Functional Summary Specification

1080p full HD series

⚠ Disclaimer

This product mainly provides vehicle drivers with comprehensive video image information of the surrounding road conditions of the vehicle. The information can be displayed or recorded on a real-time basis to assist drivers in driving more safely. But the Company shall not assume joint and several liability for any traffic accident on a vehicle equipped with this product under any circumstances due to the fact that the road conditions are complex and driving habits vary with drivers. Drivers shall drive carefully and follow the traffic safety regulations.

1. Foreword

1.1. General

This document is the description of the various setting options of 360 menu.

1.2. Product version

Version of 1080p full HD series

1.3. Intended readers

This document mainly applies to:

Ⅰ Installation engineers.

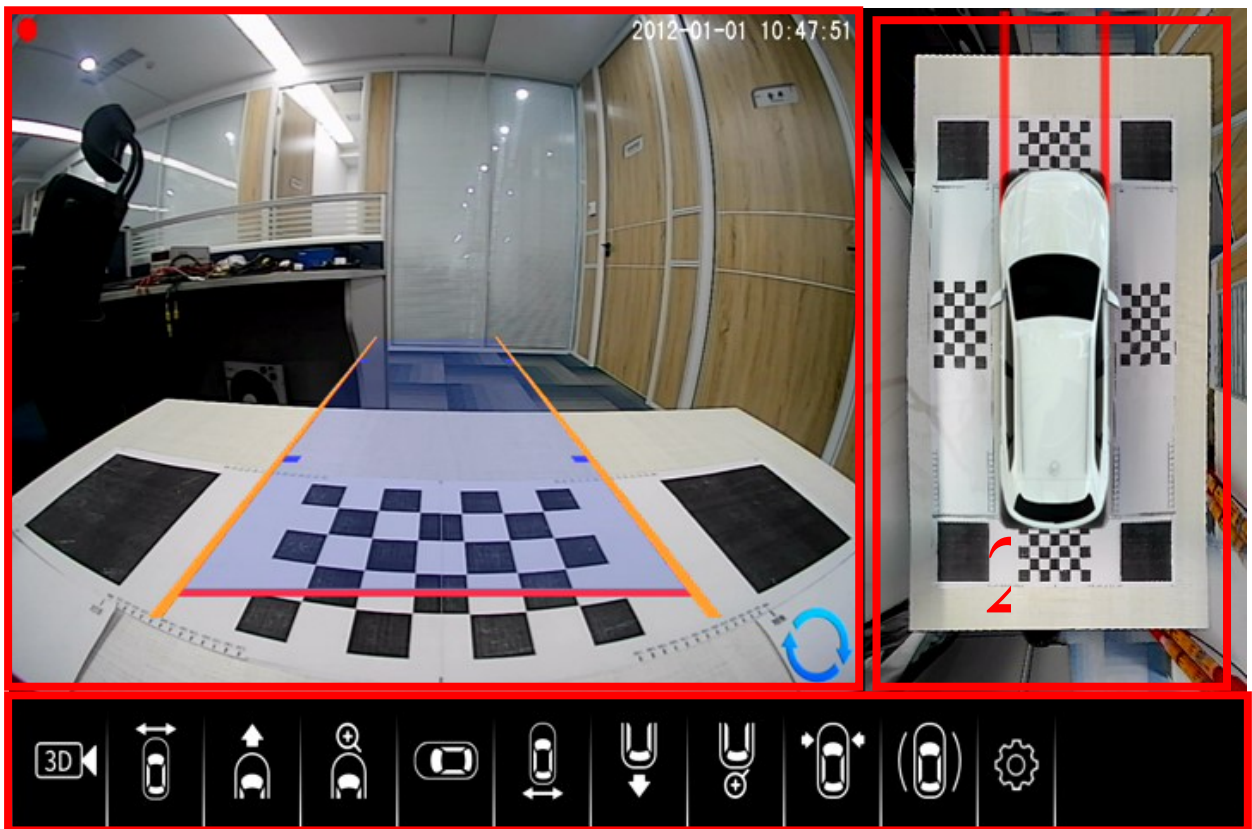Ⅰ Terminal customers.

1.4. Conventions

图 1-1

;

Fig. 1-1

The figure above is the image displayed after 360 is started or triggered, which is called as "**360 Main Interface**" or "**360 Interface**";

The part in the red box "1" shows the 360 all-round interface, called as "**360 All-round Interface View/All-round View/Aerial View/Panoramic View**", which is a reality image of the

car surroundings stitched with the images of four cameras on the ground plane;

The part in the red frame of "2" shows the image of a single 360 camera, called as "**Single View**";

The part in the red frame of "3" is the UI part, representing "**3D Rotation**", "**Front View Streaming**", "**Front View**", "**Front View Zoom**", "**3D top view**", "**Rear View Streaming**" "**Media**", "**Rear View**", "**Rear View Zoom**", "**Narrow Road Mode**", "**Curbstone Mode/Limited Width Mode**", "**360 Menu**" from the left

When these terms are mentioned herein, they refer to the meanings in this paragraph, and will not be introduced separately later.

2. Main Menu Interface
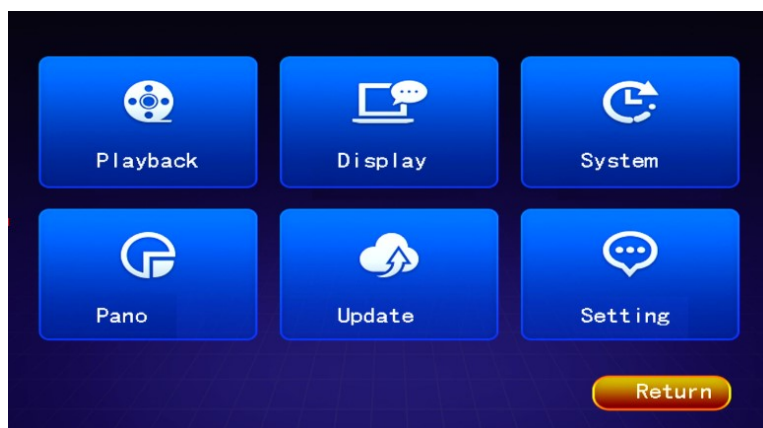
The main menu interface is shown below:

Fig. 2-1

This interface can only be displayed on the "360 Menu" button in the UI part of the **360 Main Interface** key. There are six options, which are described as follows:

l   **Driving Record:** Replay, lock, delete and other related operations on the four image video files recorded by the USB flash disk.

l   **Display settings:** Settings of the switches such as steering, display mode, distortion switch, emergency light, start-up 3D rotation, delay-off, track display.

l   **System settings:** time display and settings, car model position and type, color, screen margin, output mode and other system-related settings.

l   **Panorama debugging:** Setting of stitching and image display range etc.

l   **System upgrading:** Iterative update of system program and car model program.

l   **Factory settings:** factory-related settings.

Select the corresponding icon and press the "OK" key on the remote control to enter the corresponding setting interface.

3. Introduction of Menu Options

3.1. Driving record

Select the "**Driving Record**" icon in the Main Menu interface, and then press the "OK" button on the remote control to enter this Menu Setting item. The Setting Item interface is as follows:

Fig. 3-1

In this menu, you can view the video files saved in the USB flash disk, and execute Delete, Playback, Lock, Unlock, and Format operations on the USB flash disk.

3.1.1.   Delete

Function description: press the "Up" and "Down" keys on the remote control to select the file to be operated, and press the "OK" key to select, then press "Up" and "Down" keys on the remote control to select the "Delete" button, and press "OK" key to delete the corresponding file or delete more files.

3.1.2.   Playback

Function description: press the "Up" and "Down" keys on the remote control to select the file to be operated, and press the "OK" key to select, then press "Up" and "Down" keys on the remote control to select the "Play" button, and press "OK" key to play the corresponding file. You can play more files. The next file will be automatically played after the playing of a file is over.

Note: The video files in the USB flash disk can be played by players such as iQiyi and QQ Player in windows

3.1.3.   Lock

Function description: press the "Up" and "Down" keys on the remote control to select the file to be operated, and press the "OK" key to select, then press "Up" and "Down" keys on the remote control to select the "Lock" button, and press "OK" key to lock the corresponding file. You can lock more files. After the file is locked, it will not be automatically overwritten by the system.

Note: Do not lock undesired files for a long time, so as to avoid too many files that are finally locked, and there is no space in the system to save new video files.

3.1.4. Unlock

Function description: press the "Up" and "Down" keys on the remote control to select the file to be operated, and press the "OK" key to select, then press "Up" and "Down" keys on the remote control to select the "Unlock" button, and press "OK" key to unlock the corresponding file. You can unlock more files.

Note: Please unlock the video files carefully to prevent important video files from being overwritten.

3.1.5. Format

Function description: format USB flash disk. Delete all content in the USB flash disk.

Note: Please operate with caution. It is also recommended to format the USB flash disk every 3 months

3.2. Display settings

Select the "**Display Settings**" icon in the Main Menu interface, and then press the "OK" button on the remote

enter this Menu Setting item. The Setting Item interface is as follows:
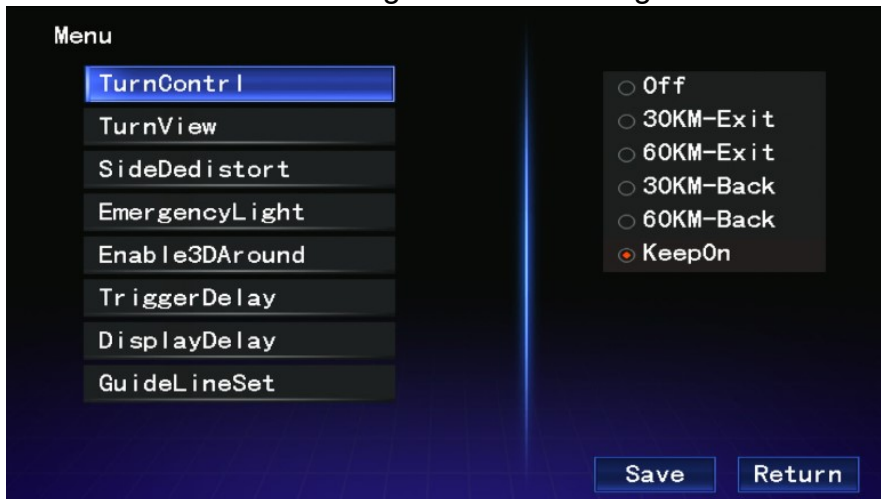
Fig. 3-2

3.2.1. Steering control:

Function description: refers to ON/OFF setting of steering triggered to enter 360.
Options:

l Normally OFF: After set, the steering will not enter 360;

l 30km OFF: If the speed exceeds 30, the steering will not enter 360;

l 60km OFF: If the speed exceeds 60, the steering will not enter 360;

l 30km streaming OFF: If the speed exceeds 30km, the streaming function will be off;

l 60km streaming OFF: If the speed exceeds 60 km, the streaming function will be off;

l Normally ON: After set, the steering can be triggered to enter 360.

3.2.2. Steering display mode

Function description: refers to the image mode of 360 single view display after the steering is triggered.
Options:

l 2D: Single view is 2D mode

l 3D: Single view is 3D mode

3.2.3. Left and right distortion correction

Function description: refers to the mode of left and right 2D screen display.
Options:

l OFF: The left and right 2D images are displayed as the original effect. As shown in Fig. 3-3

ꞁ ON: The left and right 2D images are displayed with the distortion effect turned on. As shown in Fig. 3-4
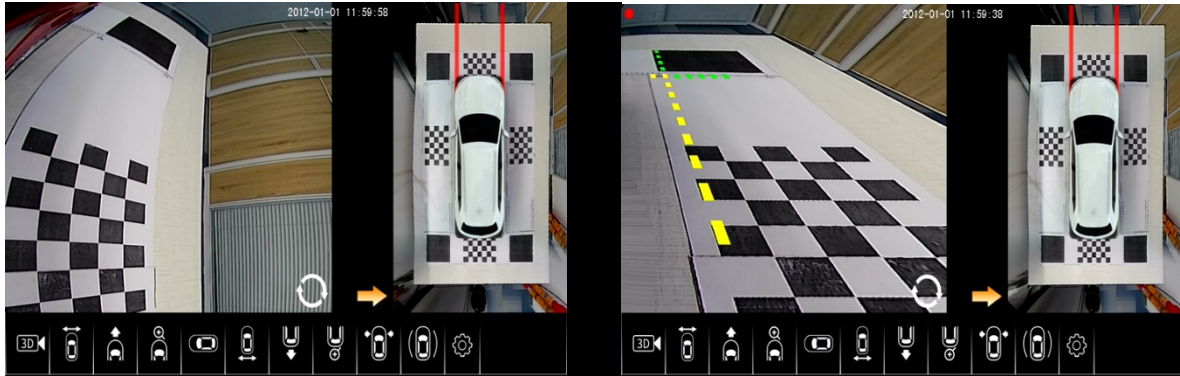

图 3-3

Fig. 3-3

图 3-4

Fig. 3-4

3.2.4. Emergency light control

Function description: refers to the setting on whether to enter 360 by pressing the Emergency Light button

Options:

ꞁ OFF: After set, the button is not triggered to enter 360.

ꞁ ON: After set, the button can be triggered to enter 360.

3.2.5. Startup 3D View

Function description: Turn on ACC to automatically enter the 360 mode and the setting on whether to enter the mode.

Options:

ꞁ OFF: After ACC is turned on, it will not automatically enter 360.

ꞁ 3D top view: After ACC is turned on, it will automatically enter 360 and display the 3D top view for a period of time.

ꞁ 3D all-round: After ACC is turned on, it will automatically enter 360 and display the 3D Rotation interface for a period of time.

3.2.6. Trigger delay-off

Function description: refers to the time for 360 to extend the trigger signal after the trigger signal (left and right steering, reverse gear, etc.) stops.

Options:

ꞁ 0s: Return to the Original Car interface immediately after exiting the steering signal (or trigger signals such as reversing)

ꞁ 3s: Display 360 interface for 3s and then return to the Original Car interface immediately after exiting the steering signal (or trigger signals such as reversing)

ꞁ 5s: Display 360 interface for 5s and then return to the Original Car interface immediately after exiting the steering signal (or trigger signals such as reversing)

ꞁ 10s: Display 360 interface for 10s and then return to the Original Car interface immediately after exiting the steering signal (or trigger signals such as reversing)

| 30s: Display 360 interface for 30s and then return to the Original Car interface immediately after exiting the steering signal (or trigger signals such as reversing

3.2.7. Display delay-off

Function description: refers to the time of outputting 360 video signal after the trigger signal (left or right steering, reverse gear, etc.) stops and the video trigger signal output stops.

Options:

| 0s

| 3s

| 5s

| 10s

| 30s

Note: This function is to solve the problem that the detection of the reverse detection line of some car navigators and the video switch are not synchronous. For some navigators (some Volkswagen models), after the signal input of reverse detection line stops, the display may not immediately switch to the navigation interface. If the 360 video output signal and video trigger output signal are turned off at the same time, black screen will happen and last for a while. To solve this problem, when the video trigger output signal is off, 360 video output signal will lag behind for a period of time. The time is set in this option and shall be longer than the time for the navigator to switch back to the navigation image. This option is generally set as 0s.

3.2.8. Front view track display

Function description: the setting switch for the track in the front view image

Options:

| Off

| On

3.3. System setting

Select the "**System Setting**" icon in the Main Menu interface, and then press the "OK" button on the remote control to enter this Menu Setting item. The Setting Item interface is as follows:
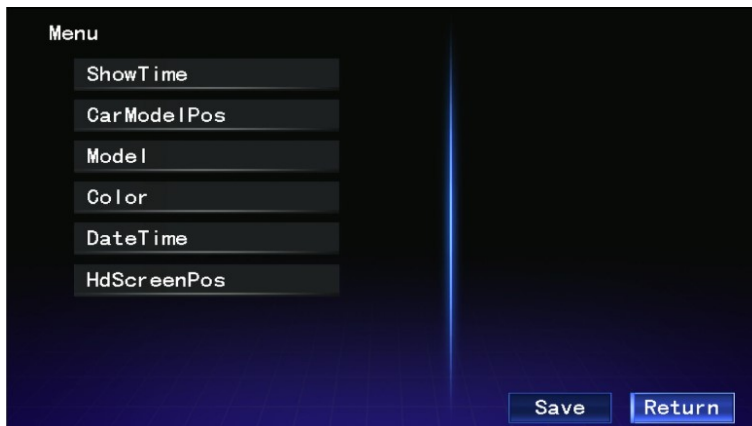

Fig. 3-5

3.3.1. Time display

Function description: the setting for time display on 360 interface.
Options:

l On: display.

l Off: not display.

3.3.2. Car model position

Function description: the display position setting of 360 main interface all-round view.
Options:

l Left: all-round view on the left and single view on the right.

l Right: all-round view on the right and single view on the left.

3.3.3. Car model setting

Function description: the car model setting of 360 main interface all-round view.
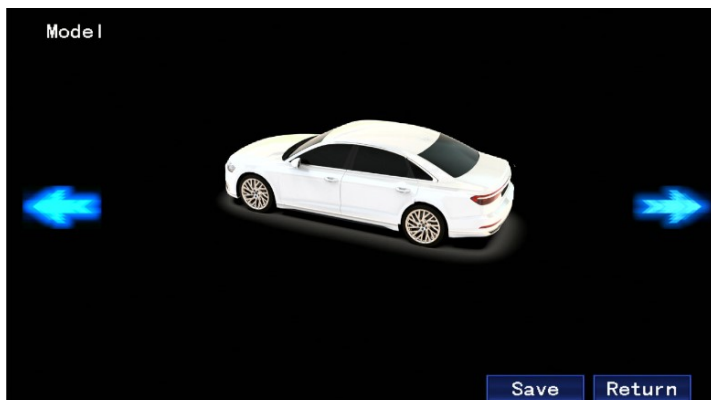

Fig. 3-6

Note: Please save after selecting the car model as required (the car model can also be obtained by upgrading car model files)

3.3.4. Color management

Color management. After selecting this option, press the "OK" key on the remote control unit to enter the menu setting option, shown as follows:

Fig. 3-7

Function description:

setting of brightness, contrast, hue and saturation.

3.3.5. Time settings

Function description: the setting of current time.

3.3.6. Screen margin

Screen margin. After selecting this option, press the "OK" key on the remote control unit to enter the menu setting option, shown as follows:
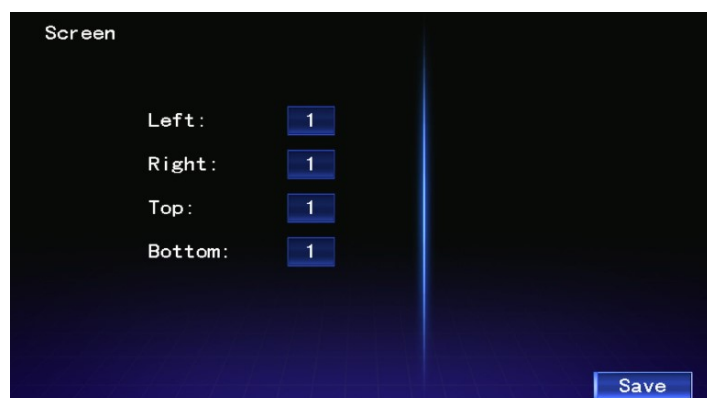

FIG. 3-8

Function description: the setting of image margin.

Note: If the image obviously extends out of the screen on one side (the image display is not complete), the image margin can be increased (the AV and HD output take effect simultaneously).

3.3.7. HD output mode

Function description: the setting of output video system (resolution).
Options:

| AV_P 制：720*576。

| AV_P: 720*576.

| AV_N 制：720*480。

| AV_N: 720*480.

| HD_1920*1080: 1920*1080

| HD_720P: 1280*720

| HD_720*576: 720*576

| HD_720*480: 720*480

......

备注：

Note:

1. When all dial codes are "OFF", the output is in the selected resolution
2. When the dial codes are OFF, OFF, ON, ON, ON and ON, the decoder set the 360 resolution via protocol
3. Without dial codes, the output is the default option of the software or communication with decoder (all-in-one decoder or all-in-one navigator)
4. List of other reference dial rules

3.4. Panorama debugging

Select the "**Panorama Debugging**" icon in the Main Menu interface, and then press the "OK" button on the remote control to enter this Menu Setting item. The Setting Item interface is as follows:
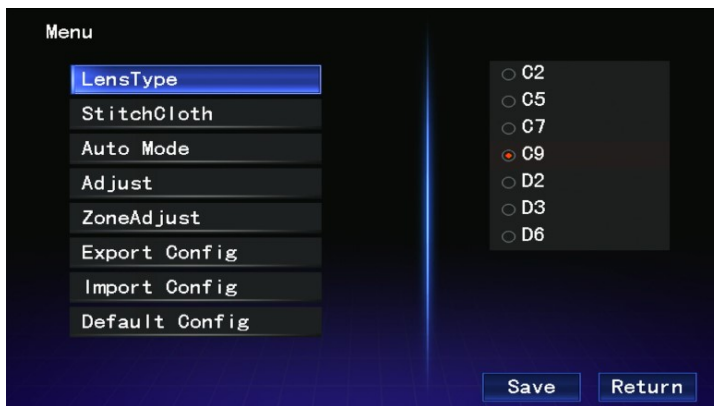

FIG. 3-9

3.4.1. Camera type

Function description: the selection of camera SENSOR and lens type.
Options:

l C2

l C5

l C7

l C9

l D2

l D3

l D6

Note: This parameter significantly affects the stitching effects. Please confirm that the installed camera conforms to this parameter before stitching.

3.4.2. Debugging cloth selection

Function description: the selection of stitching cloth.
Options:

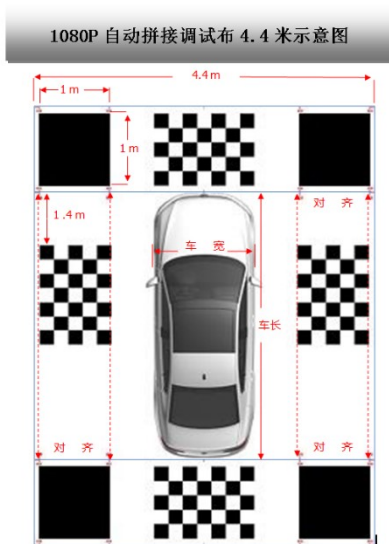Ⅰ 4.4m debugging cloth

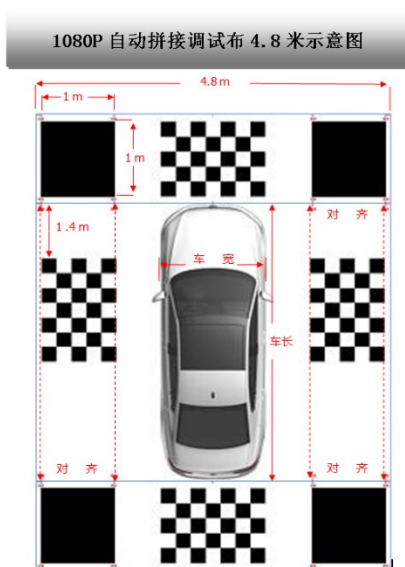FIG. 3-10

Ⅰ 4.8m debugging cloth

FIG. 3-11

Note:
Debugging cloth specification: big black grid of 1*1m; small black grid of 0.2*0.2m;
The distinction between 4.8m and 4.4m lies in the different lengths of front and rear debug cloths

3.4.3. Auto stitching

For auto stitching, after selecting this option, press the "OK" key on the remote control unit to enter the Menu Settings. This Setting interface is shown in the figure below:

Fig. 3-12

Function description: auto stitching.

Vehicle width: distance between the outer sides of two wheels (refer to Fig. 3-11)

Vehicle length: distance between the lower side of the front black grid and the upper side of the rear black grid (refer to Fig. 3-11)

After inputting the vehicle length and width, click One-key Stitching, and the system will automatically identify the stitching cloth. When the system identifies an uncertain point, it will prompt to manually enable the confirmation action. The stitching operation can be completed immediately in accordance with the system prompt during the stitching process. After the stitching operation is completed, click Return, and the stitching data and effects will be saved in the system and the system will be restarted.

Note:

1. Select the camera type corresponding to the actual use before stitching

    1.1 Fixed lens angles: the left and right lens angles are parallel to the car body; The front and rear lens angles are perpendicular to the car body (refer to Fig. 3-12)

2. Select the stitching debug cloth corresponding to the actual use (refer to Fig. 3-11 for the placement of debug cloth)

    2.1 The front and rear debug cloths are placed in the center of the car body. The distance between the left and right debug cloths and the front large black grid is 1.5m (the front debug cloth is 1.4m), and they are aligned with the front left and right large black grids respectively.

3.4.4. Panoramic fine tuning

For panoramic fine tuning, after selecting this option, press the "OK" key on the remote control unit to enter the Menu Settings. This Setting interface is shown in the figure below:

图 3-13

Fig. 3-13

Function description: After the stitching is completed, you can fine-tune the imperfect panorama area.

3.4.5. Single-image adjustment

For single-image adjustment, after selecting this option, press the "OK" key on the remote control unit to enter the Menu Settings. This Setting interface is shown in the figure below:
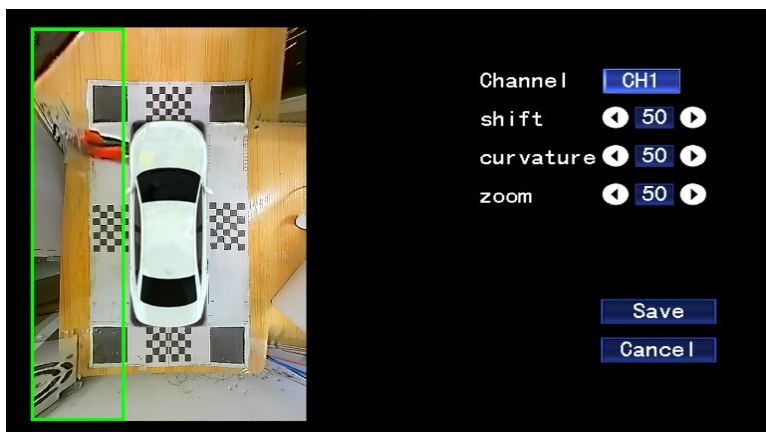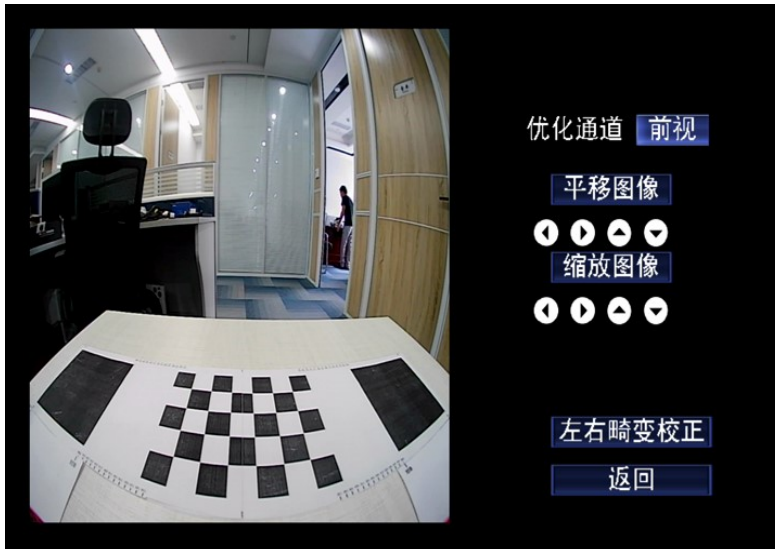

图 3-14

Fig. 3-14

Function description: execute "Pan", "Zoom" and other operations on single images in the front, back, left or right.

Left and right distortion correction:

Fig. 3-15

Function description: execute "Pan", "Zoom" and "Deflection Adjustment" operations on the left and right images with distortion function turned on.

Note: When the adjustment range is beyond a certain limit, the adjustment effect may not be saved after the power-off (software limitation)

3.4.6. Export configuration

Function description: Export the data with stitching completed to USB flash disk.

Note: After the configuration file is exported, you can back it up to prevent re-stitching for the stitching data being lost by mistake.

3.4.7. Import configuration

Function description: Import the stitching data saved to USB flash disk.

3.4.8. Restore default configuration

Function description: You can restore the data with this option when stitching for the first time.

Note: Please execute the operation with caution to avoid losing relevant fine-tuning data.

3.5. System upgrade

Select the "**System Upgrade**" icon in the Main Menu interface, and then press the "OK" button on the remote control to enter this Menu Setting item. The Setting Item interface is as follows:
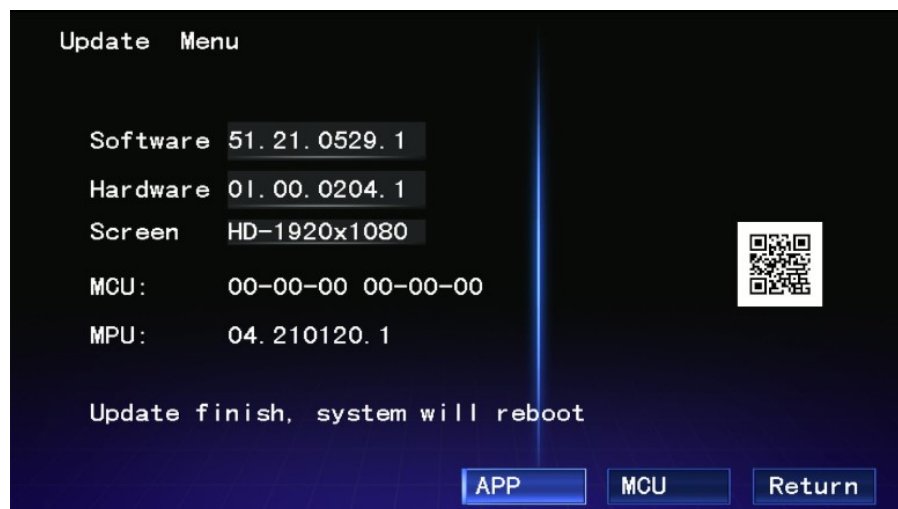

Fig. 3-16

In this menu, you can view the software version number, hardware version number, current output resolution, decoder version number (if any) etc. of the 360 host

3.5.1. Upgrade APP (360 program)

Function description: After putting the upgrade file on the USB flash disk and inserting it into the host , select this button and then press "OK" key on the remote control unit to upgrade. The host will automatically restart after the upgrade.

Note:
1. Please notice that the upgrade software must match with the hardware, otherwise it may result in unsuccessful upgrade or abnormal functions after the upgrade.
2. Do not cut off the power during the upgrade process, otherwise it may cause the host to fail to start, needing to return to the factory for repair

3.5.2. Upgrade MCU (decoder program)

Function description: After putting the upgrade file on the USB flash disk and inserting it into the host , select this button and then press "OK" key on the remote control unit to upgrade. The host will automatically restart after the upgrade.

3.6. Factory settings

Select the "**Factory Settings**" icon in the Main Menu interface, and then press the "OK" button on the remote control to enter this Menu Setting item. The Setting Item interface is as follows:
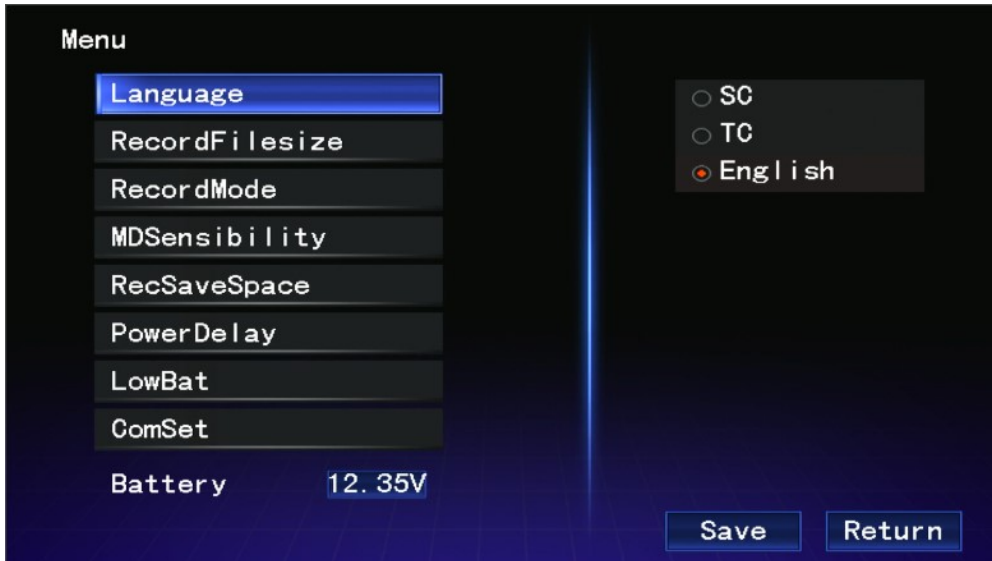

图 3-17

Figure 3-17.

3.6.1. System language

Function description: the type of text displayed in the system.
Options:

l Simplified Chinese.

l Traditional Chinese.

3.6.2. Video length

Function description: the length of each video when the video file is recorded normally.
Options:

l 3 minutes.

l 5 minutes.

l 10 minutes.

3.6.3 Video mode

Function description: the method to trigger video recording.
Options:

l Automatic: automatic recording with USB stick system access.

l Mobile surveillance: The system triggers recording when it detects a moving object in the

camera view and records a duration video for each trigger.

Note: No matter what recording method is used, the system automatically stops recording when you enter the menu interface.

3.6.4. Mobile surveillance sensitivity

Function description: The settings are valid when the recording mode is set to motion detection, with different parameters indicating the sensitivity level at which the recording is triggered.
Options:

l Highest.

l High.

l Medium.

l Low.

l Lowest.

3.6.5. Parking recording (two times in one second)

Function description: the number of photographs taken between units during parking recording (with fewer photographs, longer video can be recorded)
Options:

l OFF: Recording with the normal method.

l ON: With fewer photographs, same storage for long term video recording.

3.6.6. Delay power-off.

Function description: extension of the recording time when the car turns off ACC.
Options:

l OFF: When ACC is turned off, the system detects that ACC is switched off and turns off the

recording.

l 1 minute: After the ACC turns off, the system detects that the ACC has been turned off and

continues to record for 1 minute before turning off the recordings.

l 5 minutes: After the ACC turns off, the system detects that the ACC has been turned off and continues to record for 5 minutes before turning off the recordings.

l 1 hour: After the ACC turns off, the system detects that the ACC has been turned off and continues to record for 1 hour before turning off the recordings.

l 6 hour: After the ACC turns off, the system detects that the ACC has been turned off and continues to record for 6 hour before turning off the recordings.

l 12 hour: After the ACC turns off, the system detects that the ACC has been turned off and continues to record for 12 hour before turning off the recordings.

l 24 hour: After the ACC turns off, the system detects that the ACC has been turned off and continues to record for 24 hour before turning off the recordings.

Note: Turning on the delayed power-off may cause the car battery lose charge, so please set it carefully!

3.6.7. Low-voltage protection

Function description: When ACC of the car turns off, the system automatically stops recording and shuts down when the system detects that the battery voltage has fallen below the set value during stop recording.

l 11.0V: When the voltage is lower than 11.0V, stop the parking recording and shut down the machine.

l 11.2V: When the voltage is lower than 11.2V, stop the parking recording and shut down the machine.

l 11.4V: When the voltage is lower than 11.4V, stop the parking recording and shut down the machine.

l 11.6V: When the voltage is lower than 11.6V, stop the parking recording and shut down the machine.

l 11.8V: When the voltage is lower than 11.8V, stop the parking recording and shut down the machine.

l 12.0V: When the voltage is lower than 12.0V, stop the parking recording and shut down the machine.

l 12.2V: When the voltage is lower than 12.2V, stop the parking recording and shut down the machine.

3.6.8. Decoder settings.

Function description: 360 settings related to decoders.

Communication port 1 (32 PIN connected decoder)

Function description: the decoder manufacturer's corresponding options during protocol control

Options:

Protocol 1: Yixiangchangxing

Protocol 2: Bagoo, Yixiangchangxing, Smart-core code, Shengshimeixing, Deshichuang, Zhiyunlianche, Haozhijiang, Zhonghangtianyi, Shenghang, Juchuangzhilian.

Protocol 3: Smart-core code.

Protocol 4: Vios1

Protocol 5: Vios2

Protocol 6: Ruizhicheng

Protocol 7: Xiaofeida

Communication port 2 (VGA connected decoder)

Function description: options for visualization screen navigation trackboxes.

Options:

OFF: No external VGA decoder.

Protocol 1: Yixiangchangxing

Protocol 2: Bagoo, Yixiangchangxing, Smart-core code, Shengshimeixing, Deshichuang, Zhiyunlianche, Haozhijiang, Zhonghangtianyi, Shenghang, Juchuangzhilian.

Protocol 3: Smart-core code.

Protocol 4: Vios1

Protocol 5: Vios2

Protocol 6: Ruizhicheng

Protocol 7: Xiaofeida

Steering control

Function description: steering triggered (signals such as reverse, double flash, etc.) to enter 360 control mode.

Options:

Light line control: Entry to 360 via electrical signal trigger

Protocol control: Entry to 360 via protocol trigger.

Track inversion

Function description: When the steering direction sent by the decoder is inconsistent with the actual situation, the panoramic view track line rotation direction will be affected, and the direction can be corrected by selecting applicable parameters.

Options: OFF; ON

Wheel speed change with vehicle speed

Function description: switch to turn on or off the change of the panorama model wheel speed with the vehicle speed.

Options: OFF; ON

Note: This function requires the connection to a decoder to obtain speed information before it is supported.

Radar trigger

Function description: switch for automatic trigger or not to enter 360 when the radar signal reaches a certain level

Options: OFF; ON

P button triggers

Function description: the original P button triggers the control switch to enter 360 (not the parking P button)

Options: OFF; ON

Door trigger

Function description: Door opening triggers the control switch to enter 360.

Options: OFF; ON

Height of front track line

Function description: the setting of height parameter for track line in a single view

Options: 4; 3; 2; 1; 0; -1; -2; -3; -4

Note: The numbers represent different height values

Height of rear-view tracking line

   Function description: the setting of height parameter for track line in a single view

Options: 4; 3; 2; 1; 0; -1; -2; -3; -4

Note: The numbers represent different height values

Track line mode

Function description: the style of track line display

Options:

Mode 1

Mode 2.

3.6.9. Current voltage of storage battery

Function description: Display the battery voltage connected to the 360 system.

Fig. 3-18