

DC20 - User Manual

Simple to use. Fast to act.



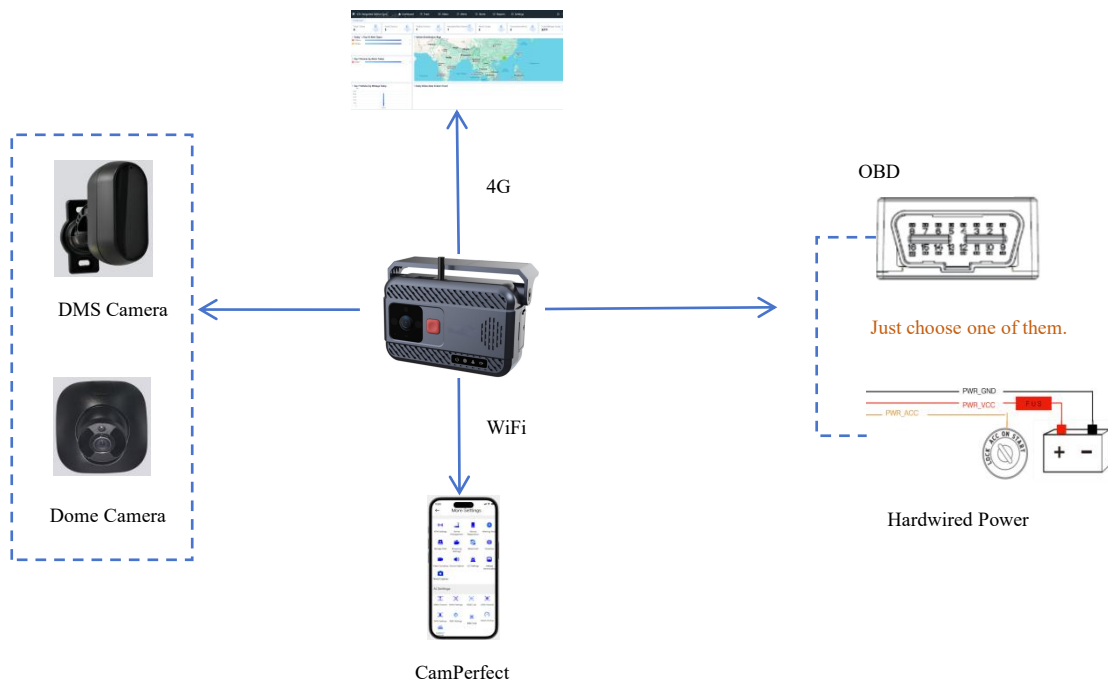
Table of Contents

1. Introduction	4
2. Mobile App Installation & Usage	4
2.1. App Installation	4
2.2. App and Device Connection	5
3. Quick Setup	5
3.1. Network Settings	5
3.2. Camera Preview	6
3.3. ADAS Cali	6
3.4. Gyro Cali	7
3.5. Device Status	7
4. Display & Output	7
5. More Settings	8
5.1. Network & Server	8
5.1.1. APN Settings	8
5.1.2. Server Management	8
5.2. Vehicle Configuration	9
5.2.1. Vehicle Registration	9
5.2.2. Working Mode	9
5.3. Recording & Storage	10
5.3.1. Storage Path	10
5.3.2. Streaming Settings	10
5.3.3. Watermark	11
5.3.4. Timezone & DST	11
5.3.5. Video Encoding	12
5.4. I/O & Power Management	12
5.4.1. I/O Settings	12
5.4.2. Voltage Abnormality	12
5.5. AI Configuration	13
5.5.1. ADAS Channel	13
5.5.2. ADAS Settings	13
5.5.3. ADAS Cali	15
5.5.4. DMS Channel	15
5.5.5. DMS Settings	16
5.5.6. BSD Settings	17
5.5.7. Device Volume	17
5.6. Driving & Safety Events	17
5.6.1. Harsh Driving	17
5.6.2. Collision/Rollover	18
5.6.3. Timed Capture	18
6. Device Maintenance & Advanced Operations	19

6.1. Device Status	19
6.2. Obtain Logs	19
6.3. Device Reset	19
6.4. Device Management	20
6.5. Text Command	20
7. Video & File Management	20
7.1. Historical Video	20
7.2. File Library	21
8. Important Notices	21
8.1. Camera Compatibility	21
8.2. Wi-Fi Activation	21
8.3. Repeated Device Restarts	21
8.4. Parameter Changes	21
8.5. Camera Installation	22
8.6. Storage Space Calculation	22

1. Introduction

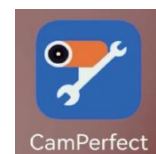
Welcome to the DC20. We're using the CamPerfect tool to assist. your smart companion for managing AI-powered 4G dashcams and MDVRs. Designed for both fleet operators and installation teams, the app lets you view camera feeds, set APN, IP, and ports, adjust video resolution, calibrate AI function, and configure all essential device settings — right from your smartphone. CamPerfect also simplifies installation and maintenance, helping technicians get devices up and running quickly with minimal effort.



2. Mobile App Installation & Usage

2.1. App Installation

You can download and install the app for free by searching for CamPerfect in the Google Play Store or the iOS App Store.



2.2. App and Device Connection

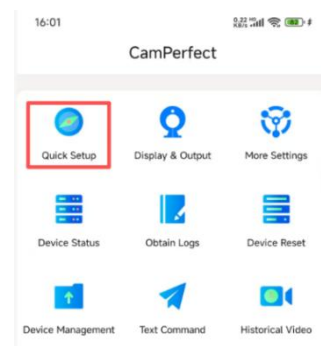
- a. After install the CamPerfect app, open the app and the homepage will show you how to connect to the device.
- b. Click the Connect WiFi button, and you will be redirected to the phone settings page. Select the WiFi hotspot sent by the device in the phone WiFi settings . The WiFi name is the device model + device SN number.
- c. WiFi Password: The default WiFi connection password is 12345678
- d. After connecting to WiFi , return to the CamPerfect app page. Click Connect WiFi again to enter the Home page of the app.

Note: If you cannot enter the Home page by clicking Connect to WiFi again after connecting to WiFi in the CamPerfect app , please try turning off the data service on your phone.

3. Quick Setup

The Quick Setup function is designed to streamline the installation process for technicians. By following the guided, step-by-step instructions, installers can rapidly complete the setup procedure.

If the basic settings (like IP and port) have already been pre-configured by the supplier before shipment, you only need to input the vehicle width, camera installation height, and the lateral offset from the vehicle's centerline.



3.1. Network Settings

Configure the target server IP, port, and SIM card APN settings.

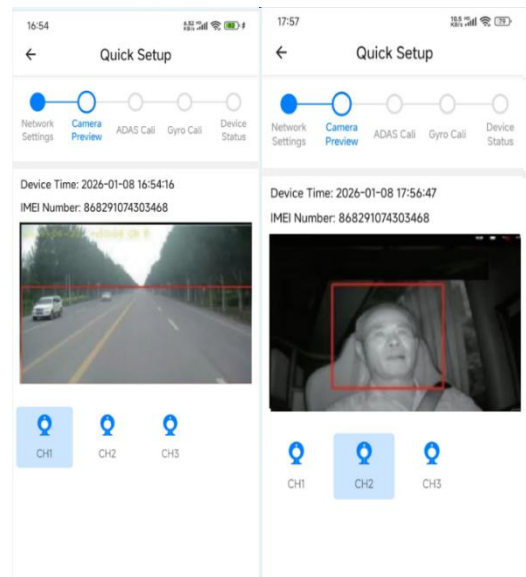


3.2. Camera Preview

Verify that the camera images are displayed correctly. This screen allows installers to adjust camera angles before securing them in place.

During installation, first attach the bracket to the windshield, then adjust the main unit to ensure the in-cabin camera angle is correct so that the driver is positioned in the vertical center of the frame. After that, adjust the forward-facing camera angle, making sure the sky and ground each occupy roughly half of the frame. Then use the included hex wrench to tighten the screw on the side of the main unit to secure and lock the ADAS camera position.

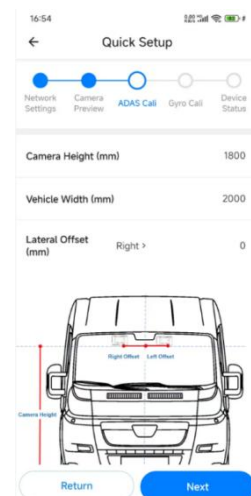
By default, the device supports 1080p cameras only. If a 720p camera needs to be connected, a specific command must be sent to the device. Please contact your supplier for assistance.



3.3. ADAS Cali

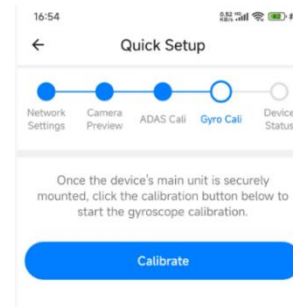
To ensure accurate ADAS performance, input the required installation parameters:

- Camera Height: Vertical distance from the ADAS camera to the ground.
- Vehicle Width: Distance between the outermost points of the tires.
- Lateral Offset: If the camera cannot be centered, specify the left or right offset and the exact distance. This is crucial for accurate calibration.



3.4. Gyro Cali

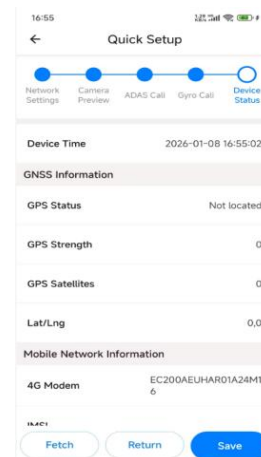
Calibrate the gyroscope while the vehicle is parked on level ground.



3.5. Device Status

Check the device's overall status, including GPS, 4G, recording, and server connection.

Note: Pay close attention to Server Information, Storage Information, and Recording Information. Confirm that the device is connected to the server, storage is correctly recognized, and recording is functioning. Reboot the device after installation to update its status.



Note:

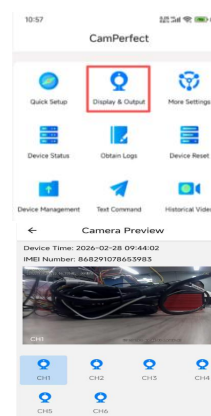
- Use Quick Setup to complete basic configuration. For ADAS, DMS, BSD and other AI function, as well as recording, storage path, streaming settings, watermark and timezone, go to [More Settings](#).
- Be sure to read the [Important Notices](#) section before completing installation.

4. Display & Output

The Display & Output menu includes:

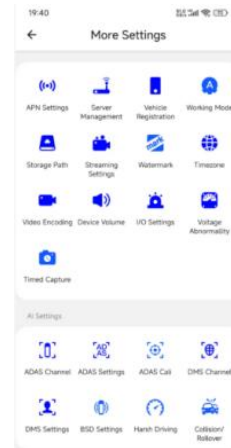
- Camera Preview
- Video Output (not supported by DC20)

Open Camera Preview to view live feeds from all connected cameras and verify the installation positions and angles.



5. More Settings

In the More Settings menu, you can configure and update all basic parameters and AI algorithm parameters.

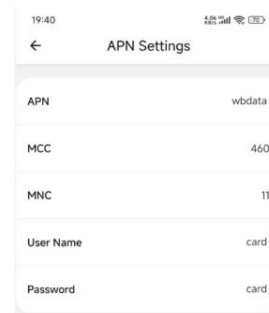


5.1. Network & Server

5.1.1. APN Settings

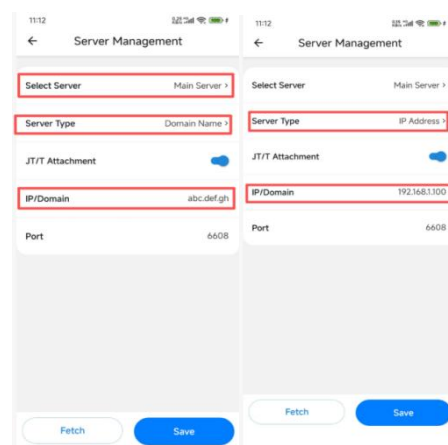
Configure cellular network parameters such as APN name, MCC, MNC, username, and password. **Proper APN configuration is required for network connectivity.**

Reboot the device to apply changes.



5.1.2. Server Management

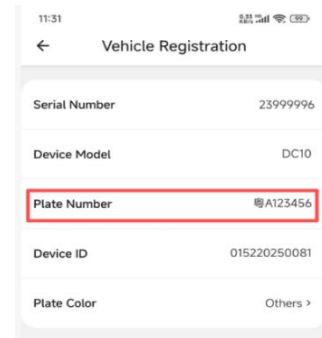
- **Select Server:** Choose the servers where the device will report data (up to six servers).
- **Server Type:** Select either Domain Name or IP Address.
- **JT/T Attachment:** This option specifies whether media attachments (e.g., images or videos) are included when AI alerts are uploaded to the configured server and port.
- **IP/Domain and Port:** Enter the server address and port number.



5.2. Vehicle Configuration

5.2.1. Vehicle Registration

- Enter the vehicle license plate number.
- All other parameters are preset by default and normally do not require configuration.



11:31

Vehicle Registration

Serial Number 23999996

Device Model DC10

Plate Number 粤A123456

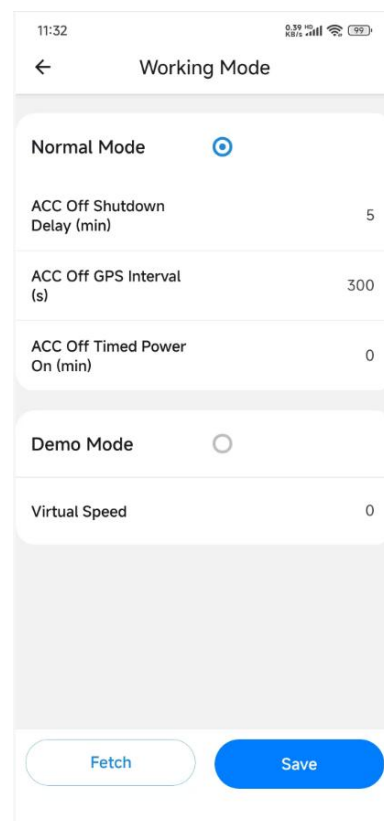
Device ID 015220250081

Plate Color Others >

5.2.2. Working Mode

- ACC Off Shutdown Delay (min): Time before the device powers off after ACC is turned off (default: 5 minutes).
- ACC Off GPS Interval (s): Interval for GPS data upload after ACC is turned off (default: 300 seconds).
- ACC Off Timed Power On (min): Time after ACC is off for the device to wake up automatically (default: 0).
- Demo Enter a virtual speed to simulate speed data for office AI testing.

Note: Always use Normal Mode for in-vehicle installation.



11:32

Working Mode

Normal Mode ☒

ACC Off Shutdown Delay (min) 5

ACC Off GPS Interval (s) 300

ACC Off Timed Power On (min) 0

Demo Mode ☐

Virtual Speed 0

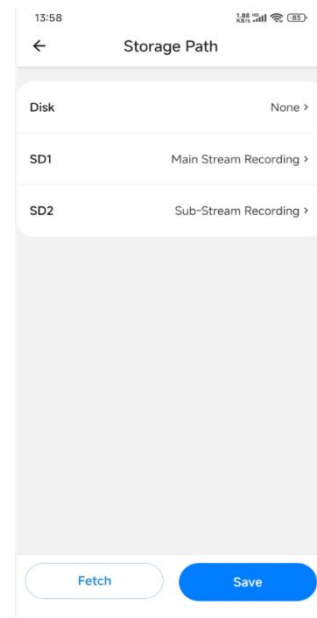
Fetch Save

5.3. Recording & Storage

5.3.1.Storage Path

Configure recording stream types and storage card usage.

- Select whether recordings use the Main Stream or Sub Stream; the DC20 supports two storage cards, SD1 and SD2.
 - SD1 records the Main Stream
 - SD2 records the Sub Stream
- Main Stream: High-quality video but shorter retention time.
- Sub Stream: Lower-quality video but longer retention time.
- Recommendation: Use two 128GB cards. If only one card is installed, disable the unused slot.

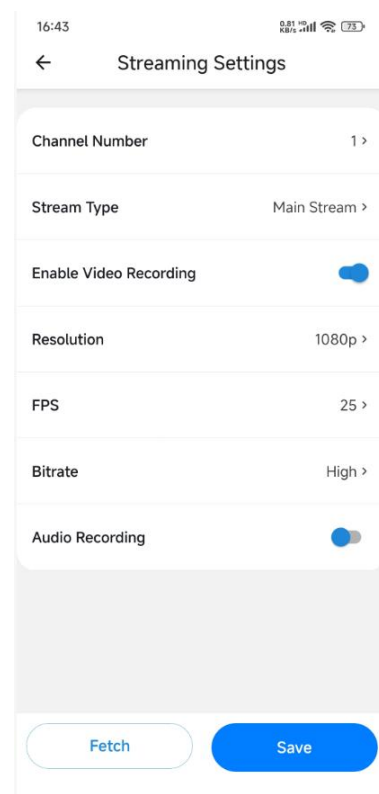


5.3.2.Streaming Settings

Configure parameters for up to 6 video channels:

- Main Stream/Sub Stream selection
- Enable/Disable recording
- Resolution, frame rate (FPS), bitrate settings
- Audio recording (requires a camera with audio input)

Note: Disable recording on channels without cameras to save storage. The device supports 1080p live streaming; for smooth performance, view one channel at a time with the Main Stream. With the Sub Stream, you can stream up to 3 channels simultaneously.



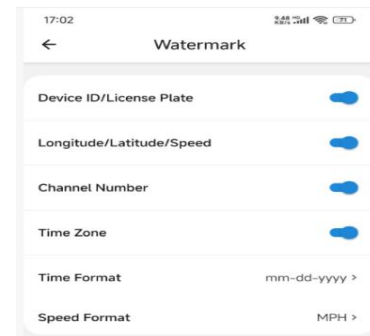
Default Settings

	Main-Stream			Sub-Stream		
	Resolution	FPS	Bitrate	Resolution	FPS	Bitrate
Channel 1	1080p	25	High	D1	15	Low
Channel 2	1080p	15	High	D1	15	Low
Channel 3	1080p	15	High	D1	15	Low
Channel 4	1080p	15	High	D1	15	Low
Channel 5	1080p	15	High	D1	15	Low
Channel 6	1080p	15	High	D1	15	Low

5.3.3. Watermark

Watermark information will be overlaid on recorded video. By default, all watermark items are enabled.

You can enable or disable the watermark display and customize the time format and speed unit.

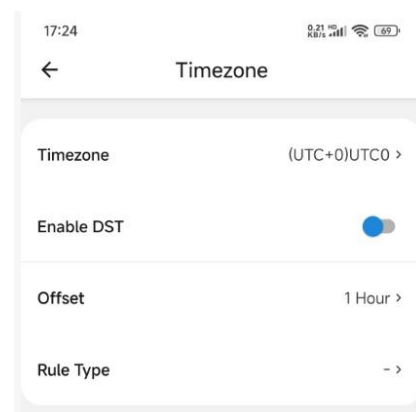


5.3.4. Timezone & DST

Configure the time zone and Daylight Saving Time (DST) for video watermarks.

- Default time zone: UTC+0
- DST is disabled by default but can be enabled if required.

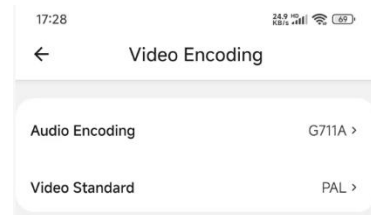
Note: The time zone setting only applies to the video watermark. All timestamps sent to the server remain fixed at UTC+0.



5.3.5. Video Encoding

Set the video standard and audio format for the camera:

- Default video standard: PAL
- If using an NTSC camera, change the setting in the Video Standard menu.



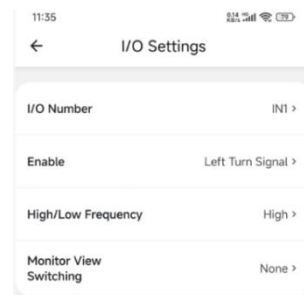
5.4. I/O & Power Management

5.4.1. I/O Settings

Configure accessories that support I/O signals.

Default assignments:

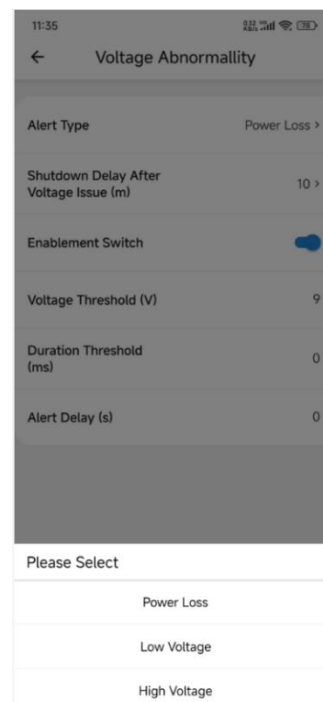
- IN1: Left turn signal
- IN2: Right turn signal



5.4.2. Voltage Abnormality

Configure Voltage Protection and Alarm Settings:

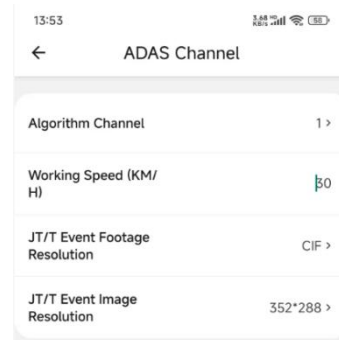
- Power Loss Alarm: Triggers below 9V, shuts down after 10 minutes. Enabled by default, with configurable threshold and delay.
- Triggers below 11V, shuts down after 10 minutes. Enabled by default, with configurable threshold and delay.
- High Voltage Alarm: Triggers above 30V, shuts down after 10 minutes. Disabled by default, with configurable threshold and delay.



5.5. AI Configuration

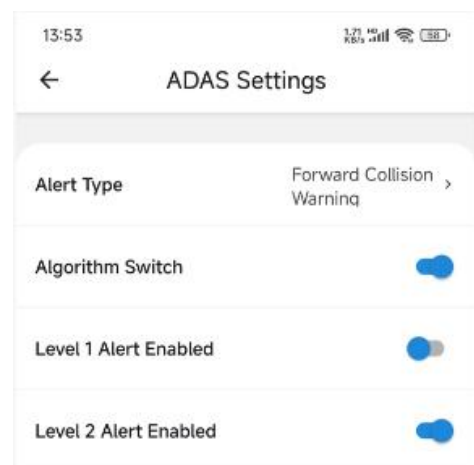
5.5.1. ADAS Channel

Configure the ADAS AI algorithm channel, including the initial speed threshold for all AI alerts, as well as the alert image format and resolution.



5.5.2. ADAS Settings

- Alert Type: Select the AI function you want to view or configure. Includes Forward Collision Warning (FCW), Headway Monitoring Warning (HMW), Lane Departure Warning (LDW), and Pedestrian Collision Warning (PCW).
- Algorithm Switch: Turn this AI function on or off.
- Level 1 Alert Enabled: Level 1 alerts are triggered when the AI function is active and the vehicle speed is above the minimum working speed but below a defined threshold (e.g., under 50 km/h). These alerts indicate lower-risk situations. Use this option to enable or disable Level 1 alerts for the selected AI function.
- Level 1 Alert Enabled: Level 1 alerts are triggered when the AI function is active and the vehicle speed is above the minimum working speed but below a defined threshold (e.g., under 50 km/h). These alerts indicate lower-risk situations. Use this option to enable or disable Level 1 alerts for the selected AI function.
- Level 2 Alert Enabled: Level 2 alerts are triggered when the AI function is active and the vehicle speed exceeds a defined threshold (e.g., over 50 km/h). These alerts represent higher-risk situations. Use this setting to enable or disable Level 2 alerts for the selected AI function.
- Level 1 Alert Attachment Switch: This setting



determines whether media attachments (such as one or three images, or a short video clip) are uploaded when a Level 1 alert is triggered for the selected AI function under the JT/T protocol.

- **Level 2 Alert Attachment Switch:** This setting determines whether media attachments (such as one or three images, or a short video clip) are uploaded when a Level 2 alert is triggered for the selected AI function under the JT/T protocol.

- **Event Upload Interval (s):** If this AI function is triggered too frequently, this setting defines the minimum interval (in seconds) between uploads. Repeated alerts triggered within this interval will not be uploaded to avoid redundancy.

- **Algorithm Sensitivity:** Adjust the sensitivity level of this AI function. Users can select the appropriate level based on their driving style and vehicle type.

- **Alert Trigger Interval (s):** The minimum time interval between two alerts triggered by this AI function. It is recommended to use the default value.

- **Alert Sound Interval (s):** If this AI function is triggered frequently, this setting allows you to mute repeated alert sounds within a defined time interval to improve the user experience. It does not affect event uploads to the cloud server.

- **Level 2 Alert Working Speed (km/h):** When using the JT/T protocol, this setting defines the speed threshold that differentiates Level 2 alerts from Level 1 alerts for the selected AI function. Level 2 alerts indicate higher-risk situations.

- **Pre/Post-Event Footage Length:** Specifies how many seconds of video to record before and after the AI event is triggered. For example, if set to 5 seconds, a total 10-second event clip will be saved.

- **Alert-Triggered Image Count:** Specifies the number of image attachments to be uploaded when this AI function is triggered. Image upload is disabled by default.

- **Alert-Triggered Image Interval (ms):** The time interval in milliseconds between each image captured when multiple images are triggered by this AI function.

Level 1 Alert Attachment Switch	☒
Level 2 Alert Attachment Switch	☒
Event Upload Interval (s)	20
Algorithm Sensitivity	Medium >
Alert Trigger Interval (s)	20
Alert Sound Interval (s)	20
Level 2 Alert Working Speed (km/h)	30
Pre/Post-Event Footage Length	5
Alert-Triggered Image Count	0
Alert-Triggered Image Interval (ms)	2

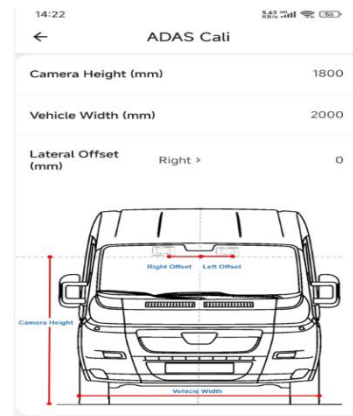
FetchSave

Default ADAS Settings

Function	Algorithm Sensitivity	Alert Interval	Working Speed
FCW	Medium	20 second	Above 30km/h
HMW	Low	20 second	Above 50km/h
LDW	Medium	20 second	1 ~ 30km/h
PCW	Medium	20 second	Above 55km/h

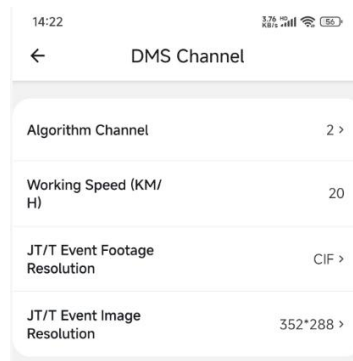
5.5.3. ADAS Cali

If the ADAS camera's position changes, use this screen to recalibrate camera parameters to ensure accurate ADAS alerts.



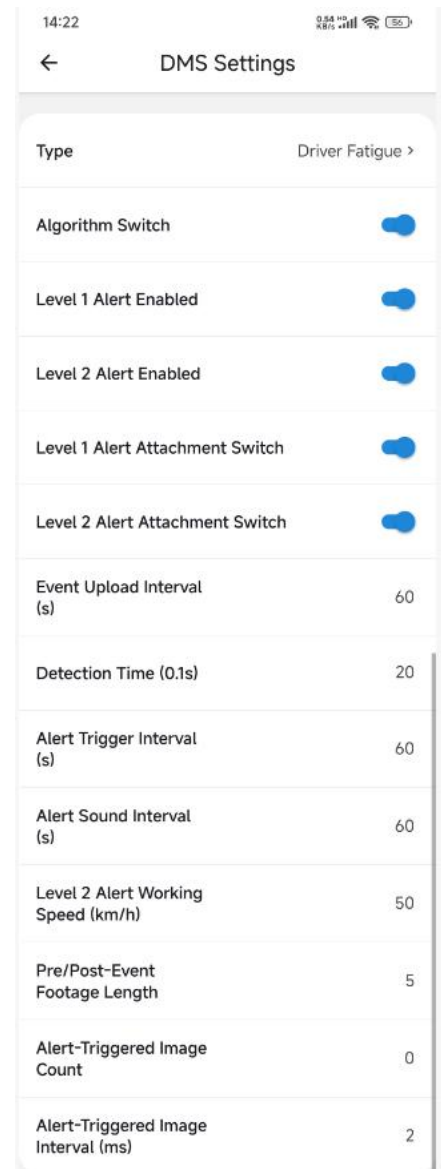
5.5.4. DMS Channel

Configure the DMS AI algorithm channel, including the initial speed threshold for all AI alerts, as well as the alert image format and resolution.



5.5.5. DMS Settings

- **Alert Type:** Select the AI function to configure, including Driver Fatigue, Driver Distraction, Smoking, Mobile Phone Use, Camera Occlusion, No Driver Detected, and Seatbelt Unfastened.
- **Algorithm Switch:** Enable or disable the selected AI function.
- **Level 1 Alert Enabled:** Enable or disable Level 2 alerts for higher-risk situations.
- **Level 2 Alert Enabled:** Enable or disable Level 2 alerts for higher-risk situations.
- **Level 1 Alert Attachment Switch:** Control whether media attachments (images or videos) are uploaded with Level 1 alerts.
- **Level 2 Alert Attachment Switch:** Control whether media attachments are uploaded with Level 2 alerts.
- **Event Upload Interval (s):** Set the interval for uploading alerts to the platform.
- **Detection Time (0.1s):** Set the minimum duration required to trigger an alert. For example, if the Detection Time for fatigue driving is set to 20, the driver must keep their eyes closed or be yawning for at least 2 seconds before the alert is triggered.
- **Alert Trigger Interval (s):** Set the cooldown period between consecutive alerts.
- **Alert Sound Interval (s):** Set the interval between local audio reminders.
- **Level 2 Alert Working Speed (km/h):** Define the speed threshold at which Level 2 alerts are triggered.
- **Alert-Triggered Image Count:** Specify how many images to upload when an alert is triggered.
- **Alert-Triggered Image Interval (ms):** Set the time interval between each image when multiple images are captured by the AI function.



Default DMS Settings

Function	Algorithm Sensitivity	Alert Interval	Working Speed
Driver Eye Closed	2 seconds	60 seconds	Above 20km/h
Driver Yawning	2 seconds	60 seconds	Above 20km/h

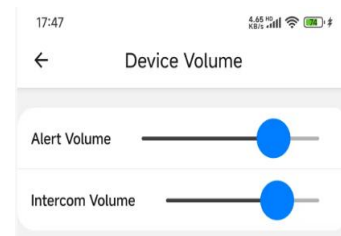
Driver Distraction	2 seconds	60 seconds	Above 20km/h
Driver Smoking	2 seconds	60 seconds	Above 20km/h
Driver Phone Use	2 seconds	60 seconds	Above 20km/h
Seat Belt Non-Fastened	10 seconds	300 seconds	Above 20km/h
No Driver Detected	120 seconds	3600 seconds	Above 20km/h
DMS Camera Obstructed	120 seconds	3600 seconds	Above 20km/h

5.5.6. BSD Settings

The BSD function is not supported at this time but will be available in a future update.

5.5.7. Device Volume

Adjust the device's audio output volume.

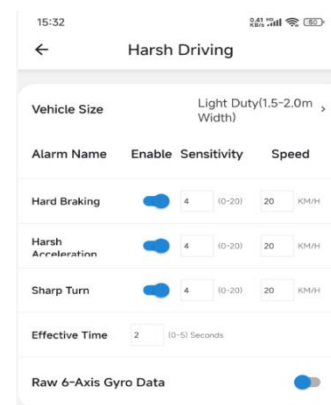


5.6. Driving & Safety Events

5.6.1. Harsh Driving

Configure aggressive driving detection parameters.

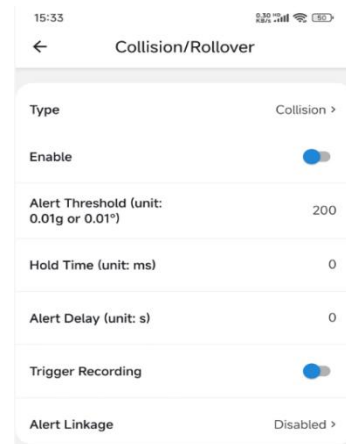
Default settings: Enabled, sensitivity 4, activation speed 20 km/h.



5.6.2. Collision/Rollover

Configure collision and rollover detection, including enable/disable settings, trigger thresholds, and whether video recording is triggered.

Default: Disabled.



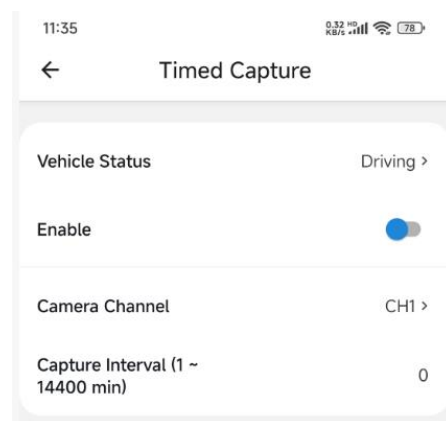
5.6.3. Timed Capture

Configure the automatic snapshot function.

Default: Disabled.

Snapshots can be configured separately for driving and parking states, including capture channel and interval.

Note: Snapshot images can only be uploaded to the main server.

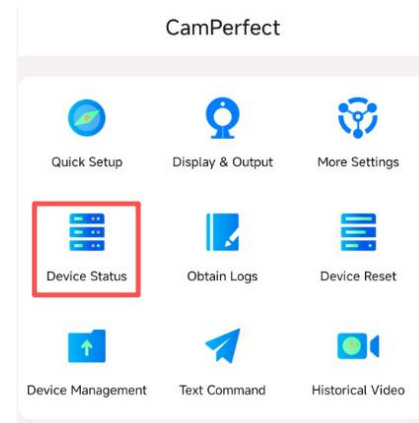


6. Device Maintenance & Advanced Operations

6.1. Device Status

View the current device status, including GPS, network, storage, server connection, and recording information.

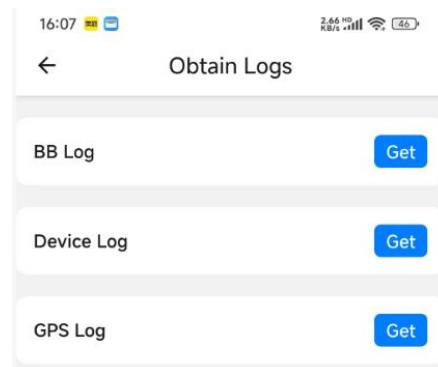
Note: Restart the device after configuring parameters to ensure the status displays correctly.



6.2. Obtain Logs

Generate logs for reporting issues to the supplier.

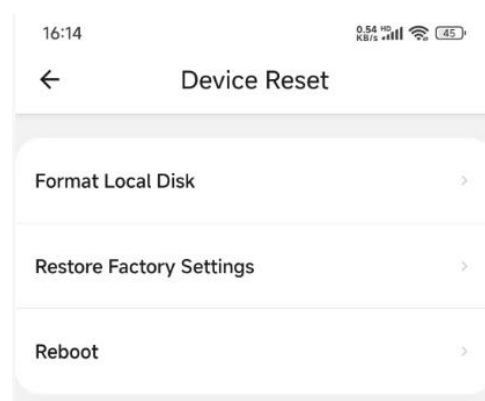
- Requires a storage card installed.
- Tap Get to automatically generate the log file.



6.3. Device Reset

Reset the device using the following options:

- Format Storage
- Restore Factory Settings
- Reboot Device



6.4. Device Management

Firmware Upgrade: Download the upgrade file to your device and select it to update the firmware.

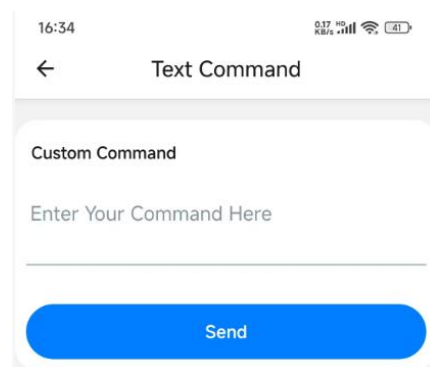
Config Import/Export: Insert an SD card, tap Export to save configuration to the card, then insert the card into another device and tap Import to update settings. The device will reboot after a successful import.



6.5. Text Command

For less common functions or parameters that can't be adjusted in the app, use text commands.

Contact your supplier for the specific commands.

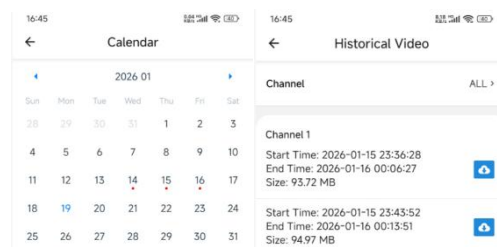


7. Video & File Management

7.1. Historical Video

Search for device historical videos by date. Available dates are marked with a red dot.

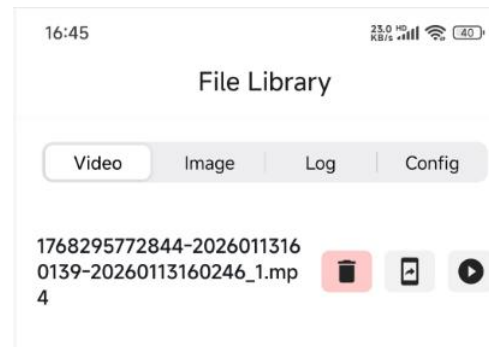
Videos can be downloaded to a mobile device for playback.



7.2. File Library

- Video: View downloaded historical videos.
- Log: View captured log files.

Files can be deleted or played using the buttons, or shared via the Share button (e.g., WhatsApp).



8. Important Notices

8.1. Camera Compatibility

- If channels 3–6 are enabled, ensure all cameras use the same resolution.
- Mixing 720p and 1080p cameras, or NTSC and PAL cameras, is not supported.

8.2. Wi-Fi Activation

- The device automatically turns on Wi-Fi when powered on.
- If no mobile app connects within 5 minutes, Wi-Fi will automatically turn off.
- To reactivate Wi-Fi, press and hold the one-key alarm button for 5 seconds.
- The device will provide a voice prompt confirming that Wi-Fi is on.

8.3. Repeated Device Restarts

- Repeated device restarts are often caused by SD card problems.
- To resolve, format the SD card on a computer or replace it with a new one.
- Use reputable SD card brands such as Metorage, SanDisk, JHL, Samsung, Toshiba, etc.

8.4. Parameter Changes

Restart the device after modifying any parameters to ensure the changes take effect.

8.5. Camera Installation

Before installing the camera:

- Remove the protective film.
- Avoid touching the lens with your fingers during installation.

8.6. Storage Space Calculation

The bitrate value can be obtained from the table; the query result unit is kbps.

Bitrate Resolution	1	4	8
CIF	600	300	90
HD1	640	320	200
D1	1026	512	320
720P	2048	1280	400
1080P	4096	2560	800

File Size (GB) $\approx$ Value (kbps) $\div$ 1000 $\times$ 0.45 $\times$ Recording Time (hours) $\times$ Number of Channels

Example:

For 2 cameras recording at 1080P with a bitrate of 1 , the file size for 24 hours of recording is 88.47 GB.

$$4096 \div 1000 \times 0.45 \times 24 \times 2 \approx 88.47 \text{ GB}$$

FCC Warning:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.