

**360° Surround View AI Image
Active Safety Driving Assistance System
Installation and User Manuals**



Applicable Model: NEX-H8-AI Version No.: VER1.3

version number	Record of changes	audits
VER1.0		
VER1.1	Updated product features as per the latest version of the system (20211129)	
VER1.2	On the basis of the original H8M products, increase the AI like machine, voice intelligent broadcast function, change the host shape structure , increase HDMI display output interface, increase the built-in 2.5-inch hard disk interface (2022-05-24)	
VER1.3	On the basis of version 1.2, add HISI V500 core board, support up to 8-channel 1080P image function, support built-in AI algorithm, updated voice library, add lane change assist function, reverse warning function, blind spot indicator function, add support 14.5 inch screen function.	

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statement denying or limiting responsibility

During high-speed driving, the driver's operation of the 360 panoramic parking video system and related operations are prohibited by the laws of some countries. For your personal safety, please do not operate the system while driving the car! If you need to set up the system, please stop the car safely before operation.

360 panoramic parking image system in the application process, please drivers control the speed of the vehicle, pay attention to observe the conditions around the vehicle, the image provided by this system is for reference only. The company will not be responsible for traffic accidents caused by watching the 360 panoramic parking image system or operating it during the driving process.

The radar configured in the system will affect the detection effect in case of heavy rain, probe dirt, shedding or damage; different objects will have different detection distances; the radar product is only used as an auxiliary reminder product, and our company will not be responsible for any accidents that may occur as a result.

AI camera is through the visual recognition of the human body, the actual use, there may be objects shaped like a person will be misrecognized, we will continue to optimize to improve the product experience feeling; when the surface of the camera is not clean, it may result in low recognition rate or can not be recognized, please be sure to ensure that the cleanliness of the AI camera lens, in order to ensure that the product can be used effectively.

The speed sensor configured in the system is a GPS+BeiDou sensor, when this sensor enters places without satellite signals, such as tunnels and underground parking lots, the speed will be zero because of the lack of signals, at this time, the functions related to the speed will be executed according to the state of 0 mph.

Precautions before installation:

Due to the wide variety of vehicle brands, before installation, please make sure that the master confirms the host placement position, as well as the appropriate wiring location, before starting to do the installation.

For two dangerous and one passenger car, the car is installed with the Department of the standard machine, you can put the 360 host next to the Department of the standard machine, or next to the original car radio, 360 required body power and IO port communication signals Department of the standard machine have.

Requires models that support CAN communication. Can take power and parse body signals directly from the OBD diagnostic interface directly.

Fitment Model:

More models installed only consult our sales representative (**support customized car models**)

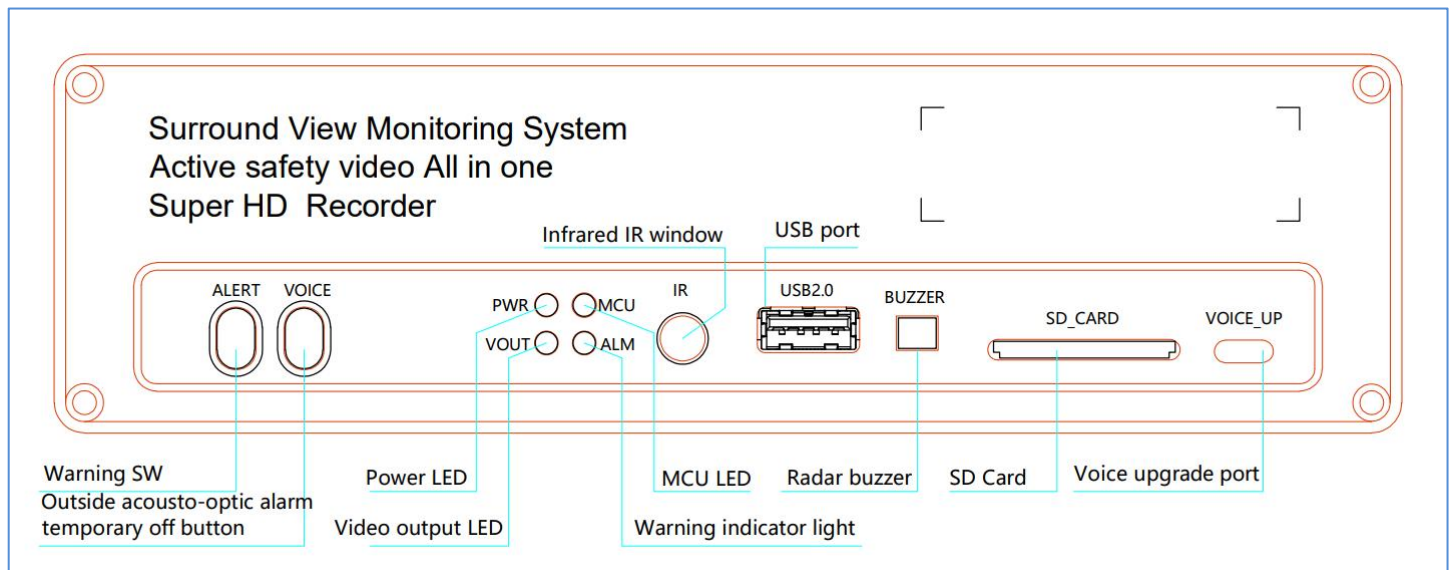


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I. Product Interface & Functional Application

1. Front panel interface:



1、ALERT (Alert Setting Switch)

Parking setup function, can be realized by the original car's radar or like machine, when the function is enabled, the ALM indicator light will be lit, the following are two ways to realize respectively:

Way 1: Realization using radar sensors:

When the vehicle has the optional radar feature, pressing ALERT (Alert Setup Switch) will cause the system to turn off the vehicle when the vehicle is turned off (ACC_OFF), at which time the 360 Surround View system will shut down, leaving only the radar system working.

When there is an object close to the radar probe distance less than 25 cm, and stay for more than 2 seconds, these two conditions are met at the same time, the sound and light alarm outside the vehicle will immediately send out an alarm sound + LED flashing, to drive away the object close to the vehicle; the car's voice speakers will broadcast "intrusion alarm + alarm sound", to remind the driver of the car. The voice speaker inside the vehicle will announce "Intrusion Alarm + Alarm Sound" to remind the driver inside the vehicle that there is an unidentified object approaching the vehicle; the system will wake up the 360 system to boot the video at the same time, and the display will automatically open the display without ignition, so that it is convenient for the driver to check the image of the outside of the vehicle through the screen.

The power consumption of this method is very low, depending on the number of radars in the whole car, 1W-4W for setting up defense when 4-16 probes, suitable for long time work.

Way 2: Implemented using 360 Image's AI function:

This function uses 360 built-in AI algorithm, to realize, when you turn on this function, you need to turn on 360's parking video function first (system setting-parking video time-select the time to turn on the parking setup-save to exit). Press ALERT (Alert Setup Switch), the system will turn off the vehicle (ACC_OFF), at this time the 360 Around View system will always work, but the display is not working.

When someone enters the prohibited area delineated by the camera and stays for more than 5 seconds, these two conditions are met at the same time, the acoustic and optical alarm outside the vehicle will immediately emit an alarm sound + LED flashing to drive away the person who is approaching the vehicle; the voice speaker inside the vehicle will broadcast "Intrusion Alarm + Alarm Sound" to remind the driver of the vehicle of the approaching person; and The display screen will be turned on automatically without

ignition, which is convenient for the driver to view the outside of the vehicle through the screen.

The power consumption of this method is high, depending on the number of devices connected to the host, the power consumption of setting up the defense is about 10-15W.

Setting up the defense function is suitable for preventing fuel and cargo theft; suitable for warning of the approach of unknown objects in the RV.

2、VOICE (Temporary shut-off button for exterior acoustic and visual sirens)

When the vehicle operating environment is surrounded by residential areas, in order to avoid disturbing the public, the exterior acoustic and optical sirens need to be temporarily turned off, in this case you can press this button to temporarily turn off the exterior siren function, and there will be a voice reminder when you press the button:

"The acoustic-visual siren function for the blind spot outside the vehicle has been turned off, and in the off state, please drive with caution."

After the voice announcement is completed, if you want to turn on the function again, then press it again, at this time, the function of the exterior siren is resumed, and there will be a voice reminder when the button is pressed:

"Outside vehicle audible and visual siren functions are on."

Warm tips: the blind spot warning function outside the vehicle is turned off, it will be turned on by default in the next power on, in case the driver forgets to turn on the warning function after it is turned off, leading to the Problems that cause the warning function to fail.

3、Indicator light function

PWR, the system power indicator, normally bright indicates that the system power supply is working normally, normally off the power supply is not working.

MCU, the system microprocessor work indicator, normally bright indicates normal work, upgrade status flashing, normally off sleep or shutdown.

VOUT, system video output indicator, normally bright indicates that the system has picture output, normally off the system runs in background mode, at this time the remote control and touch function is disabled.

ALM, Alert Setting Indicator Light, after pressing the switch on the front panel, when the vehicle is in the off state, the normally bright setting function is on, and the normally off setting function is off.

4、IR Infrared receiving window

The reception window of the infrared remote control of this main unit.

5、USB interface

USB interface of the system, support U disk for video recording and upgrading, (only in the case of no SD card can be used, there is SD card default recognition SD card)

6. Buzzer

An ultrasonic radar system has a buzzer that operates according to the radar's set far, medium and near frequencies.

7、SD CARD interface

System's logger main storage interface. Supports 8-512G memory.

8, VOICE UP host built-in voice file upgrade interface

Connect to the 360 host through the Micro USB cable, the computer will recognize the 360 Panorama host's voice library as a USB flash drive, you can replace the MP3 audio files in the USB flash drive to achieve the desired voice broadcast content or language; when replacing the files, the file name should be

consistent, as shown in the following figure:

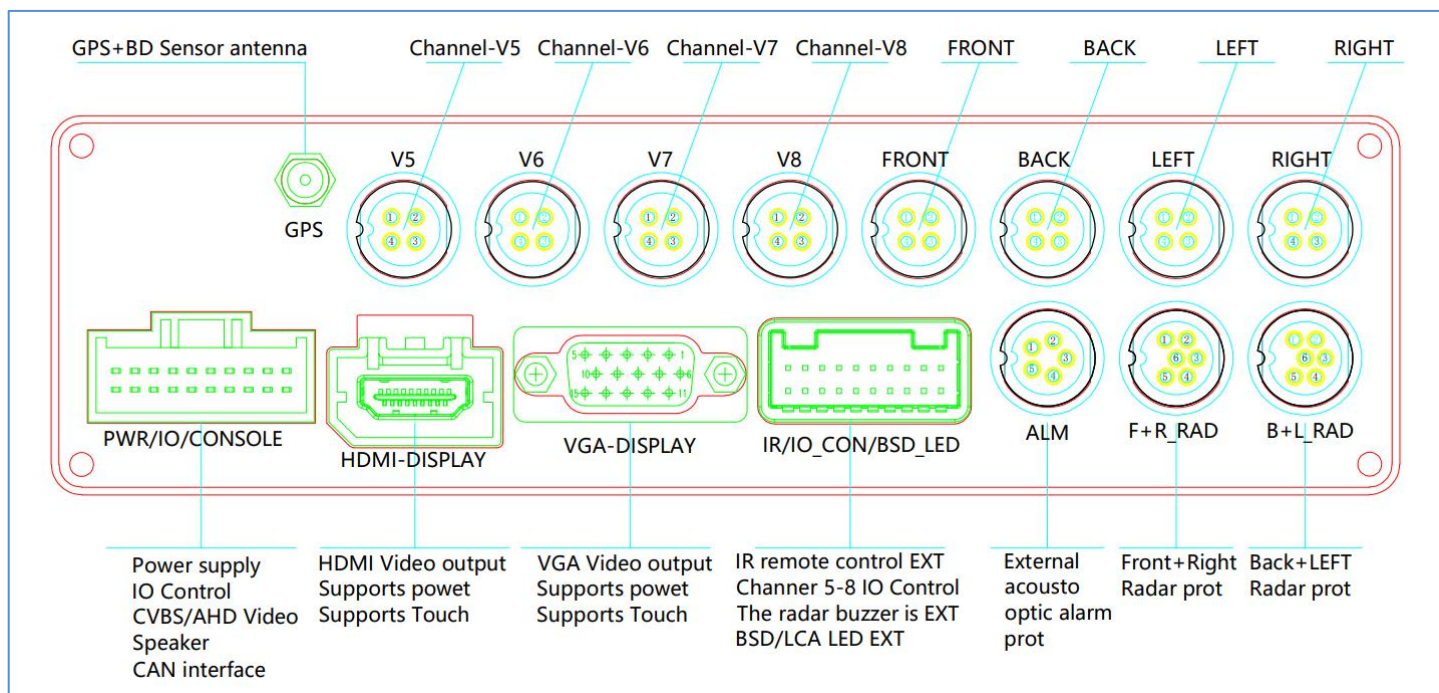


Adjust the voice broadcast speaker volume, Micro USB cable connected to the 360 host, in addition to the 360 host recognized as a USB flash drive, the computer also recognizes the 360 host as a USB sound card, as shown in the figure below, select the speaker (USBDemoV1.0), click on the speaker icon in the lower-right corner of the Start menu, this time you can play the MP3 files in the USB flash drive in the adjustment of the volume. Progress bar to adjust the volume of the speaker broadcast volume, adjust to the appropriate volume after disconnecting the cable can be.

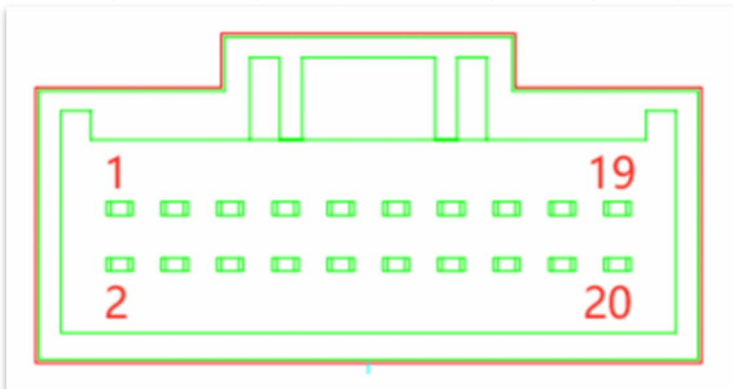


Warm tips: After updating the MP3 file, the voice announcement sound becomes smaller or no sound, adjust the volume bar according to the above steps to solve the problem.

2. Back panel interface:

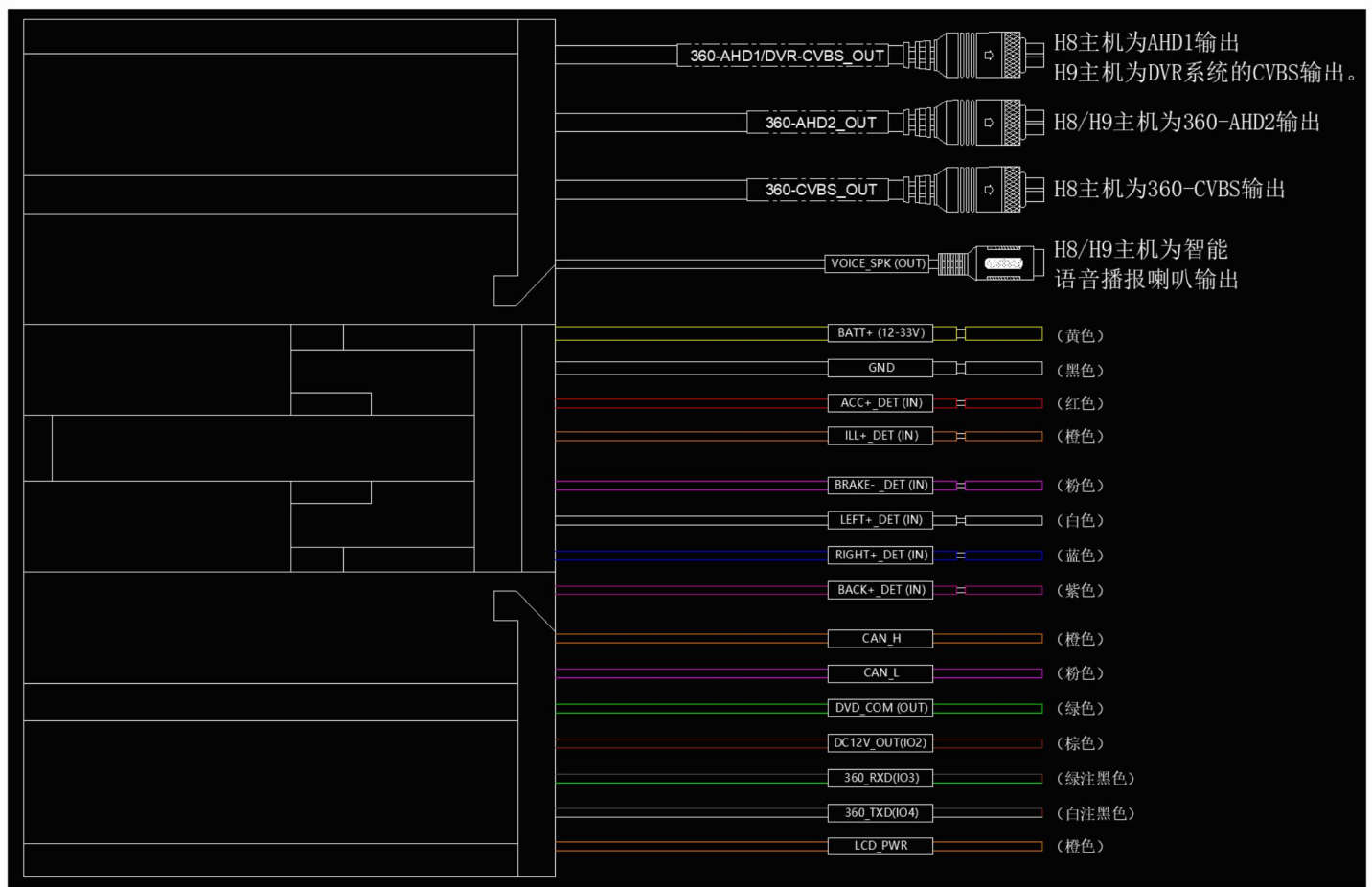


1. Power / IO Control / CVBS / AHD Video / Voice Speaker / CAN Interface



C

1	3	5	7	9	11	13	15	17	19
ACC+ ignition switch	BATT+ System Standing Power	GND POWER GROUND	AHD1-OUT video output	AHD2-OUT video output	CVBS-OUT video output	DVD-COM Toggle control	left turn signal (auto.) sensing	right turn signal (auto.) sensing	Reverse gear detection
2	4	6	8	10	12	14	16	18	20
CAN-H	CAN-L	SPK+ speaker positive (electronics)	SPK- Horn Negative	video link	ILL+ Nighttime Detection	BRAKE- parking test	DC12V regulated output	RXD serial port reception	TXD serial port sending



- **BATT+ (12-33V) (yellow) 360 Normally Powered (must be connected)**

Put the car lock key in OFF, one end of the stylus is hitched to the wire to be tested, one end of the stylus is connected to the wire to be tested, and the stylus lights up, then it is normally charged.

It is especially emphasized that the standing power should be connected to the line controlled by the original car's main power supply, so as not to use the car for a long time, resulting in a leakage of the car battery.

If the normal power is not connected, the host does not work, the parking monitoring function cannot be used, and the parking defense function is not available.

- **ACC+_DET (IN) (red) Ignition switch control wire, test wire voltage range 10-33V (mandatory)**

Put the car lock key in OFF gear, one end of the stylus is hitched and one end is connected to the wire to be tested, the stylus goes out, at this time, rotate the car lock key by one gear (ACC gear), the stylus lights up, then it is ACC.

The system turns on when ACC is high and turns off when it is low.

- **GND Ground, (Black) Hitch Wire (Required)**

Hitch directly to the body.

- **ILL+_DET(IN) (Orange) Night Mode Detect Line, Detect Line Voltage Range 10-33V (Optional)**

Put the car lock key in ON gear, one end of the stylus is hitched, one end is connected to the wire to be tested, turn on the original small light switch, the stylus is bright, turn off the original small light switch, the stylus light is off, then it is the ILL wire.

When the night detection line is high, the system will activate the night mode state, reducing the brightness of the display and lowering the volume of the exterior acoustic and visual siren to 50%.

All four of these wires are routinely found behind the original radio mainframe.

- **BACK+_DET (IN) (Purple) Reverse Firewire**

Put the car lock key in ON gear, one end of the stylus is hitched to the iron, one end is connected to the wire to be tested, put it in reverse gear, the stylus lights up, reverse gear is canceled, and the stylus goes out, then it is the reverse gear control wire.

When the reverse firewire is high, system will switch to reverse mode with the highest priority and the 360 will display: "Panorama + Rear View" screen.

- **LEFT+_DET (IN) (White) Left Turn Signal Wire**

Put the car lock key in ON gear, one end of the stylus is hitched to the iron, one end is connected to the line to be tested, turn on the left turn signal switch, the stylus light is the same frequency as the turn signal, a bright one, that is, the left turn signal.

When turning left, the system switches to left steering mode and the 360 displays: "Panorama + Left View".

- **RIGHT+_DET (IN) (White), Right Turn Signal Wire**

Put the car lock key in ON gear, one end of the stylus is hitched to the iron, one end is connected to the wire to be tested, turn on the right turn signal switch, the stylus light is the same frequency as the turn signal, a bright one, is the right turn signal.

When turning right, the system switches to the right steering mode and the 360 displays: "Panorama + Right View".

In park state and double blinker state, the system will switch to 4-division screen mode, and the 360 will display: "Left+Right+Front+Rear" screen.

In the driving state, the system will switch to the road end mode under the double flash state, and the 360 will display: "panorama + left front + right front" screen.

- **BRAKE-_DET (IN) (Pink) Parking (Air Brake) Detection Wire**

Put the car lock key in ON gear, the stylus end of the iron, one end of the wire to be tested, put down the handbrake, pay attention to the original car instrumentation on the handbrake light **P** light signal, the light is off, said the handbrake release, the stylus light is on, pull up the handbrake light is off, it is the handbrake line.

Special emphasis, big car handbrake are air brake, when the car vehicle cylinder air pressure is insufficient, handbrake down, the P light will always be on, the handbrake will not be released to open, at this time you should start the vehicle to pump, and then try again. Air brake sensor is usually on the vapor brake tube, along the hand brake air tube can be found.

The parking detection line is the control line of 360 Blind Zone Recognition + Radar function. When the parking detection line is empty, it means the vehicle is in parking state, and the Blind Zone Recognition + Radar function will be closed at this time; when the parking detection line is high level, it means the vehicle is in driving state, and the Blind Zone Recognition + Radar function will be opened at this time.

This line can be left unconnected for products that do not have the blind spot recognition function and do not have the optional radar function.

When you really can't find the parking detection line, connect this line to the ACC, otherwise the blind zone recognition function and the radar function are off.

- **CAN_H bus high (orange), CAN_L bus low (pink)**

Put the car lock key in the ON gear, with a multimeter end of the laptop, one end of the line to be tested, CAN voltage is generally a little more than 2V, CAN wire is usually twisted pair of wires, high and low together, CAN-H CAN-L both voltage is a little more than 2V, a little higher voltage for CAN-H, a little lower for the CAN-L.

- **DVD_COM (IO2) (OUT) (green) H8 is the 360 video output control line when it is the host, and H9 is the IO2 detection pin.**

When there is 360 video output in the H8 host, this line will have a high level output to control the Android car to switch to panoramic picture, and a low level to control the Android car to close the panoramic display.

In the H9 system, it is the IO2 detection port, and the function of this pin can be customized in the software for application.

- **360_RXD (IO3) (green note black) H8 host when it is the host serial receive port, H9 is the IO3 detect pin**

At the time of the H8 host, it was the 360 serial receive pin.

In the H9 system, it is the IO3 detection port, and the function of this pin can be customized in the software for application.

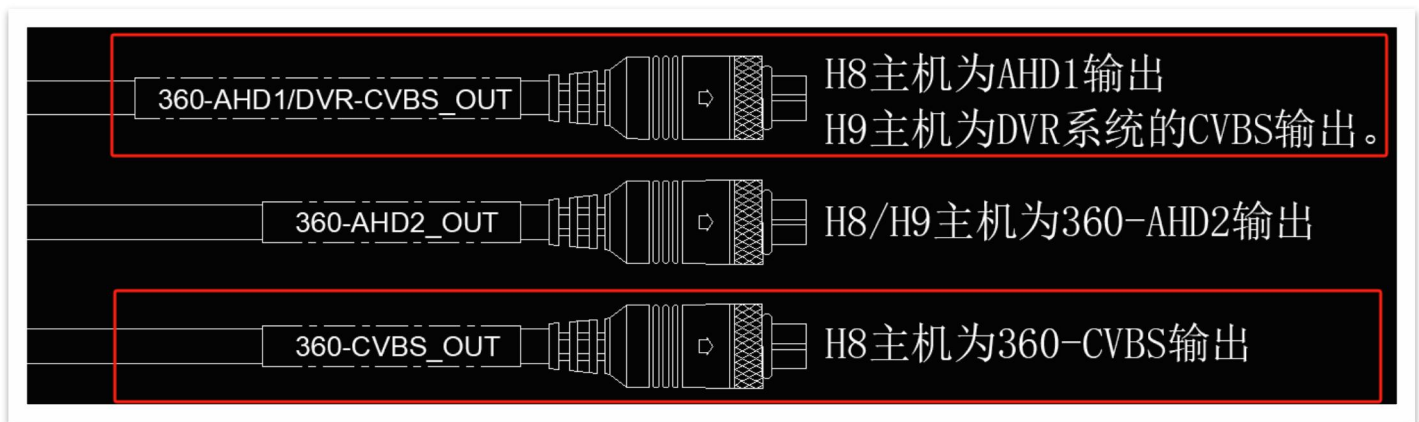
- **360_TXD (IO4) (white note black) H8 host when it is the host serial transmit port, H9 is the IO4 detect pin**

At the H8 host, it is the 360 serial transmit pin.

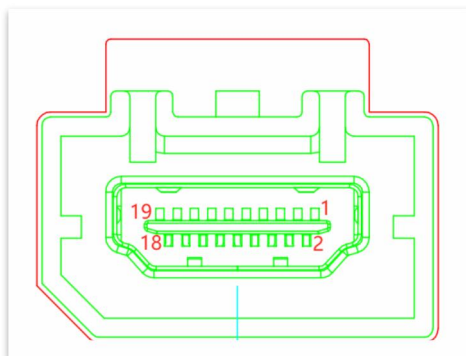
In the H9 system, it is the IO4 detection port, and the function of this pin can be customized in the software for application.

- **LCD_PWR (orange) (360-AHD1/DVR-CVBS_OUT) and (360-CVBS_OUT) Power supply pins for air header**

(360-AHD1/DVR-CVBS_OUT) and (360-CVBS_OUT) Aerial header pin 1 and LCD_PWR pin and together, when this pin is connected to the power supply, these two video outputs of the aerial header support power supply. Default this line is not connected, because the video output may be connected to other hosts, if the 1-pin with power supply, is to cause burned equipment.

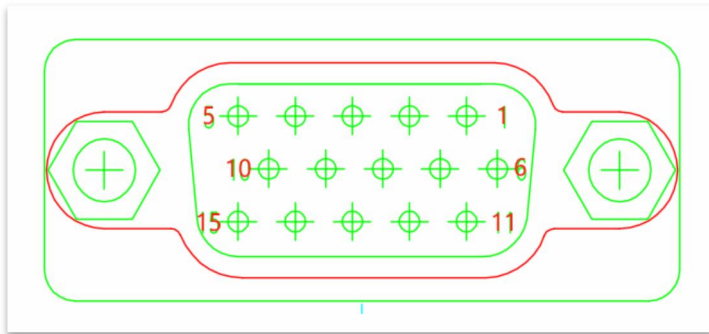


2、 HDMI interfaces and definitions:



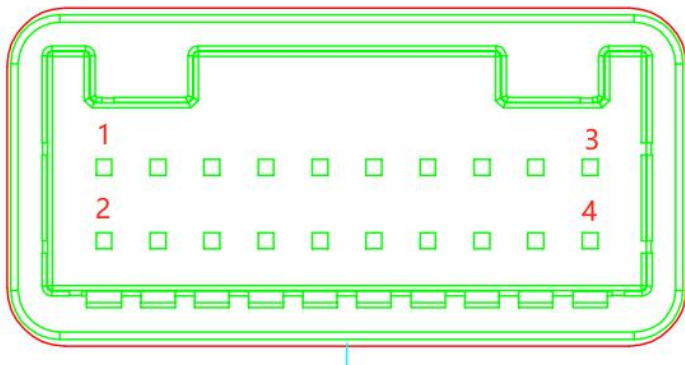
HPD	GND	SCL	LCD_DC-12V	ILL_5V	HDMI_0-	HDMI_0+	R_BSD_LED	HDMI_2-	HDMI_2+
VCC_5V	SDA	UART_RXD	HDMI_CLK-	HDMI_CLK+	UART_TXD	HDMI_1-	HDMI_1+	L_BSD_LED	

3, VGA interface, standard DB15 interface, inside the regulated 12V power output, UART serial communication function



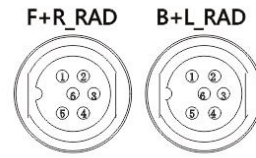
5. GND	4.UART_RX (serial port)	3. RGB_B	2. RGB_G	1. RGB_R
10. GND	9, DC_12V_OUT	8. RGB_B_GND	7. RGB_G_GND	6. RGB_R_GND
15, CLK (empty)	14, VGA_V	13. VGA_H	12, SDA (empty)	11. UART_TX (serial port)

4. Expand the remote control, IO port, lane change auxiliary light expansion interface, **(this interface is optional, the default does not match)**

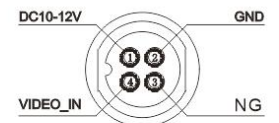
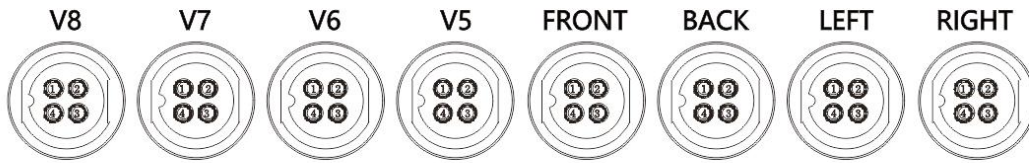
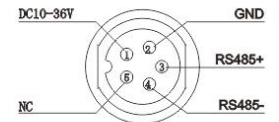
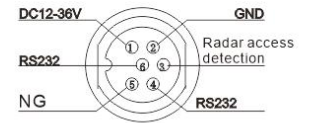


1	3	5	7	9	11	13	15	17	19
V5_DET V5 Control	V6_DET V6 Control	V7_DET V7 Control	V8_DET V8 Control	R_BSD_LED right turn signal (auto.)	L_BSD_LED left turn signal (auto.)	BUZZER buzzers	SPEED Speed Test	Foot Brake Detection	Seat belt testing
2	4	6	8	10	12	14	16	18	20
BAT+Common Power	unoccupied	unoccupied	GND	GND	GND	GND	GND	IR Infrared	VCC_5V

5. Airhead interface definition and functional description:



The detection line outputs a high level, indicating that there is radar access.



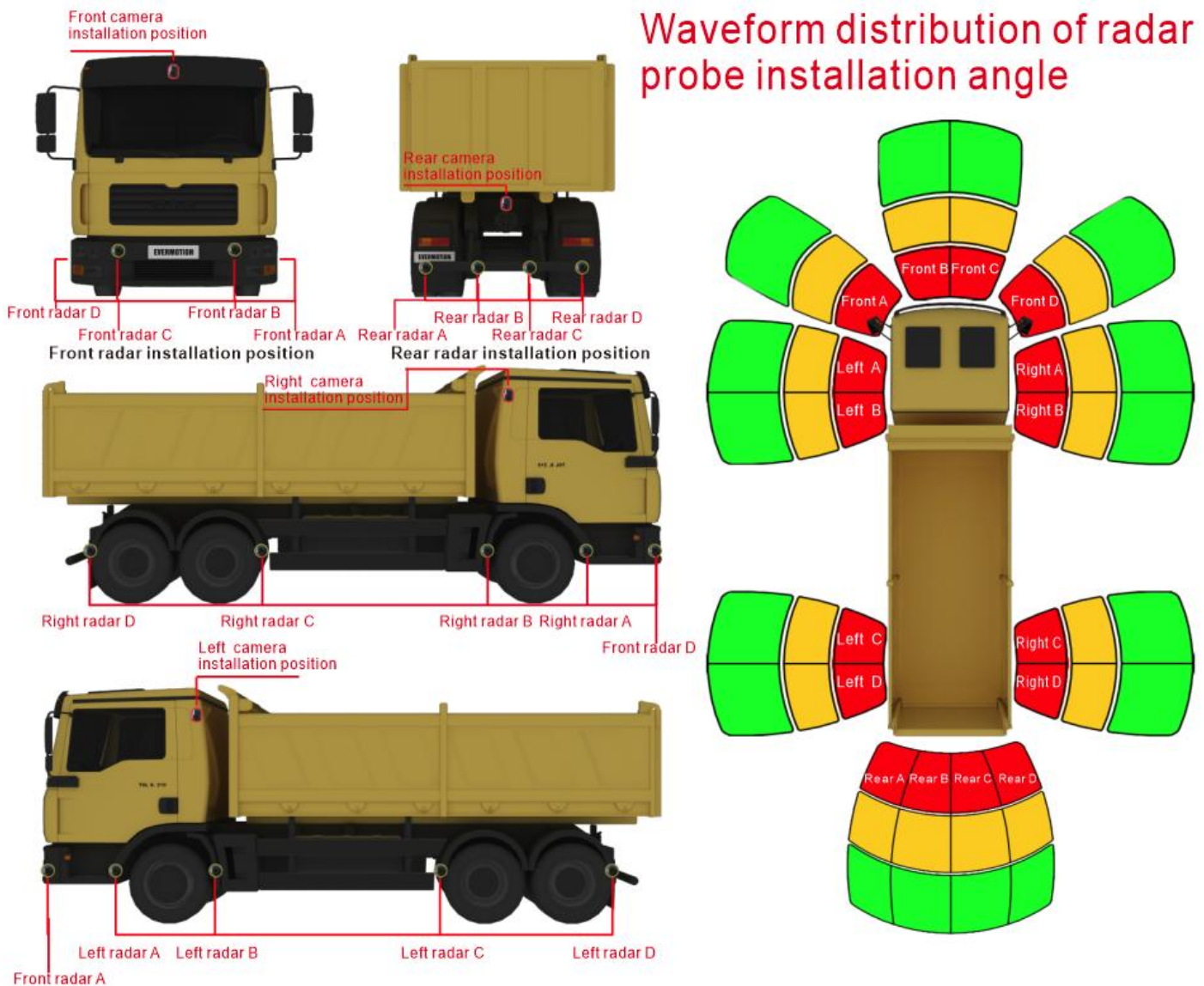
Channel V8 Channel V7 Channel V6 Channel V5 FRONT BACK LEFT RIGHT

6. GPS/BD antenna interface (SMA female)



II、 Example of product installation, illustration of camera and radar mounting position

1, product installation examples, like machine and radar installation position illustration

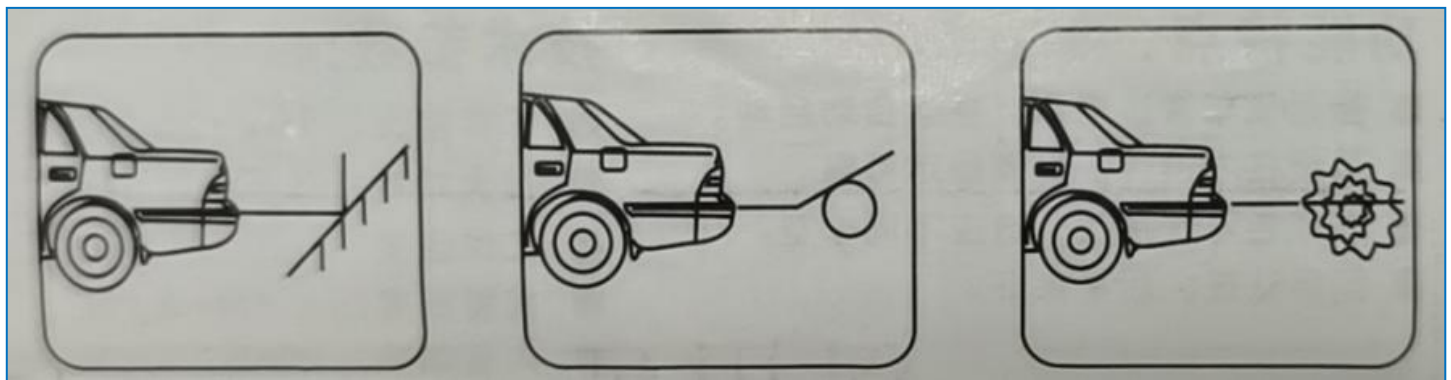


2, Radar detection distance and buzzer working status & radar product specification parameters:

Front radar detection distance 2.5 meters	Radar A (Buzzer/360)	Radar B (Buzzer/360)	Radar C (Buzzer/360)	Radar D (Buzzer/360)
Red zone (0.0-0.8 m)	Quick beep / 360 shows red	Quick beep / 360 shows red	Quick beep / 360 shows red	Quick beep / 360 shows red
Yellow zone (0.81-1.6 m)	None / 360 shows yellow	Medium ringing / 360 display yellow	Medium ringing / 360 display yellow	None / 360 shows yellow
Green area (1.61-2.5 m)	None / 360 shows green	None / 360 shows green	None / 360 shows green	None / 360 shows green
Rear radar detection range 2.5 meters	Radar A (Buzzer/360)	Radar B (Buzzer/360)	Radar C (Buzzer/360)	Radar D (Buzzer/360)
Red zone (0.0-0.8 m)	Quick beep / 360 shows red			

Yellow zone (0.81-1.6 m)	Medium ringing / 360 display yellow			
Green area (1.61-2.5 m)	Low beep / 360 display green			
Left radar detection range 2.5 meters	Radar A (Buzzer/360)	Radar B (Buzzer/360)	Radar C (Buzzer/360)	Radar D (Buzzer/360)
Red zone (0.0-0.8 m)	Medium sound / 360 display red			
Yellow zone (0.81-1.6 m)	None / 360 shows yellow			
Green zone (1.61-2.5 m)	None / 360 shows green			
Left radar detection range 2.5 meters	Radar A (Buzzer/360)	Radar B (Buzzer/360)	Radar C (Buzzer/360)	Radar D (Buzzer/360)
Red zone (0.0-0.8 m)	Medium sound / 360 display red			
Yellow zone (0.81-1.6 m)	None / 360 shows yellow			
Green zone (1.61-2.5 m)	None / 360 shows green			

Note that the detection effect will be affected when encountering objects as shown in the figure below:



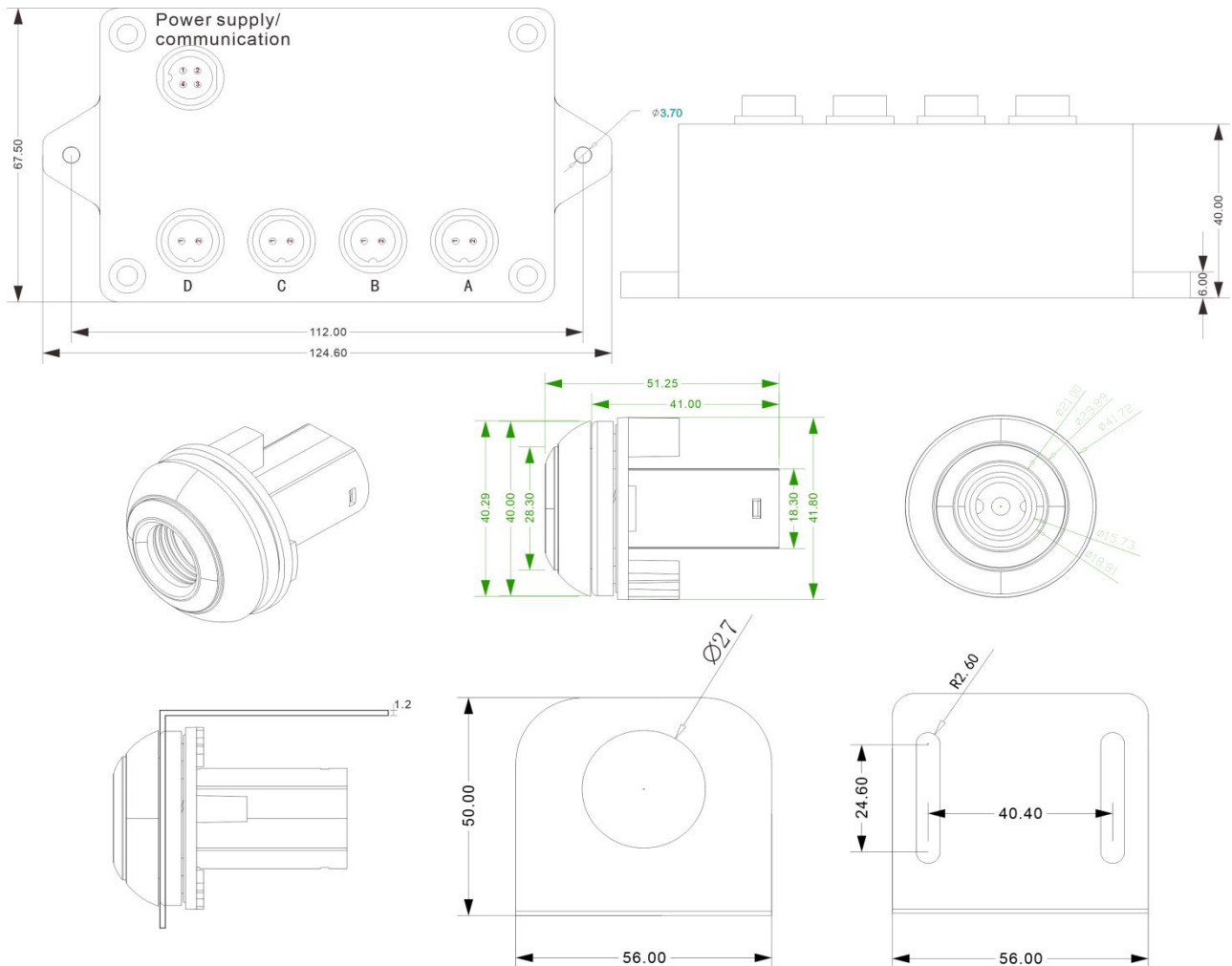
Special Notes:

- The radar is mounted at a height of not less than 0.6 meters with the radar angle parallel to the ground or slightly upward;
- In the event of heavy rainfall, the probe is fouled, which will affect the detection effect or false alarms;
- Different objects will have different detection distances, and multiple radar-mounted vehicles lined up may cause false radar alarms.

Radar product specification parameters

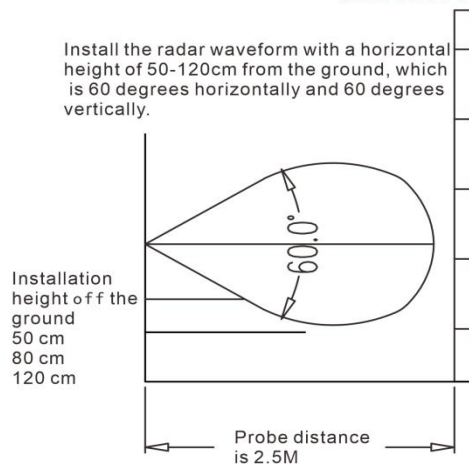
Specification	Product Model:	DF-2040-2.5M Ultrasonic Radar (optional)
ultrasonic radar	Radar Mainframe	A host comes standard with 4 radar probes, GX12 aviation header interface, a communication line with 360 host, 360 host support radar function, radar host need to be separately optional, directly connected to the use.
	Detection distance	The detection distance is 2.5 meters in all four directions, and 0.35 meters in all when the flameout is set.
	Power supply parameters	Supply voltage DC12-36V, maximum power consumption 0.2W.
	waterproof rating	The whole machine is waterproof to IP67.
	radar function	It is used for functions such as Blind Spot of Vehicle (BSD) + Lane Change Assist (LCA) + Parking Assist, etc. Combined with the company's own algorithms and protocols, it

		realizes various complex scenarios of applications.
	communication interface	RS232 at a baud rate of 19200.
Physical Specifications	Product Size	L*W*H=100*130*29 (unit: mm).
	Product weight	Weight of main unit: 0.4KG; Whole unit: 2.9-4KG (the difference in weight lies in the length of the wire harness).



Obstacle

Install the radar waveform with a horizontal height of 50-120cm from the ground, which is 60 degrees horizontally and 60 degrees vertically.



Radar host interface definition:

1.1. The power supply/communication uses the GX12-4P aviation header with the following interface definitions:

1	2	3	4
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Power supply DC10-36V	POWER GROUND	Communication (data transmission)	RS232-TX	unoccupied
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1.2 The radar probe interface is a GX12-2P air head with the following interface definition:

1	2
Probe Signal	Probe Shielding

3. Panoramic camera installation

Points for attention in camera installation :

1. Semicircular camera mount (for forward, left and right viewing)

1.1 installation steps

2. Installation of square camera (suitable for front and rear view installation)

2.1 Installation steps



III、 Product specification parameters

Specification	Product Model:	NEX-H8-AI-hdmi/ahd
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Electrical parameters	Product Power Consumption	The whole machine power consumption 10-30W working voltage DC12-36V.
	Power protection	With anti-surge function, anti-reverse connection function, low power protection, short circuit overload protection.
Video Output Interface	AHD video output [optional]	Support, standard GX12-4P female connector, two-way AHD25_720P/1080P output (360 panoramic picture, can be connected to the Department of standard machine, MDVR).
	CVBS video output	Support, standard GX12-4P aircraft female head, support PAL/NTSC.
	VGA video output [optional]	Support, standard DB15 female connector, built-in DC12V regulated power supply, serial communication function; optional my company screen, no additional power supply, installation is more convenient.
	HDMI video output [optional]	Support, dedicated HDMI interface output, built-in DC12V regulated power supply, serial communication function; optional my company screen, no additional power supply, installation is more convenient.
Video Input Interface	AHD video input	8-way 1080P_AHD camera input, standard GX12-4P aviation male connector, DC12V regulated power supply.
AI blind zone warning function	AI visual warning function	360-degree surround view system with built-in AI vision algorithm supports full 360-degree blind spot detection function: The system provides [image + light + sound] three-in-one reminder function to the driver through the in-cab display (visual) + blind zone (BSD_LED) indicator light (light) + intelligent voice announcing speaker (sound), and at the same time linkage control of sound and light sirens outside the vehicle to remind pedestrians or non-motorized vehicles entering the blind zone, improving driving safety in all aspects.
ultrasonic radar Radar host [optional]	Radar warning function	The product supports four-direction 16-probe ultrasonic radar, combined with speed sensors, its own algorithm, real-time communication with 360 panorama, combined with the panoramic interface, the radar information intuitively displayed on the 360 car model, support for enhanced right blind spot (BSD) detection, support for the lane change assist (LCA) function, the radar and the acoustic and visual siren linked to realize the blind spot alarm function.
	Radar Mainframe	A single set of radar host comes standard with 4 radar probes for large vehicles, 4 2.5-5 meter probe extension cables, and 1 communication cable with 360 host.
	Detection distance	The detection distance is 2.5 meters in all four directions, and 0.3 meters in all when the flameout is set.
	Power supply	Supply voltage DC12-33V, maximum power consumption 0.2W.

	parameters	
	waterproof rating	The whole machine is waterproof to IP67.
	radar function	It is used for functions such as Blind Spot of Vehicle (BSD) + Lane Change Assist (LCA) + Parking Assist, etc. Combined with the company's own algorithms and protocols, it realizes various complex scenarios of applications.
	radar interface	GX12-6P aviation male connector, through one to two wires into four GX12-4P female connector, support 4 directions, each direction 1 host plus 4-way probe, a total of 16-way probe support.
CAN communication function	Functions and Features	High-speed CAN bus transceiver, ISO11898 compliant, low power management, Wake-on-LAN function.
memory function	2.5-inch HDD storage	Supports 2.5-inch HDD or SSD storage with SATA interface. Capacity 128G-2TB.
	SD_CARD storage	Standard SD_CARD storage function, support 8-512G.
Sound and light alarm function [optional]	Specification	Power supply voltage DC12-36V, maximum power consumption 3W, protection class IP65, volume within 1 meter ≤ 105dB, 16 levels of volume adjustable, RS485 communication, support up to 10 kinds of sound.
Physical Specifications	Product Size	L*W*H=105*178*50 (unit: mm).
	Product weight	Weight of main unit: 0.65KG; Whole unit: 2.9-4KG (the difference in weight lies in the length of the wire harness).
Camera parameters	camera voltage	DC8-16V.
	Camera power consumption	0.5-1W for a single statue.
	resolution (of a photo)	AHD1080P.
	Operating/storage temperature	Working temperature: -30℃ ~ +70℃; Storage temperature: -40℃ ~ +85℃.
	video frame rate	Acquisition frame rate 25 FPS/sec.
	waterproof rating	IP68.
	low light	0.01 Lux.
	Vibration/shock	Conforms to MIL-STD-810F, Method 516.5
	horizontal angle	210 degrees
	vertical angle	126 degrees
	aperture	1.6±5%
	monitoring range	1.5MM
Video Parameters	video format	H265
	Video resolution	4 channels together 1920*1080P.

	file capacity	1.25 GB/hour.
Mainframe Parameters	IP Protection Rating	IP51.
	operating temperature	20~70°C below zero.
	Storage temperature	40~80°C below zero.
	Vibration/shock	Complies with MIL-STD-810F, Method 516.5.
	Fuselage Material	Body, high quality aluminum alloy, surface oxidation brushed process.

The following operating instructions are applicable to DF-3DH7AI version and DF--3DH8AI version;

Menu operation mode: touch version (click the view on the car model to enter the menu), infrared remote control version (refer to the name of the remote control silkscreen to operate)

The system password is 000000 (new version).

You need to input the password when you log in for the first time, after inputting it correctly, you don't need to input the password in other menus again, you can directly click "Confirm".

5.1 Playback



Select [Playback] function in the setup menu, enter the video file list, as shown in the right figure above, move to the video file to be viewed through the remote control [up] [down] arrow keys, press the [OK] key to select the video file to be viewed, and then move to the lower function button area through the remote control [up] [down] arrow keys to perform the corresponding operation.



Lock the selected video file, the locked file, [Properties] has this lock symbol, the file will not be automatically overwritten, but can be [Formatted].



Unlock locked video files.



Play the previous video file forward.



Play the selected video file.



Play the next video file backwards.



Delete the selected video file.



Format the USB flash drive or SD card memory, the hard disk is not formatted here.



Return to 【Main Menu】

Note: The formatting of the hard disk is not on this page; in the [System Upgrade] menu, long press the remote control [Left

View] for more than 5 seconds to perform the formatting operation of the SATA hard disk.

5.2 Display



- Select the [Display] function in the setup menu to enter the display setting options, as shown in the right figure above, move to the corresponding option to set the corresponding function by using the [Up] [Down] arrow keys of the remote control.

[TurnContrl] Panorama system performs the operation on the turn signal, the default is always on.

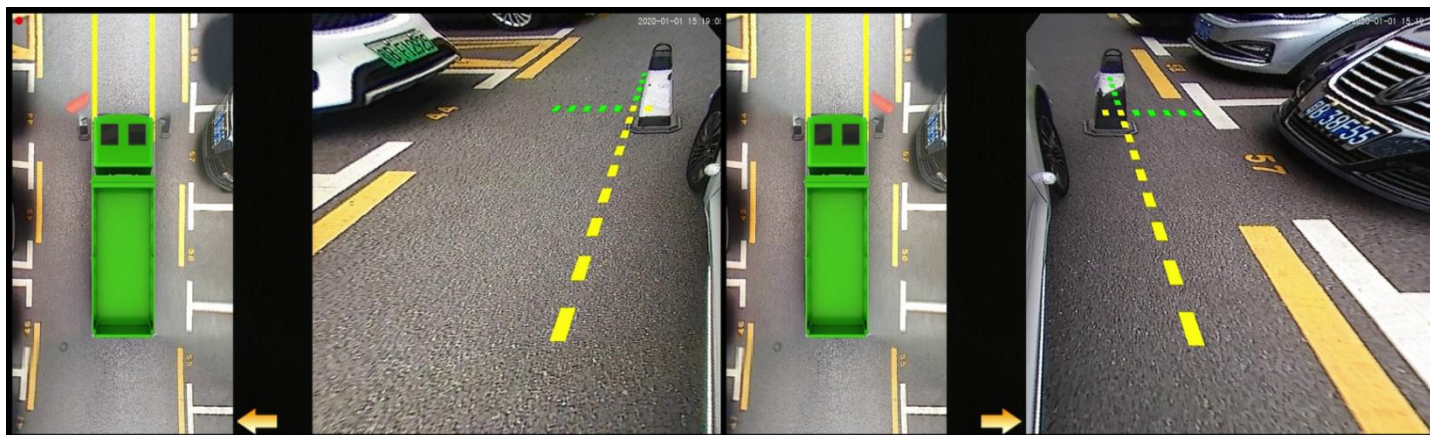
- [Off] In the P3-AI system, when this item is selected, the system does not switch the view angle when hitting the turn signal.
- [30 km-Exit] In the P3-AI system, when this item is selected, the system switches the steering view when hitting the turn signal at speeds below 30 km/h.
- [60km-Exit] In the P3-AI system, when this item is selected, the system switches the steering view when the speed is below 60km/h and the turn signal is hit.
- **【30Km-Back】** In P3-AI system, when this item is selected, the system will switch the streaming view when the speed is below 30km/h and the turn signal is hit.
- [60km-Back] In the P3-AI system, when this item is selected, the system will switch the streaming view when the speed is below 60km/h and the turn signal is hit.
- **【Keep On】** In P3-AI system, when this item is selected, when hitting the turn signal, the system switches the steering view, regardless of the speed.
- Note: When P3-AI host has no speed information access, the functions related to setting the hourly speed are not enabled.
- H8-AI host is normally on by default, the 1st-4th settings are invalid for H8-AI.



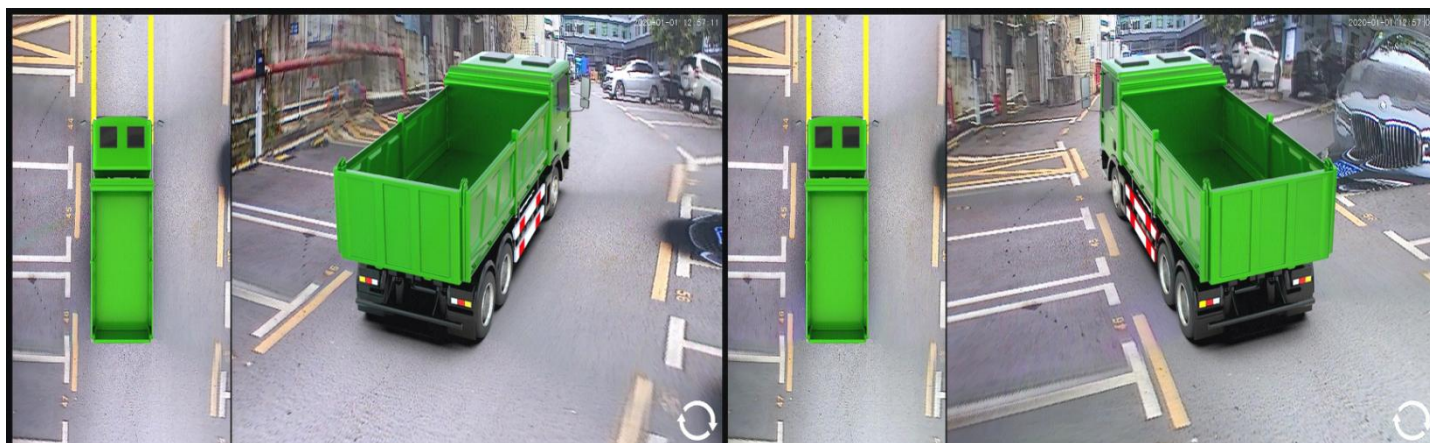
[TurnView] The status of the panoramic display screen when the turn signal is operating:

- In [2D] mode, when hitting the left or right steering, the view angle will be corrected when the [Left/Right Aberration

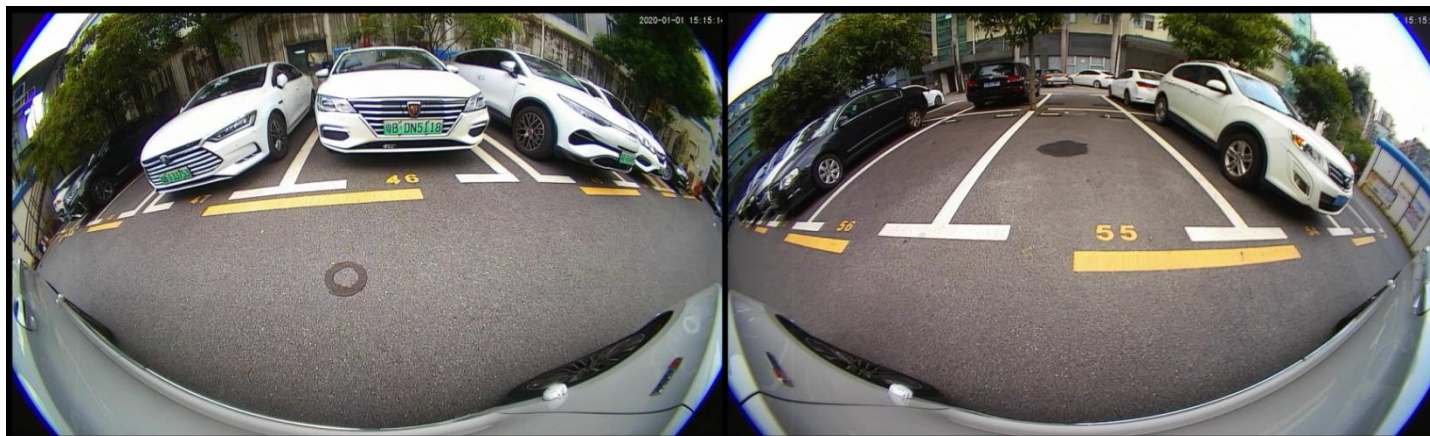
Correction] function is turned on, and turned off will be the original image of the camera, which is displayed as follows:

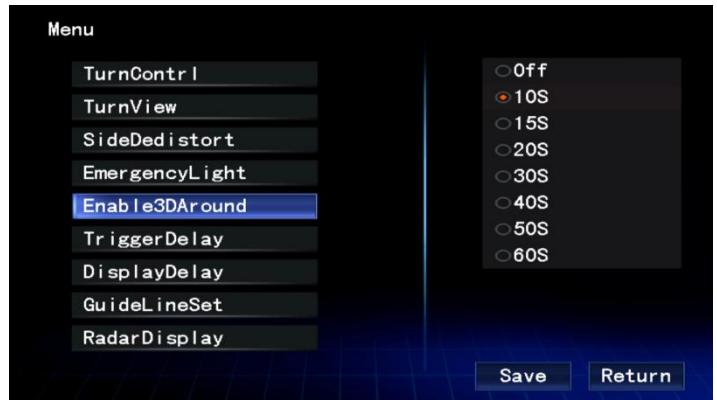
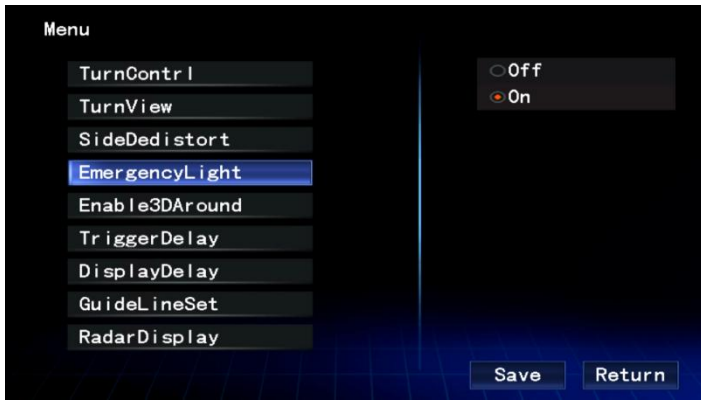


- In [3D] mode, the display mode is as follows when hitting the left or right steering



- When hitting left or right steering in [Single Screen] mode, the display mode is as follows:

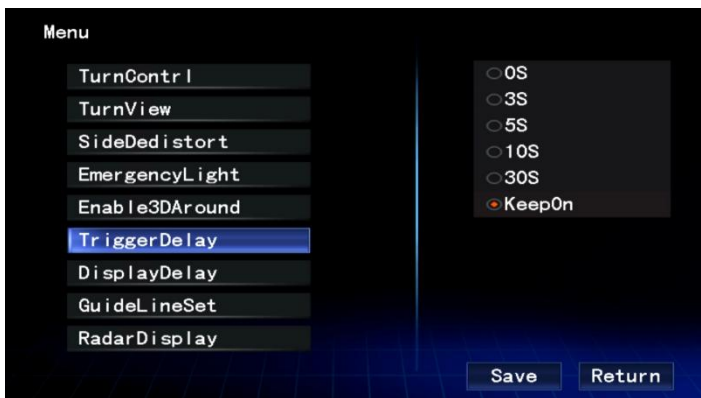




[Emergency light], when open, double flash can control the panorama on and off, when closed, double flash does not control the panorama.

[Enable3DAround], after power on, default 360 3D surround how long after exit.

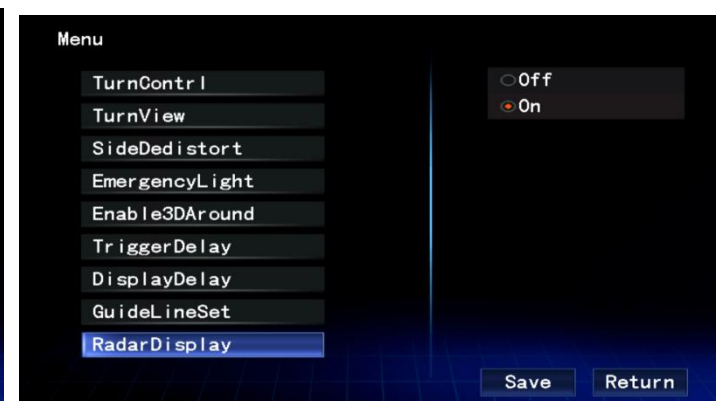
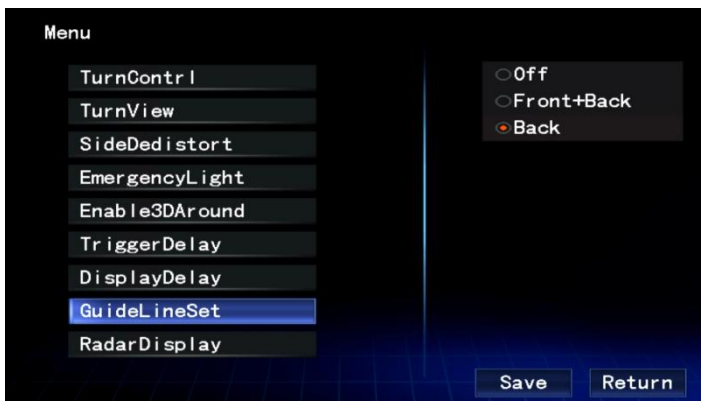
[Trigger Delay], [Display Delay] Function Description



[Trigger Delay], this item is set as "DVD_COM control line", which is used to control the IO output control pin of the external device to switch the time of 360 screen display.

Example: Trigger delay off time is 10 seconds, when 360 is triggered by radar, speed control, steering, reversing signal, when the trigger signal is off, the 360 detection line will be changed from high level to low level after 10 seconds; this IO signal line can be applied to Android navigation, when there is a trigger, the 360 detection line outputs a high level to control the priority of Android navigation to switch to the 360 screen, when the trigger is off, after a delay of 10 seconds, the 360 detection line will be turned off. When the trigger is turned off, the 360 detection line will be turned off after a delay of 10 seconds, and the navigation will automatically return to the car screen.

[Display delay], 360 video signal output control, and the above [trigger delay] function is similar to the control of the 360 video screen time.



[GuideLineSet], [Radar Display] function description:

[GuideLineSet], there are three modes in total:

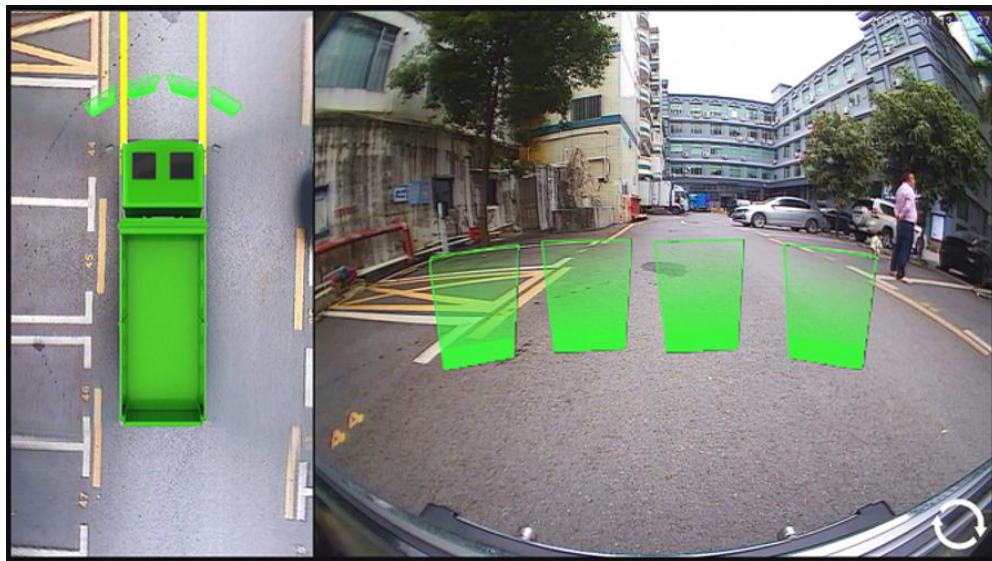
[off], no track line is displayed when moving forward or reversing.

[Front +Back], when moving forward or reversing, there are track lines in front and rear, [Explain that the AI version has to turn

off the [AI ranging] function to display the front track].

[Back], No track line when front, track line when reverse.

[Radar Display], when closed, the radar radar status will not be displayed above the panoramic view, open it and it will be displayed as shown below:

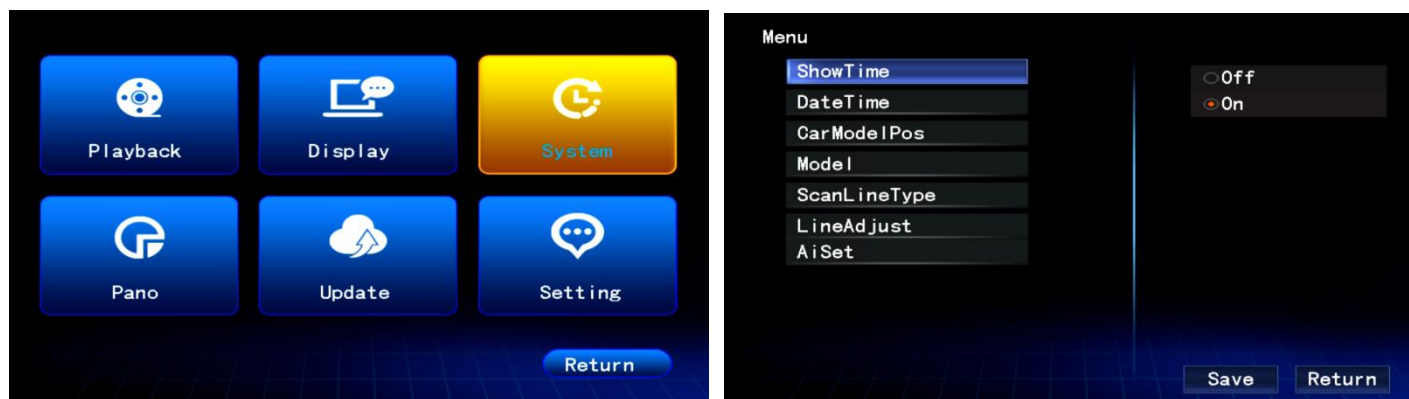


Note: After all the settings are made the last point to [Save] the settings will take effect.

5.3 System

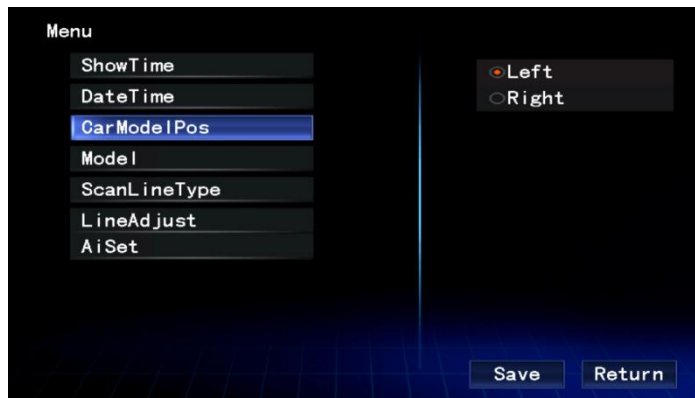
Select [System] function in the setup menu to enter the user setting options, as shown in the right figure below, move to the corresponding option to set the corresponding function through the [Up] [Down] arrow keys of the remote control.

[ShowTime] Set whether to display the current time/date/latitude/longitude/speed/limit on the main interface of the panorama, and turn it on by default.



[SateTime]To change the system time and date, move the remote control to the position you want to change, press the remote control "OK" button to select it, and press the remote control "up" and "down" buttons to adjust it.

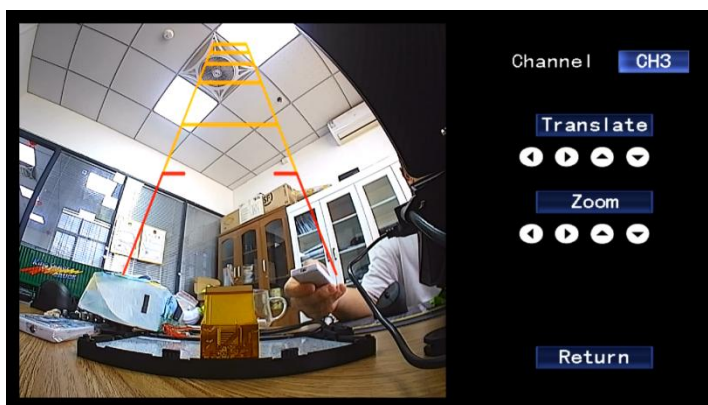
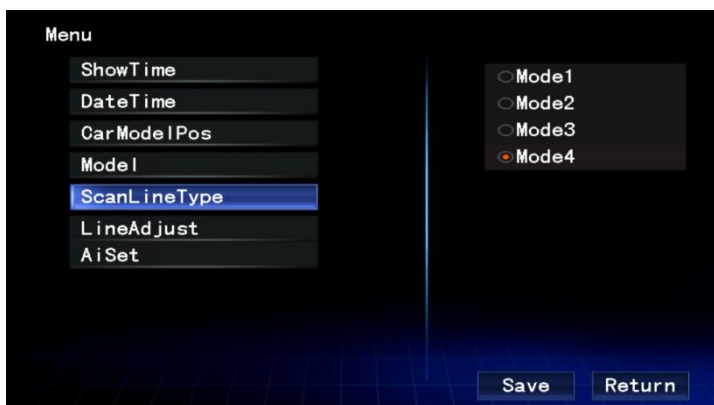
[CarModeiPos] Default left, when right is selected, the bird's eye view will be displayed on the right side of the screen.



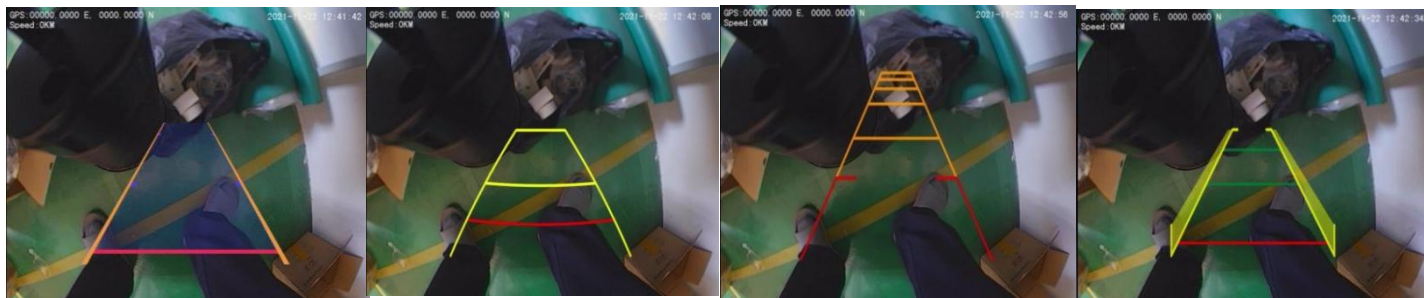
[Model] The system has built-in 9 car models to choose from, which can be selected through the arrows on the left and right sides of the interface, and then "Save" after selection.



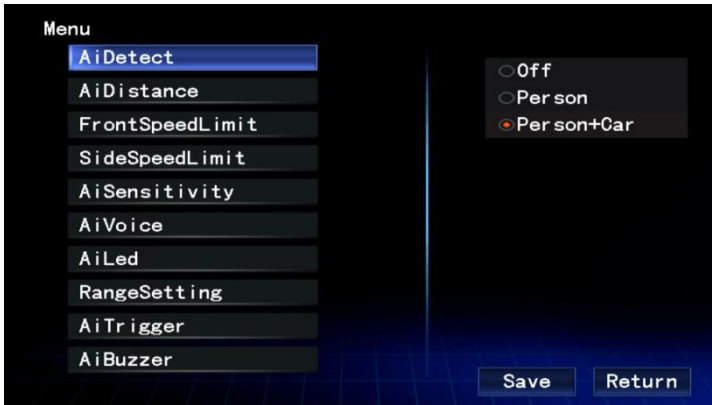
Description of [ScanlineType], [LineAdjust] functions:



[ScanlineType] The system defaults to mode two, different modes of the ruler line is different. The following pictures from left to right, respectively, for mode one to four styles:



[LineAdjust] After calibration, the scale line will be generated automatically according to the calibration data, if the scale has a little deviation, you can fine-tune it here.

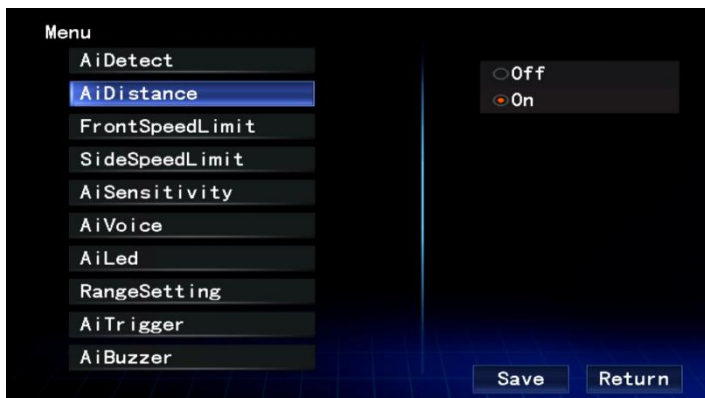


[AI Set] - [AiDetect]

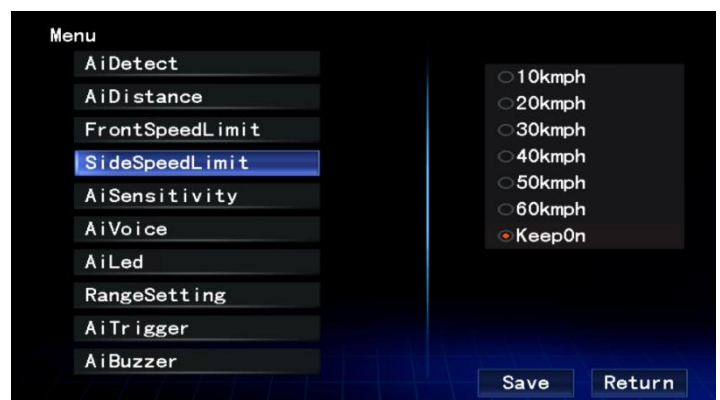
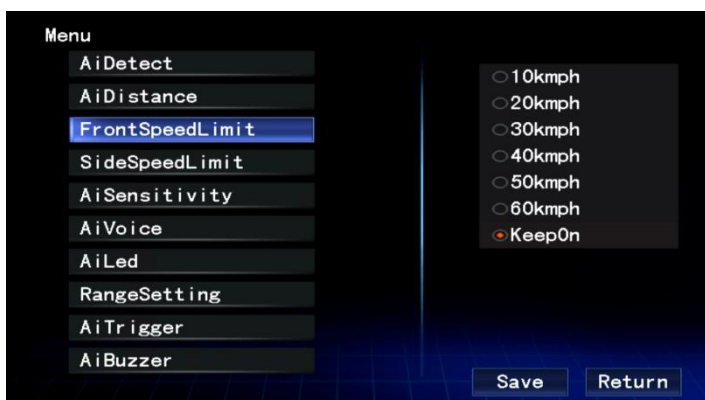
[Off], AI does not do the recognition, there is no voice broadcast function.

【 Person 】, AI will only recognize pedestrians, and when a person is recognized in the corresponding direction, it will be announced with voice announcement.

[Person+car] - AI recognizes pedestrians+vehicles, and there will be voice announcement when a person or a vehicle is recognized in the corresponding direction.

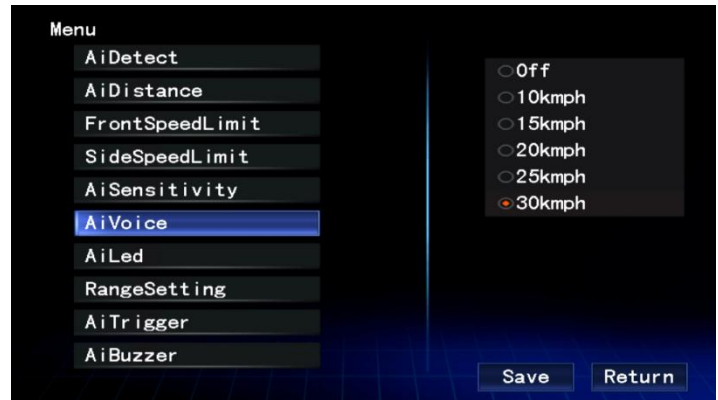
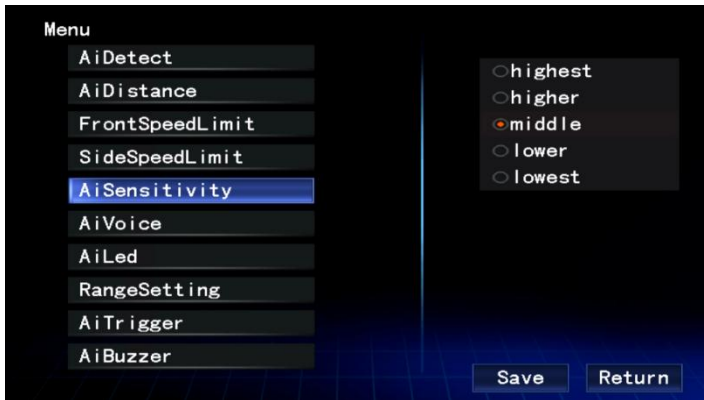


When [AiDistance] is open, as shown in the right picture above, there will be a person + car distance display, Note: To calibrate this ranging is more accurate, when you close the ranging function, the front scale line can be displayed.



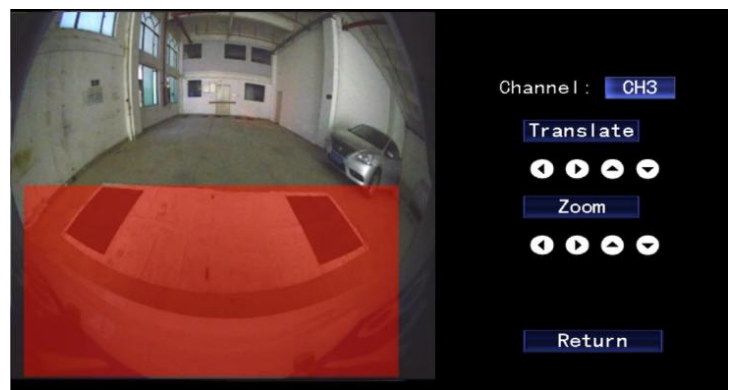
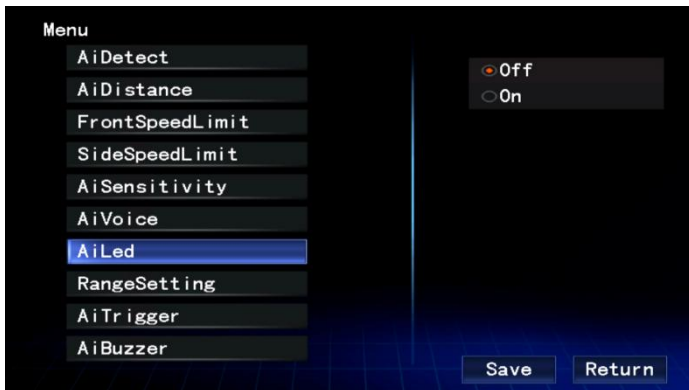
[FrontSpeedLimit] When moving forward, assuming that the selected value is 10 kilometers, the AI does not recognize when the speed exceeds 10 kilometers per hour, and so on, the default is not limited, this setting only works for DF-3DH7-AI, NEX-H8-AI is always recognized, the set speed value does not work.

[SideSpeedLimit] When hitting the turn signal, assuming the value of 10km/h is selected, the AI will not recognize when hitting the turn signal after the speed exceeds 10km/h. By analogy, the default is not limited, this setting only works for DF-3DH7-AI, NEX-H8-AI always recognizes it, and the set speed value does not work.



[Aisensitivity], AI function detection sensitivity selection, default medium.

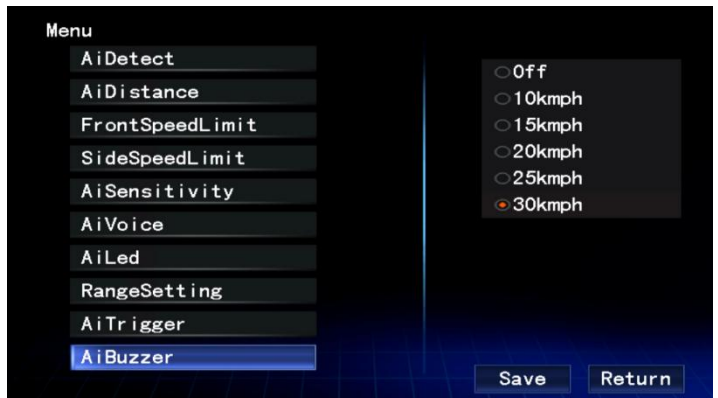
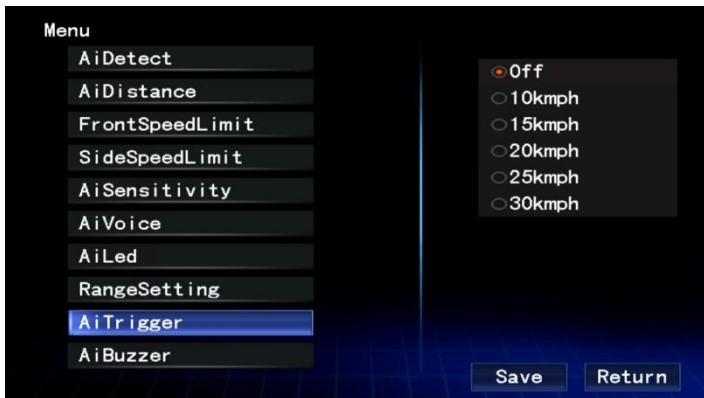
[AiVoice], assuming the value of 10 km/h is selected, the buzzer will not broadcast after the speed exceeds 10 km/h. This setting is only suitable for DF-3DH7-AI version, NEX-H8-AI has a separate set of logic.



[AiLed] Default off, this function is reserved for the blind zone indication of DF-3DH7-AI products. NEX-H8-AI products have a separate set of logic.

[RangeSetting] When the splicing is completed, the recognition area in each direction is aligned with the debugging cloth, and the customer can adjust the area according to the actual area to be warned.

Example: If a part of the body is mistakenly recognized as an adult or car, you can adjust the recognition area to avoid and solve the problem of false alarms.

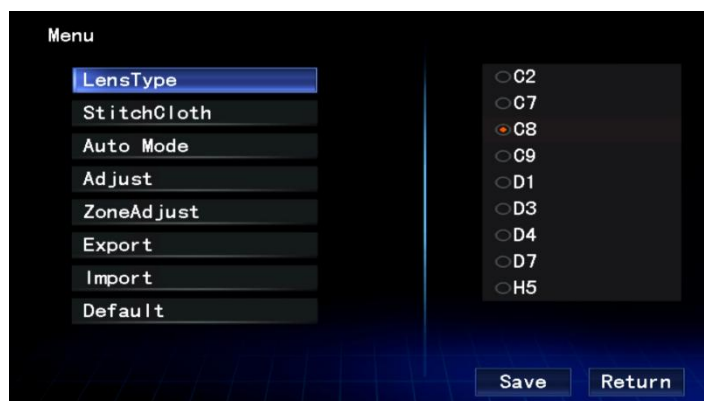
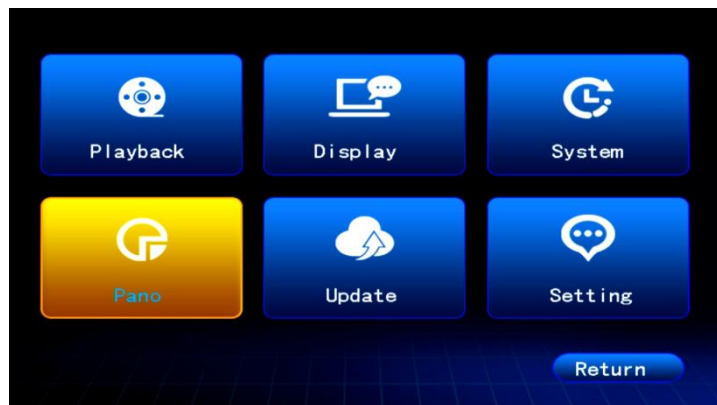


[AiTrigger] Assuming the value of 10 kilometers is selected, when AI is triggered, after the speed exceeds 10 kilometers, the screen stays in the background and does not switch to the front end.

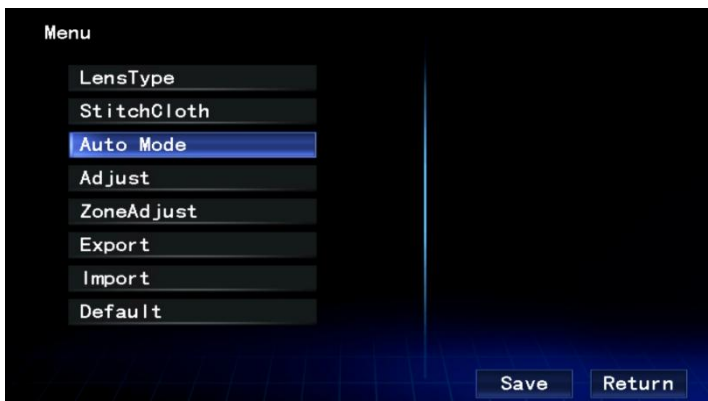
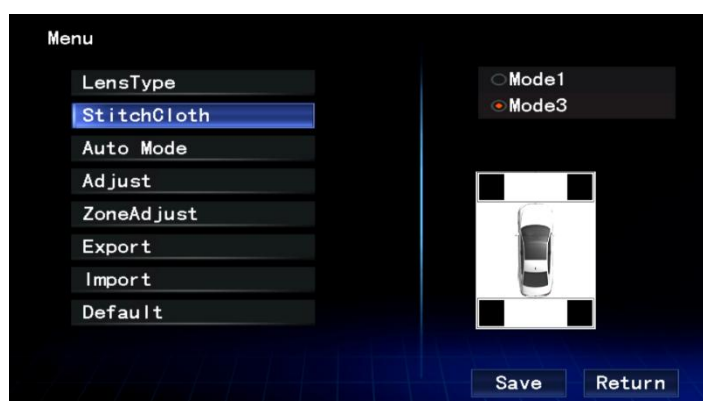
[AiBuzzer] Assuming the value of 10 kilometers is selected, at this time, after the speed exceeds 10 kilometers, the voice announcement will be closed, this function is suitable for DF-3DH7-AI products blind spot indication. NEX-H8-AI products have a separate set of logic.

Note: After all the settings are made, the last point is to [Save] the settings to take effect.

5.4 Pano

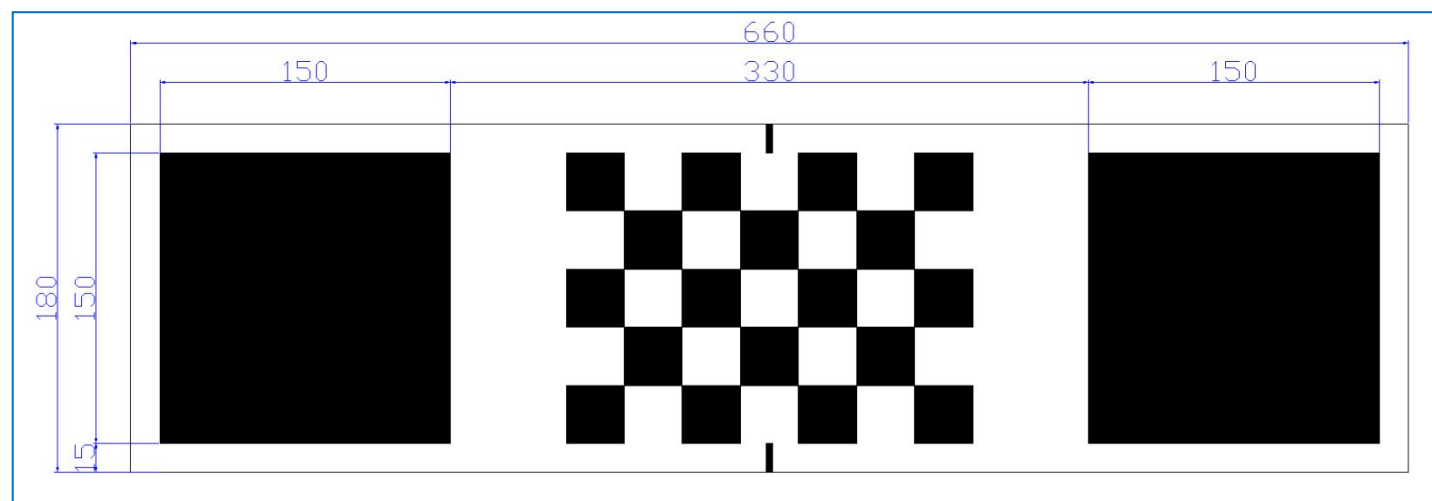


【Lenstype】 Default selection of C8, camera type corresponding to the code is a different camera lens + module code, details need to consult the manufacturer.



[StitchCloth] default manual debugging cloth debugging cloth selection, after the installation of our default choice [6.6 meters manual] debugging cloth, manual debugging on the light, site, the requirements are relatively low;

- 1、 Front-loaded debugging with [6.6 meters automatic] more, automatic splicing requirements site light, flat.
- 2, manual debugging cloth splicing method (2 long cloth or 4 black square), debugging cloth size chart, you need two, 6.6 * 1.8 meters, the size of the following chart:



3. Pendulum requirements:

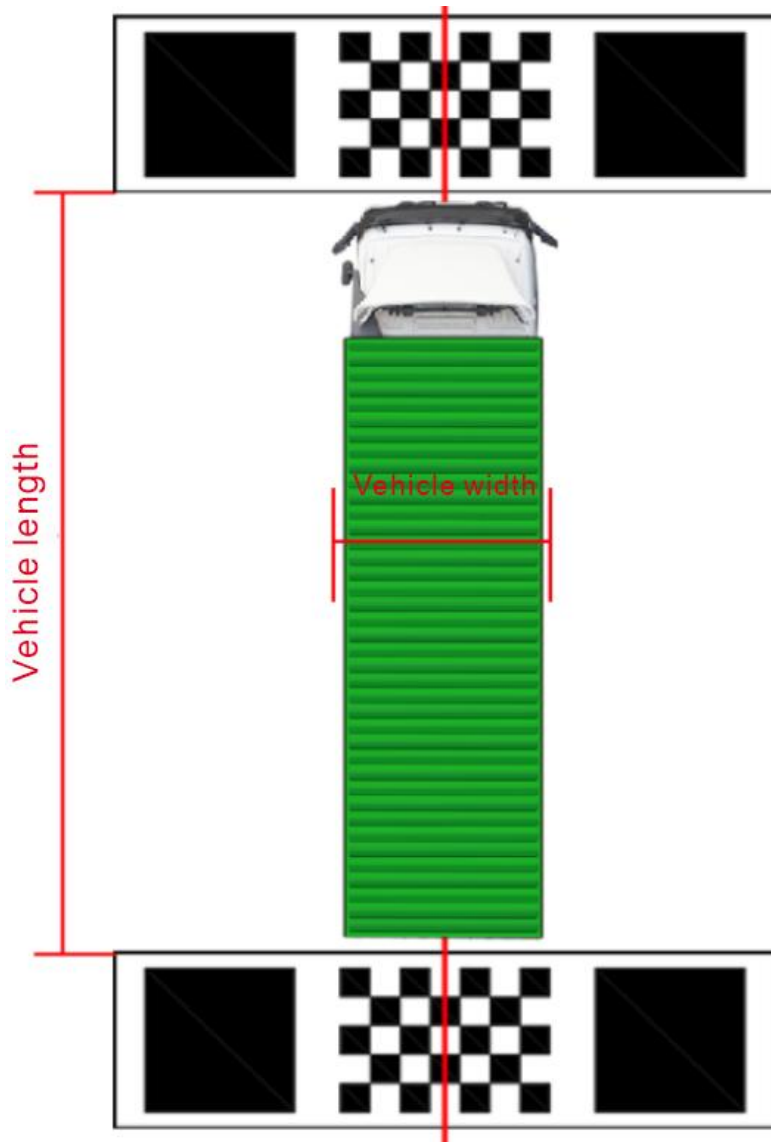
As shown in the left figure below, the two pieces of debugging cloth are placed parallel and centered in the front and rear position of the vehicle, 30CM from the front and rear of the vehicle.

debugging cloth placed, through the remote control of the [front view], [rear view] button to view the front and rear camera screen, whether you can see the complete cloth; if you can not see the complete cloth or a large black block, you can appropriately adjust the distance between the cloth and the car, and is not subject to the limit of 30CM.

Through the remote control of the [left view], [right view] button to view the left and right video camera screen, whether you can see the front and rear of the two cloth complete big black block; if you can not see the complete big black block, you need to adjust the installation position of the video camera, until you can see the front and rear of the two cloth

complete big black block.

After the above work is completed, start panoramic splicing.

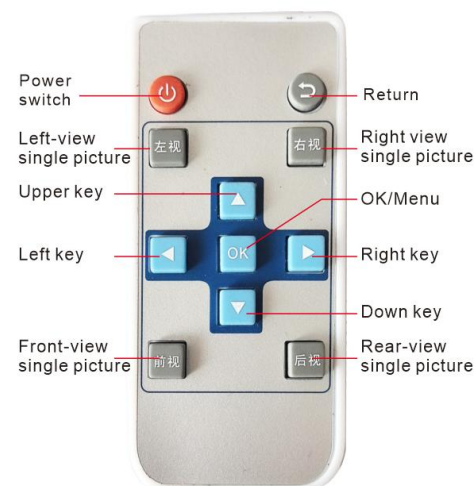


Car length:

Is the actual length of the front and rear cloth edges as shown on the left, not the true car length.

Car Width:

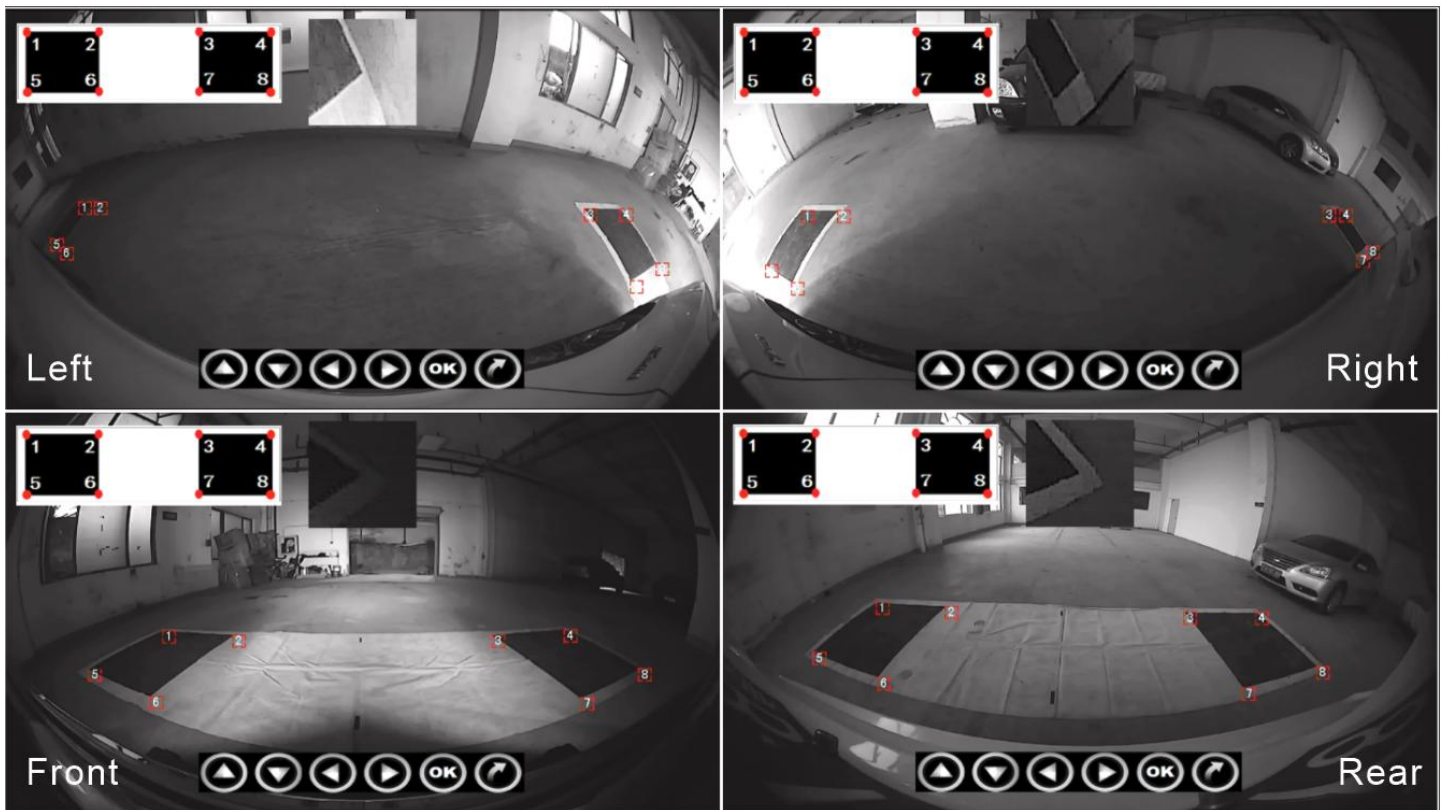
The actual width of the car plus 10-20 centimeters, columns such as the actual width of the car is 2500 centimeters, then the width of the car fill 2510 or 2520 centimeters.



- [Auto Mode] 6.6 meters manual debugging cloth splicing method
- Click the [OK] key at the number of car length and width, change the value through the remote control [up] or [down] arrow keys, enter the correct car length and width, error is allowed, error value $\pm 5\text{CM}$.
- click [Snap], the system will take pictures of the external environment to stay, at this point the debugging cloth can be put away, then click [left Set] [Right Set] [Front Set] [Rear Set], tracing point location see the following chart, 4 cameras are traced, click [Cal icate], the system will be splicing algorithms, the process is about 1 minute. As long as the cloth is correctly placed, the tracing point is accurate, a successful calibration, basically no need for fine-tuning.
- After splicing is completed, press the [Return] key of the remote control to exit the splicing screen, when exiting, the splicing data will be automatically saved.



Splice tracing points, using the screen as a reference, the order of tracing points is the same for all 4 cameras, 1-2-3-4 from top left to top right, and 5-6-7-8 from bottom left to bottom right

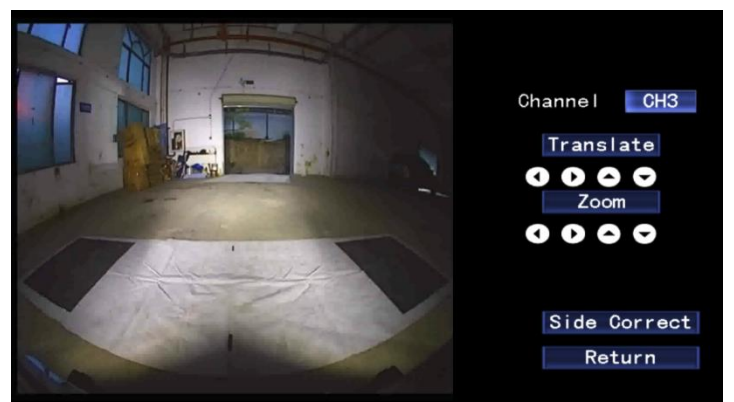
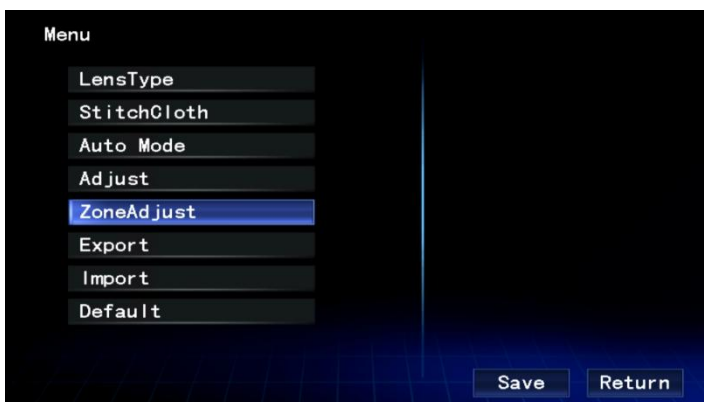
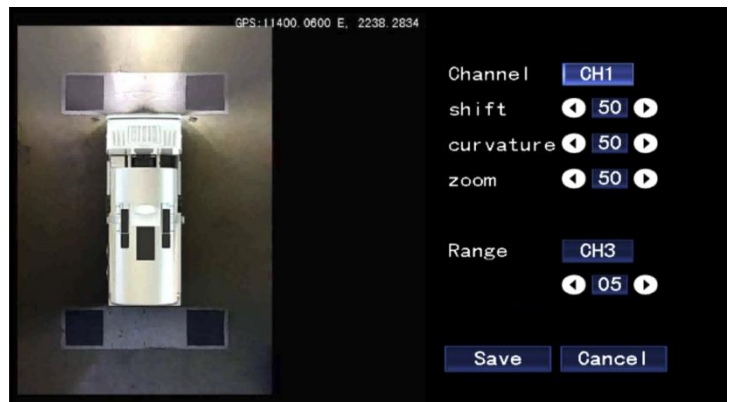
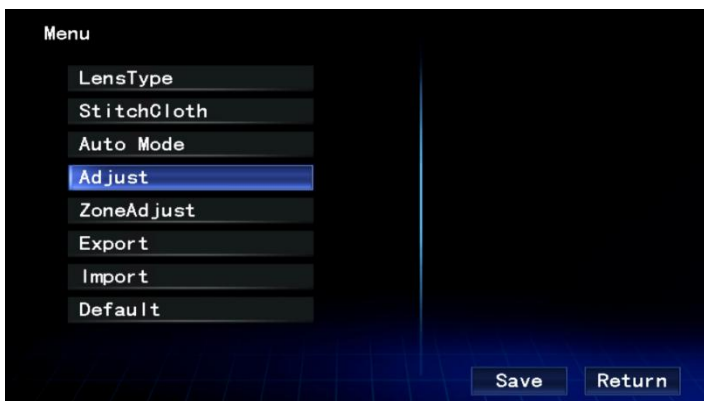


After tracing all the points, tap [Cal icate] and the following screen will appear:

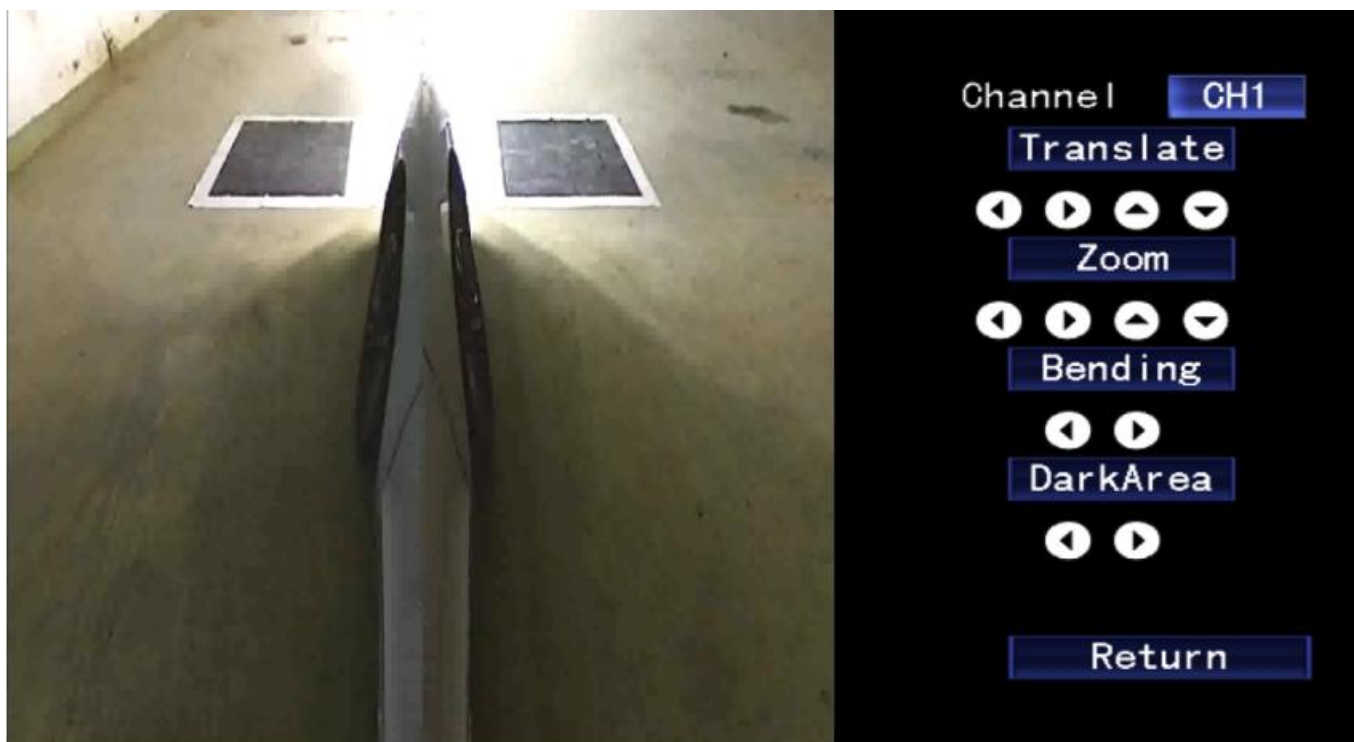
Press [Return], the calibration data will be saved and the device will restart automatically.



[Ad just] function, you can do some fine-tuning for the spliced picture, you can stretch the finished spliced picture and adjust the viewing angle height.



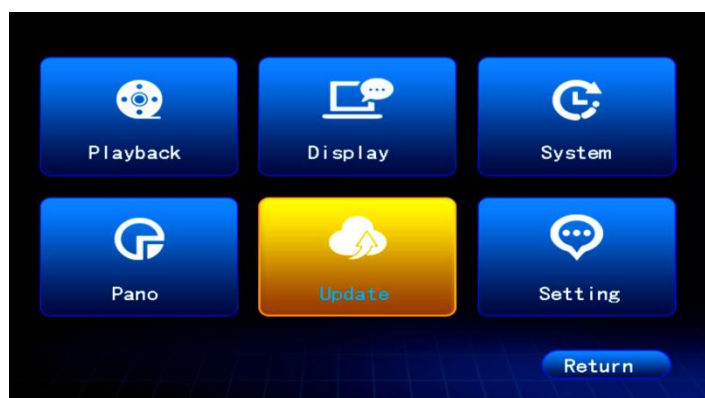
The [ZoneAdjust] function allows you to perform image panning or zooming, left and right distortion correction for a single camera screen.



The [Export & Import] function allows you to export the spliced calibration data to SD card for backup, and then import the data when the device needs to be replaced. It can also be used for batch installation to import the data of the first vehicle to other vehicles to reduce the calibration steps; the prerequisite for doing so requires that the precision of the like machine installation should be the same, otherwise the splicing effect is not good.

[Default], when the setting is wrong and you are not sure what you have changed, click this button to restore the device to its default state.

5.5 Update



You can upgrade the panoramic main degree, UI, car model, underlying MCU, remote control, and configuration files through this page.

360 software upgrade instructions:

1, you need to prepare a SD card formatted as FAT32, because 360 for LINUX system, can only recognize the FAT32 format card, otherwise the file baked shell to the SD card, the upgrade will be prompted to find the file or can not find the memory card.

2, how to confirm whether the card has FAT32 format?

If the new card is blank, insert the new card into the SD card slot of 360 host, press the "OK" button of 360 remote control, enter the menu, select "Car Record", select "Format", and format the new card. "After formatting the new card, it will be in

FAT32 format.

360 host has been in use and can record the storage card, itself is FAT32 format.

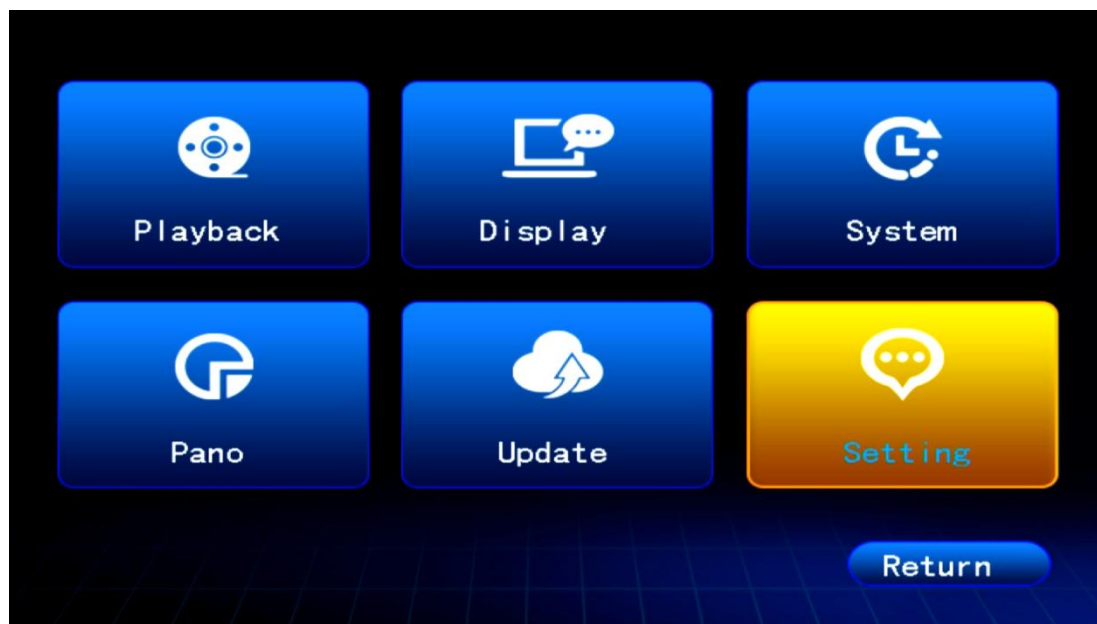
For non-FAT32 format card, please take it to your computer and format it with a special tool, and choose FAT32 format when formatting.

Bake the upgrade file to the root directory of the SD card, the upgrade package file can not be a compressed file or folder.

Insert the SD card into the 360 host, press the "OK" button of the remote control, enter the menu, select "Update", select "APP", the system will prompt "The system is being upgraded, please do not power off", after the upgrade is completed, the system will restart automatically to complete the upgrade.

Note: In the upgrade menu, long press the remote control [Left View] for more than 5 seconds, you can perform the formatting operation of SATA hard disk.

5.6 Setting



[Language] Default is "Simplified Chinese", there are three language versions.

[RecordFilesize] Default is 3 minutes, set the recording time for a single segment.



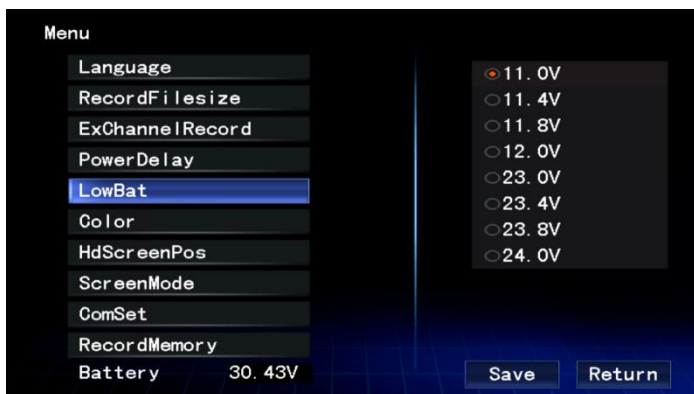
[ExChangne Record] is off by default, when it is on, the system increases from 4 cameras, to 8 cameras function.

[Power Delay]is off by default, you can choose the time of parking video.

Columns such as selecting the [KeepOn] setting, after turning off the engine (ACC-OFF), the system will turn off the screen, the background has been kept in the video recording state.

Description:

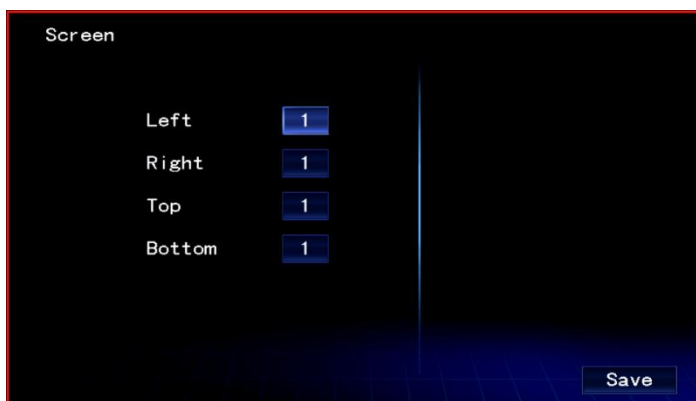
The system has [LowBat] function, when the battery voltage is lower than the set voltage, the system will be forced to shut down to protect the battery, to avoid excessive power consumption resulting in the car can not start.



[Color] Screen Settings, which adjusts the display parameters of the 360 panorama screen; Camera Settings, which adjusts the display parameters of a single camera.



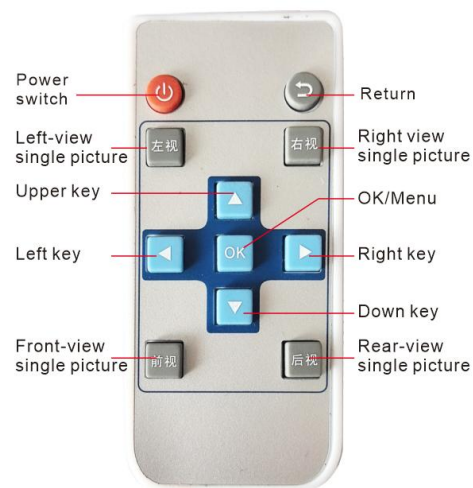
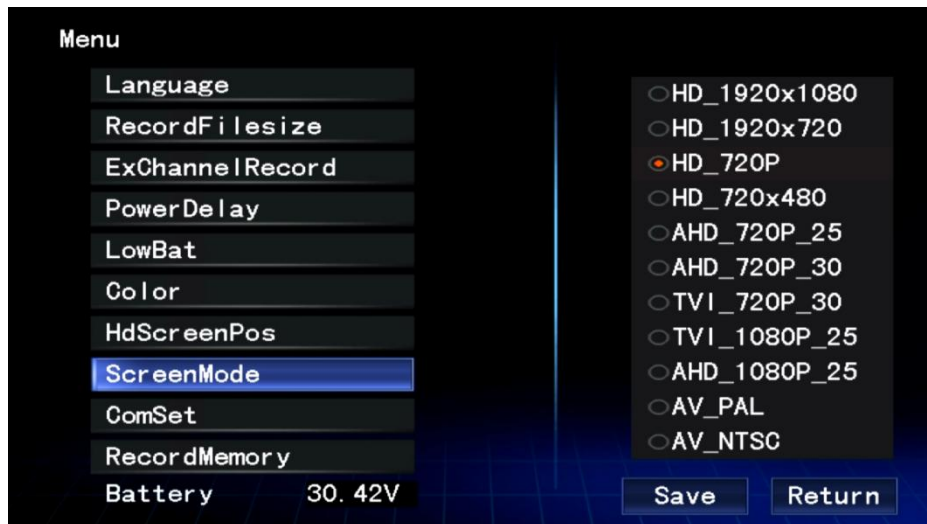
[HdScreenPos] When the system display screen beyond the screen range, you can modify the screen margins, the remote control to move to the location to be changed, press the remote control "OK" key to select, press the remote control "up" and "down" keys to adjust the value of the larger, the corresponding direction and the screen will be zoomed inward, you can see the red border can be.



[ScreenMode] The system default is "HD_720P(1280*720), CVBS interface is PAL(720*576). Remote control to move to the resolution to be selected, press the remote control "OK" button to select, press the remote control "up" and "down" button to move to the bottom of the [Save] button, the system will restart;

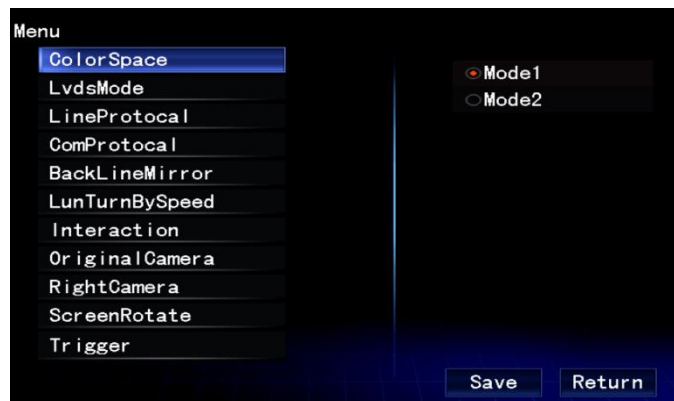
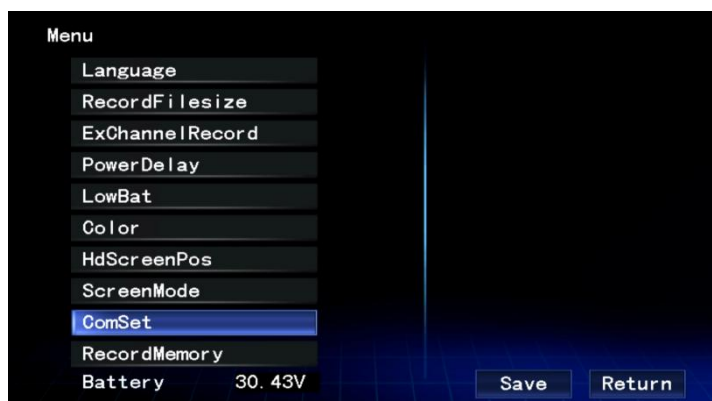
When there is an AHD chip in the system, the options here will be more AHD and TVI options.

Special emphasis, do not change the resolution, connected to the VGA or HDMI display, when selecting the AHD or TVI mode, VGA or HDMI will have no video output; if misuse, resulting in VGA or HDMI no display, can only be changed by connecting to the CVBS screen, or in the state of the 360 main interface, the host of the VOUT light is on the state of the host, often press the [Save] button. Or in the 360 main interface state, when the host VOUT light is on, press the "Front/Rear/Right View" button of the remote control for more than 5 seconds, and then change back to the correct settings.



[ComSet] - [ColorSpace]

Color selection, mode one is standard mode, mode two is vivid mode.



[LVDSMode] is the JEATA&VESA standard of LVDS interface, default, do not need to change.

[Protocol_ 1]The communication serial port of 360 Panorama system and MCU, default is protocol II, don't change it freely, the other corresponds to the communication protocols of different customers.



[Protocol_ 2] 360 panoramic system and touch screen communication serial port, the default is the protocol two, do not change arbitrarily, the other corresponds to a different customer's communication protocol.

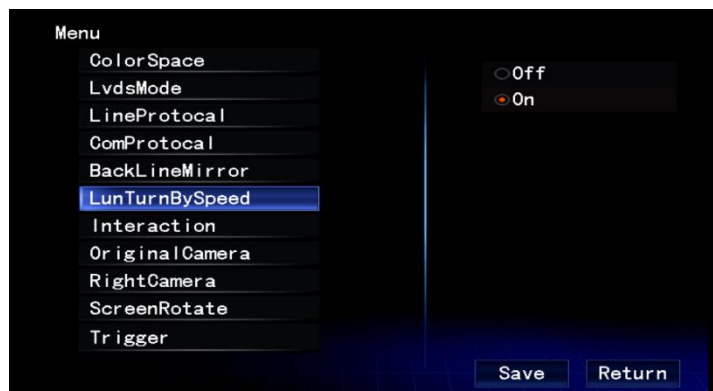
[BackLineMirror] Default "Off", for models with track following, if the track swing direction is opposite to the actual direction, please select this function.



[LunTurnBySpeed] default "off", the wheel rotation speed on the 3D car model is the same as the vehicle speed, this function depends on whether the car model file has the function of wheel rotation.

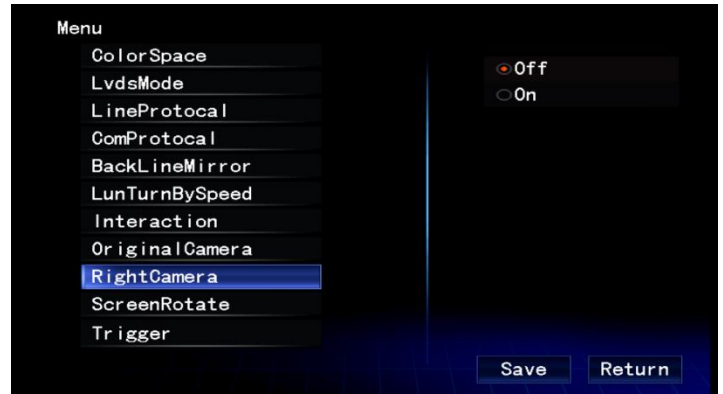
This function depends on whether the car model file has the function of wheel rotation or not.

[Interaction] is turned on by default, when this function is turned on, you can control the 360 panorama through the original vehicle buttons.



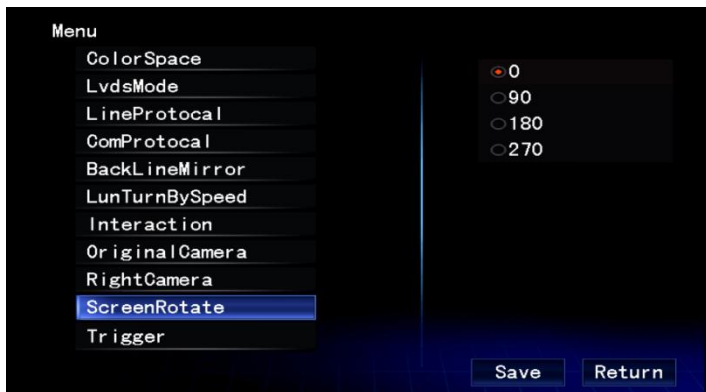
[OriginalCamera] must be closed by default, when open, 360 output control line DVD_COM (IO2) will be closed when reversing, does not control the original car screen to switch the screen.

[RightCamera]Default must be closed, when open, 360 output control line DVD_COM (IO2) will be closed when turning, not control the original screen switching screen.



[ScreenRotate]Screen can be rotated by selection, the default is 0 degrees, other angle functions need to be customized.

[Trigger] Steering, Reverse, Speed Trigger, Radar Trigger, P-Button Trigger, Door Trigger, and Emergency Lights Control Setting.



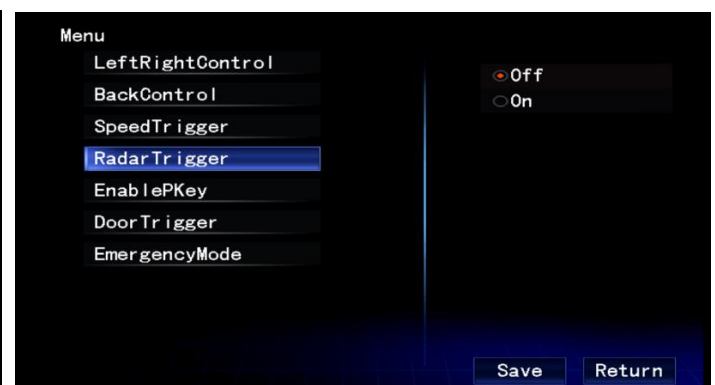
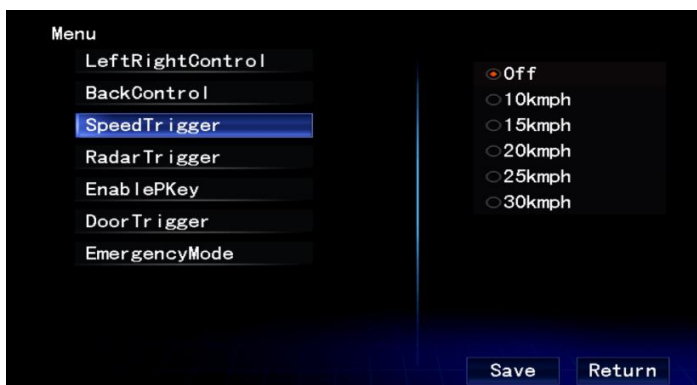
[LeftRightControl], DF-3DH7-AI mainframe, select lamp line control, NEX-H8-AI mainframe, select protocol control.

[BackControl], DF-3DH7-AI mainframe, select lamp line control, NEX-H8-AI mainframe, select protocol control.



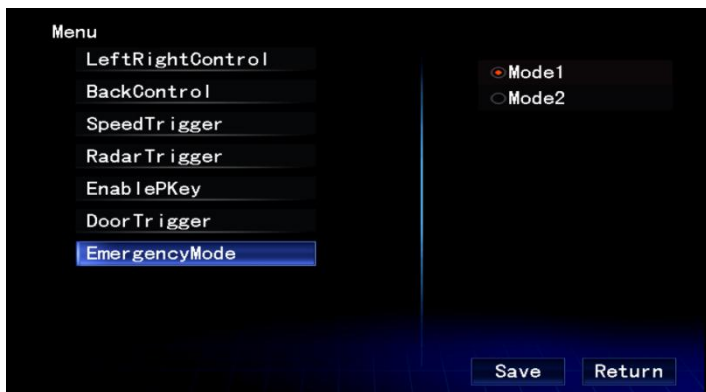
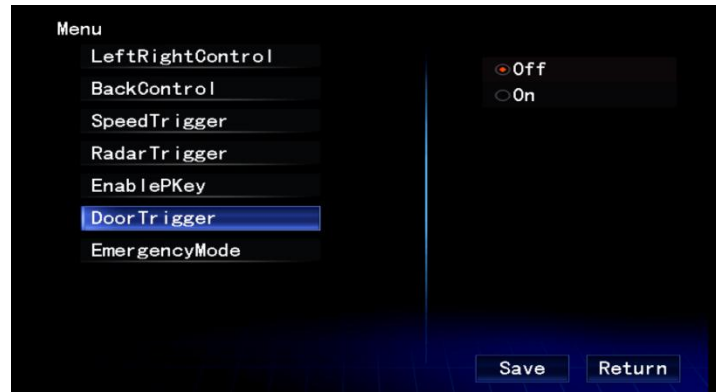
[Speed Trigger] default off, reserved function, temporarily unavailable, designed to select 10KMPH, when 360 in the background, the speed reaches 10 kilometers, it will trigger the 360 to front-end display.

[Radar Trigger] default off, for navigation host, normal display navigation screen, when radar warning, control 360 panorama from back to front display.



[EnablePKey] default off, for navigation host, normal display navigation screen, through the CAN bus to parse the original car's P-key, when there is a P-key signal, control 360 panorama from back to front display.

[Door Trigger] is off by default, for the navigation host, displaying the navigation screen normally, parsing the original car door key through CAN bus, controlling the 360 panorama display from back to front when there is a car door opening.



[RecordMemory] The default is SD_CARD memory, with SATA interface hard disk, select SATA mode.