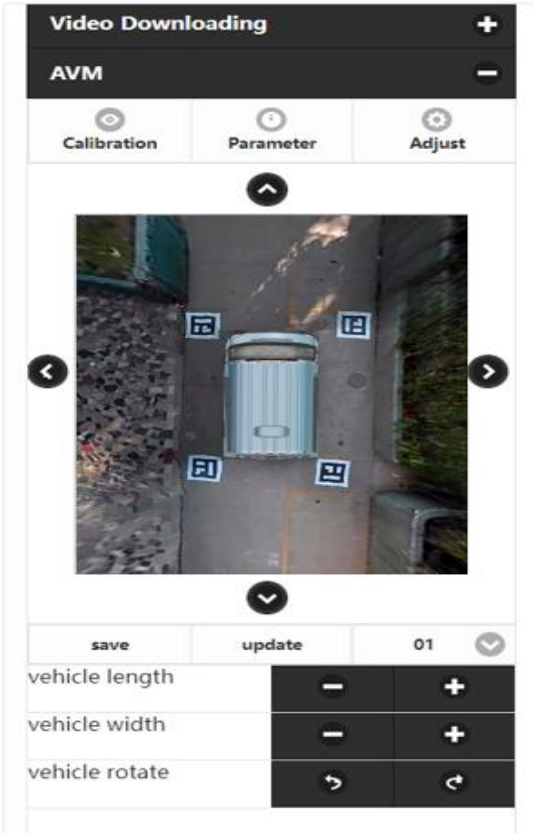


: When all four cameras can see the calibration mats, click Start Calibration.

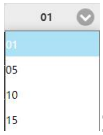


Into the adjustment screen after successful calibration.

2) Parameter adjustment interface.



Function Description:



: The adjustment range can be changed:

: Vehicle Model Length Adjustment.

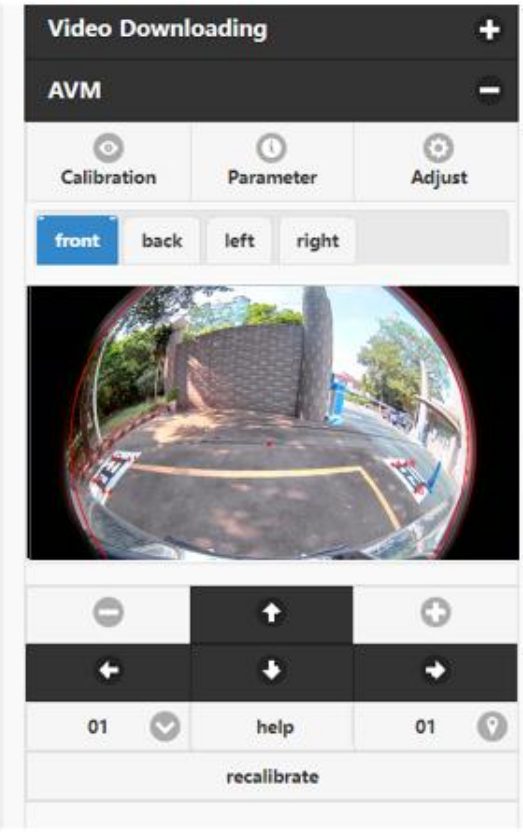
: Vehicle Model Width Adjustment.

: Vehicle Model Rotation.

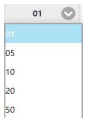
: Parameters adjustment.

: Save.

3）Internal parameter adjustment interface.



Function Description:



: Adjustment range can be changed.

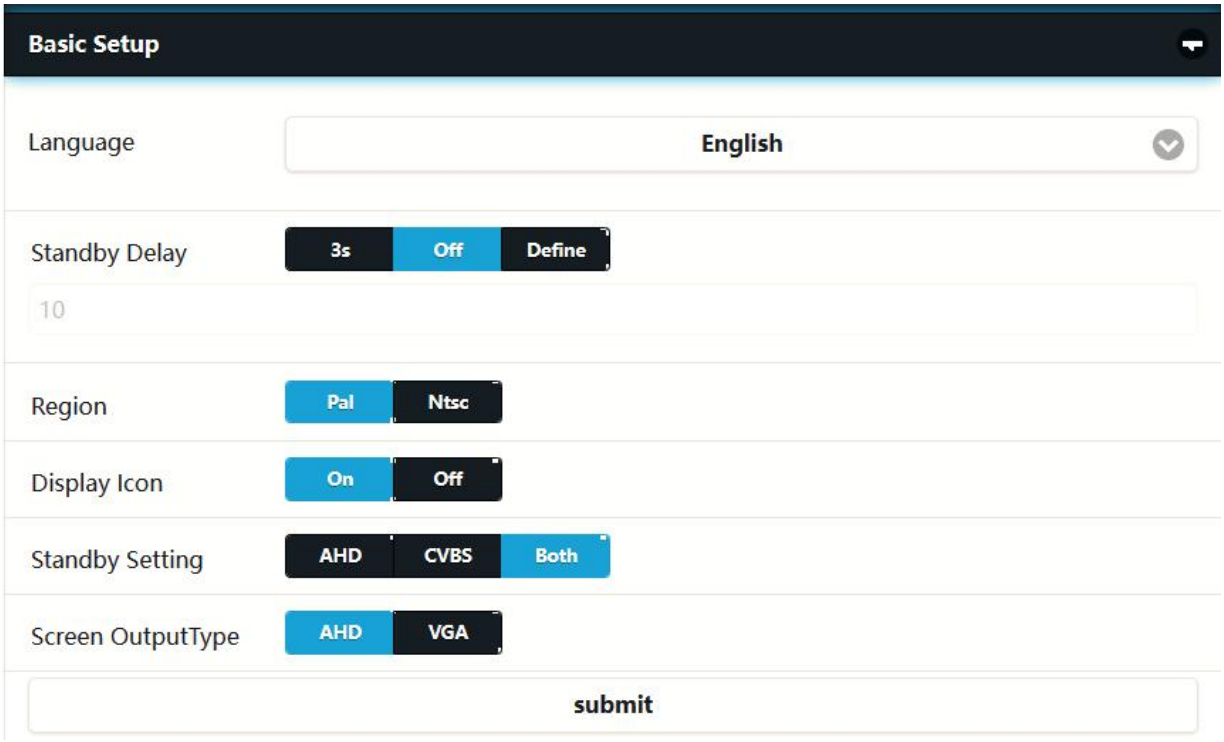
: The Spot can be changed.


: Zoom out or zoom in adjustment line in red area.


: Move adjustment line in red area up, down, left, and right.

: Re-calibration.

11.2.4 Basic Setup

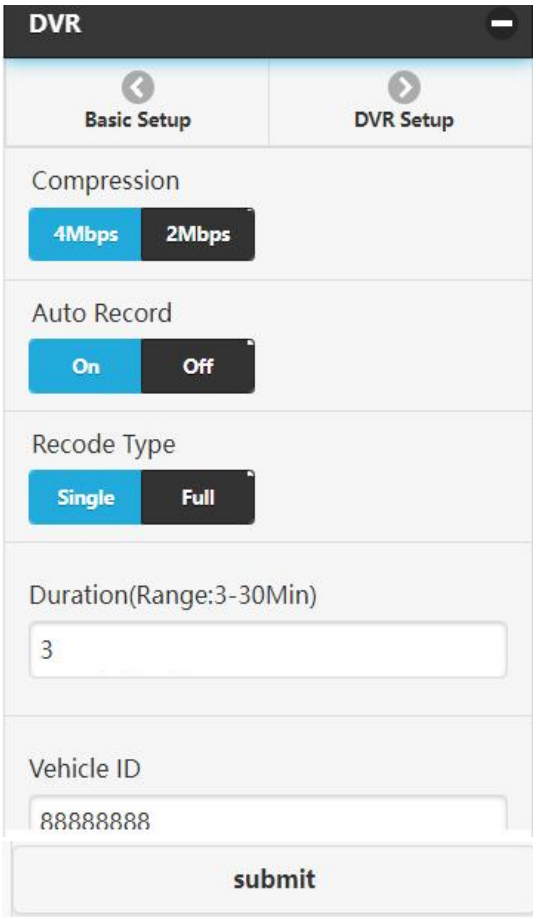


Function Description:

- Language: Default English, with options in English, Chinese.
- Standby Delay: Set standby, the default is Off, you can set 3s or any other time range.
- Region: AV system, default Pal system.
- Display Icon: Display icon, the default is ON.
- Standby Setting: Standby mode setting, the default is Both.
- Screen Output Type: The output type of the complete box display, AHD and VGA.give tacit consent to AHD.
- submit: Each change needs to be submitted to take effect, and the system will automatically restart after each submission.

11.2.5 DVR

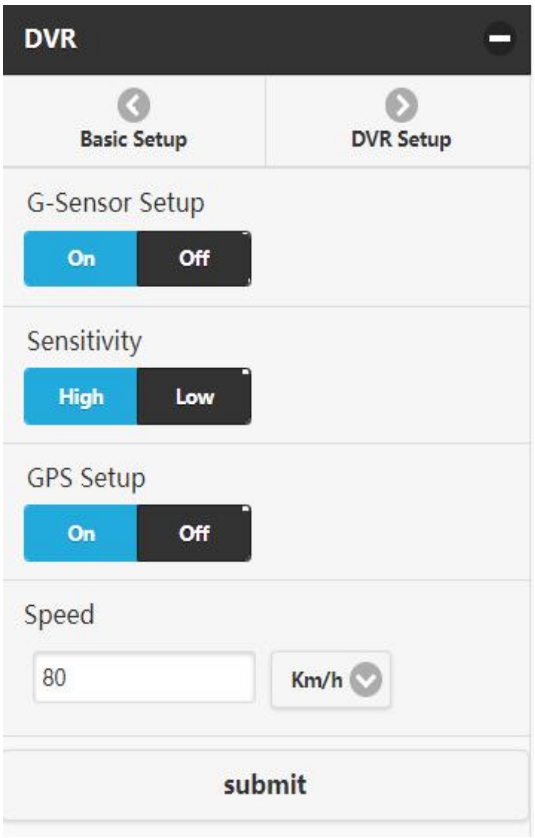
1) Basic Setup



Function Description:

- Compression: There are some options for video resolution, which can be set to 4Mbps (high) and 2Mbps (low).
- Auto Record: Automatic recording switch: On/Off. When it is ON, it will automatically start recording after power on. When it is OFF, recording will not be started under any circumstances.(including triggering)
- Record Type: The default recording viewing mode is Single. When set to Single, the system will record 4 single-channel images; when set to Full, the system will only record 1 full-screen image.
- Duration: The duration setting of recording video file : 3Min, 5Min, 10Min. And you can also enter any value between 3min and 30min.
- Vehicle ID: License plate number setting, the maximum length is 10 digits. The default is 88888888.
- submit: Every change needs to be submitted to take effect, and the system will automatically restart every time it is submitted.

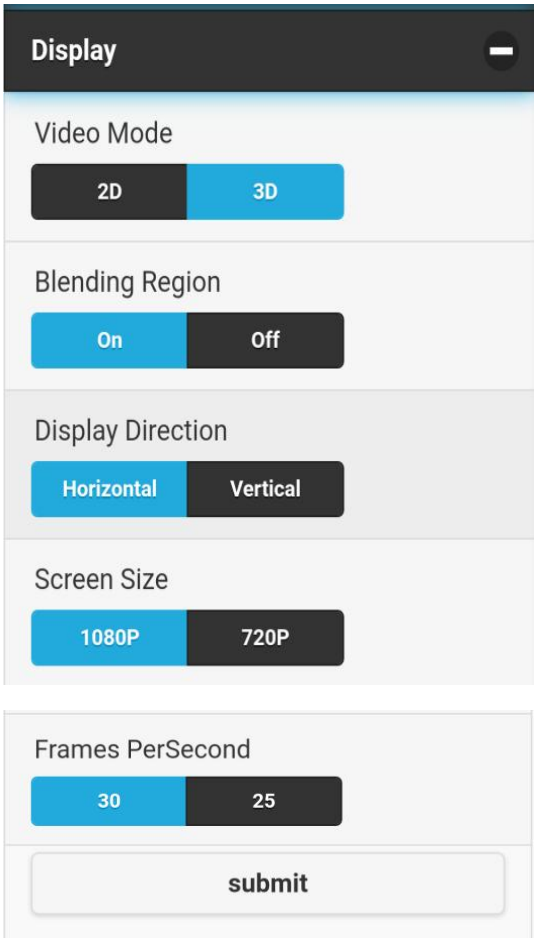
2) DVR setting



Function Description:

- G-Sensor Setup: ON/OFF.
- Sensitivity: G-sensor sensitivity, HIGH/LOW.
- GPS Setup: ON/OFF.
- Speed: Overspeed value limit setting, unit of which can be set in km/h or miles/h.
- submit: Each setting change will take effect only after it is submitted. The system will restart automatically every time when the setting is submitted.

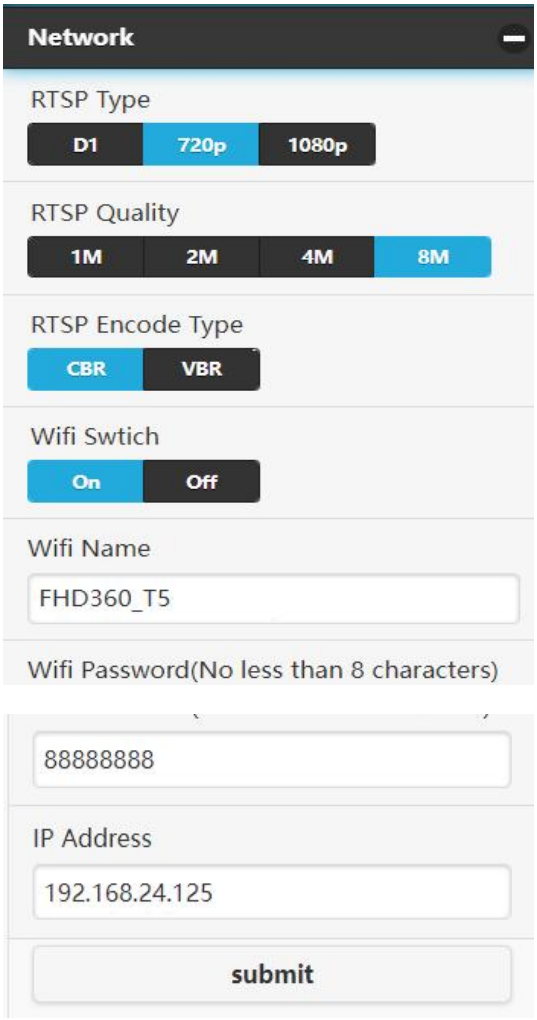
11.2.6 Display



Function Description:

- View Mode: Display mode switching, which is 2D by default but can be switch two 3D. When set to 2D, the screen displays 2D round view and a single view; When set to 3D, the screen displays 2D surround view and 3D surround view.
- Blending Region: Overlapping area, ON/OFF.
- Display Direction: Horizontal and vertical display switching.(A18 doesn't have this function)
- Screen Size: AHD display resolution configuration, default 1080p.
- Frames Per Second: AHD display frame rate setting, default: 30.
- submit:Each setting change will take effect only after it is submitted. The system will restart automatically every time when the setting is submitted.

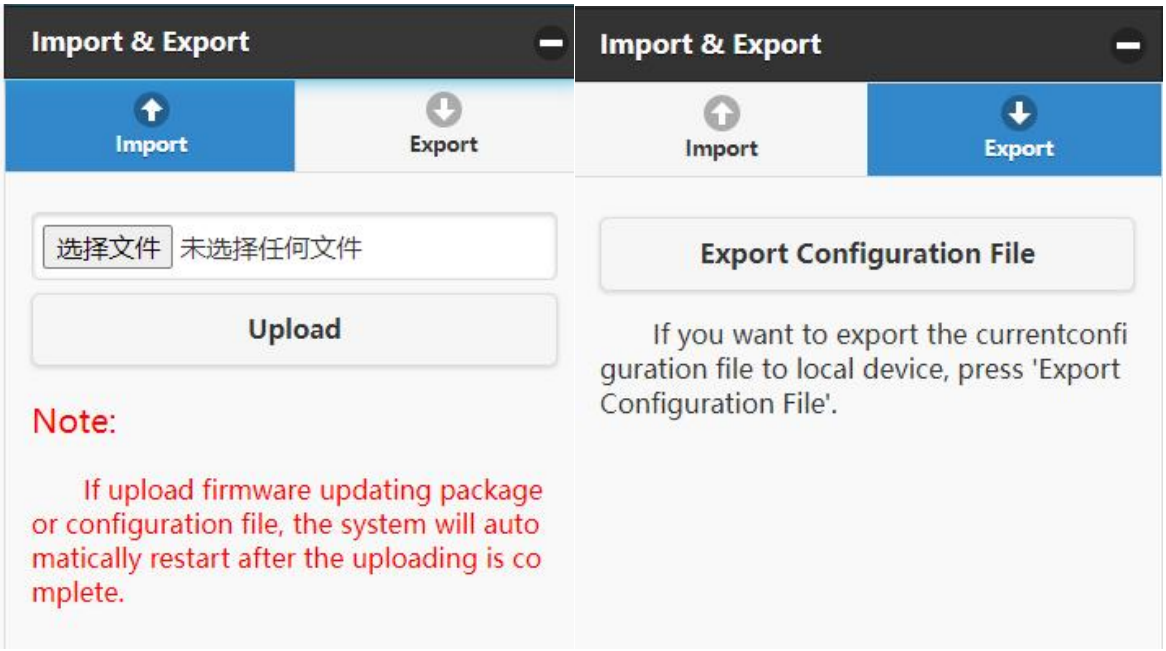
11.2.7 Network



Function Description:

- RTSP Type: network video playing resolution setting, D1 by setting, D1/720P /1080P switchable.
- RTSP Quality: RTSP quality setting.
- RTSP Encode Type: RTSP Encoding setting.
- Wifi switch: Wi-Fi function on/off switch.
- Wifi Name: Wi-Fi name setting, the maximum length is 16 bits.
- Wifi password setting, the minimum length is 8 bits, and the maximum length is 16 bits.
- IP Address: Network IP address setting.
- submit: Each setting change will take effect only after it is submitted. The system will restart automatically every time when the setting is submitted.

11.2.8 Import/Export



Function Description:

: Import system configuration files. The system will reboot after the importing and start to work upon success.

: Export the configuration file of the current system.

Notice:

The SD card must be inserted into the control box. Otherwise, the import cannot be performed successfully.