Camera Monitoring System - Dashcam

Installation and Programming Manual

SHC-20280C / D21

Dashcam System
Installation and Programming Manual

Disclaimer

Stortech Electronics does its best to ensure the integrity and accuracy of the contents in this document and cannot guarantee this. The outcome of using this document shall be entirely the user's own responsibility. Stortech Electronics reserves the right to change the contents of this document without prior notice.

- Design and specifications are subject to change without prior notice.
- It is the responsibility of the user to ensure the products are services and maintained by a trained   engineer.

Important Safety Instructions

1. Read, keep, and follow these instructions.
2. Only use the power supplies that are recommended in the manual, failure to do so could cause damage to the product.
3. Before cleaning, remove all cable connections from the control box.
4. When cleaning the product's surface, use a soft, dry cloth or a damp cloth. Do not use detergent or products that contain alcohol, solvents or surfactants or oil constituents. They may damage the product. Especially the viewing bubble/window)
5. Do not use excessive force when installing the product, the camera may be damaged and fail to work. If the warranty seal is damaged, the warrantee will become void.
6. Install or uninstall the product as described in the manual, failure to do so may damage the product, affect the functions and performance that could invalidate the warrantee.
7. Install the product by referring to "Installation & connection" in the user manual.
8. This product is designed to be installed by trained professionals, incorrect installation may cause the product not to perform as expected or to malfunction.
9. Storage temperature: -40 ~ +85℃; The Operating temperature of equipment with LTE module is: -20 ~ +70℃, and that of equipment without LTE module is: -20 ~ +70℃,Relative humidity: RH90%;
10. The device isn't waterproof and please do not place this device in bathroom, kitchens, swimming pools or similar places.

Contents

Overview

Basic Features

- 2K Forward and Rear-view cameras
- Built-in Algorithms (AI)
  - Forward Collison Warning
  - Lane Departure Warning
  - Pedestrian Detection
  - Driver Management System
- 2* SD Card slots 512Gb Max each
- True Day/Night LED Camera
- Wi-Fi & 2G/3G/4G connectivity
- Calibration via Smartphone & Wi-Fi Hotspot

Features

- Active collision avoidance alarm,
- Driver abnormal behaviour alarm
  - Smoking, Talking on the phone, tired driving, distraction
- On-board recorder with an alarm alert function.
- The cameras and AI (Artificial Intelligence) algorithms, can detect and recognize vehicles in front and monitor lanes and traffic scenes around it.
- Combining video compression/decompression technology, 3G/4G network technology and GPS/BD positioning technology, it can upload video recording, and vehicle driving information recording.

Packaging List

- Dashcam x 1
- External power supply x 1
- CAN/LAN adapter cable x 1
- Spirit Level

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.
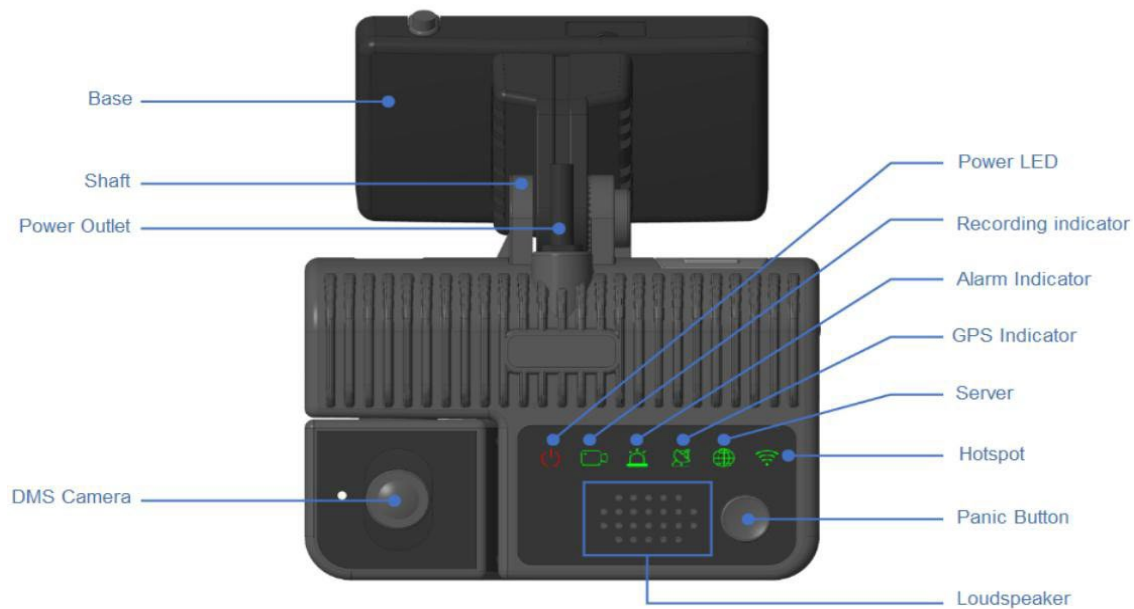
This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This symbol is intended to alert the user not to dispose of electrical and electronic equipment.

Do Not: Place this device in a humid, dusty or smoky environment. Drop or hit the device.
The operating voltage of device is 10-32V, able to be used for 12V and 24V systems, exceeding the limit operating voltage may damage the device; Too high a voltage can damage the device.

Installation

Front View of the Driver

- Base
- Shaft
- Power Outlet
- DMS Camera
- Power LED
- Recording indicator
- Alarm Indicator
- GPS Indicator
- Server
- Hotspot
- Panic Button
- Loudspeaker

Rear View

- ADAS Camera

Side View

- Power Outlet
- Screw for Spindle
- TF Card
- USB Interface
- SIM Card Slot
- External Camera/LAN Interface
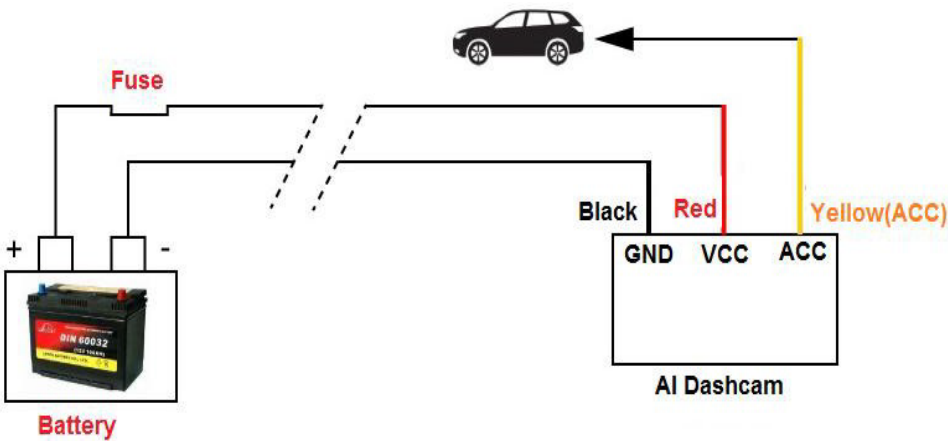- GPS/4G Outlet
- Adjusting Screw for DMS Camera

V1

Overview

Wiring Diagram

Required Tools

Please prepare additional tool prior to starting the installation.

	Tools	Purposes
1	Tape measure	For measuring body parameters during ADAS calibration.
2	Test pencil	For testing if there is electricity in the wire.
3	Multi-meter	For measuring voltage, checking whether short circuit, and finding pulse signals.
4	Wire stripper	For stripping after wire finding.
5	Electrical tape	For wrapping the wire head after wiring.
6	Cable tie	For wire organization - binding.
7	Hole opener	For opening holes for wiring, with a hole diameter of less than 15mm.
8	Screwdriver	For dismantling the central control and fastening equipment. There are Flat Blade Screwdriver and Phillips Head Screwdriver.
9	RVV wire	For extending the wiring when the standard cable length is not enough. The diameter of the power extension cable is not less than 1.5mm², and that of the signal extension cable is not less than 0.5mm².
10	Velcro	For fastening equipment.

Confirming the mounting position

1. There are two installation conditions. One requires, calibration rods may be needed to measure distances. The other requires the Engineer to drive at ground level so that they can see the line of the road disappearing.

2. Decide on the mounting height of the device.

   a. The mounting height is related to the vehicle's height. The installation height should be within 1.40m ~ 2.50m from the ground. An example of installation heights for several vehicle models is shown on the "Right".

   b. The installation height – is one where the vehicle has fewest blind spots, the driver has a clear view of the ground and has complete visibility of vehicles and pedestrians within a certain distance.

3. Place the Dashcam in front of the windscreen at the optimal mounting position and in the centre of the windscreen. (See "Right") Note: The camera is mounted horizontally.

4. In practice, the mounting position can be offset to the right from the centre line by ≤ 5cm if it is difficult to install on the centre line. (See "Right")

   The green dot in (See "Right") is the ideal mounting position, and the red centre line offset to the right within 5cm is the permissible mounting area. Please note that this area is the range of movement of the Dashcam bracket.

5. Once the above has been achieved enter the Dashcam calibration interface and adjust the Dashcam bracket. If the contour pole marking line or road disappearing line appears within the red upper and lower lines after adjustment, the bracket fixing position can be fixed and labelled.

6. Separated the bracket from the camera before fixing the bracket. Place the spirit level on the upper end of the mountable range of the windscreen, ensure that the spirit level bubble is in the middle position before fixing. Install the base of the camera tightly against the lower end of the spirit level. (See "Right")

7. After fixing the bracket, mount the camera back on the bracket and adjust the pitch angle with the pivot screw. (See "Right")

8. Once the Camera is fixed, the DMS camera angle can be adjusted up and down. Enter the DMS calibration interface, and select the driver's orientation (left- or right-hand drive).

9. The DMS camera angle can be adjusted through the operation in Figure A so that the driver's face is near the centre of the driver's seat box area. The adjustment of the DMS camera is complete as shown in Figure B.
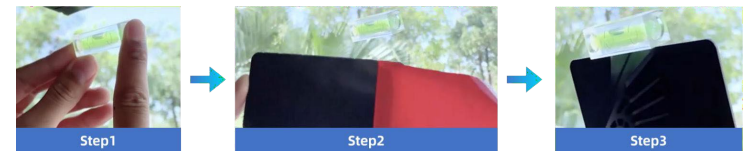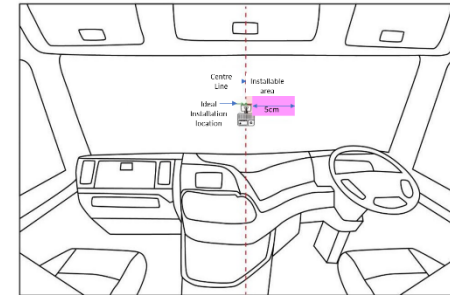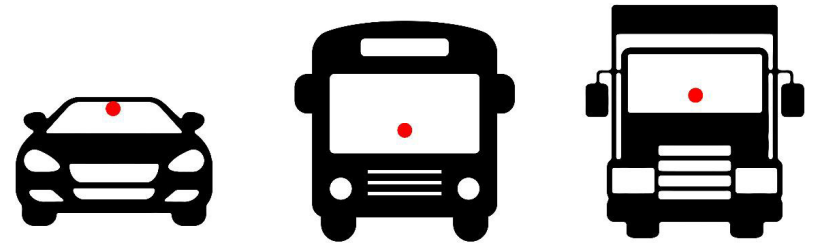

Centre Line — Installable area
Ideal installation location — 5cm

Step1 — Step2 — Step3

Screw for Spindle

Adjusting Screw for DMS camera

Figure A.
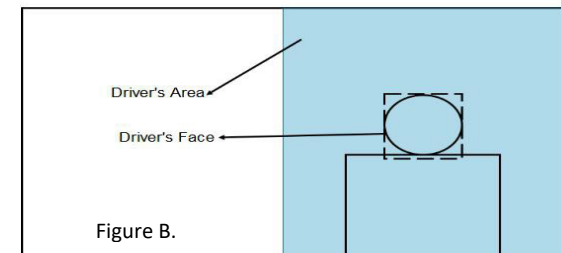

Driver's Area
Driver's Face

Figure B.

Additional Precautions

1. **Cleaning the surface of the windshield:** Use a non-fibre shedding cloth with alcohol to clean the mounting surface. Ensure the surface is dry and avoid dust, grease or water on the surface and allow the surface to dry thoroughly before installation.

2. **When placing the spirit level:** it should be placed on the upper end of the installation position, and keep the bubble located in the middle of the spirit level. The bracket should be placed tightly against the spirit level, and it should be pressed firmly after pasting to reduce air bubbles and improve the fit.

3. **Before installing the machine:** Insert the SIM card, TF card, etc. into the corresponding card slot. Find the vehicle's corresponding constant power, ACC, and GND line, and then connect the power supply. Then, all prompt lights are normal, and APP [VehicleViewer] can be logged in. SIM card, TF card, and each module can work typically.

INSTRUCTIONS FOR USE
SOFTWARE DOWNLOAD AND INSTALLATION

Android phone users search on Google Play Store for "Vehicle Viewer" and iOS phone users please search "Vehicle Viewer" in the App Store. After downloading, install.

System Login

1. Before connecting the device, please turn on the Wi-Fi switch on your phone. After the device is powered on, search and connect to the Wi-Fi hotspot of the device, then connect VehicleViewer. At this point, you can use the software on your phone to operate.

2. Search for the device's Wi-Fi hotspots and connect it: the SSID name of the device hotspot is prefixed with "WFD-" followed by the device's serial number (password: ap12345678), as shown in the figure below.

3. After successfully connecting to the device, the APP displays the login interface as shown "Right".

    a. Click on Device to enter.

    b. Enter the username and password. Click "Login"

    c. The default in "admin" and the password is "123"

    d. Click on CMS Server to enter the server interface.

Click on the upper right corner to select and check language information and APP version information, as shown "Right".
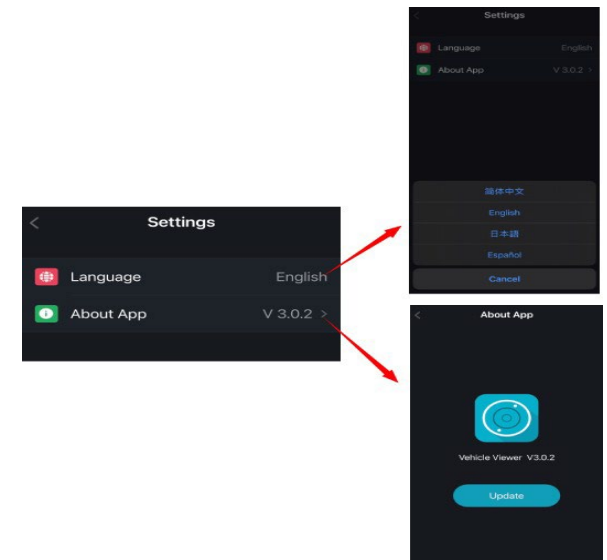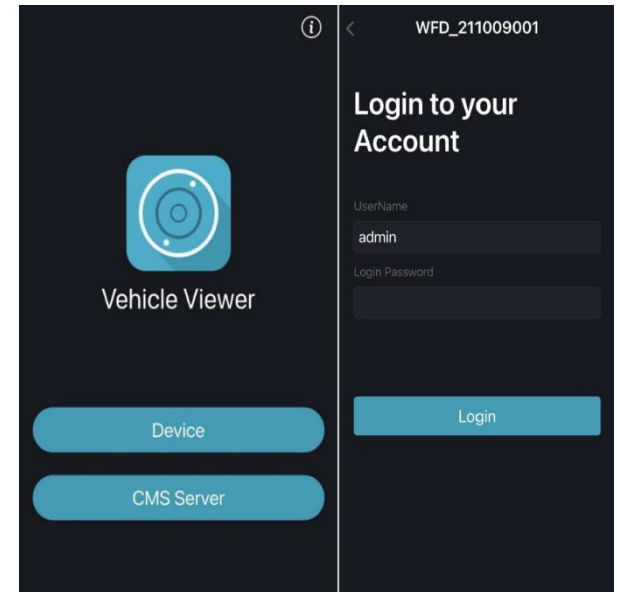
After clicking on the device's direct connection, select the corresponding device and the main menu will display as well as a pop-up calibration reminder.
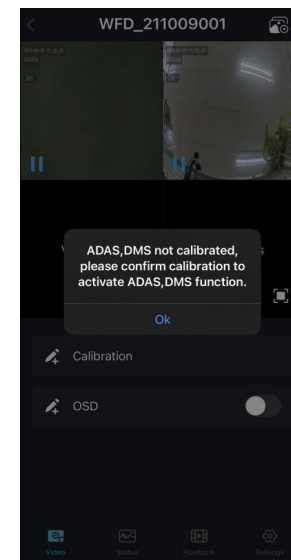
PREVIEW INTERFACE DISPLAY

1. **Channel screen display:** Double-click to zoom into a single channel screen. When in a "small view", it is displayed in standard definition. On zooming in, it will automatically switch to high definition display.
2. **Full screen button:** Click this icon to play in full screen.
3. **Calibration button:** ADAS and DMS calibration can be performed here, as shown right.

ADAS Calibration: Before starting the algorithm function, parameter calibration can be performed as shown "Right".

Measure the camera installation height with a calibration pole. Click the up and down arrows in the calibration interface to adjust the blue calibration line to coincide with the vanishing line of the road. Click to confirm and exit the calibration interface.
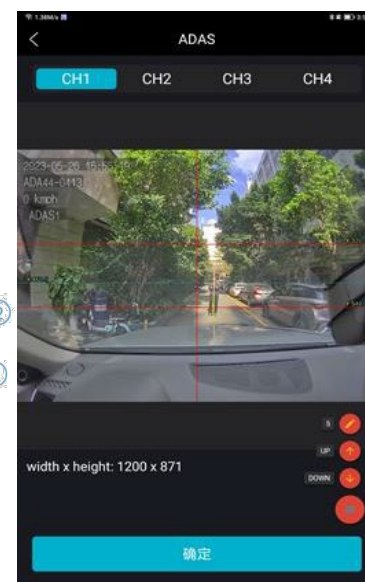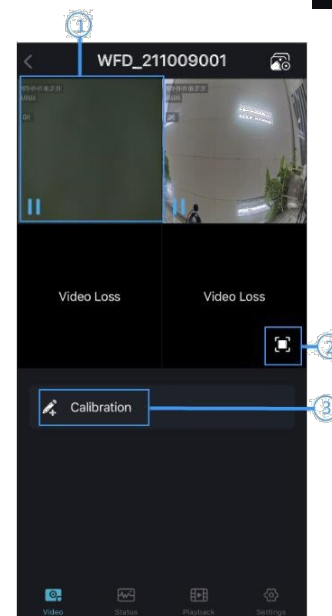
DMS Calibration

Before starting the algorithm function, parameter calibration can be performed. The DMS calibration process is shown "Right".

Enter the calibration mode, select DMS mode and then the driver's seat position (left or right). After entering the calibration interface, the driver to look straight ahead and click start calibration. The interface will display the calibration angle in real-time.

When the calibration angle is within the specified range, left seat, -50° to 30°; right seat: -30° to 50°; a voice will confirm successful calibration. If not, "too right" or "too left" voice is sounded. This means that the angle between the driver's face and the camera's lens is too great.

When the vehicle's speed reaches 40km/h or above for at least 10 minutes, the system will start the automatic calibration program.

Device Status Check

The device status can be viewed on the webpage shown "Right" including: Camera, disk, Wi-Fi and network connection.
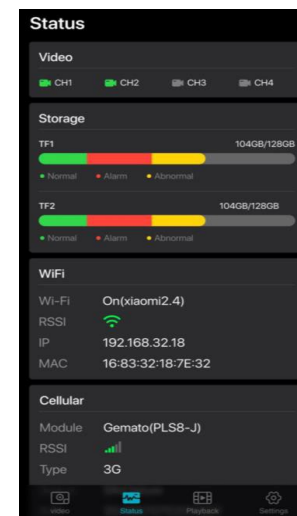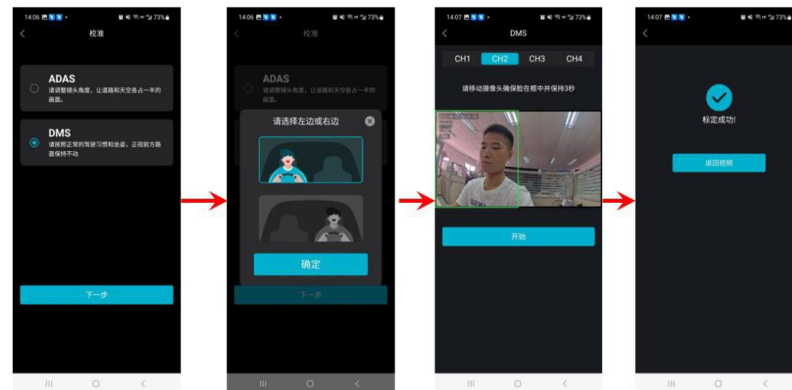
Video Playback

When a memory card is inserted in the device, you can view the playback video via this interface . As shown "Right".

Video files can be played back using the playback button at the bottom of the page as shown "Right". There is an option of "Normal Files and "Event Files". Select each required file to play or download.

PARAMETER SETTINGS
**The main functions include:**

- Record
- Display
- Network
- System
- Preview mode
- Disk
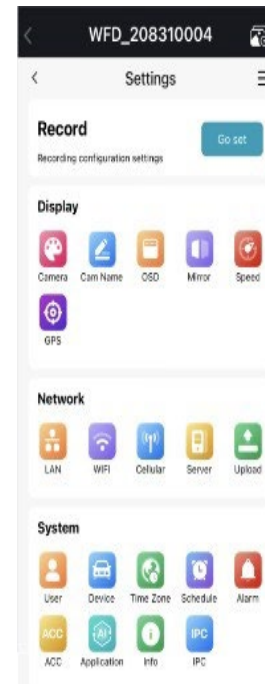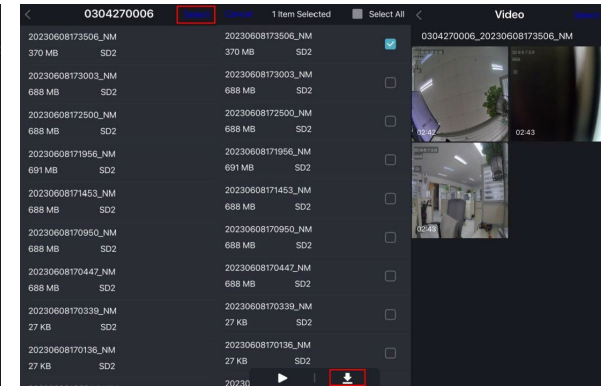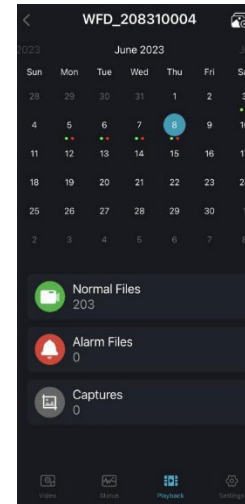
Record

1. **Power Rec:** When set to On, the device will automatically start recording after rebooting. When set to Off, the device will not automatically start recording after rebooting.
2. **Cyclic Rec:** When set to On, once the disk is full, the new video files will automatically overwrite the oldest video files.
3. **Event Duration:** When an Event occurs, Event recording will start for a pre-determined duration set between 5-180-sec. (Default 5-sec.)
4. **Event Rec: Event recording types include:**
   a. Motion detection
   b. G-Sensor
   c. Emergency button
   d. Overspeed alarm
   e. DMS detection
   f. FCW detection
   g. PDS detection
   h. LANE departure detection
   i. Alarm input 1 ~ 4
   Event Rec is On by default. If Event Rec Lock is On events will not be overwritten when Cyclic Record mode is set to On.

   Filter Time: As shown "Right" If the same alarm is re-triggered again within 60-sec a "new" event will not be generated. If the same alarm is re-triggered after 60-sec a "new" event will be generated. The filter time ranges from 1-300 sec. (default 60-sec).
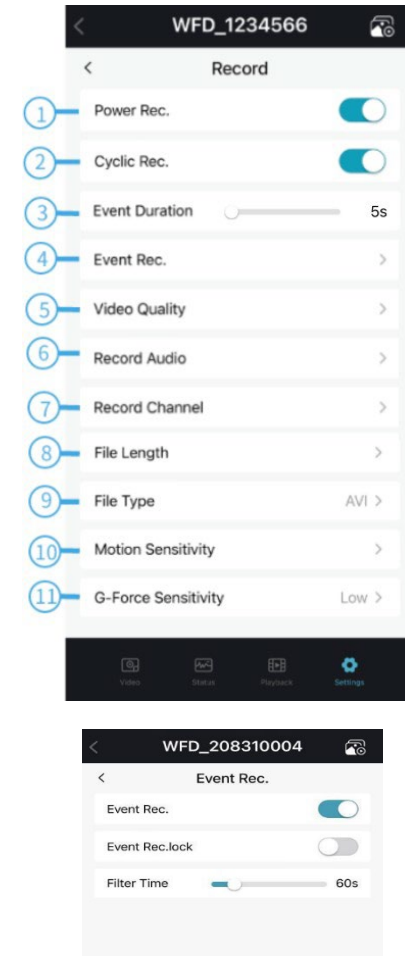
5. **Video Quality:** The device's Mainstream is used for video storage. The SubStream is used for network transmission.
The default configuration for Mainstream, SubStream and JPG are shown below.

CH1	Main Stream	Sub Stream	JPG
Resolution	2K	D1(NTSC)	/
Bitrate	10Mbps	512Kbps	/
Framerate	20fps	15fps	Low
CH2	**Main Stream**	**Sub Stream**	**JPG**
Resolution	1080P	D1(NTSC)	/
Bitrate	6Mbps	512Kbps	/
Framerate	20fps	15fps	Low
CH3	**Main Stream**	**Sub Stream**	**JPG**
Resolution	1080P	D1(NTSC)	/
Bitrate	2Mbps	512Kbps	/
Framerate	20fps	15fps	Low
CH4	**Main Stream**	**Sub Stream**	**JPG**
Resolution	1080P	D1(NTSC)	/
Bitrate	4Mbps	512Kbps	/
Framerate	20fps	15fps	Low

6. **Record Audio:** Select the channel you wish is to record audio, the audio for that file will be linked to that video file. If a channel is not selected, that channel will not record audio.

7. **Record Channel:** Select the channel you wish is to record video. If a channel is not selected video will not be recorded on that file.. **Note:** This configuration only applies to "regular" recordings and not to "Event" recordings. A "trigger" event recording, all channels will be recorded.

8. **File Length:** The default recording file length for an AVI format is 5-mins. The length can be set at either 5-mins, 10-mins, 15-mins.

File Type	File Length
AVI	5-mins, 10-mins, 15-mins

9. **File Type:** Video file format selection : AVI

10. **Motion Sensitivity:** When an object movement exceeds the preset motion detection sensitivity levels it will record for one of the predetermined above durations. In addition a fixed 10-sec pre-event recording will also take place. The Total length of video file = length of pre-recorded file + length of file (configured by Event Duration). If Motion Sensitivity is set to Off, motion detection alarm recording will not be triggered. Motion Detection sensitivity has three options, Low, high, off.

G-Force Sensitivity: Preset sensitivity level at which a G-Sensor recording will take place. (G-Sensor acceleration / gyroscope). Recording will occur for one of the predetermined above durations. In addition a fixed 10-sec pre-event recording will also take place.
If the G-Sensor triggers are set to Off, a triggered event recording will not take place. G-Sensor sensitivity has three options, Low, high, off.
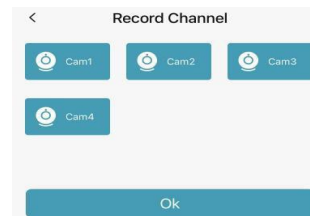
DISPLAY SETTINGS

1. Camera
2. Cam name
3. OSD
4. Mirror
5. Speed
6. GPS

Camera

The default settings for each camera channel is shown below. (Channel 4 is the extended IPC channel and the camera parameters cannot be changed.)

Camera Display	Minimum Value	Maximum Value	Default Value
Brightness	0	99	50
Contrast	0	99	50
Saturation	0	99	50
Hue	0	99	50

Cam Name

An individual name can be given to each camera, that can be displayed on the image and screen.

Click the button corresponding to the relevant camera in the menu and a "keyboard" will pop-up.

Note: The camera name cannot be empty and any name has a max of 8-chanracters.
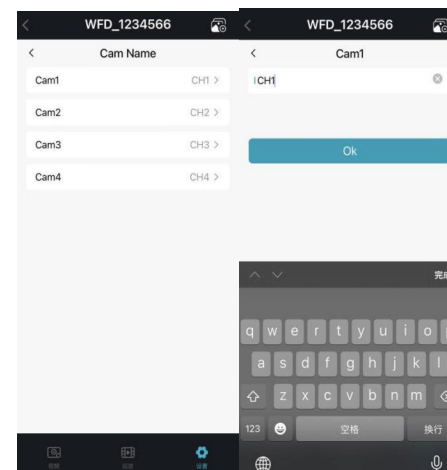
OSD

You can set the OSD so that the cam name, license plate No. Timestamp, and Speed, are displayed and embedded on the video for playback.

Mirror

Mirror: Once set to On, the corresponding channel will flip horizontally. Set to off, the corresponding image will be shown as normal.
Flip: Once set to On, the corresponding channel will flip vertically. Set to off, the corresponding image will be shown as normal.
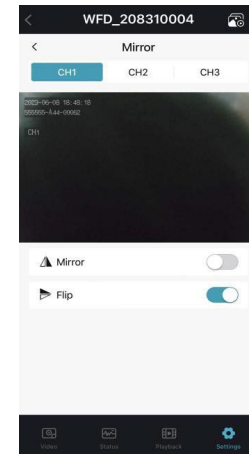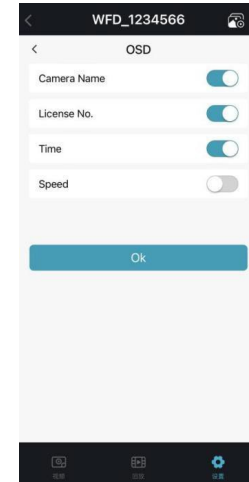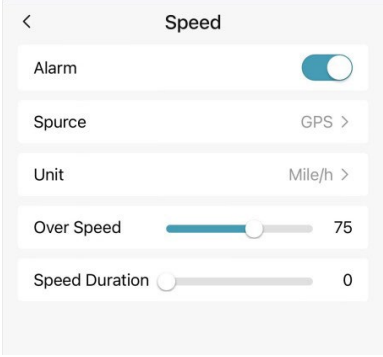
Speed

Source: The speed data for the speed alarm comes from the GPS unit.

Units: Listed as Km/h or Miles/hr

Over Speed: If the vehicle's speed exceeds that set in the "Overspeed" a speed alarm will trigger. While the duration, refers to how long the vehicle was over speeding before the alarm in triggered.

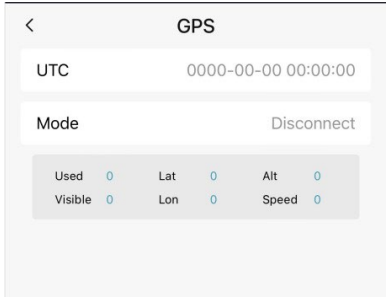| Over Speed	Minimum Value	Maximum Value	Default Value
Km/h	0	200	120
Mile/h	0	125	75

GPS

This will record latitude, longitude and speed in the video file. The menu displays the GPS information above as well as satellite detection, and reachable satellites.

Mode:

- GPS connection status. **Used:**
- Number of available satellites: **Visible:**
- Number of searchable satellite. **Lat:** Latitude.
- Altitude.
- **Speed(km/s):** Current speed
- **UTC:** UTC time (Universal Time Coordinated Time).

NETWORK SETTINGS

- LAN
- Wi-Fi
- Cellular
- Server
- Upload

LAN

- **DHCP:** Dynamic Ip Switch, when the switch is On dynamic IP is enabled. When set to Off, Static IP is enabled, where the IP address, Subnet and gateway addresses need to be added manually. The MAC address can be automatically assigned or modified.

- **IP:** Set the Dashcam IP address.

- **MASK:** Set the subnet mask for AI Dashcam.

- **GATEWAY:** Set up the gateway for AI Dashcam.

- **MAC:** Set the physical address
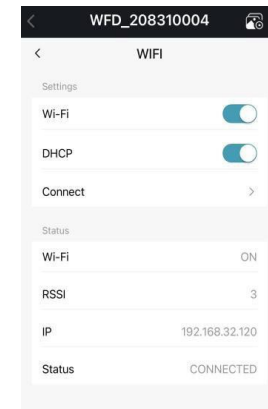
Wi-Fi Network Settings

- **Wi-Fi:** On/Off

- **DHCP:** Dynamic Ip Switch, when the switch is On dynamic IP is enabled. When set to Off, Static IP is enabled, where the IP address, Subnet and gateway addresses need to be added manually. The MAC address can be automatically assigned or modified.

- **Connect:** Wi-Fi connection, including SSID and Passwords

- **SSID:** List of Wi-Fi hotspots that can be searched by AI Dashcam. If there is no list, manually enter the Wi-Fi name.

- **Password:** Wi-Fi password

- **Status:** Wi-Fi connection status display
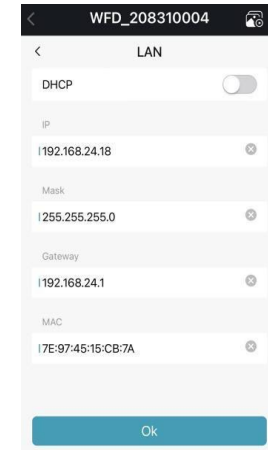
Cellular network Settings

- **Cellular:** 2G/3G/4G switch, turn on the switch to start.
- **APN:** The Access Point Name (APN) can use the default value and does not require a username and password. If the default value cannot connect to the internet correctly, please consult your local service provider.
- **Username:** Enter the username setting provided by the operator.
- **Password:** Enter the password setting provided by the operator.
- **Status:** Wi-Fi connection status display
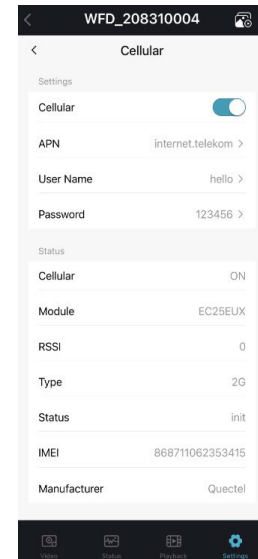
Server Settings

- **Status:** Server connection status display
- **Server IP:** The IP address of the server, the default server IP for LAN, Wi-Fi, and Cellular is 183.233.190.23.
- **Port:** Server port number
- **Server 1:** Domain settings. When set to ON, you can manually enter the domain name in the input box below.
- **Server 1-IP:** IP address of Server 1.
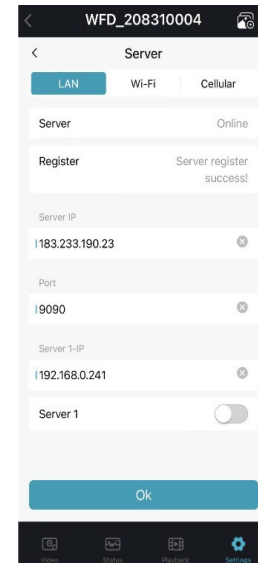
File Update
Upload Files: On/Off
Normal Files: Off/On

- **Off:** In addition to normal recordings, alarm and scheduled recording files will not be uploaded.

- **On:** Upload all video files (including regular recordings).

Cellular: Off/On

- **Off:** When cellular is connected, uploading files are not allowed. Uploading will only occur when connected to a wired or Wi-Fi network.

- **On:** When cellular is connected, uploading files are allowed. When the status is changed to On, a pop-up will prompt "Network flow consuming, continue?" Click OK to confirm. Transferring video files via cellular will consume a large amount of data.

Uploading: Displays the video file uploading progress.
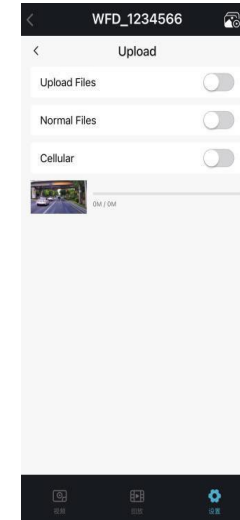
SYSTEM SETTINGS

- User
- Device
- Time Zone
- Schedule
- Alarm
- ACC
- Application
- Info
- IPC

Login Settings
User: Set username and password to enter the menu. The initial password is 123.
Guest: Set username and password for visitors to access the menu. The initial password is 321.

License Plate Number Setting
License NO. : License Plate Number Setting
Device ID : Device ID number, this ID number does not support user Customization.
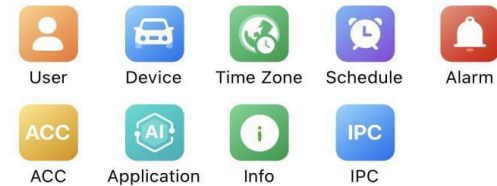**Voice :** Volume adjustment: The minimum volume is 0, the maximum volume is 10, and the default value is 8.

System Time Setting
Date: Set the system date
Time: Set the system time
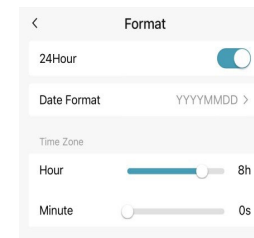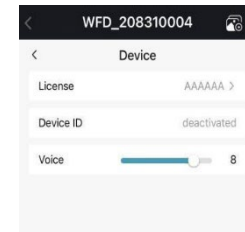
Format: Set the Time zone setting
24 Hour: If enabled, the time format will be displayed in the 24-hour system format. If disabled the time will be displayed in the 12-hours format.
Date Format: Date display format, "YYYYMMDD" is displayed as "year-month-date", "MMDDYYYY" is displayed as "month-date-year".
Hour & Minute: Time zone setting are accurate to minute

.

Hour & Minute	Minimum Value	Maximum Value	Default Value
Hour	-12	14	8
Minute	0	59	0

Time Sync: Time Synchronisation
GPS: Turn on or Off GPS time synchronisation
NTP: Turn on or off NTP time synchronization.
NTP Server: Display the URL of the NTP server.

Use Case	Instructions
GPS : Off and NTP : Off	Set the time zone and daylight saving time first, then set the date and time.
GPS : On or NTP : On	Time zone and daylight saving time must be set, date and time do not need to be set.

Note: When "Time Sync" → "GPS" or "Time Sync" → "NTP" is set to On, the time zone and daylight saving time must be set. If the time zone is not set, GPS and NTP will change the system time to the default East Zone 8 time, resulting in an abnormal equipment time.

DST: Daylight saving time setting
DST: Set DST to ON/OFF. The default is OFF, as shown in the figure above when set to ON.
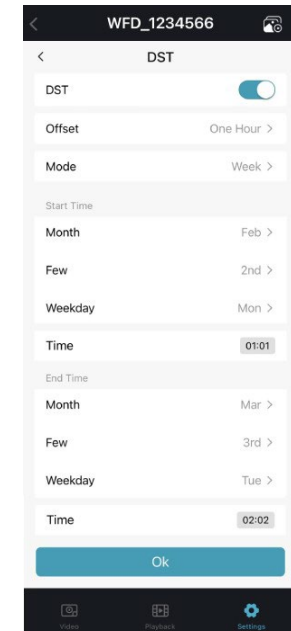**Offset:** Adjust the offset for 1 hour or 2 hours after enabling DST.
Mode: Select the DST mode (set DST by week or day).
Start Time: Set the DST start time.
End Time: Set the DST end time.

Scheduled Recording
Schedule:

- Supports scheduled video recording for up to 4-time periods. The minimum unit for recording is in minutes.

- Video record time can overlap.

- The end-time of a schedule must be later than the start-time.

- Click on each Schedule time to enter the start and end time settings, as shown "Right".

Start Time: Set the start time for schedule recording.
End Time: Set the end time for the schedule recording.
Weekday Days: Set scheduled recording on weekdays. Select the weekdays for scheduled recording.

ALARM SETTINGS
Alarm1 ~ Alarm4: Custom alarm recording
Trigger Level: There are three options, Low, High, Off. Low is generally use for debugging, High to enable alarm function in practical applications. Off means the alarm trigger function is Off.
Output Duration: The duration of "Display", "Cursor", "Alarm Out". The Output duration options are: 0-sec, 5-sec, 10-sec, 30-sec, 60-sec, 5-min, 10-min 30-min, 60-min, always.
Output1/2: Alarm output, when set to On, triggers an alarm and outputs a high-level.
Buzzer: Set the buzzer, the default alarm will sound for 5-sec.
Alarm Rec: Alarm recording switch, recording duration is set in [Record] → [Event Duration].
Priority: Set the priority of Alarm1 ~ Alarm4, drag to switch the priority order. When different types of alarms are triggered simultaneously, the alarm with the highest priority will work first.
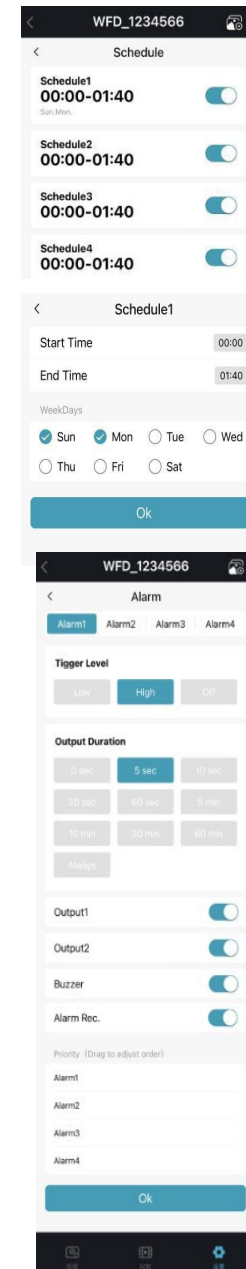
ACC SETTINGS

Current voltage: The current voltage of the Dashcam.
Shutdown: The Dashcam will automatically shut down when the current voltage is below, the selected Shutdown Voltage. It will restart once the voltage is higher than this value.
Duration: The Dashcam will continue to record for a period after the ACC is disconnected. The ACC delay time can be set between 5-Sec ~ 60-min.

ACC	Minimum Value	Maximum Value	Default Value
Shutdown Voltage(V)	9	24	10
ACC Duration(s)	5	360	5

- **Application Settings**

AI: Select the AI mode, click setup to enter the configure algorithm function interface. Channel 1 is set to ADAS by default and Channel 2 is set to DMS by default. Each channel needs to be manually enable to work.

- **ADAS**

Calibration: Perform the calibration before activating the algorithm function.
FCW: Forward collision warning algorithm.
   FCW: Front collision warning algorithm switch
   Audio Crash: Voice alarm switch, set to On, for a voice prompt. Set to Off to disable the voice prompt.
PDS: Pedestrian detection system algorithm.
   PDS: Pedestrian detection system switch.
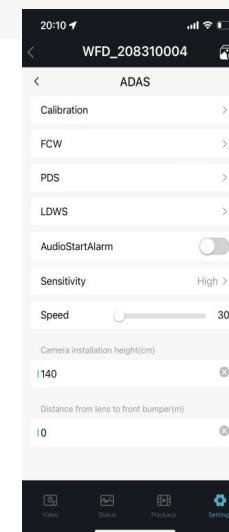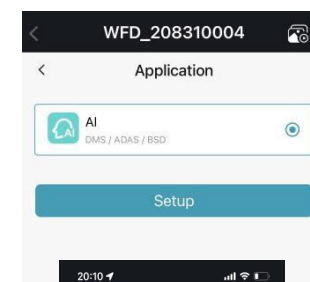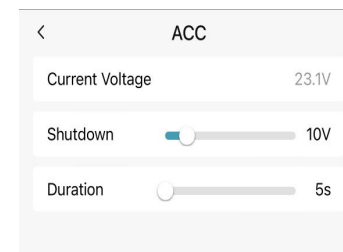   **Audio Passerby:** Voice alarm switch, set to On, for a voice prompt. Set to Off to disable the voice prompt.
LDWS: Lane departure warning system algorithm.
   Lane: Lane departure warning system switch.
   Audi Skew: Voice alarm switch, set to On, for a voice prompt. Set to Off to disable the voice prompt.
   Speed: Set the working speed for lane departure alarm. If set to 60, the Lane.

Sensitivity: There are three sensitivity levels; Low, Medium, High. The default is low.

Speed: Set the FCW working speed value. When set to 30, the FCW algorithm will only be activated when the vehicle speed is faster greater than or equal to 30km/h. The default value is 30.

Height: Installation height, The device is installed in front of the windscreen ant a height of approx. 1.4m from the ground.

Distance from lens to front bumper: Distance from lens to front bumper

- **DMS**

Face Recognition: Turn on the PowerFaceCheck switch, the system will open the face recognition login each time the vehicle engine is switched on.

DMS Config: Driving Monitoring System can be set to open or closed, and the interface displayed after opening is as follows.
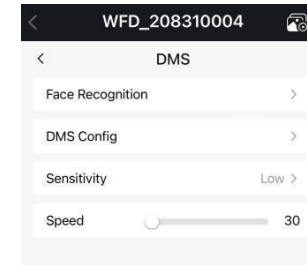
DMS Alarm Type Selection and Default Configuration

Alarm Type	Function	Function
Fatigue	When On, an alarm recording and voice broadcast will trigger when the driver's fatigue behavior is detected.	When Fatigue is OFF, it will not trigger fatigue alarm
Distraction	When On, an alarm recording and voice broadcast will trigger when the driver's distracted behavior is detected.	When Distraction is OFF, it will not trigger Distraction alarm.
No Seatbelt	When On, it will trigger an alarm recording and voice broadcast when the driver is detected not to take the seatbelt.	When No Seatbelt is OFF, it will not trigger No Seatbelt alarm
Smoking	When On, an alarm recording and voice broadcast will trigger when the driver's smoking behavior is detected.	When Smoking is OFF, it will not trigger Smoking alarm
Calling	When On, an alarm recording and voice broadcast will trigger when the driver is detected to making a call.	When Calling is OFF, it will not trigger Calling alarm
NoDriver	When On, an alarm recording and voice broadcast will trigger when the driver is detected to be off the seat.	When NoDriver is OFF, it will not trigger NoDriver alarm
Sunglass	When On, an alarm recording will trigger when the driver is detected wearing sunglasses.	When Sunglass is OFF, it will not trigger Sunglass alarm
Yawn	When On, an alarm recording and voice broadcast will trigger when the driver is detected yawning.	When Yawn is OFF, it will not trigger Yawn alarm
Shelter	When Shelter is ON, it will trigger an alarm recording and voice broadcast when camera occlusion is detected.	When Shelter is OFF, it will not trigger Shelter alarm
No Mask	When No Mask is ON, an alarm recording and voice broadcast will trigger when driver is detected not wearing a mask.	When No Mask is OFF, it will not trigger No Mask alarm
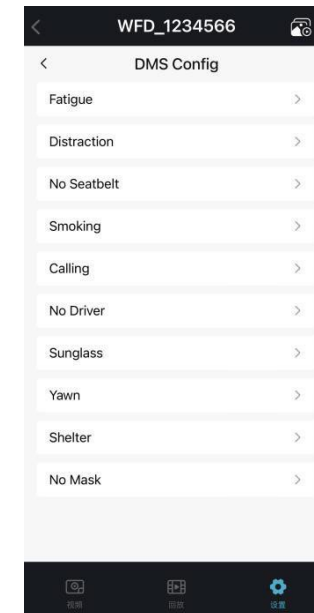
Function	Alarm/(Accuracy) Length/Accuracy /	Minimum	Maximum	Default
Fatigue	Time（s）	1	300	0
	Threshold	0	100	30
	Time limit	1	6	3
Distraction	Time（s）	1	300	0
	Threshold	0	75	35
	Time limit	1	9	5
NoSeatBelt	Time（s）	1	300	0
	Threshold	0	100	75
	Time limit	5	15	10
Smoking	Time（s）	1	300	0
	Threshold	0	100	35
	Time limit	0	5	2
Calling	Time（s）	1	300	0
	Threshold	0	100	55
	Time limit	0	5	3
NoDriver	Time（s）	1	300	0
	Time limit	1	30	15
SunGlass	Time（s）	1	300	0
	Time limit	5	15	5
Yawn	Time（s）	1	300	0
	Time limit	5	15	2
Shelter	Time（s）	1	300	5
	Time limit	1	20	20
No Mask	Time（s）	1	300	30
	Time limit	5	15	5

Sensitivity: There are three sensitivity levels Low, Medium, High, Default is Low.
Speed: Set the DMS operating speed value. When set to 30, the DMS algorithm will be started only when the vehicle's speed is greater than or equal to 30.

- **SYSTEM INFORMATION**
  Web UI Version: Software version.
  SYS Version: Device version number.
  MCU Version: MCU version number.
  Device ID: Device ID number.
  Machine Type: Machine type name.

  ### IPC Settings
  Configure the IPC function interface. After connecting the IPC, you can view the IPC image in the preview interface.

  Host IP: The default Host IP for the Dashcam is 192.168.88.1. The connected IPC must be within the same range as the MDVR. The Dashcam can connect to a maximum of 1 IPC channel.
  AUTO: When AUO is turned On, the IPC detected will be connected automatically. When set to On the following functions are not available: On, Clear, Add, Clear All and fast Setup.
  Fast Setup: Press the button to quickly connect all IPCS.
  Clear All: Press the button to clear all connected IPCs.
  Turn off AUTO, Click on the channel to enter single channel settings, as shown "Right".
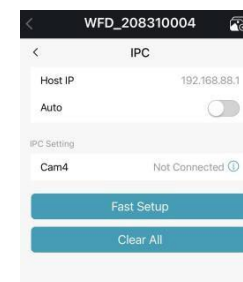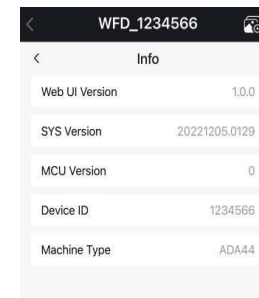
SPLIT MODE SETTINGS

Preview Mode – There are a total of 11 preview modes available as shown "Right".

Preview Mode

DISK SETTINGS

1. **SD: Disk Type**
2. **Disk Capacity bar:**
   a. **Green:** The size of all the video files in the "Normal" list
   b. **Red:** The size of all the video files in the "Alarm" list
   c. **Yellow:** The size of all the other files except those mentioned above.
3. **Format:** Press this button to format the disk. When the "Are you sure to format this disk?" Pops up, press "Confirm" to start formatting the disk.
4. **Disk Capacity:**
   a. The right-side value represents the total capacity of the storage on the disk.
   b. The left-side represents the used capacity of the video storage.
   c. If the right-side value shows 0.00MB, it means that the Recorder cannot access this type of disk.

Disk

FREQUENTLY Q&A

1) System cannot start?	Check power connection. Please follow the steps below. 1. Check the input power: Is the power cord correctly connected, is the ground wire is correctly connected, and is the power cord fuse intact. 2. Check if the voltage of the ACC signal line is greater than 6V. 3. Check if the input voltage of the device is higher than the shutdown voltage set in the Dashcam interface.
2) Dashcam restarts continuously?	Please follow the steps below for inspection: 1. Check if the power supply voltage of Dashcam is insufficient. If it is lower than the startup voltage of the device, the device will repeatedly start. 2. Restart Dashcam and see if it works properly this time.
3) Unable to recognize the disk?	1. Check if the disk itself is in good condition and ensure that it is installed and connected properly. 2. The disk has been formatted by AI Dashcam. 3. Restart AI Dashcam and see if it works properly this time.
4) Unable to recognize the camera?	1. Ensure that the camera is in good condition and connected correctly. 2. Re-connect all the wires (e.g.: DB44 cables and extension cables) between the camera and the device. 3. Restart Dashcam and see if it works properly this time.

Specifications

SCS-402801/D2I

SYSTEM	
Operating System	**Linux**
Operating Interface	Mobile APP/WebUI
Video Permission	Administrator & User setting

VIDEO	
Video Input	Built-in 2K+Built-in 1080P+External 2*1080P
Video Output	PAL: 25 fps
Compression	H.264/H.265
Resolution	2K/1080P/720P/D1

AI	
ADAS (Forward Facing Camera)	Lane Departure Warning, Forward Collision Warning, Pedestrian Detection Warning, Front Vehicle Start Warning,
Driver Management System (Rear Facing Camera)	Fatigue, Distraction, Yawning, No Driver, Not wearing seat belts, Mobile Phone calls, Smoking, Drinking, Camera blocking, Face Identification.

AUDIO	
Audio Input	Built-in Mic
Audio Output	Built-in Speaker
Record Format	Synchronised video and audio recording
Audio compression	ADPCM

STORAGE	
Video Bit Rate	64kbps ~ 10Mbps/channel
Audio Bit Rate	32kbps
Storage Consumption	56~2700MB/（channel*hour）
Disc Media	Micro SD card x 2, max 512GB*2

ALARM	
Alarm Input	6 Ch
Alarm Output	2 Ch

INTERFACE FOR COMMUNICATION	
RS232	1 CH
RS485	1 CH
CAN	2 CH
USB	1 CH

WIRELESS	
2G/3G/4G	Optional
Wi-Fi	2.4g
Wi-Fi Hotspot	Optional
GPS	Optional
G-Force	Six-axis sensors – Optional

ENVIRONMENTAL	
Operating Temperature	-30°C - +70°C, RH90%
Storage Temperature	-40°C - +80°C, RH90%
Shockproof range	6.3G

ELECTRICAL	
Input	10 – 32V DC
Output	12V @4A
Power Supply	< 8W
Materials	Plastic & With Black Rubber Painted

ENVIRONMENTAL	
Operating Temp/ Hum	-20°C ~ +70°C /80% RH

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