Siera
Electronics

MOB DMS KIT Installation Guideline for (MOB 8014/8414)

User Manual

Contents

1. Connection

DMS and ADAS camera: You can install any channel of MDVR.

Then install cameras on other channels and GPS/4G/WIFI antenna, power cable and TFT Monitor.

Speaker Connection:

Need the 4Pin-3Pin converter add between the Speaker and Serial cable.

2. AI Function

Login the MDVR's Main menu, check the Alarm.

A. Setting for Camera
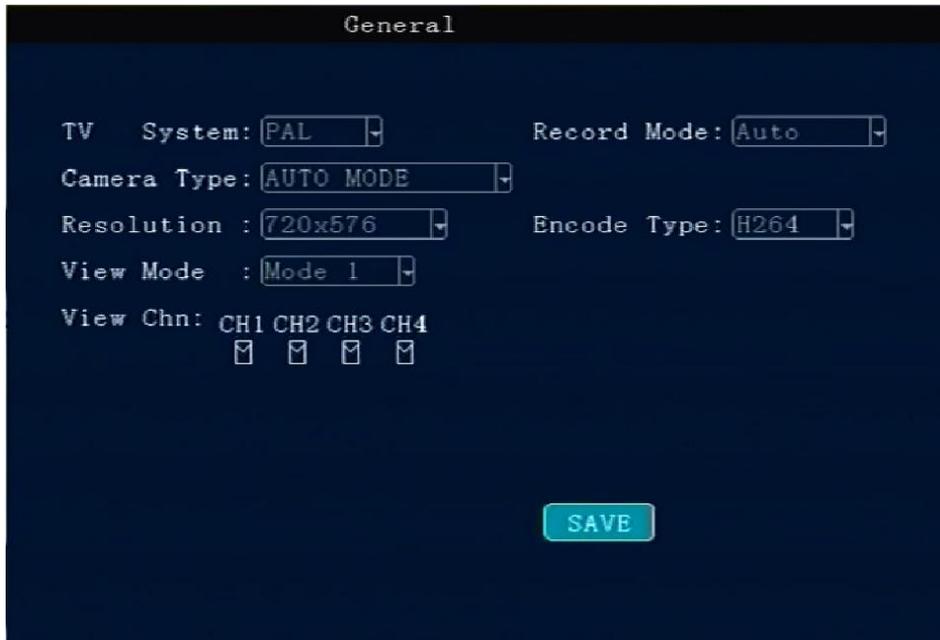
Sub Encode Type: Choose H264 if H265 is not available for your platform.

After set the camera mode, you can change Resolution in **Main-stream** also.

B. Setting for Storage

AI video saving in the HDD/SD card of MDVR, so need to set a bigger space for it.
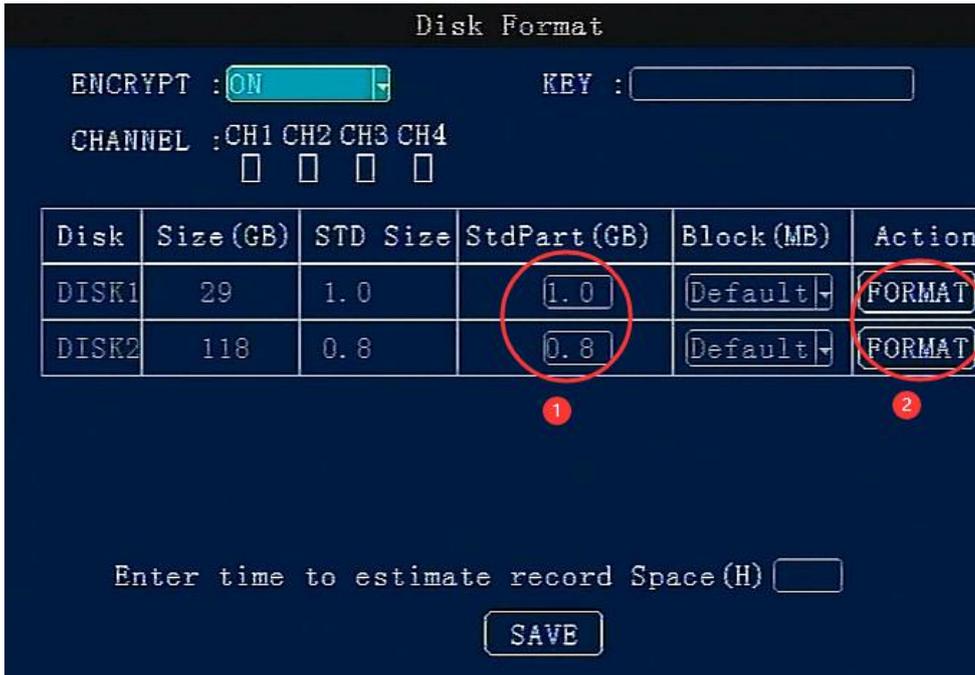
For HDD, the default size is 2GB, you can change to 6-8GB for saving.

For SD card[if there is and more than 32GB], suggest set as 4GB.

Then go to → menu

Select the AI Built-in menu, which contains DMS, ADAS, Face Recognition, Speed test.
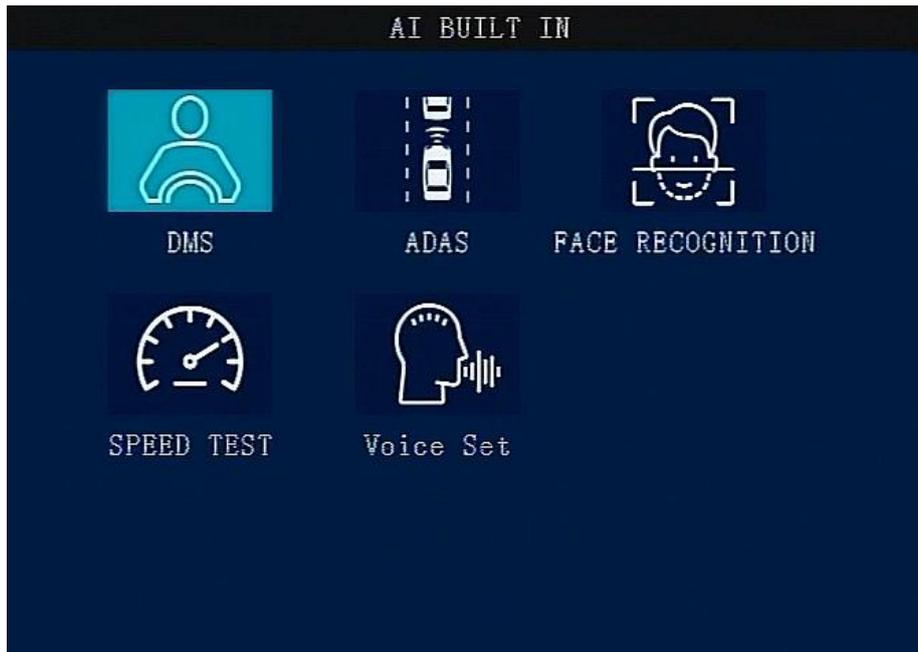
2.1 DMS

DMS supports Smoking, Phone call, Eye closing, Yawning, Distracted, Absent (No driver), Sunglasses and Camera Cover.
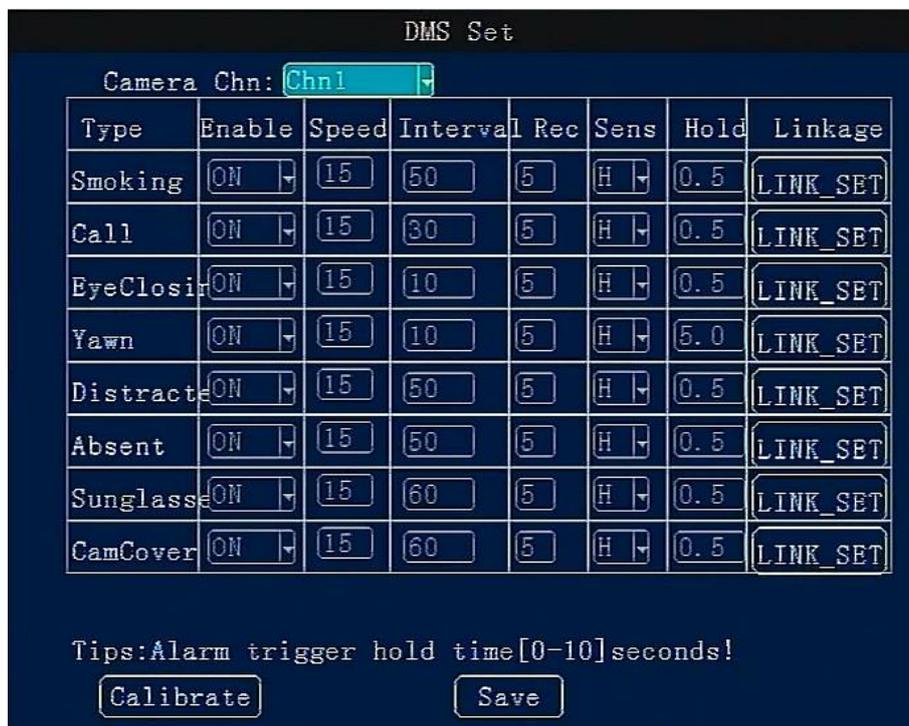
Camera Chn: Set the Channel for DMS.

Enable: Turn on/off this alert.

Speed: The alert triggering speed (km/H or MPH, switch in **Speed** menu), which you can configure it.

Interval: The interval (Unit: Second) for next same alert.

PreRec: Previous recording time (Unit: Second), 1 to 5 seconds for option.

Sens: Adjust sensitivity as High/Middle/Low.

Hold: The threshold to trigger the alert.

Linkage: Make the corresponding alarm linkage.

Click Alarm **LINK_SET**, it will show as this

Alm Msg: Alarm message on/off to platform.

Voice: Turn on /off alert announcement.

REC_LOCK: No need to select.

RECUPLOAD: Choose the channel that need to upload.

ALARM OUT: Choose output1, output2.

SNAPPIC: Take a snapshot.

PRECHN: Preview channel when the alarm is triggering.

Just tick the corresponding channel for **RECUPLOAD** and **SNAPPIC**, then those video/picture will upload to the MOB.

Face to the camera, make your face in the center of image, then Click **Calibrate**, it will begin to calibrate
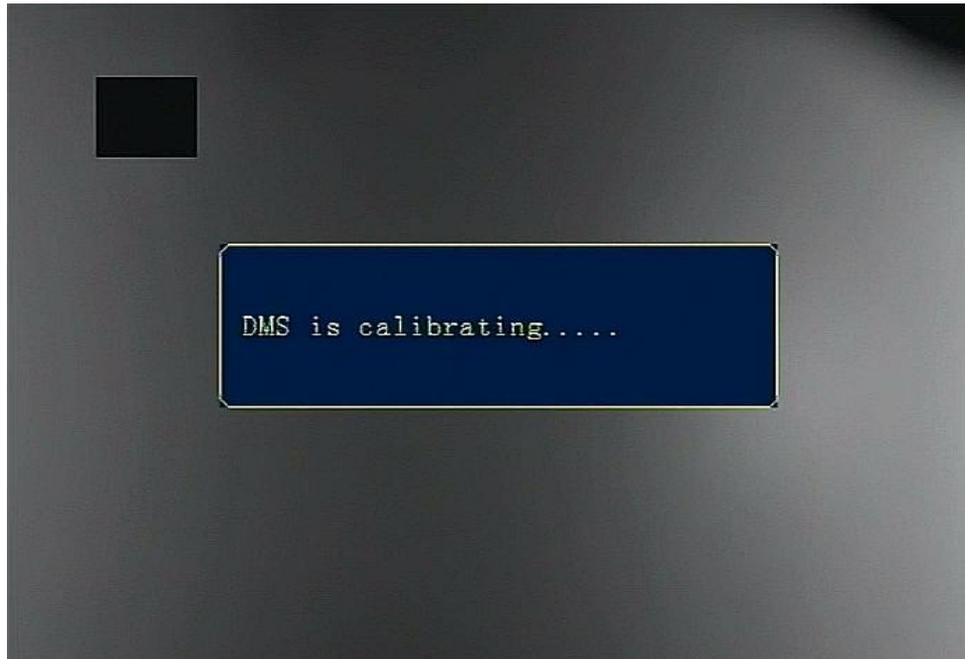
2.2 ADAS

ADAS supports **FCW** (Forward Collision Warning), **HMW** (Headway Monitoring Warning), **LDW** (Lane Departure Warning), **PCW** (Pedestrian Collision Warning).

Camera Chn: Set the channel for ADAS.

Enable: Turn on/off this alert.

Speed: The alert triggering speed (km/H or MPH, switch in **Speed** menu), which you can

configure it.

Interval: The interval (Unit: Second) for next same alert.

PreRec: Previous recording time, 1 to 5 seconds for setting.

Sensitivity: H/M/L, adjust sensitivity as high/middle/low. **High is the most sensitivity.**

Linkage: Make the corresponding alarm linkage.

Alm Msg: Alarm message on/off to platform.

Voice: Turn on /off alert announcement.

REC_LOCK: No need to select.

RECUPLOAD: Choose the channel that need to upload.

ALARM OUT: Choose output1, output2.

SNAPPIC: Take a snapshot.

PRECHN: Preview channel when the alarm is triggering.

Just tick the corresponding channel for **RECUPLOAD** and **SNAPPIC**, then those video/picture will upload to the MOB.

Click **Calibration Config** to do the calibration procedure, please refer to our dedicated manual for more
details.

2.3 Face Recognition

Driver ID: Input an ID for the driver.

Driver name: Input the name for this driver.

Face Collect: After you input the driver ID and name, click "**COLLECT**" to register driver. **It supports 20 faces as Maximum**.

Face Search: Check the drive list which have been registered.

FR Enable: Face Recognize enable or disable.

For **Driver Back** and **Driver Change**, the system will detect and analyze its same driver or another driver.

2.4 Speed test
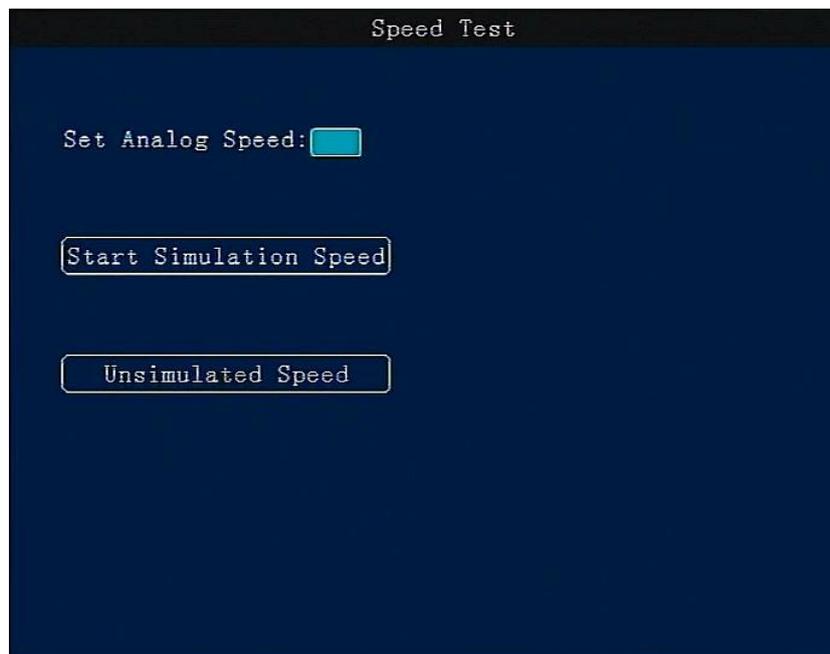
For office testing or demo mode, need set a speed for it.

Input a setting speed which should over than ADAS&DMS threshold speed, then click **Start Simulation Speed**.

For stopping it, click **Unsimulated Speed**.

2.5 Voice Set

Voice: Import the customize audio.

Voice Volume: 0-5 for selection, **5 is Maximum.**
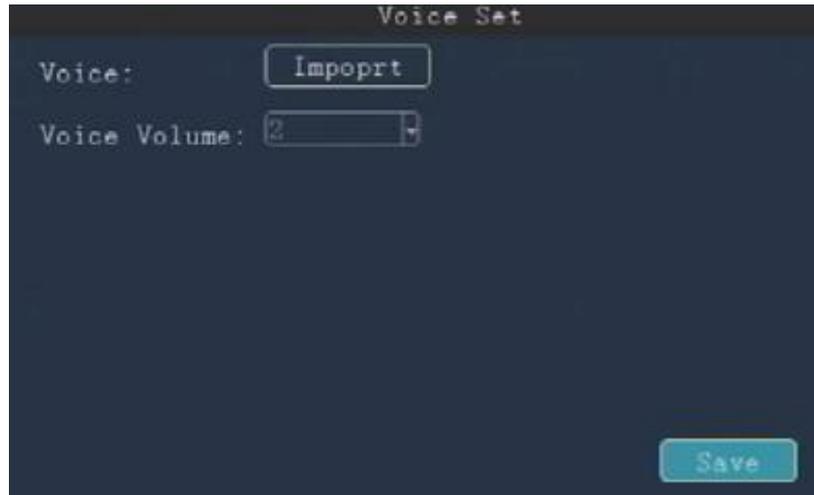
3. Installation

3.1 DMS

Install the DMS camera face to driver, 60-120cm distance, don't cover it by other objects. You can adjust the angle (left and right, up and down) to make sure the driver face in the center of DMS.

Attention: Not support install in A Column of vehicle.
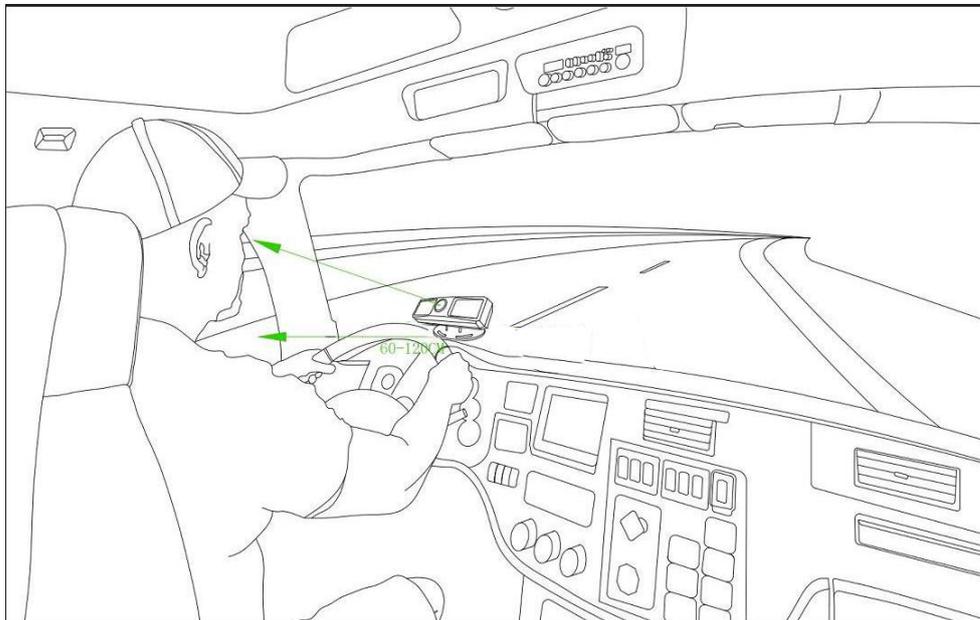
The Standard installation is like this:

If the steer wheel occludes the installation, two solutions:

1. Install a holder to enhance the height.

2. Put the DMS camera offset about 15-20cm or less than 15 degrees, but can't over the center of windshield. Then let the camera face the driver, make the calibration and make sure the driver face in the center of camera view.
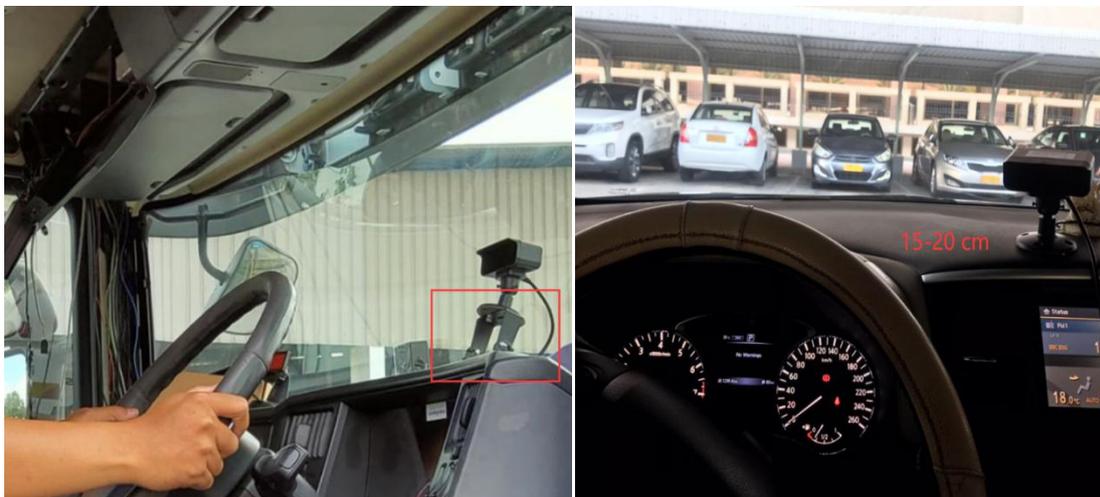
3.2 ADAS
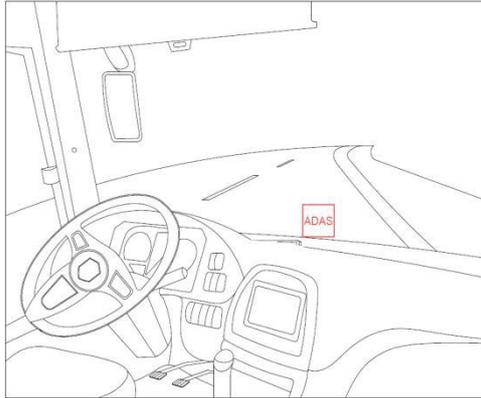
Middle and Large-size Vehicle   Small Vehicle
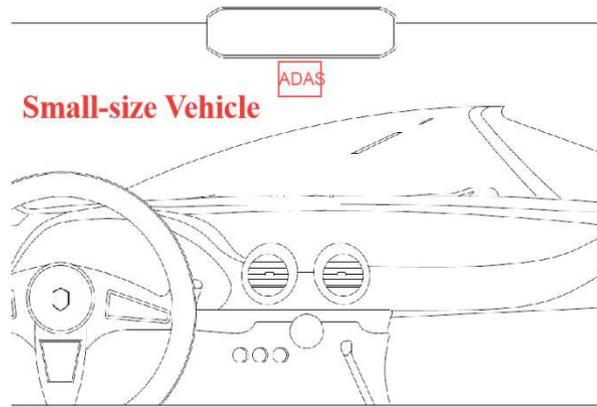
For small-sized vehicles, ADAS camera should be installed on the upper part of the windshield, which is at the bottom part of the rear mirror. The horizontal location should be in the central axis as presented.

For medium and large-sized vehicles, the ADAS camera should be installed close to the bottom of the windshield. The horizontal location should be in the central axis as presented.

Note: The installation location should be within the wiper area with no blockage of camera by the wiper).

3.3 R/L-Turn Signal

In order to not make wrong judgement of Lane Departure Waring, need connect the Right/left-Turn signal to MDVR.

Take the serial cable from the package, User Sensor-IN1 and Sensor-IN2, Connect the Left-turn and right-turn signal to the serial cable of device (Must be consistent with the actual connection line and then set R/L-turn item).

For wait time, suggest set as **0 or 1 second**.

After you connected, turn the vehicle's light, then check the I/O status from the system page. It will change from **0** to **1** if connect & set success, which you can see from INFO page.
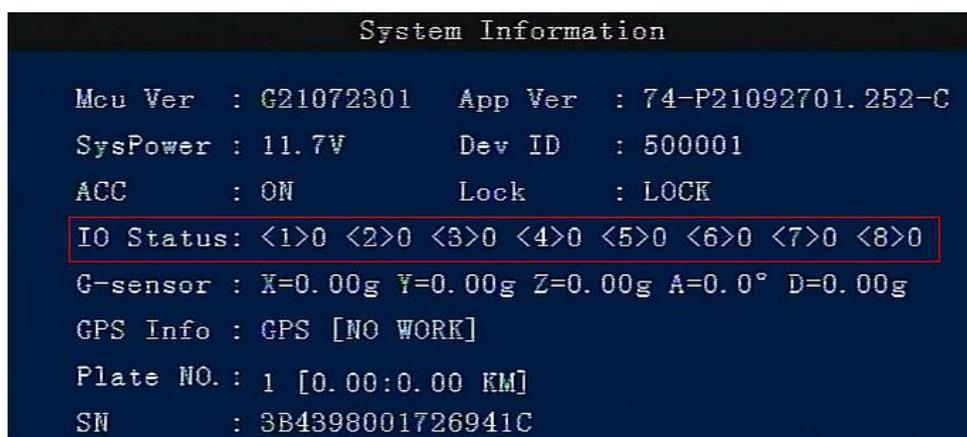
4. Calibration

4.1 DMS

1. After you install the camera, sit in front of the DMS camera, and face the camera lens.
2. Go to DMS set menu, Click **Calibrate**.
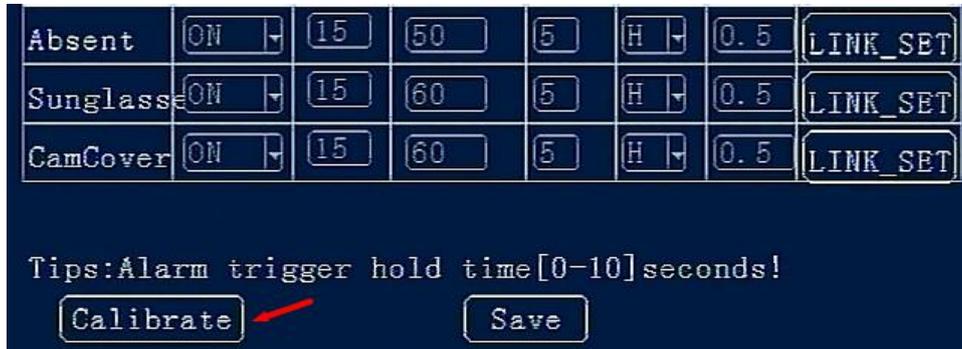
It will take a while to calibrate.
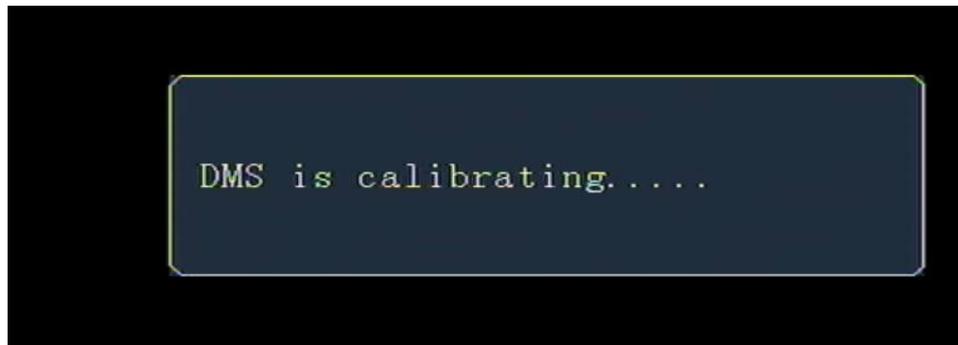
3. It will show "DMS Calibrate successfully" if success.

If failed, make sure you face in the center of screen, adjust the camera angle and try to calibrate again.

4.2 Face Recognition

1. Sit in front of camera, and face the lens.
2. Input the driver ID and name, then click "COLLECT".
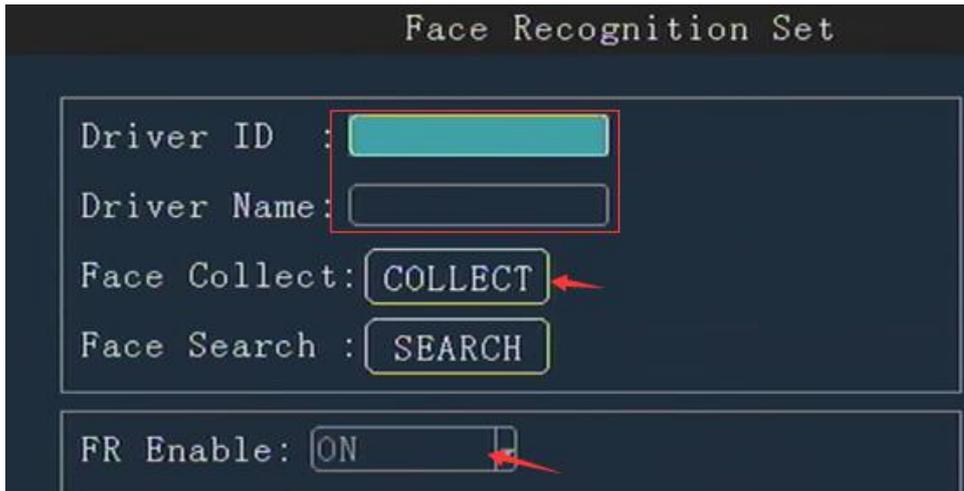
3. When you face the camera, click "**Start collect**".
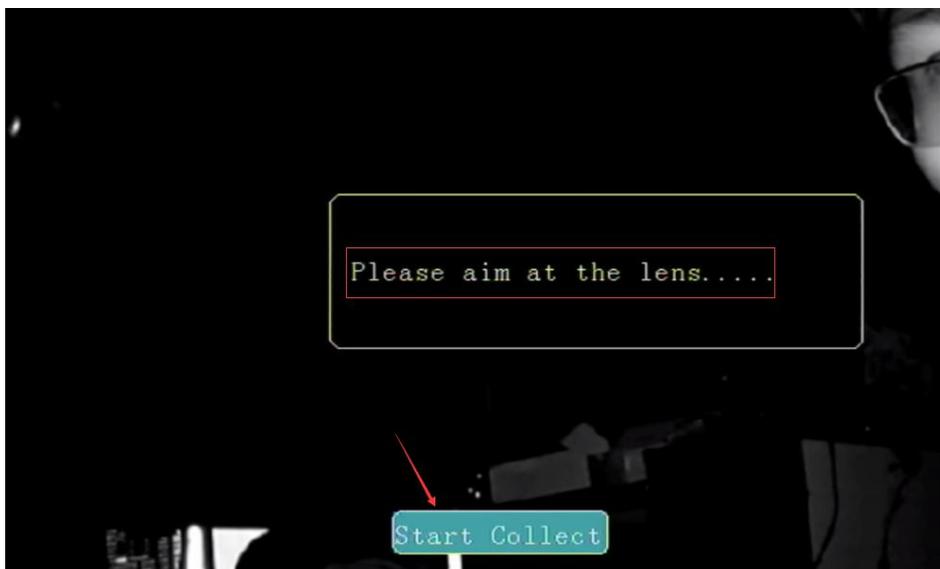
4. It will take some seconds to record, It will pop-up "**Face collection Successful**".
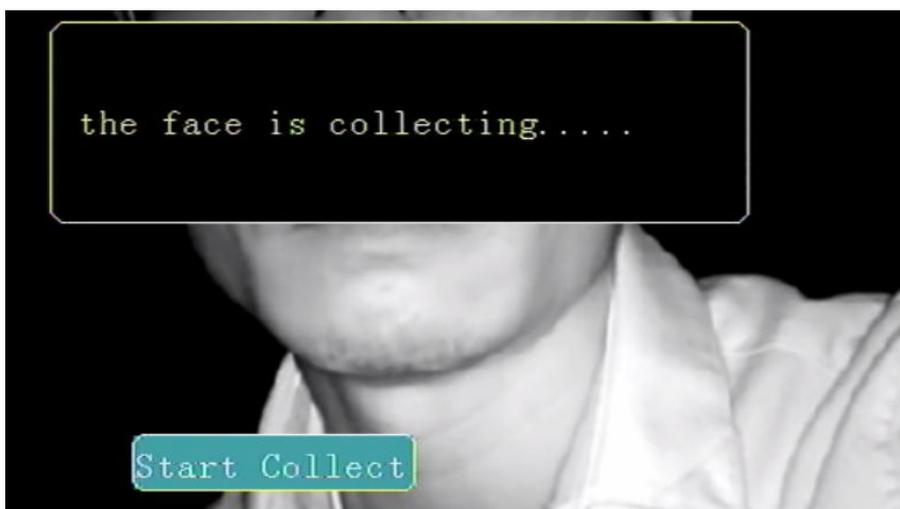
5. After register, you can click "**Search**" to get the list, it supports 20 drivers at most.

4.3 ADAS Calibration

1. Install the ADAS camera, and stop the vehicle in a flat and open area.

2. Ready to calibrate

A. Put a pole or ruler in the front of vehicle, the distance from camera center to pole/ruler is 5m, mark a line which is the same height with ADAS camera.
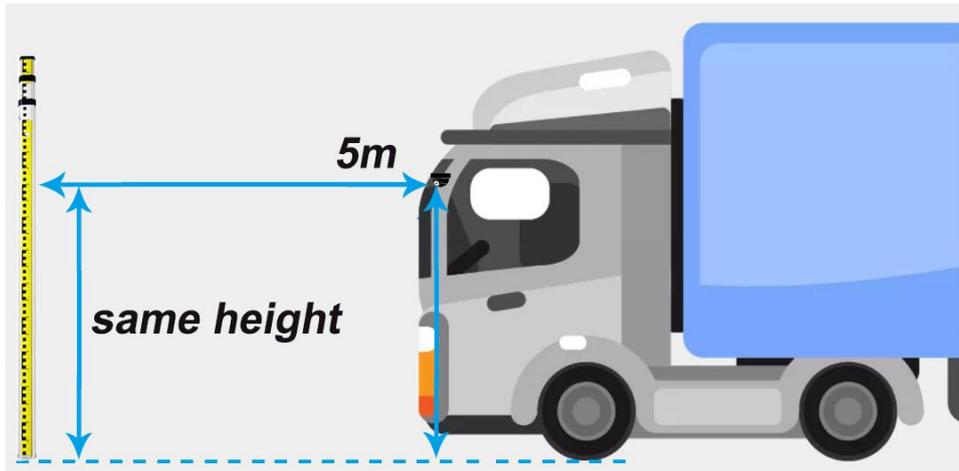
Fig.1 Flat Nose Truck
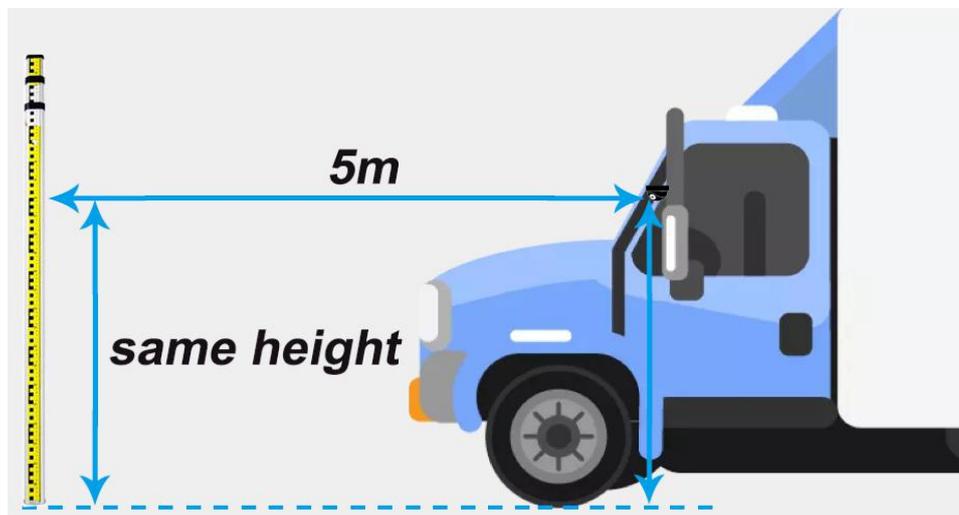
Fig.2 With Nose Truck

For example:

Use a ruler, 5m distance from the camera. make the same height with camera center. Then mark a line on the ruler.

And the ruler/Pole must be in exactly same line with ADAS center.

3. Go to ADAS setting menu, select the ADAS channel, default is Channel2.

Click "**Calibration Config**"

You will get this page.
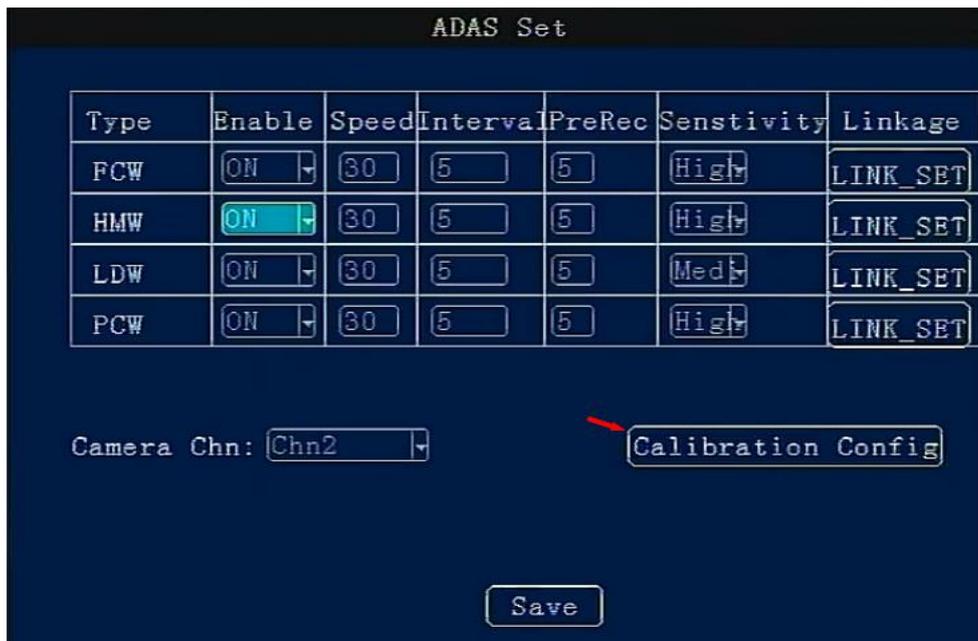
```
                    ADAS Adjust Param Set

        Horizon   :360

        CarMiddle:640

        CarWidth :183

        CameraHeight :130

        Camera2Bumper:185

        CameraCenter :0

        Camera2Axle  :89




           Calibrate          Save
```
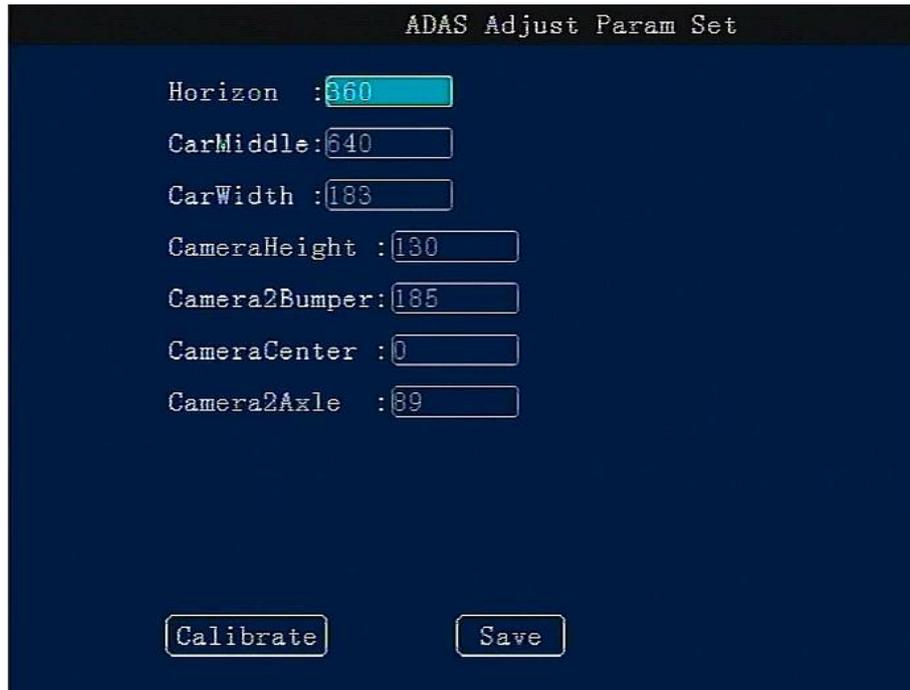
Horizon: The horizontal level, this value need to adjust to get it, not by input directly. **Unit:Pixel**.

Car Middle: The offset(distance) from the camera center, Need calibrate to get it. **Unit: Pixel**. **Fig.3**

Attention: Must **put the ruler/pole in the exactly same line with ADAS center.**

Fig.3 Car middle

The width between the outer edges of tires
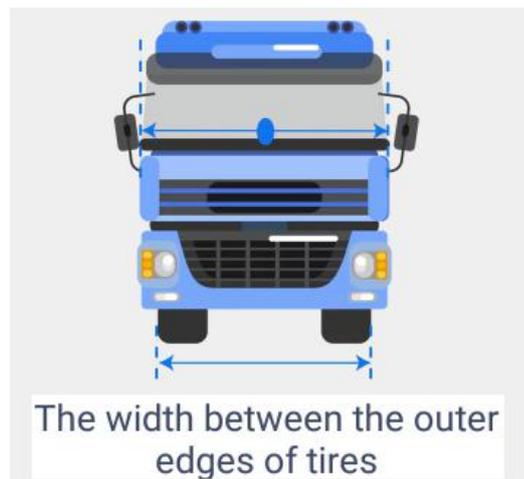
Fig.4 Car Width

Car Width: The width between the out edge of tires. **Unit: cm**. **Fig.4**
Camera Height: The distance from the ground to center of camera. **Unit: cm**. **Fig.5**
Camera2Bumper: The distance from camera to front bumper. **Unit: cm**. **Fig.5**
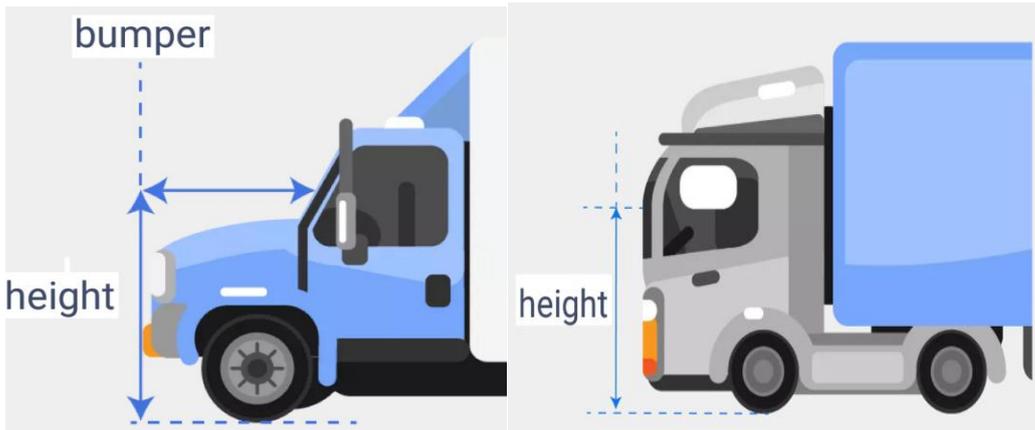
Fig.5 Camera Height and Bumper

Camera center: Set as **0** directly. **Unit: cm**.

Camera2 Axle: The distance from camera to front wheel axle. **Unit: cm**. **Fig.6**

Attention: Need to pay attention the negative/positive value. <u>If wheel is after the camera, need input negative value.</u>
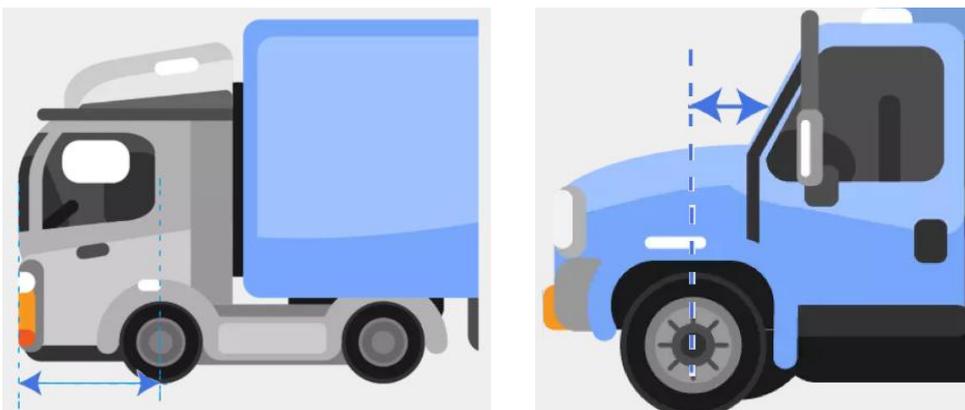
Fig.6 Camera to Axle

After you input those parameters, Click the <u>Calibrate</u> button. Then follow those steps.

A. Camera angle adjustment -- **Physical adjustment**

Need adjust the Car middle line and horizon level line.
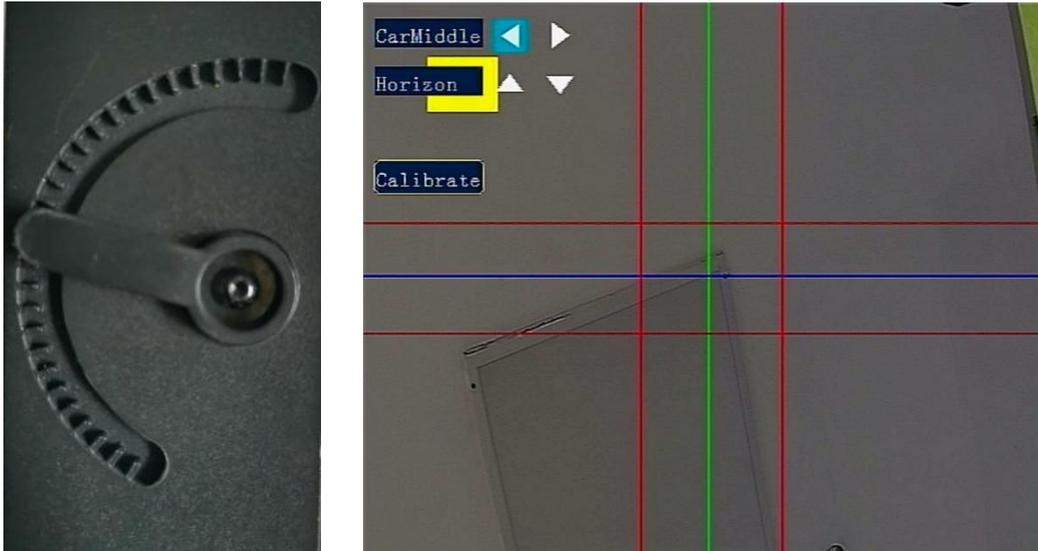
Loosen the ADAS screw, then adjust the camera angle, **make sure the two red lines area could cover the Ruler's mark line**. After you adjust camera, fix it with screw.
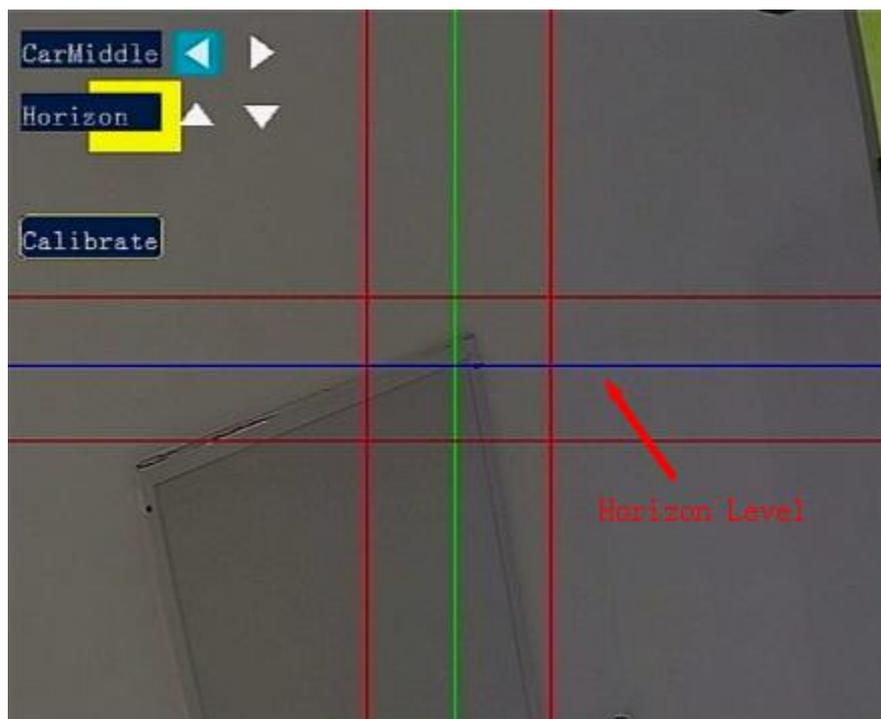
Fig.7 Adjust camera

B. Software adjust

Car Middle: Adjust the **Green line** to by , make it overlap with the ruler in Vertical direction.

Horizon: Use the remote control to adjust via the ▲▼ button.

Make the horizontal **Blue line** to be overlapped with the **marked line on the ruler,**
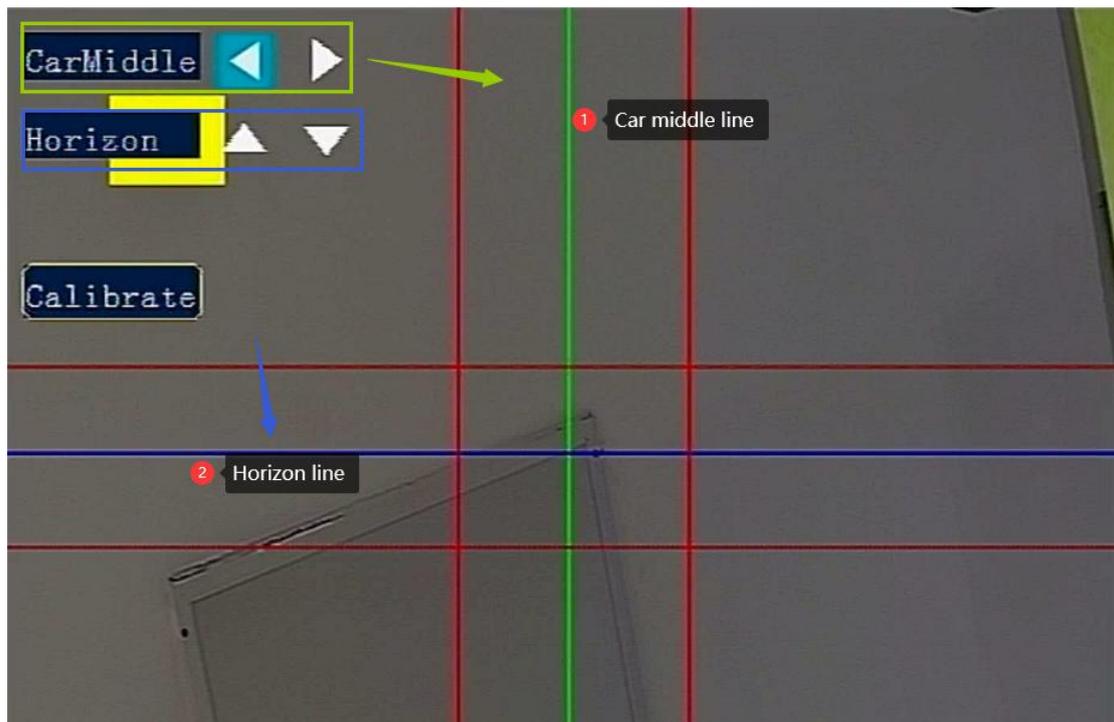
Fig.8 Adjust Horizon&Car middle

C. Click "**Calibrate**", it will success later.

Fig.9 Calibration Success

4. Voice of Alert

	Item	Type	Alert Voice
ADAS	1	FCW	Dangerous
	2	HMW	Too Close
	3	LDW	Lane Departure
	4	PCW	Pay attention to pedestrian
	Item	**Type**	**Alert Voice**
DMS	1	Smoking	No smoking
	2	Call	No phone call
	3	Eye closing	No fatigue driving
	4	Yawn	Yawning
	5	Distracted	No distracted driving
	6	Absent	No driver detected
	7	Sunglasses	Eye detection failed
	8	Cam-Cover	Camera is covered

5. Check MOB Platform

5.1 Reports

Login the MOB client or web, Select the Report Type, device ID and alert type, then search.

5.2 Evidence Center

MDVR will upload the ADAS&DMS alarm videos to MOB directly, just make correct setting on MDVR side.

1. Server Setting, must use the Server2's H-protocol.

2. **Link_Set**

For DMS and ADAS's alarm linkage setting, just tick the corresponding channel, then those video/picture will upload to the MOB. For example. If DMS is channel1, just choose the CH1.

Attention: This automatically upload is only for DSM&ADAS.

Search the alarm videos/pictures in **Evidence Center**.

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