Operating Instructions

STSS1200 HD Video Processor-Multiplexer

Please read all instructions before using the product and keep the manual for future reference.

The product may differ from the manual description according to the upgraded

S/W version or performance, and it may be altered without notice.

Contents

1. Precautions

● Storage and Keeping

(1) Do not expose this device to excessive heat or cold. The storage temperature of this device is -30~+80°C, and the operating temperature is -20~+70°C.

(2) Avoid dropping or striking this device.

(3) Avoid using this device in enclosed spaces, areas with excessive vibration or subject to severe impacts.

(4) Never puncture, scratch or use abrasive cleaning materials on this device.

(5) Do not place cables where they may be pinched or stepped on.

(6) Leave at least a 2" space between this device and walls, cabinets or other objects to allow adequate air circulation around the device.

● Operating Precautions

(1) The device can be powered by DC power 10V - 32V (e.g. 12V or 24V ACC).

(2) Make sure all cables are connected properly, and check the polarity, as improper cable connections may damage the monitor. Remove the power cable connections when you do not intend to use the device.

⚠ Warning!
High voltage is present within this device. The opening of the case should be done by professionals.

⚠ Special Notice
Never try to repair this device by yourself. In case of any problems, please turn off this device at once and notify our company or the authorized dealer. This device is a complex device, and any disassembly or modification may lead to damage and void the warranty.

● Maintenance

(1) Remove all the cable connections from this device before cleaning.

(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 to disposing of electrical and electronic items in separate collection facilities for recovery and recycling.

CAUTION

You are cautioned that any changes or modifications not expressly approved in this manual could void your warranty and necessitate expensive repairs.
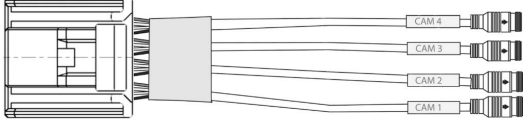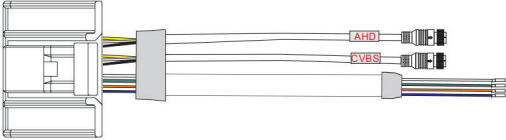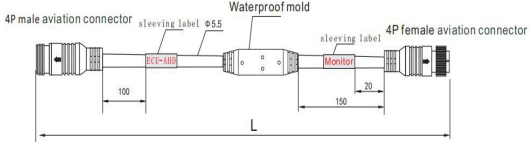
2. Features and Specifications

(1)　Supports four HD camera inputs and split-view display mode.

(2)　Multiple video formats available: 1080P30/1080P25/720P30/720P25/PAL/NTSC.

(3)　Supports dual CVBS and AHD outputs.

(4)　Single, dual, triplex, quad, trefoil, Y-split and PIP view display modes available.

(5)　Each channel supports independent image adjustment for horizontal-mirror, vertical-mirror view display.

(6)　Four trigger wires, with adjustable trigger image, priority, and delay.

(7)　Auto Scan mode with customizable scanning sequence and display duration.

(8)　Adjustable parking lines.

(9)　Multiple languages available.

(10)　Wide operational voltage range of 10 - 32V ; Compatible with both 12V and 24V automobile battery systems.

(11)　Easy installation and convenient operation, with innovative functions.

(12)　Applicable to interior / exterior vehicle video systems.

⚠ **Special Notice**

Vehicle accessory voltage supply may vary depending on application.

3. Accessories

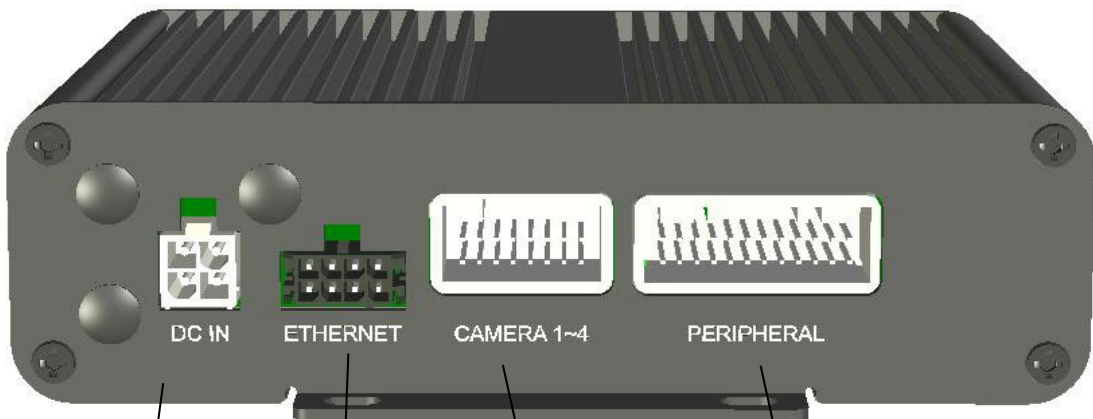|	
STSS1200PHAR – Power Input Cable	STSS1200VHARA – Video Input Harness
STSS1200VHARB – Video Output and Trigger Harness	STSA1035 – IR Remote
STSA1036 – IR Extension Cable	STSH415 – Video Magnification Cable

4. Parts Identification
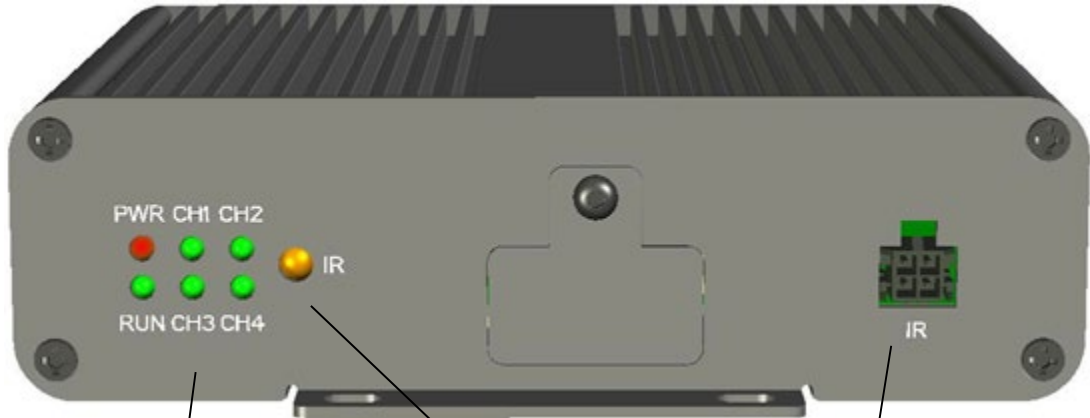
Indicator:
PWR: Power Status
CHx: Camera Input Status
RUN: Error Status

IR Remote Control Receiver

IR Extension Cable Connector

DC Power Input Connector
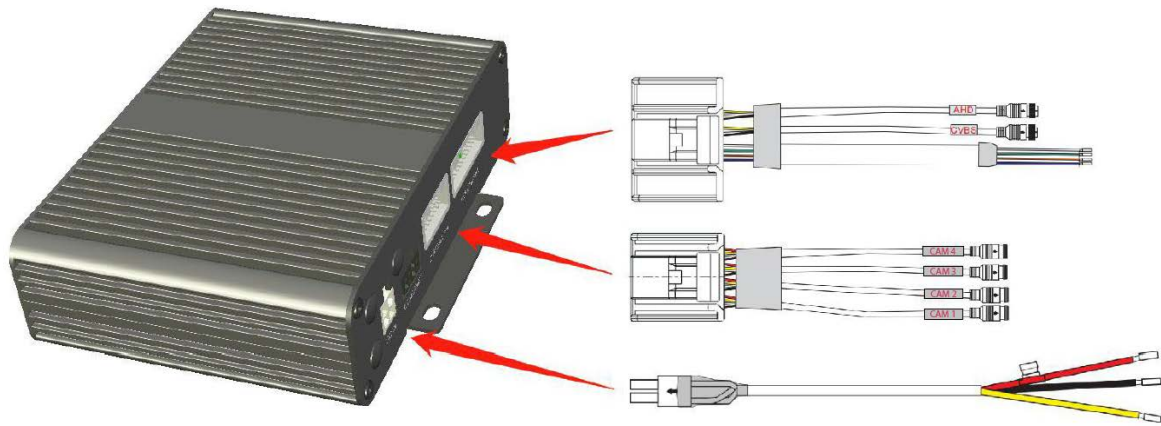
Debug

Camera Input Connector

Video Output & Trigger Connector

5. Connections

Connect STSS1200PHAR to the DC Power Input Connector.
Connect STSS1200VHARA to the Camera Input Connector.
Connect STSS1200VHARB to the Video Output & Trigger Connector.

STSS1200PHAR:

(1) Connect red wire to 10-32V ACC power.
(2) Connect yellow wire to 10-32V ACC power.
(3) Connect black wire to GND.

STSS1200VHARA:

(1) Connect 4Pin male connector with label "CAM 1" to Camera 1.
(2) Connect 4Pin male connector with label "CAM 2" to Camera 2.
(3) Connect 4Pin male connector with label "CAM 3" to Camera 3.
(4) Connect 4Pin male connector with label "CAM 4" to Camera 4.

STSS1200VHARB:

(1) Connect green trigger wire to positive power wire of Camera 1.
(2) Connect white trigger wire to positive power wire of Camera 2.
(3) Connect blue trigger wire to positive power wire of Camera 3.
(4) Connect brown trigger wire to positive power wire of Camera 4.
(5) Connect both ends of STSH415 to the 4-pin male connector labeled "AHD"
on STSS1200VHARA and to the AHD monitor, respectively.

(6) Connect 4Pin male connector with label "CVBS" to SD monitor.

6. Menu Operation & Functional Specification

6.1 STSA1035

Mute or unmute	N/A
Move up the menu cursor	Exit to the main menu or return to the previous menu
Move left the menu cursor or decrease volume	Move right the menu cursor or increase volume
Move down the menu cursor	Confirmation button
Multifunctional button	Multifunctional button
Switch system language	Multifunctional button
	Reset the system
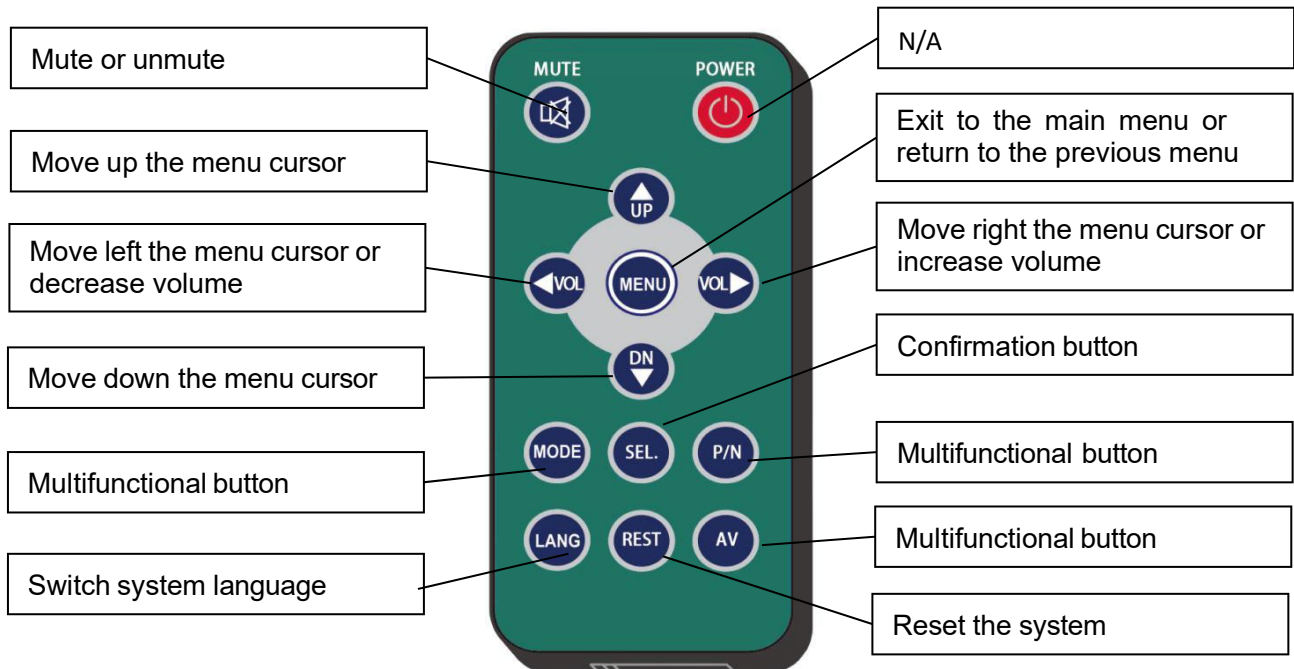
Pic.6.1

- MUTE:

  Mute or unmute the Multiplexer.

- Power:

  N/A.

- VOL ▷:

  Open the volume adjustment menu.
  Move the red box in the magnified mode.
  Move the displayed place of the magnified image.
  Move the menu cursor.

- ◁ VOL :

  Open the volume adjustment menu.
  Move the red box in the magnified mode.
  Move the displayed place of the magnified image.
  Move the menu cursor.

● UP:

Switch the channel without special mode such as auto scan and trigger function turned on.
Move the red box in the magnified mode.
Move the displayed place of the magnified image.

● DN:

Switch the channel without special mode such as auto scan and trigger function.
Move the red box in the magnified mode.
Move the displayed place of the magnified image.

● P/N:

Shrink the red box if the red box is shown in the magnified mode.

● LANG:

Switch to different languages on some menus.

● REST:

Reset the system.

● AV:

Magnify the red box if the red box is shown in the magnified mode.

● SEL:

Enter the menu which the cursor selects.
Show/hide a red box to magnify the displayed area when in single view display mode and without special mode such as auto scan or trigger function turned on.
Magnify the image to full screen when the red box is shown in the magnified mode.

● MENU:

Return the magnified image to normal size when the green box is shown in the magnified mode.

6.2 Menu Operation

6.2.1 Desktop

IR Instructions:

● ◁**VOL or VOL**▷**:** Increase/ reduce the volume.

● **MENU:** Press for 3s to enable/disable the menu lock; short press to get access to home menu.

● **UP / DOWN:** Switch display mode.

Unless a higher priority special display mode (such as autoscan or a trigger function) is currently engaged, pressing the UP key will cycle the display mode in the following order:

H-SPLIT->Y-SPLIT->TREFOIL->TRIPLE->DUAL->CAM4->CAM3->CAM2->CAM1->PIP3-> PIP2->PIP1->QUAD

If user press DN key, it will be switched in the opposite order.

Other Instructions:

● When the device is in single view display and not in special mode like auto scan or trigger function, pressing SEL key can pop up the red zoom box.

● Pressing ◁VOL / VOL▷/ UP / DOWN key can move red box's position and pressing P/N or AV key can zoom in or zoom out the red box.
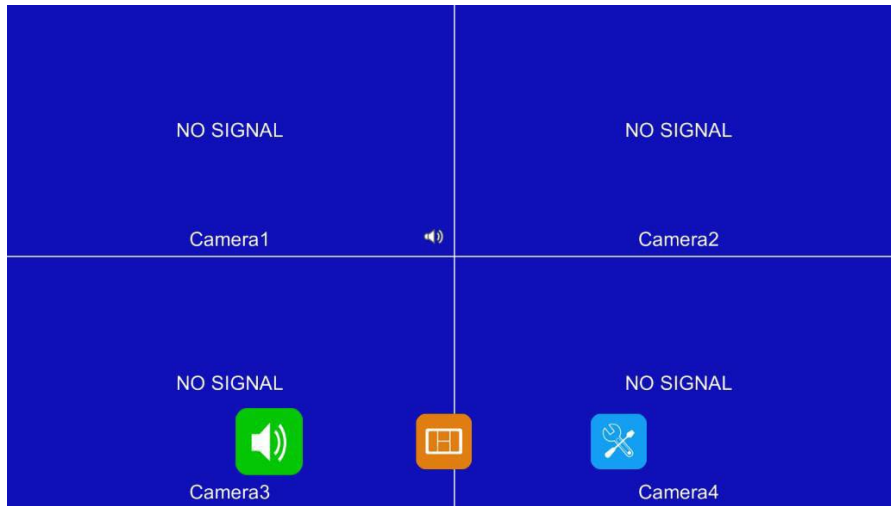
● Press MENU key to exit zooming.
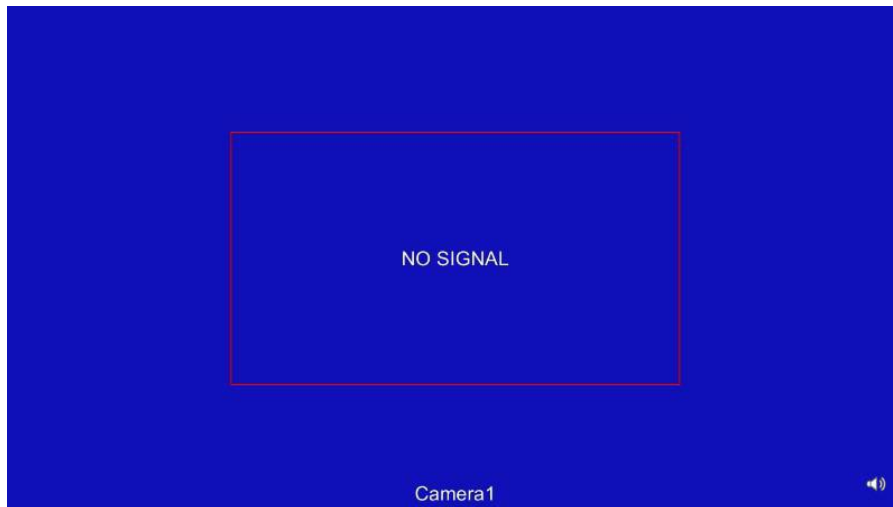
Pic.6.2.1

6.2.2 Home Menu

IR Instructions:

● **MENU:** Enter or exit home menu.

● ◁ **VOL or VOL**▷**:** Move the cursor.

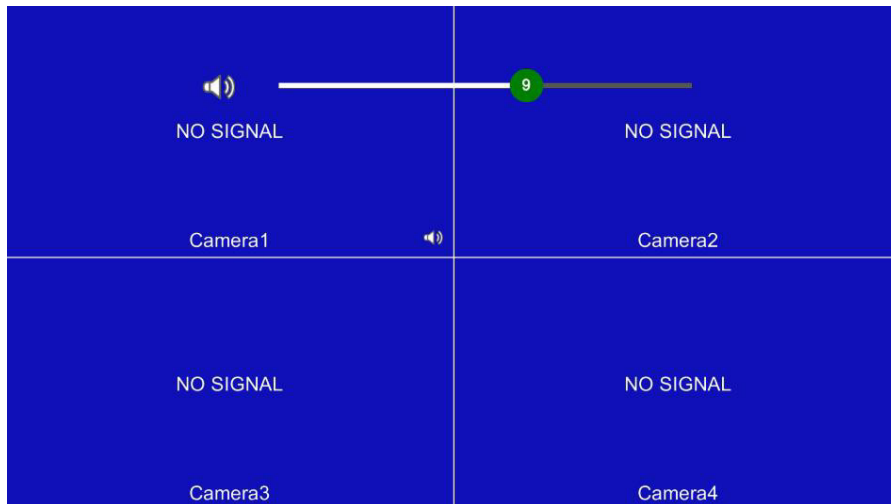● **SEL:** Select the icon to enter sub menu.

Pic.6.2.2

6.2.3 Volume Menu

IR Instructions:
- ◁VOL or VOL ▷:Decrease or increase volume.
- **MUTE:** Mute or unmute the multiplexer.
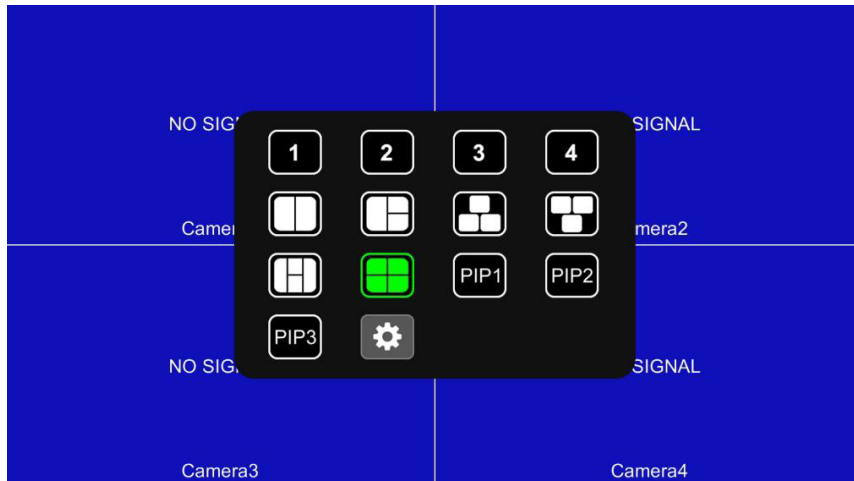- **MENU:** Return to the previous menu.

Pic.6.2.3

6.2.4 Mode Menu

IR Instructions:

- ◁**VOL / VOL**▷**/ UP / DOWN:** Move the cursor.
- **SEL:** Select the preview mode. If icon is selected, it will enter Split Setup menu when in split-view display mode.
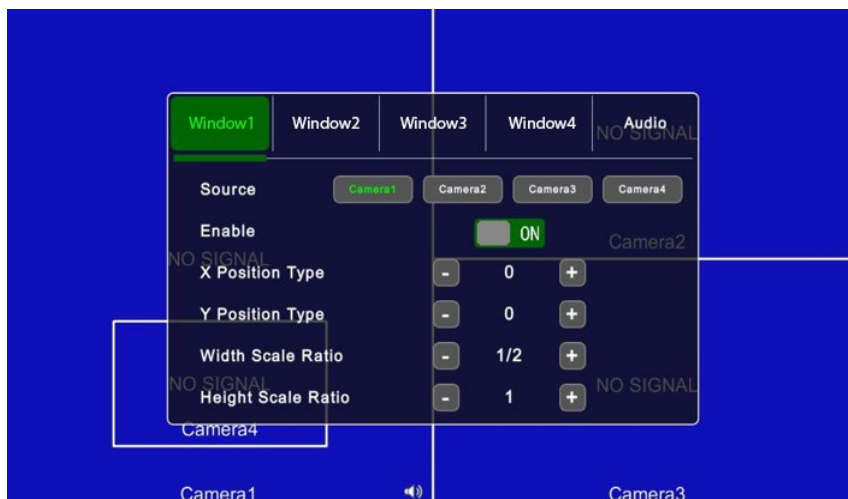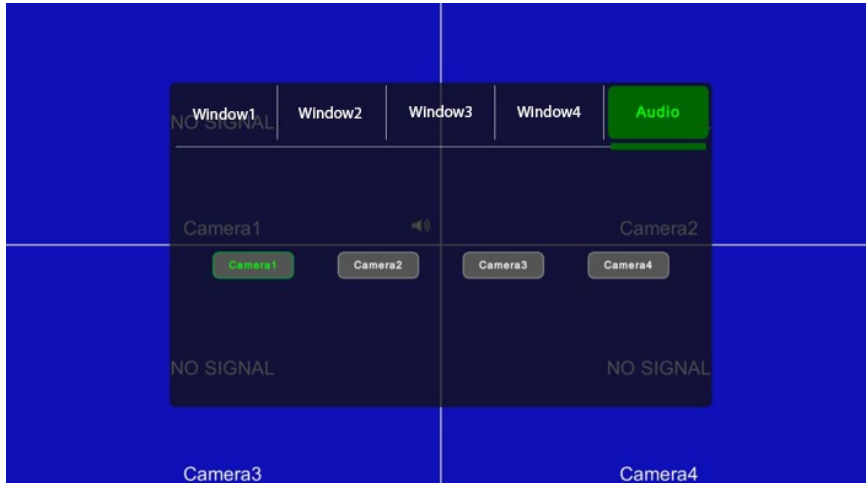- **MENU:** Return to the previous menu.

Pic.6.2.4

6.2.4.1 Split Setup Menu

IR Instructions:

- ◁**VOL/ VOL**▷**:** To change the corresponding features of the window when setting up Window 1-4; to move the cursor when setting up Audio.
- **UP / DOWN:** Cursor switch.
- **MENU:** Return to the previous menu.
- **SEL:** Select camera channel and audio output channel.

Pic.6.2.4.1

Pic.6.2.4.2

Feature Instructions:
- **Source:** The camera channel that will be displayed in the window.
- **Enable:** If the window is displayed.

The following features are only available when in PIP1/2/3 view display mode:
- **Width Scale Ratio:** The horizontal down scale ratio of the window.
- **Height Scale Ratio:** The vertical down scale ratio of the window.
- **X Position Type:** The horizontal position of the window.
- **Y Position Type:** The vertical position of the window.
- **Output Channel:** Audio output channel

6.2.5 Setting

IR Instructions:
- ◁**VOL / VOL**▷**/ UP / DOWN:** Move the cursor.
- **SEL:** Enter the sub menu.
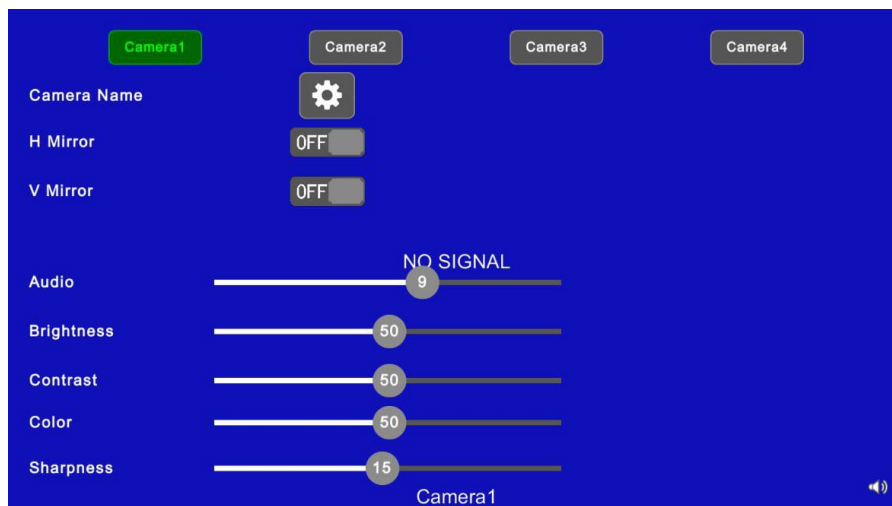- **MENU:** Return to the previous menu.
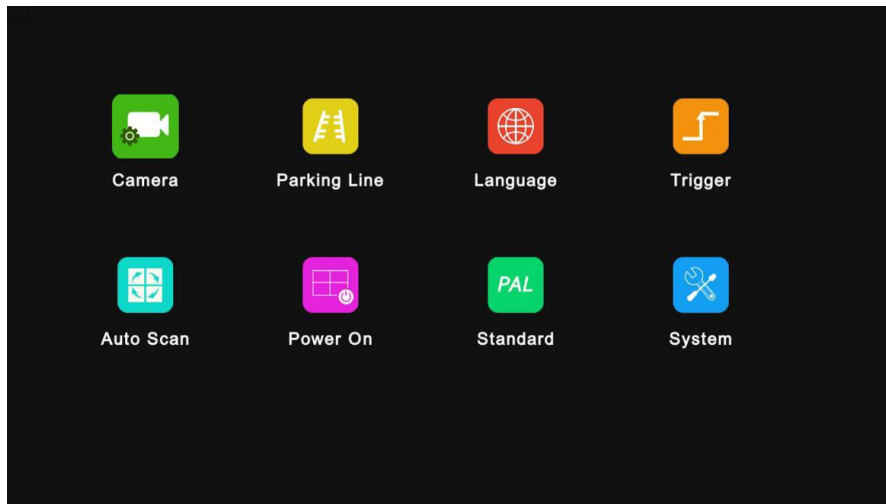
Pic.6.2.5

6.2.5.1 Camera

IR Instructions:

- ◁**VOL/ VOL**▷: Move the cursor to switch camera input or increase / decrease volume.
- **SEL:** Select camera input.
- **UP / DOWN:** Switch and move the cursor.
- **MENU:** Return to the previous menu.

Pic.6.2.5.1

Camera Settings:

- **Camera Name:** Camera channel name.
- **H Mirror:** Horizontal mirror.
- **V Mirror:** Vertical mirror.
- **Audio:** Volume of the camera channel. Each camera channel has its own volume setting (raising or lowering the volume while muted will cancel the mute.).
- **Brightness:** Brightness of the image.

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- **Contrast:** Contrast of the image.
- **Color:** Saturation of the image.
- **Sharpness:** Sharpness of the image.

6.2.5.1.1 Keyboard (show up when editing channel name)

IR Instructions:

- ◁**VOL / VOL▷/ UP / DOWN:** Move the cursor.
- **SEL:** Click the chosen icon.
- **MENU:** Go back to the Camera menu without saving.
- **MODE:** Switch the keyboard mode, low-case letters->special numerical character 1->special numerical character 2->capital letters->low-case letters.
- **RESET:** Delete characters when editing.
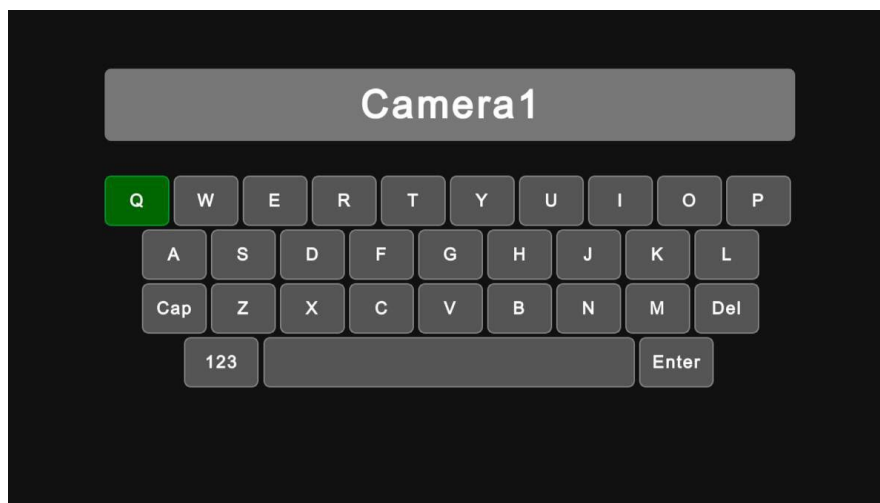
Pic.6.2.5.1.1

Other Instructions:

- Following keys are special for:

(1) **Caps:** Switch between capital/low-case letters

(2) **123:** Switch to special numerical character 1 and 2

(3) **Del:** Delete the last letter before the edit box

(4) **ENTER:** Save the revised channel name, and go back to Camera menu.

6.2.5.2 Parking Line

IR Instructions:

- ◁**VOL / VOL▷/ UP / DOWN:** Move the cursor.
- **SEL:** Enter the calibrate menu or change the state of ON/OFF/ AUTO.
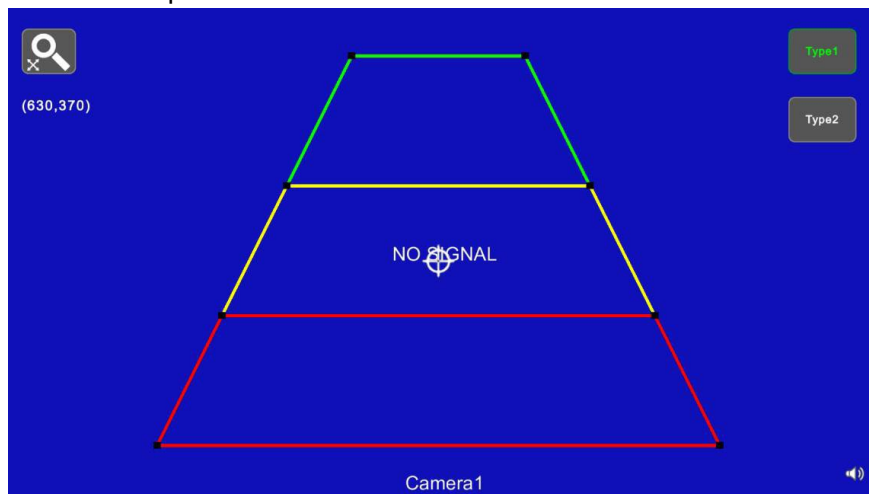- **MENU:** Return to the previous menu.

Pic.6.2.5.2

6.2.5.2.1 Calibration

IR Instructions:

- ◁**VOL / VOL▷ / UP / DOWN:** Move the parking line.
- **MODE:** Magnify the parking line.
- **LANG:** Shrink the parking line.
- **P/N:** Switch the parking line focuses.
- **RESET:** Return to the default configuration.
- **AV:** Switch parking line types.
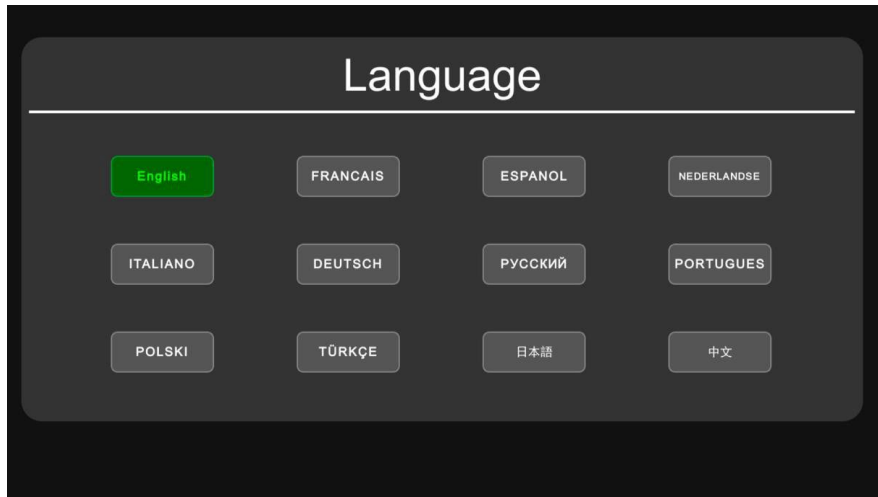- **MENU:** Return to the previous menu.

Pic.6.2.5.2.1

6.2.5.3 Language

IR Instructions:

- ◁**VOL / VOL▷ / UP / DOWN:** Move the cursor.
- **SEL:** Confirm and switch system language.
- **MENU:** Return to the previous menu.
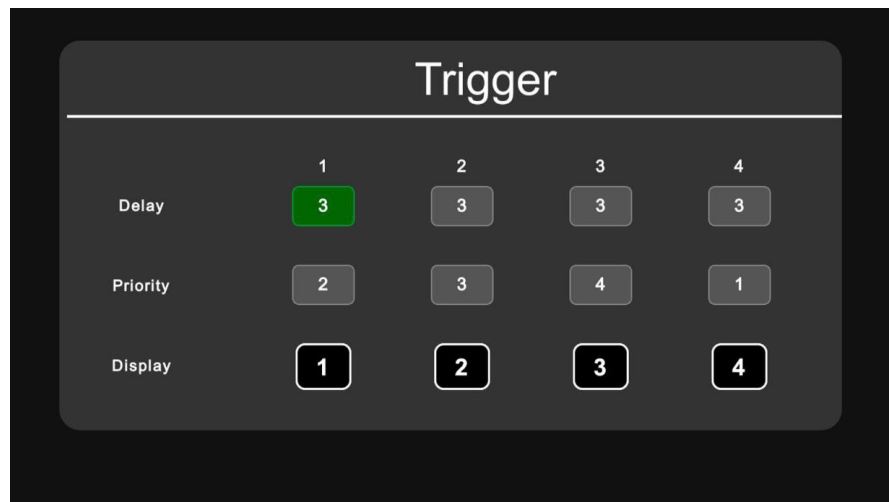- **LANG:** Switch system language.

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Pic.6.2.5.3

6.2.5.4 Trigger

IR Instructions:
● ◁**VOL / VOL**▷**/ UP / DOWN:** Move the cursor.
● **SEL:** Pop up the edit menu.
● **MENU:** Return to the previous menu.

Pic.6.2.5.4

Feature Instructions:

● **Delay:** Image display will last for a few seconds (0-60s) after trigger signal disappears.
● **Priority:** Settings of trigger priorities. Triggers with smaller numbers have priority over triggers with larger numbers. (A camera with Priority 1 will override a camera with Priority 4).
● **Display:** Selection of which display view the trigger will activate.

Other Instructions:

● Trigger function can interrupt auto scan function.

● When the trigger signal is received, the multiplexer will switch into the trigger display image automatically and resume the previous state before the trigger occurs after delay time.

6.2.5.4.1 Delay

IR Instructions:

● ◁VOL / VOL▷/ UP / DOWN: Move the cursor.

●   SEL: Select the chosen number.

●   MENU: Return to the previous menu without saving.
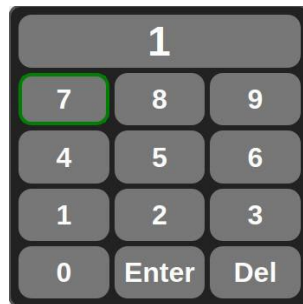
Pic.6.2.5.4.1

Other Instructions:

● Input number will turn to 60 if it is larger than 60.

● **Enter:** Save input. Number input in "Delay" will be saved if return to previous menu.

● **Del:** Delete number.

6.2.5.4.2 Priority

IR Instructions:

● ◁VOL / VOL ▷ : Move the cursor.

●   SEL: Select the chosen priority.
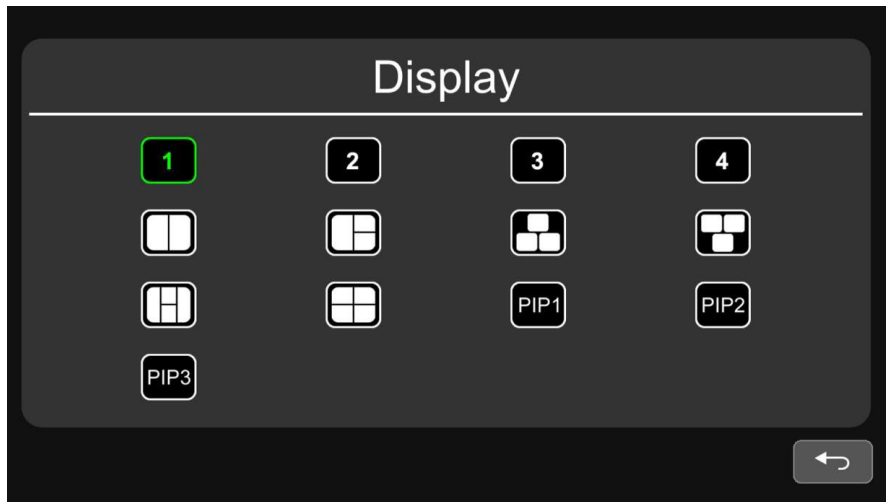
●   MENU: Return to the previous menu and save.

Pic.6.2.5.4.2

6.2.5.4.3 Display

IR Instructions:

● ◁VOL / VOL ▷ / UP / DOWN: Move the cursor.

●   SEL: Select the chosen icon.

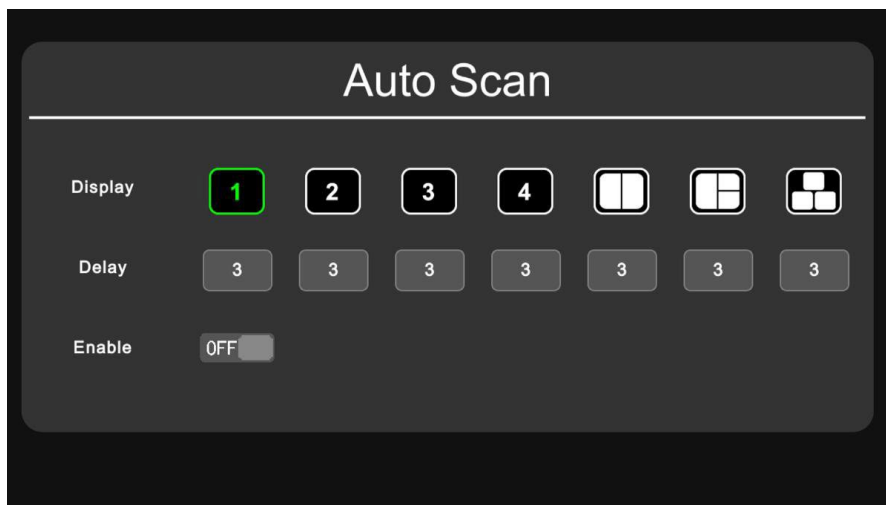●   MENU: Return to the previous menu and save.

Pic.6.2.5.4.3

6.2.5.5 Auto Scan

IR Instructions:
- ◁**VOL / VOL**▷/ **UP / DOWN:** Move the cursor.
- **SEL:** Pop up the edit menu or change the state of ON/OFF icon.
- **MENU:** Return to the previous menu.

Pic.6.2.5.5

Feature Instructions:
- **Display:** to set preferred display image when in auto scanning. Please refer to section "6.2.5.4.3 Display" for details.
- **Delay:** To set duration time of scanning image, ranging 0-60s. Operation of delay is the same as section 6.2.5.4.1 "Delay" part.
- **Enable:** Turn on/off auto scan function.

Other Instructions:
- If parameters of "Display" or "Delay" are changed during auto scan, they will take effect on next

cycle. User can also validate parameters immediately by turning off and on again the auto scan function. Auto scan can be interrupted by trigger function.

6.2.5.6 Power On

IR Instructions:
- ◁VOL / VOL▷/ UP / DOWN: Move the cursor and highlight the selected icon.
- **SEL:** Highlight/cancel highlight the icon selected.
- **MENU:** Return to the previous menu and save.
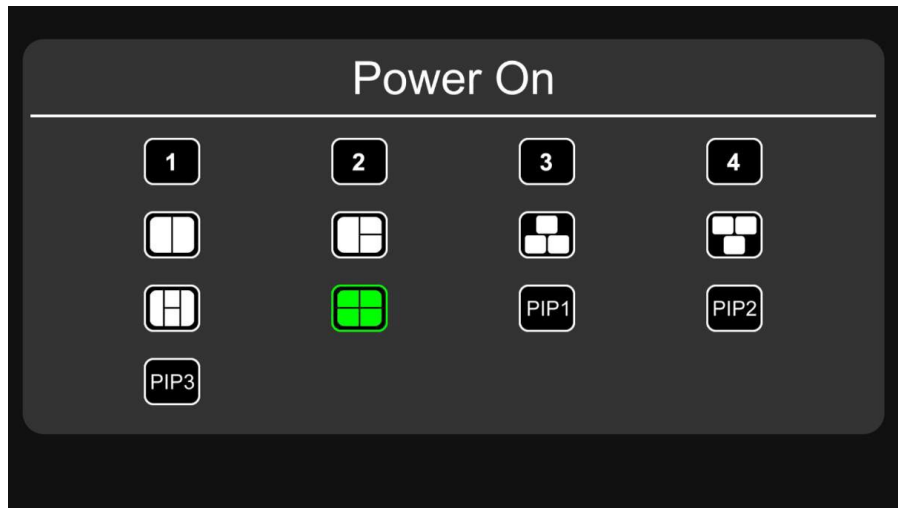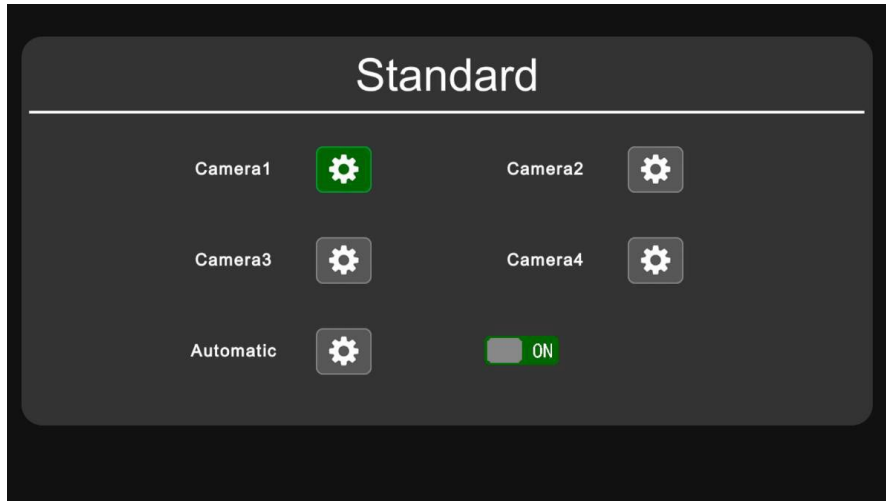

Pic.6.2.5.6

Other Instructions:
- Multiplexer will default to displaying the highlighted view mode upon start up.
- If no icon is chosen and highlighted in green, the multiplexer will display the most recent image selected before being powered off.

6.2.5.7 Standard

IR Instructions:
- ◁VOL / VOL▷/ UP / DOWN: Move the cursor.
- **SEL:** Enter sub Format menu.
- **MENU:** Return to the previous menu.

Pic.6.2.5.7-1

When automatic is on, multiplexer will automatically update format to fit input cameras. If automatic is off, the multiplexer will configure with user inputted settings. User is able to set input formats of corresponding cameras via gear icon for each channel or turn on automatic to enter automatic configuration. The multiplexer will run a diagnostic scan to obtain camera information, which will then be displayed upon completion. If the camera can't be recognized in the diagnostic scan, the information display will be empty.
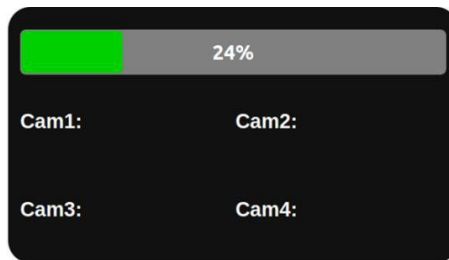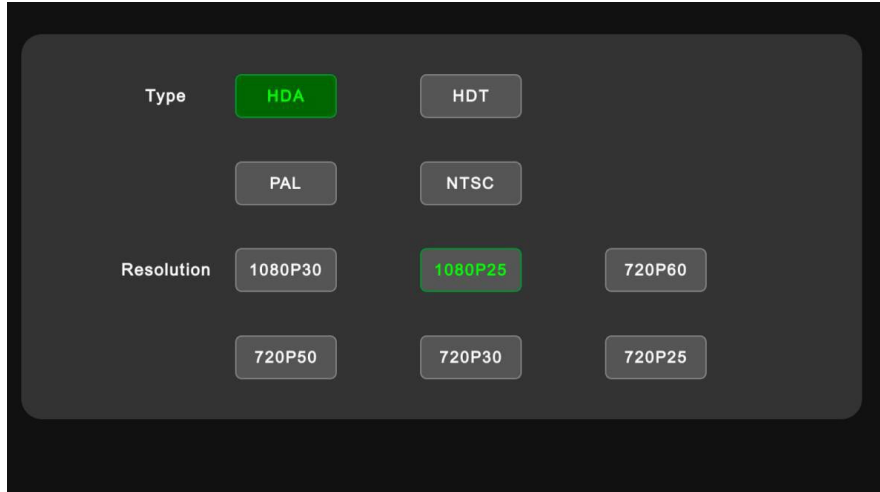

Pic.6.2.5.7-2

Other Instructions:

● When "Automatic" is turned ON, multiplexer will adjust camera display automatically. In this case, system setting in CAMERA 1~CAMERA 4 will be overridden.

● When "Automatic" is turned OFF, multiplexer will respond to fixed system settings in menu of CAMERA1~CAMERA4. It allows the user to manually set each camera`s input format or auto configure via icon ⚙ in "Automatic" menu.

● Multiplexer won't response to any press before progress bar reaches to 100%. User cannot exit this setting until the process is 100% finished.

6.2.5.7.1 Format menu

IR Instructions:

● ◁VOL / VOL▷ / UP / DOWN: Move the cursor.

● SEL: Select the chosen format. If PAL or NTSC is selected in "Type", system won't enter "Resolution" to adjust.

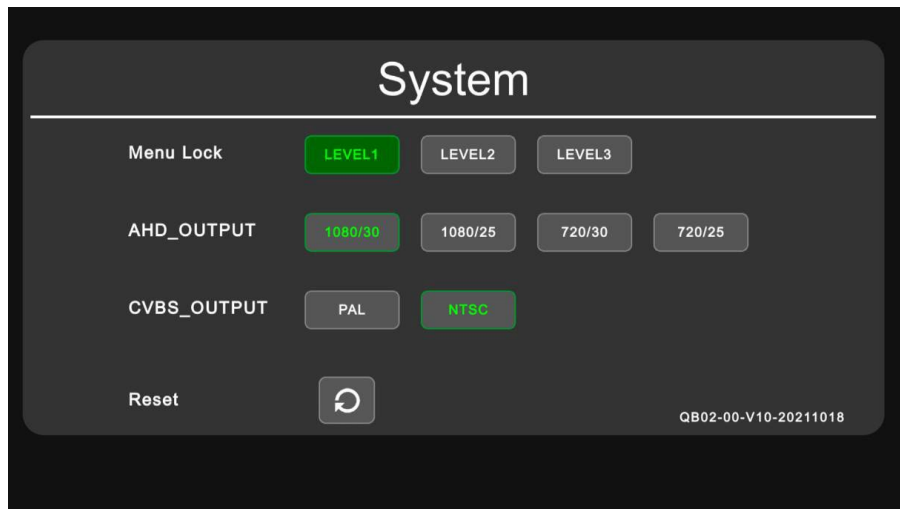● MENU: When in "Type", return to the previous menu. When in "Resolution" , return to "Type".

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Pic.6.2.5.7.1

6.2.5.8 System

IR Instructions:

- ◁**VOL / VOL**▷**/ UP / DOWN:** Move the cursor.
- **SEL:** Select the chosen icon.
- **MENU:** Return to the previous menu.

Pic.6.2.5.8

Feature Instructions:

● **Menu Lock:** Degree of menu lock. There are 3 levels of menu lock:

(1) **LEVEL1:** All buttons fail to response.

(2) **LEVEL2:** All buttons fail to response except for POWER, ◁VOL or VOL▷ .

(3) **LEVEL3:** No response to MENU key of IR Remote.

● **AHD_OUTPUT:** The resolution and frame of the AHD video output.

● **CVBS_OUTPUT:** The standard of the CVBS video output.

● **Reset:** Reset all the menu settings.

A CENTURY OF AUTOMOTIVE VISION SAFETY

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