

# TOTALVIEW HD USER GUIDE

## **Important Notices**

Title: TOTALVIEW HD User Guide

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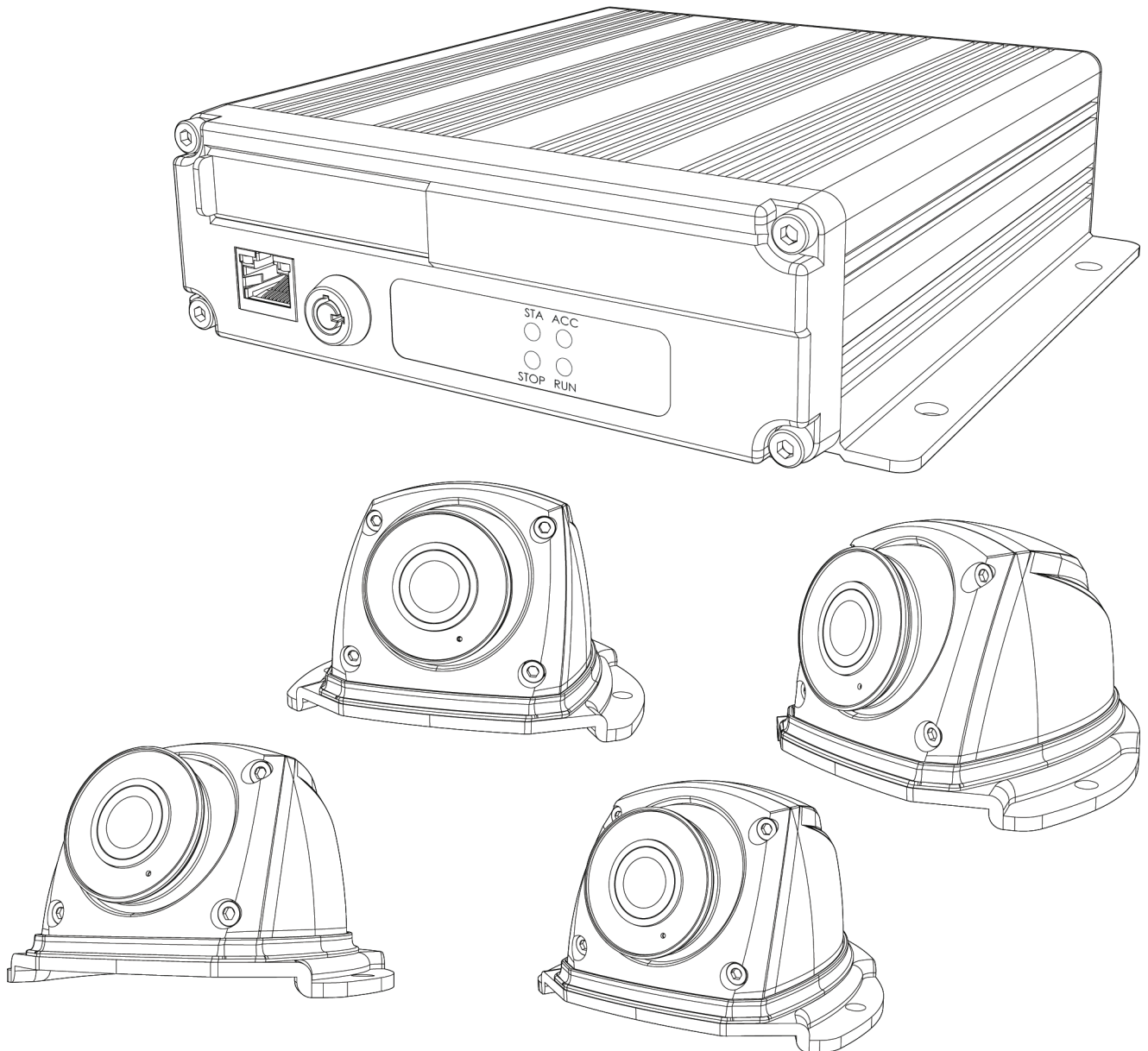
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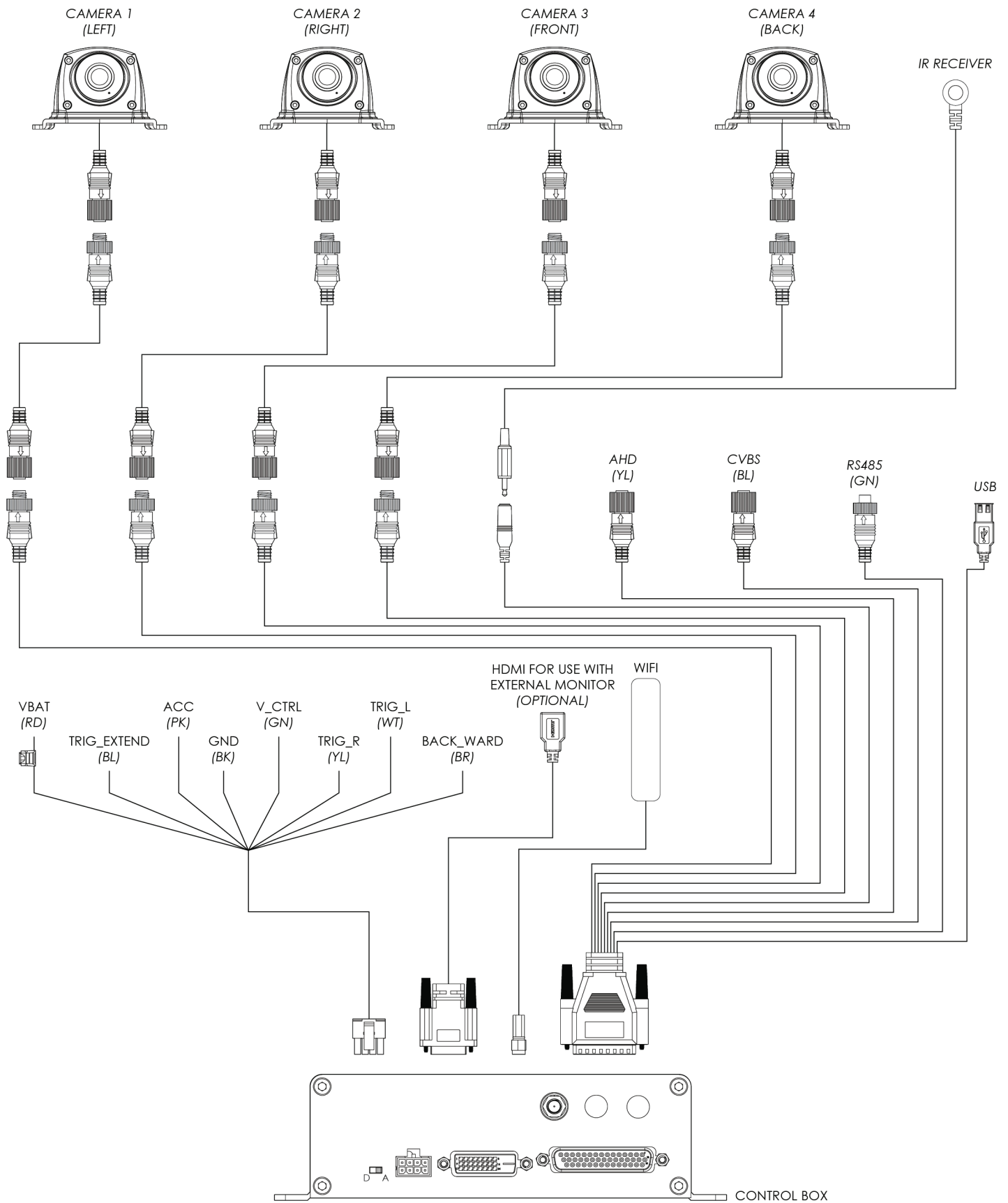
## Product Features

- Four (4) 190° full HD 1080p wide-angle fisheye cameras, horizontal view angle  $>170^\circ$  (8 channel inputs maximum)
- Split screen to show 360° view and rear view **OR** 360° view and front view as default.
- Dual-core ARM Cortex-A9 and built-in high performance H.264 video encoding / decoding allow for composite seamless, high accuracy images.
- Analog CVBS video output.
- Simple calibration procedures with automatic image stitching.
- High definition 1080p HDMI video output.





## Main Wiring Diagram

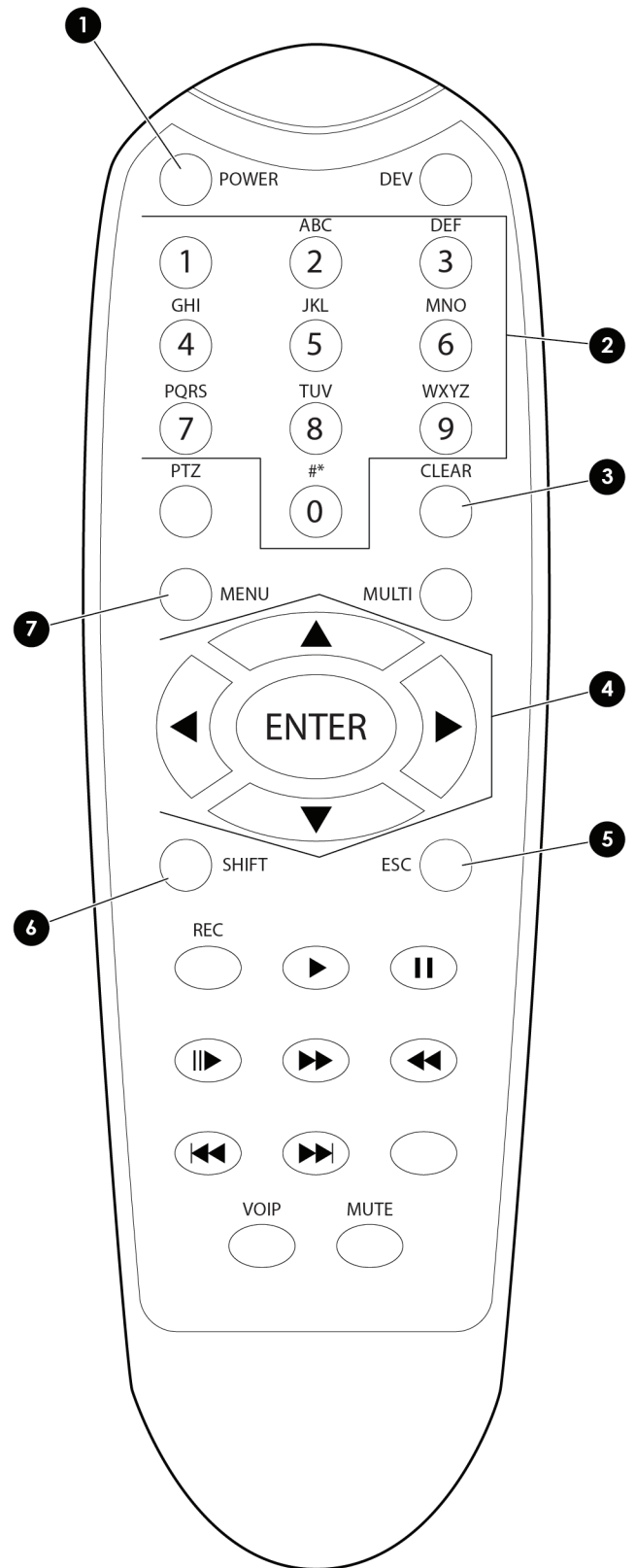


## Remote Control

- 1 - POWER** - Turn on / off video display on or off.
- 2 - 0-9** - Input numbers.
- 3 - CLEAR** - Delete a character.
- 4 - Navigation Keys** - Use the left, right, up, and down keys to navigate menus, move the cursor, or shift the image. Press the center key to enter a command.
- 5 - ESC** - Exit out of the main menu interface.
- 6 - SHIFT** - Shift current channel to full screen display or exit from full screen display. In the main menu interface it's used for switching the menu selection.
- 7 - MENU** - Display the main menu.

**Note:** 2 AAA batteries are **not** included with remote control.

**Important:** Remote control is necessary to configure system if a touchscreen monitor is not used.



## User Interface

### Log In Interface

#### Input Password

Enter an alphanumeric password.  
The default password should be changed after stitching is finished.

*The default password is 000000.*

*Note: If the password is forgotten, input "root" to log in. Select factory default setting in the Information menu. The new password will be 000000.*

#### Log In

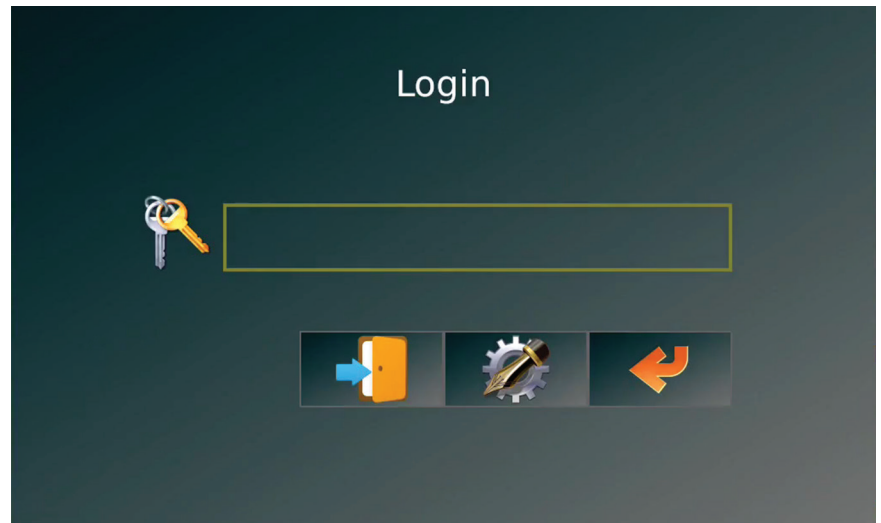
After the password is entered, click the **Log In** icon to log into the system.

#### Password Reset

Click the **Password Reset** icon to change the current password.


#### Back

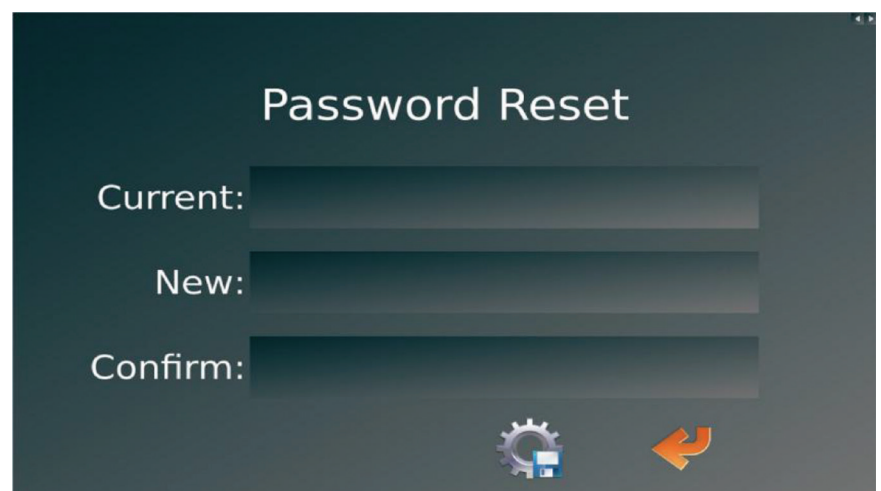
Click the **Back** icon to return to the previous menu.



### Password Reset

The password reset screen provides access to change the current password.

- **Current:** enter the current password
- **New:** enter the new password
- **Confirm:** confirm the new password by entering it again.
-  : save the current settings



## Main Menu Interface

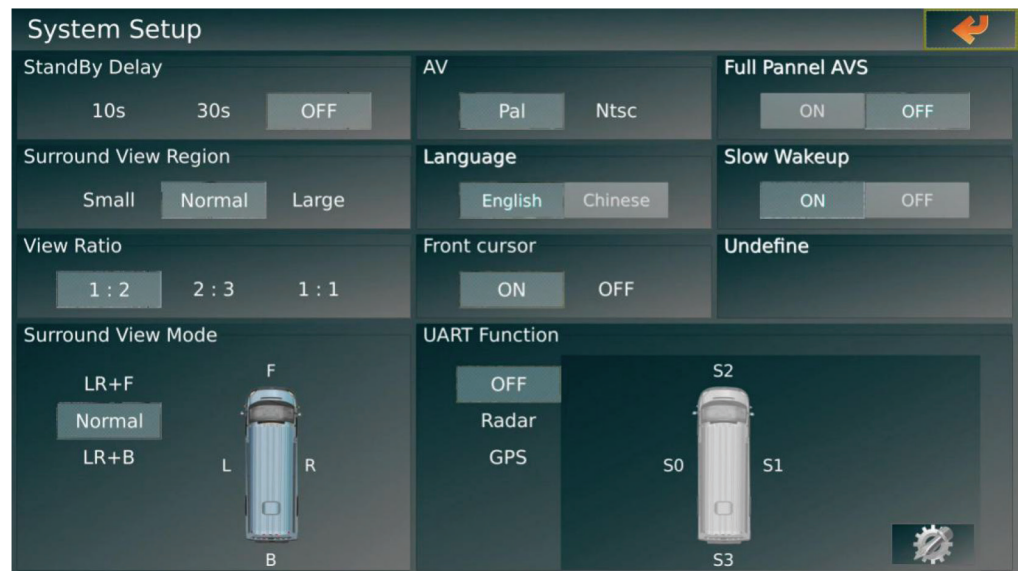
- **System:** basic function setting
- **Clock:** system time setting
- **Storage:** storage function and system log management
- **DVR:** *Under development*
- **AVM:** 360 panorama calibration and related operation
- **Player:** *Under development*
- **Information:** upgrade operation and local IP setting
- **Radar:** *Under development*



**Note:** 0-9 numeric keys on remote control may be used to select options in the menu (e.g. , press 5 to select AVM).

## System

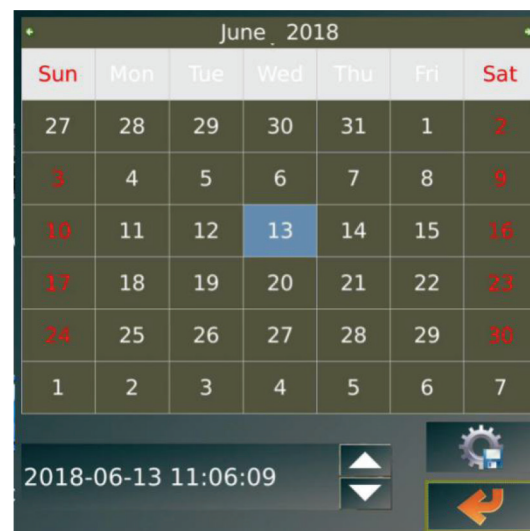
- **Standby Delay:** time frame can be set for standby
  - 10s
  - 30s
  - OFF
- **AV:** select color encoding system
  - NTSC: 1080p / 60 frames per second (*fps*)
  - PAL: 1080p / 50 fps
- **Full Pannel AVS:** *Under development*
- **Surround View Region:** select surround view size
  - Small
  - Normal
  - Large
- **Language:** *Under development*
- **Slow Wakeup:** *Under development*
- **View Ratio:** display ratio between birds eye view and single view
  - 1 : 2
  - 2 : 3
  - 1 : 1
- **Front Cursor:** front view cursor selection
  - ON
  - OFF
- **Surround View Mode:** surround view mode selection
  - LR+F
  - Normal
  - LR+B
- **UART Function:** *Under development*



## Clock




Click on the right / left arrows at the top of the screen to scroll through month and year options. Select the date by clicking today's date on the calendar. Click the up / down arrows at the bottom of the screen to adjust the current time.

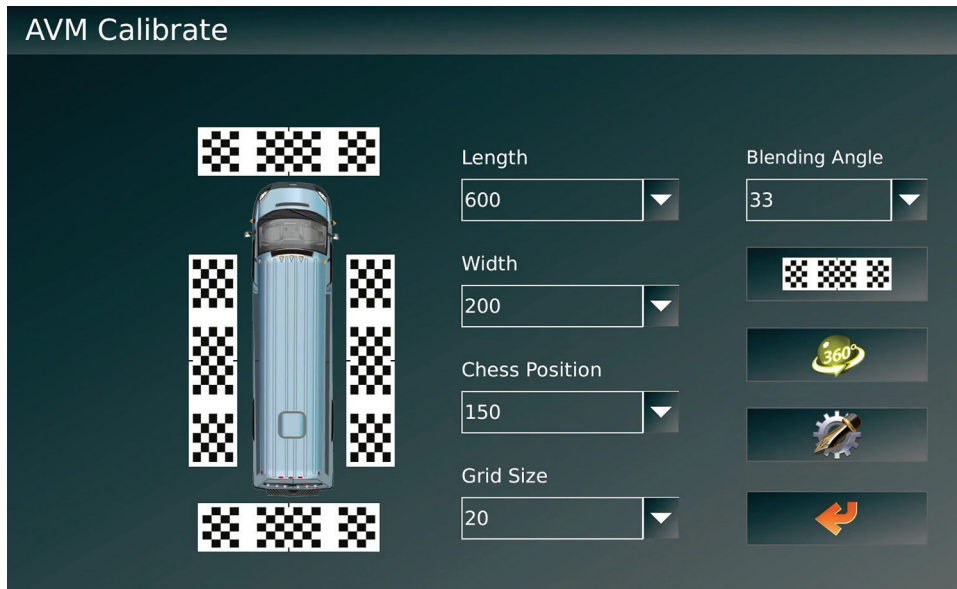
Once current time and date have been selected, click the **Save** icon to save any changes. Then click on the **Back** icon to return to the main menu.



## AVM




The fields in the AVM Calibration menu will be automatically populated when calibration files are imported.

- **Length:** the total length of the calibration mats from front to back of vehicle centimeters
- **Width:** the total width of the calibration mats from the left side to right side of vehicle in centimeters
- **Chess Position:** panoramic stitching parameter
- **Grid Size (in centimeters):**
  - If using the 1.2m calibration mats: 20
  - If using the 1.8m calibration mats: 30
- **Blending Angle:** panoramic stitching parameter
-  : enter calibration mat setting menu
-  : enter image stitching menu
-  : enter AVM Option Setup

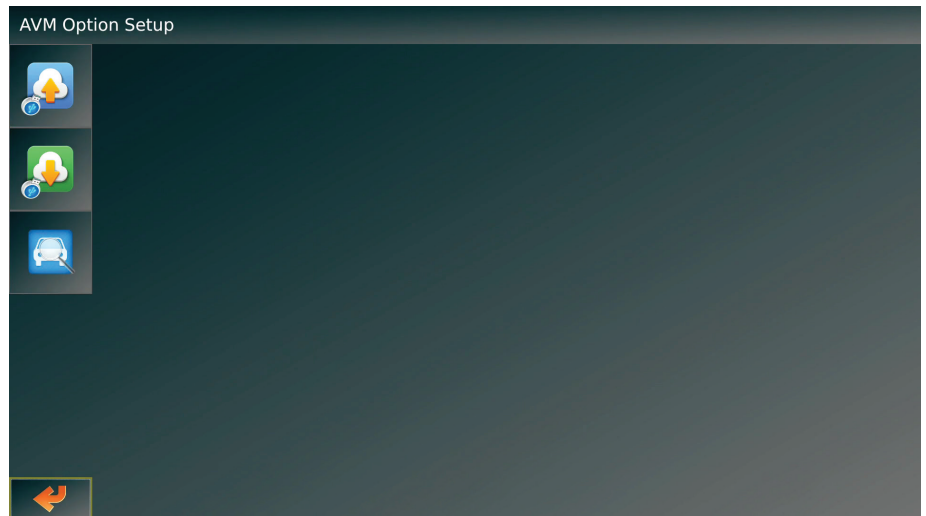





## AVM Option Setup

-  : import calibration files from USB flash drive to system.
-  : export saved calibration files and single views to USB flash drive
-  : change vehicle image

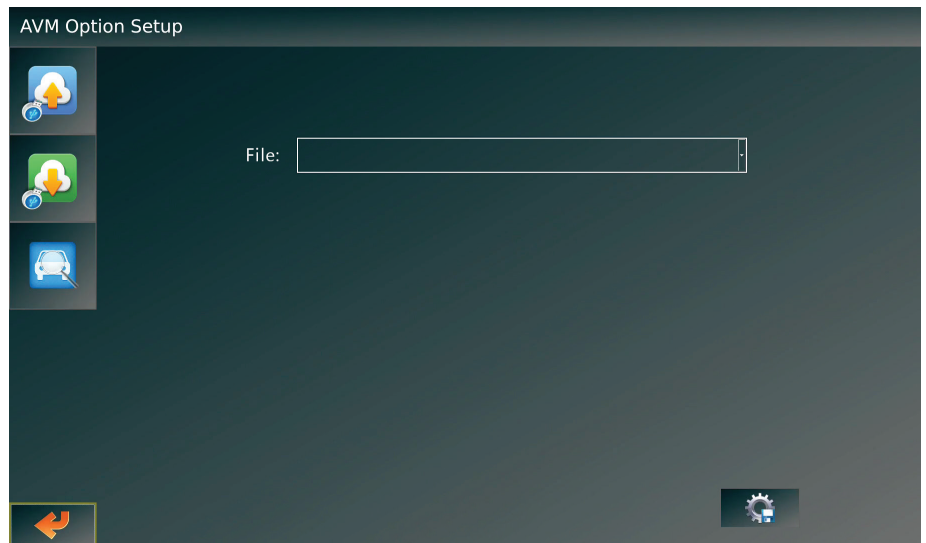
**Note:** Calibration files are saved as XML files.




## Import Calibration Files

- **File:** Select calibration file with XML extension
-  : Confirm calibration file with XML extension

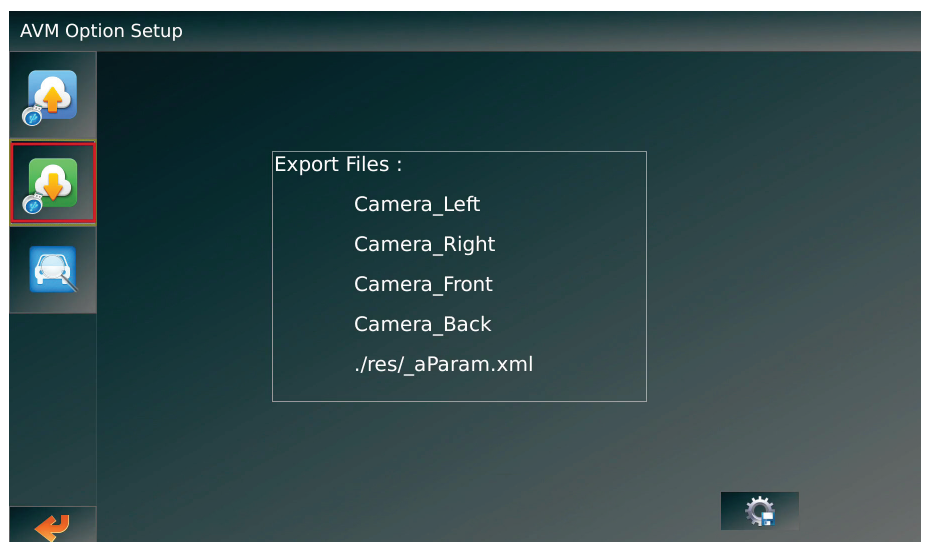
**Note:** After the calibration file has been imported, the system will restart.



## Export Calibration Files

-  : Confirm calibration file with XML extension

**Warning:** Removing the USB flash drive during export may corrupt the XML file.



## Change Vehicle Image

This screen allows users to select a vehicle image. Select one of the available vehicle images across the top or upload a custom vehicle image. Click the **Save** button to apply changes.

**Note:** Custom vehicle images must be saved as a .PNG file to be uploaded.

**Note:** After any changes are applied, system will restart.

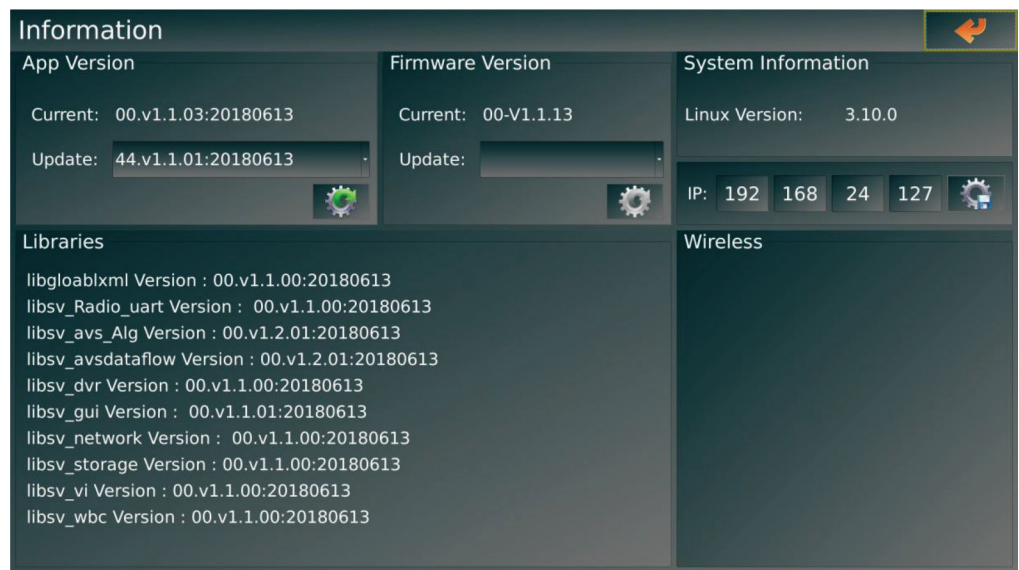


## Information

- **APP Version:** Current APP Flash version information / upgrade files list / upgrade confirmation key. This function is activated only when there's APP upgrade file HD360-CPU-APP-00-Vx.x.xx.tar.gz under USB flash drive root file.
- **Firmware Version:** Current MCU Firmware version information / upgrade files list / upgrade confirmation key. This function is activated only when there's MCU upgrade file HD360-MCU-APP-00-Vx.x.xx.bin under USB flash drive root file.
- **IP Setup:** IP address of control box

**Note:** There will be a indication red dot on upgrade key if there's new APP software or MCU firmware version under USB flash drive root file.

**Note:** Do not pull out USB flash drive during system upgrade.

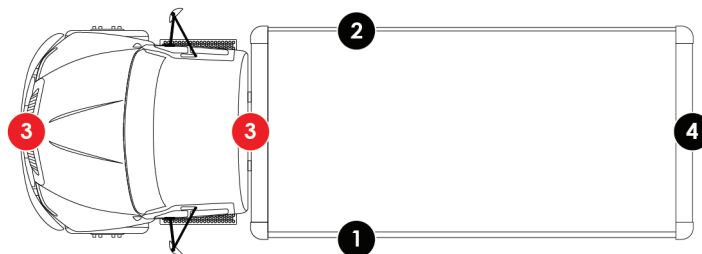




## Hardware Installation

### Wiring of the Vehicle Body

Wires should be run from the cameras to the control box. Cameras must be positioned in the locations shown and connected to its correct cable (e.g. camera in position 2 connected to the CAM2 cable on the control box).

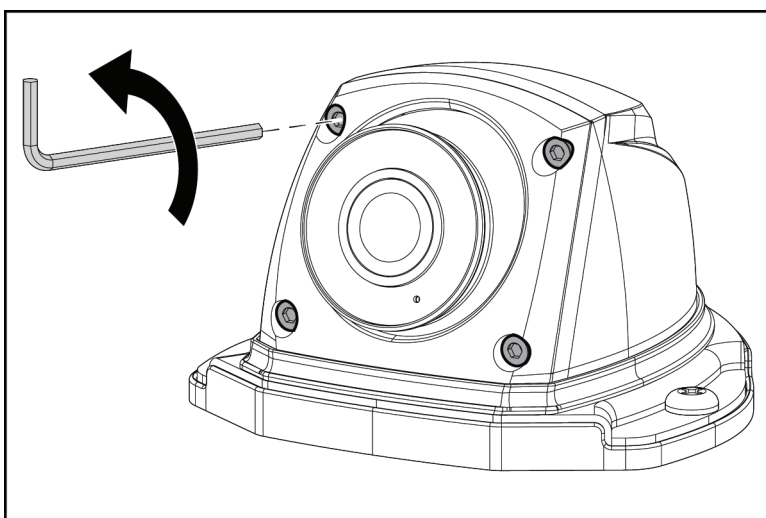
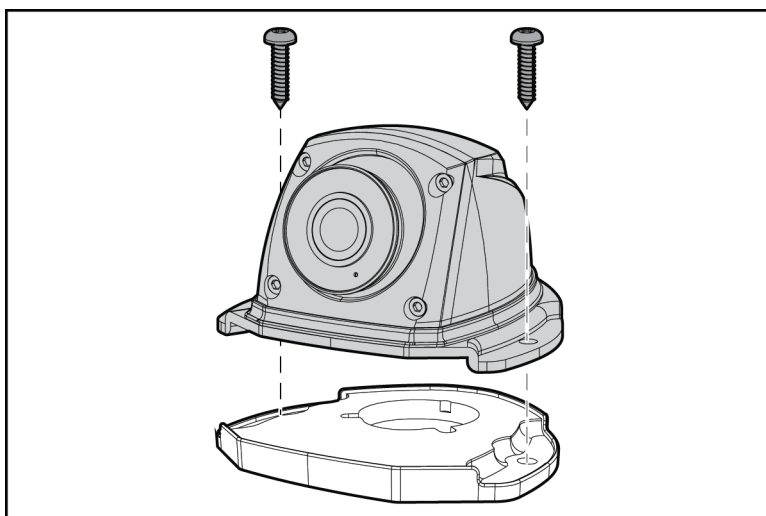


### Camera Installation

**Note:** Recommended minimum height is 1.5m.

1. Clean the area where the camera is to be installed.
2. Mark the positions of the two mounting screw holes and cable exit hole.
3. **Drill cable exit hole.**  
Using a hole saw or appropriate drill bit, drill a 7/8" hole for the cable exit.
4. **Drill mounting holes.**  
Using an appropriate drill bit, drill two mounting screw holes where marked.
5. **Position gasket on mounting surface.**  
Align the gasket holes with the two fastener anchors on the mounting surface and place camera on the gasket, threading the cable through the 7/8" hole. Use the included mounting screws to secure the camera into position.
6. **Adjust camera view.**  
Using the included hex key, the front 4 screws may be loosened in order to position the camera. Adjust the camera angles and verify the normal image mark (white dot on camera lens) is placed outward.

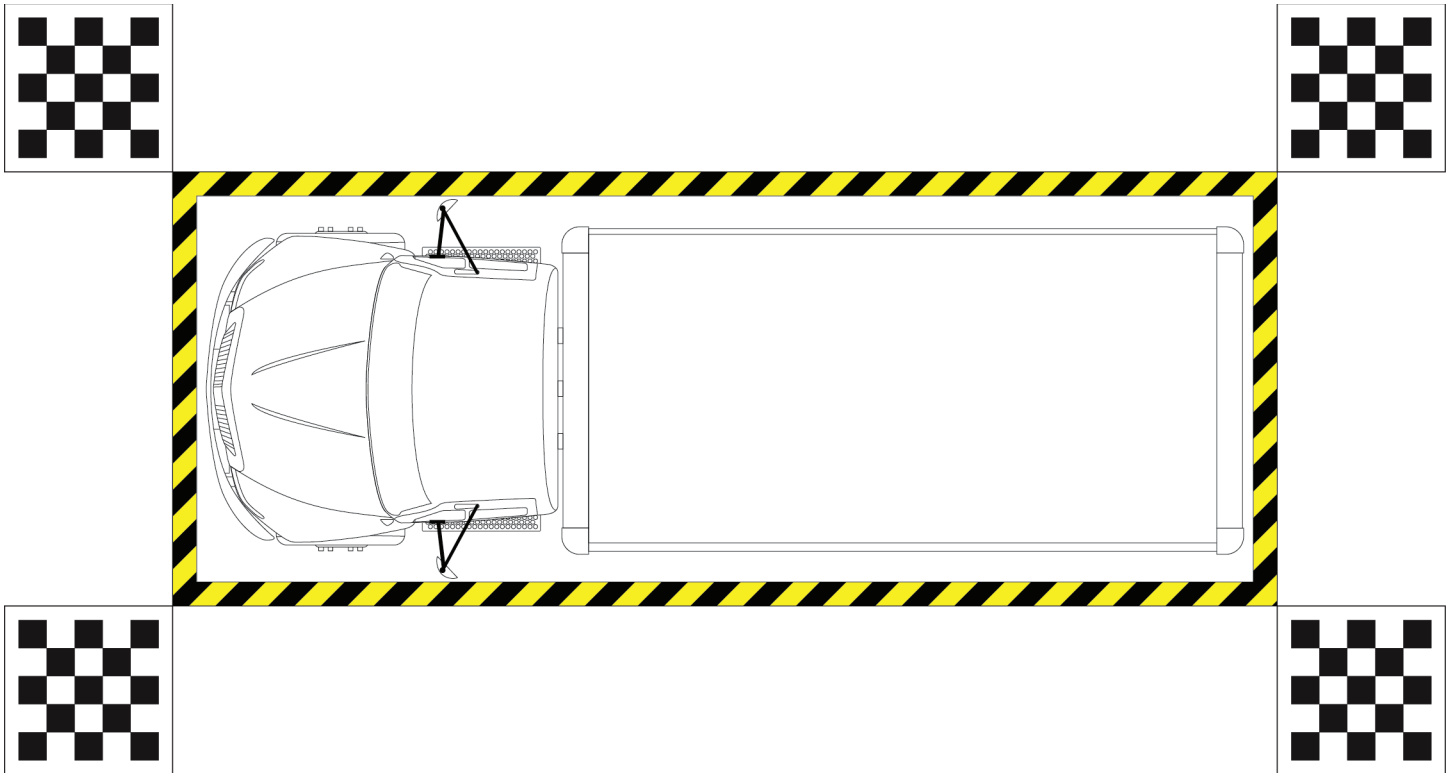
**Note:** Camera 3 location is vehicle dependant, use the location that allows the for the greatest coverage.



### Control Box Installation

1. Using the included 4 mounting screws, mount the control box in desired location.
2. Connect cabling to the control box.
3. Power on control box to test wiring connections.
4. Test operation functions.

## Calibration Mats



1. Use the provided adhesive tape to mark a rectangle around the vehicle. Everything outside of the rectangle will be part of the captured images.
2. Measure the length and width of the rectangle.  
*These measurements will be used later during software calibration.*
3. Place the calibration mats square, relative to each other and the adhesive tape.
4. Confirm the aim and focus of each image. Each view must contain all 4 corners of both mats and contain the entire length of adhesive tape on that side.



## Software Calibration

The TotalView AHD system is configured through proprietary software that must be installed on a USB flash drive and accessed with a Windows PC.

Use the following procedure to calibrate the cameras through the software:

1. Enter the password and click the login icon.  
*The main menu appears.*

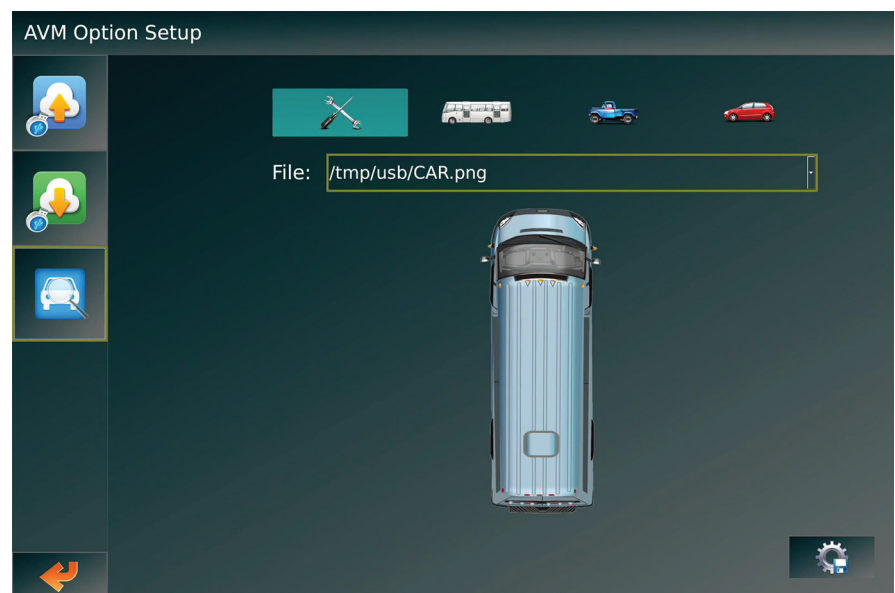
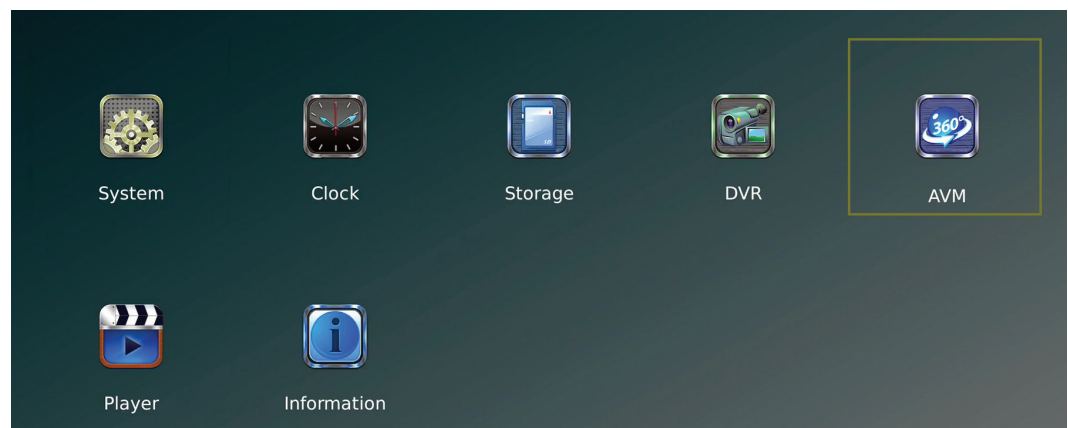
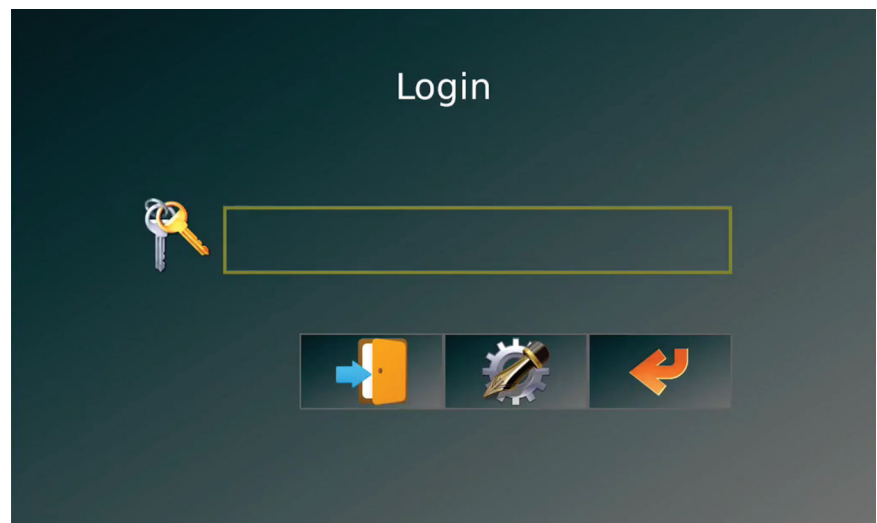
*The default password is 000000.*

2. Once logged in, the **Main Menu** page is displayed by default. Click on **AVM**.  
*The AVM Option Setup screen appears.*

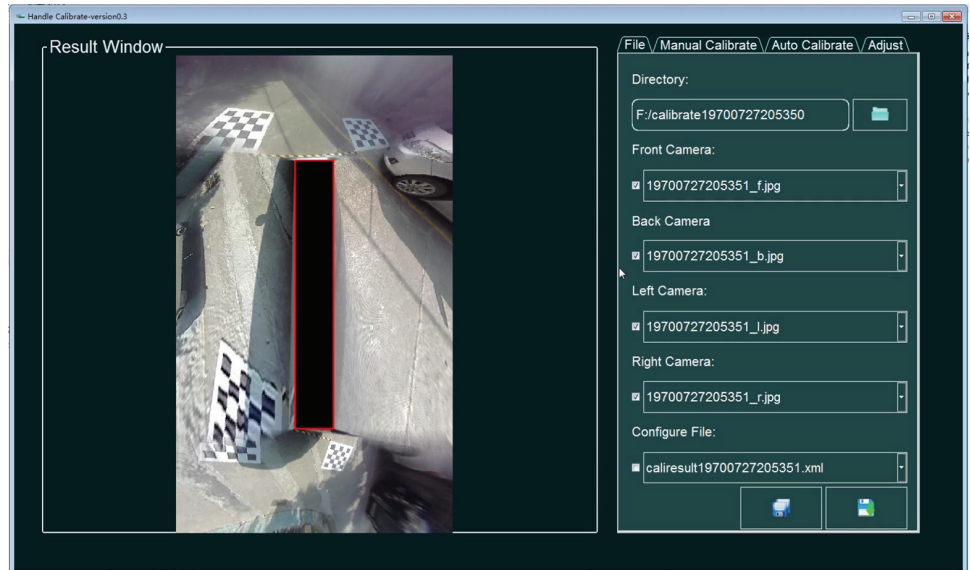
3. The AVM Option Setup screen allows users to select a vehicle image. Select one of the available vehicle images or upload a custom image.  
*Custom vehicle images must be saved as a .PNG file to be uploaded.*

4. After the vehicle image is selected, click the **Save** icon in the lower right hand corner.

5. Click the **Export** icon on the menu at the left side of the screen to export the current configuration to a USB flash drive.

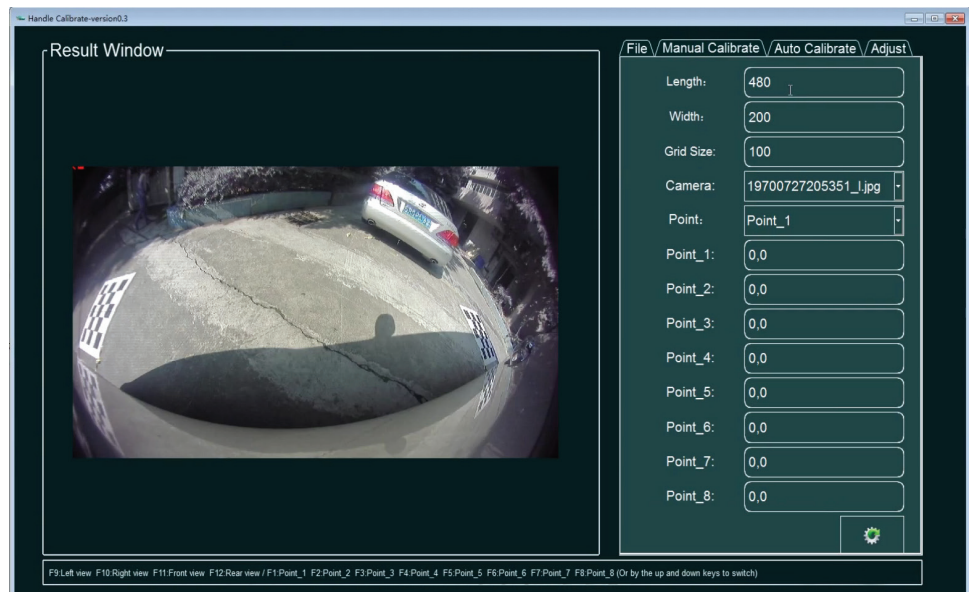


6. In Windows, open the Calibration Tool and click the **File** tab on the top menu. Then select the Directory exported to the USB flash drive.

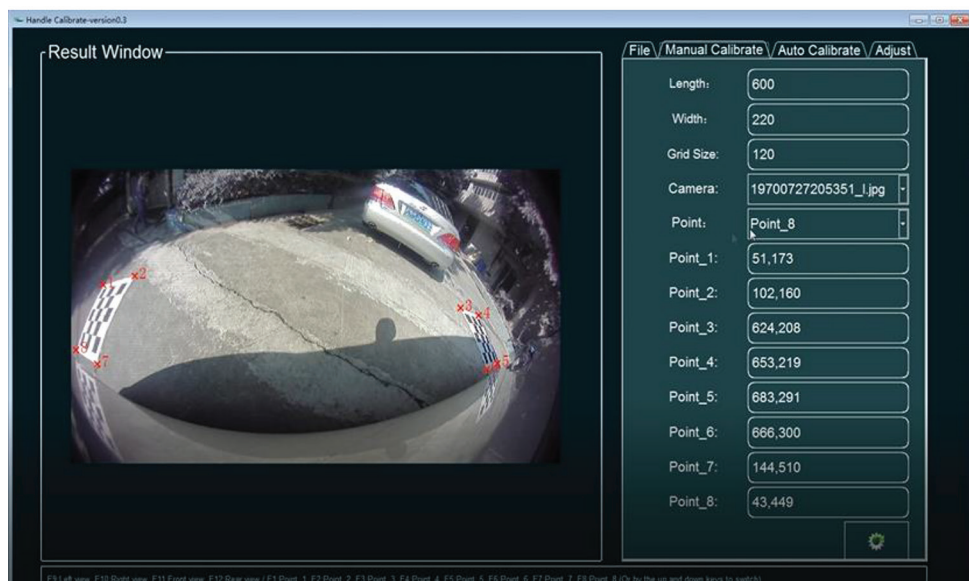


7. After the directory has been imported, click on the **Manual Calibrate** tab on the top menu. Enter the length, width, and grid size in centimeters.

- The length and width should be the measurements that were taken on step 2 under **Calibration Mats**.
- **Grid size will be:**
  - 120 for the 1.2m calibration mats
  - 180 for the 1.8m calibration mats

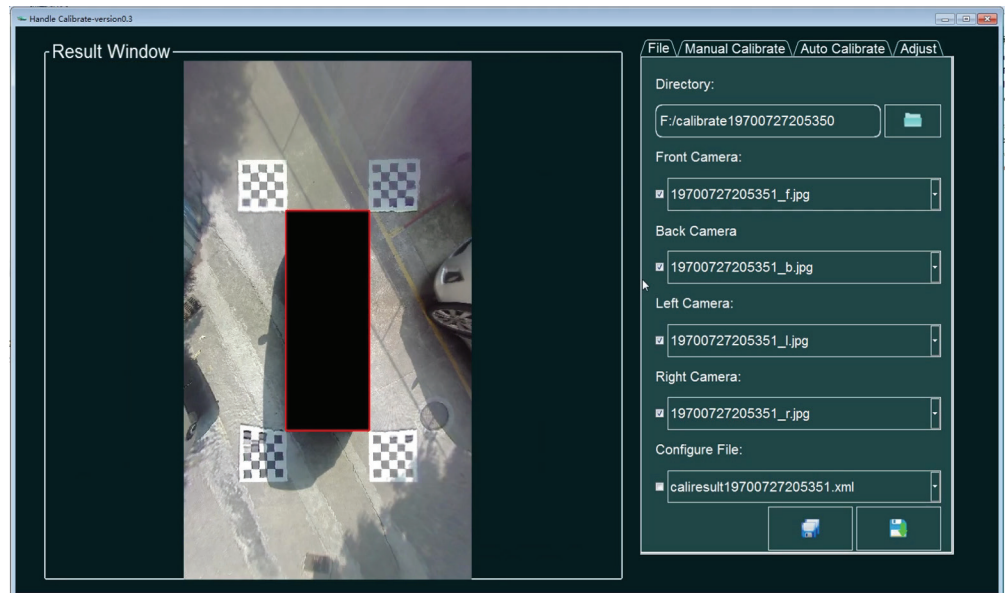


8. For each of the 4 images, select the corners of both calibration mats, starting at the top left corner and continuing clockwise.

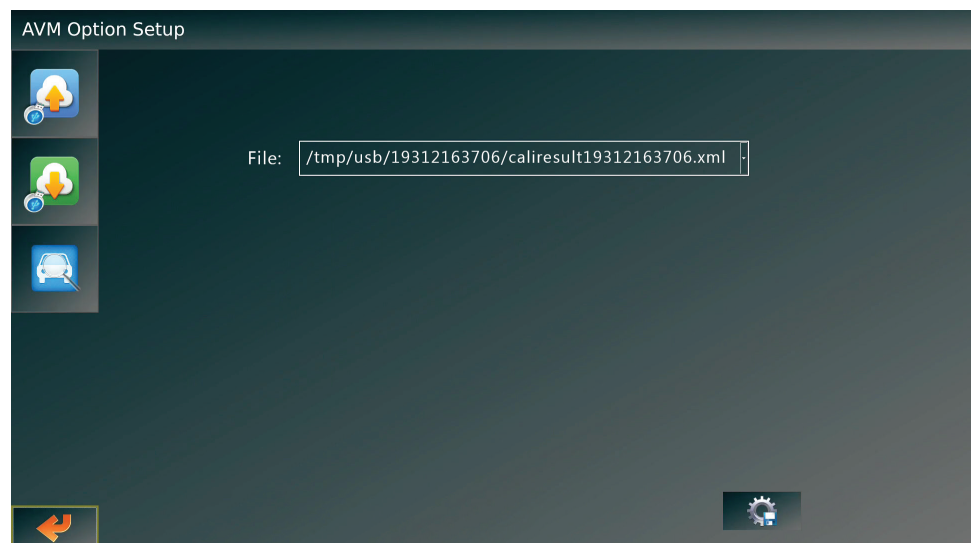




9. Save the modified setup to the USB flash drive.



10. Import the modified setup from the USB flash drive into the control box. If the import is successful the system will automatically restart.



11. The final result should look similar to the picture on the right.



## Appendix A: Specifications

### IMAGE DEVICE

1/2.9" SONY CMOS (IMX323)

### SCANNING SYSTEM

Progressive

### SYNC. SYSTEM

Internal

### FRAME RATE

PAL: 25 NTSC: 30

### RESOLUTION

1080p

### EFFECTIVE PIXELS

1920 (H) × 1080 (V)

### IMAGE MODE

Normal

### VIEWING ANGLE

200°

### MINIMUM ILLUMINATION

0 Lux

### NIGHT VISION DISTANCE

3~5m

### VIDEO OUTPUT

1.0Vp-p, 75Ω

### GAMMA CONSUMPTION

0.45

### AUTOMATIC ADJUSTMENTS

AGC, BLC, white balance

### SIGNAL-TO-NOISE RATIO

Better than 52dB

### ELECTRONIC SHUTTER

1/30(1/25)~1/50,000 Seconds

### POWER SUPPLY

12V DC

### IP RATING

IP69K

### AUDIO

No

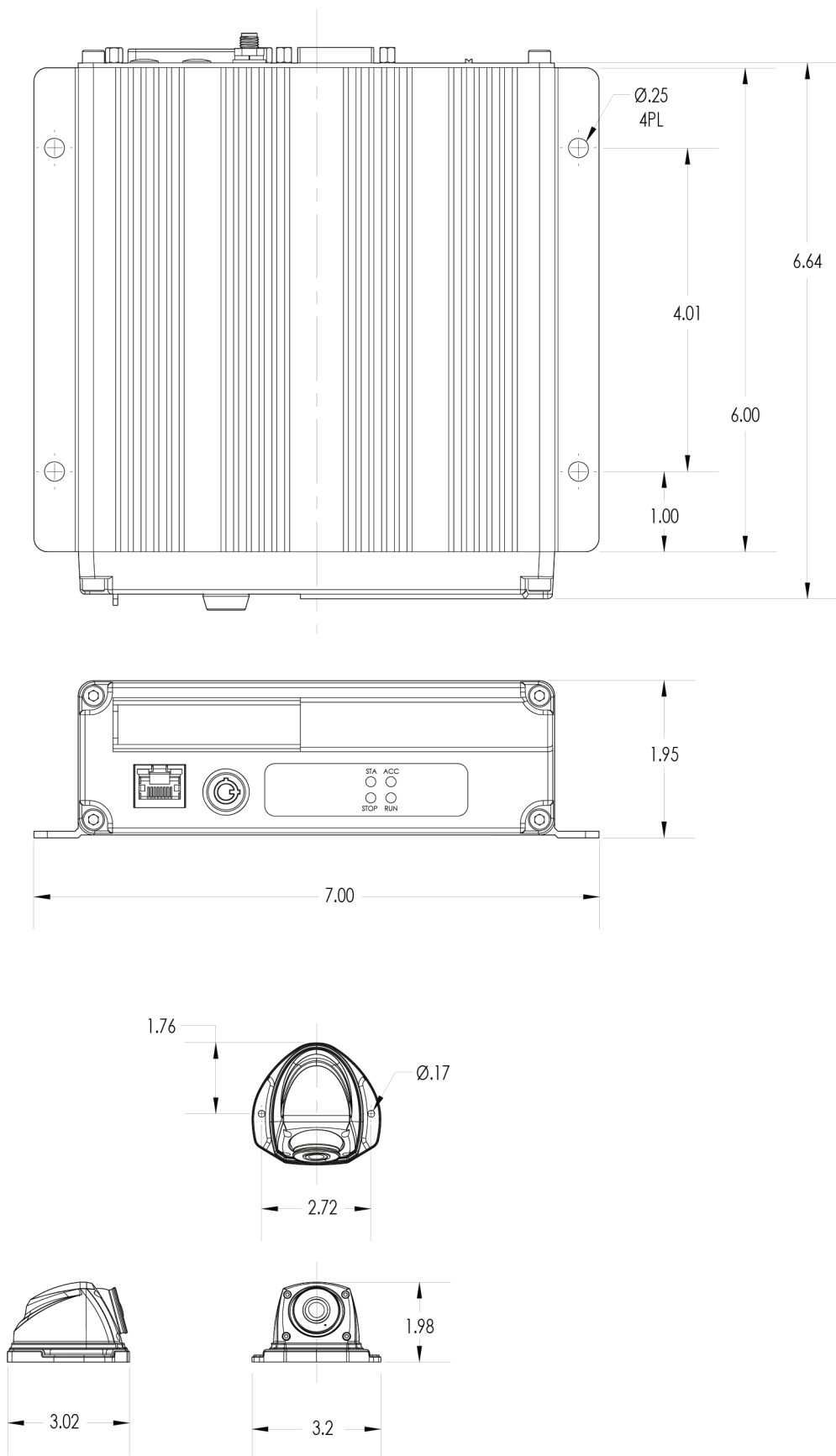
### STORAGE TEMPERATURE

-22° F ~ 176° F (-30°C ~ 80°C), RH 95% max.

### OPERATING TEMPERATURE

-4° F ~ 158° F (-20°C ~ 70°C), RH 95% max.

## Appendix B: Dimensions



## FCC Compliance Statement

### Note

This device has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense.

### Caution

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for the compliance could void the user's authority to operate the equipment.



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