Brigade

AI Connected Dashcam

DC-204-AI Series

DC-204-AI(UK/EU) (7477)
DC-204-AI(NA) (7487)

Installation and Operation Guide

Please refer to www.brigade-electronics.com for the latest version of this document

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1 Introduction to DC-204-AI Series

Brigade's DC-204-AI Series are AI Connected Dashcams designed to record and playback various channels. Two channels are built into the dashcam: the road facing Advance Driving Assistance System (ADAS) camera and the driver facing Driver Safety Cockpit (DSC) camera.

The system uses Analog High Definition (AHD) television system. The resolution can be CIF, WCIF, HD1, WHD1, D1, WD1, 720P, 960P, 1080P or 1920P. 1920P is for the road facing ADAS camera only. Information related to recording parameters, alarms and trigger status can be recorded along with speed, location, and G-Force data. In addition, data related to the unit itself such as voltage are recorded and plotted graphically in MDR Software (MDR-Dashboard and MDR-Player). This information is called metadata.

Recordings can be searched, viewed, and exported (clipped and saved locally) using MDR-Dashboard software. This allows users to access all the vehicle's travel information, including route tracking. Recordings can be easily exported in three different formats:

1. **MP4** format: in this format the file is playable by consumer media players.
2. **Standard** format: when the footage is clipped, a folder structure is created which contains the video files in the original native proprietary format clips which can only be viewed using MDR-Dashboard/MDR-Player.
3. **Export** format: This creates a password protected executable (.exe) file with MDR-Player embedded in it.

The storage units for the AI connected dashcam are two micro-SD (Secure Digital) cards. They are set in the loop recording mode as default which means that both micro-SD cards record as mainstream and there is no back-up however, they have more storage capacity than if the recording mode were to be set to mirror recording mode. The mirror recording mode can also be set for the micro-SD cards, in this mode one micro-SD card is used for mainstream and the other for sub-stream recording. Mainstream is the main storage micro-SD card (slot 1 at the top see section 3.3) and sub-stream micro-SD card (slot 2 at the bottom, see section 3.3) acts as a back-up just in case something goes wrong with the main storage (mainstream) micro-SD card but mirror recording mode does not have as much storage capacity as the loop recording mode because the recordings are duplicated, see section 4.3.2.1 for details. The SD card stores video data and frame information only in chosen image resolution and frame rate. The standard micro-SD card availability that comes with the AI connected dashcam is 2x 128GB, however, 2x 256GB are available as optional parts.

Note: Only micro-SD cards supplied by Brigade Electronics PLC are to be used.

Mobile network and Wi-Fi settings found in this manual relate to all models currently available.

AI Connected Dashcams require connection to the server through mobile network therefore users are advised to subscribe to the Brigade Electronics BRIDGE Services to have access to the full capability of the device and benefit from seamless over the air firmware updates and unlimited access and monitoring of vehicle to which the dashcam is installed. The device comes with a SIM pack which details how to connect to BRIDGE Services.

Firmware upgrades and video exports can all be done through wireless connection to the MDR-Dashboard in server mode.

It is imperative that Brigade AI connected Dashcams are fitted and commissioned by competent and trained technicians. The installers are responsible for the correct setup of the overall system and must adhere to relevant regulations and legislation.

Table 1: Description of DC-204-AI Series Models

#	MODEL	NUMBER OF CHANNELS	MAINSTREAM CAPACITY	SUBSTREAM CAPACITY	GPS	MOB. NET	WI-FI
(1)	DC-204-AI(UK/EU)	2	128GB	128GB	✓	✓	✓
(2)	DC-204-AI(NA)	2	128GB	128GB	✓	✓	✓

Warning: Prior to attempting the system setup, please ensure the DC-204-AI Series Installation & Operation Guide is thoroughly read and understood. Brigade Electronics PLC are not responsible for any failures due to incorrect installation or operation.

Ensure your anti-virus software has exclusions in place to allow the MDR software package to function properly.

There is the need to download and install the MDR SmartController app on the installer's mobile device because this app is needed to calibrate the dashcam and the vehicle will need to be moved for the calibration process to be completed. See section 2.3 for detailed information.

1.1 Product Features

- Ultra-wide 140° Diagonal Field of View (DFOV) road facing ADAS lens, supporting up to 1920P HD video recording.
- Ultra-wide 170° DFOV driver facing DSC lens, supporting up to 1080P HD video recording.
- 2x 128GB dual-Micro SD card storage, supporting the simultaneous storage of mainstreams and sub-streams.
- Built-in Wi-Fi, 4G communication module, and inertial navigation positioning module.
- AES256 encryption for video/audio data, encryption protocol TLS1.3 for data transmission.
- 4-channel IO input and 1-channel RS232.
- Compact design, not affecting the driver's sight regardless of vehicle size.
- Built-in ADAS function, supporting lane departure warning (LDW), forward collision warning (FCW), and headway monitoring warning (HMW).
- Built-in DSC function, supporting the detection of unsafe driving behaviours.
- AI voice alert available in 9 languages (English, French, Italian, Dutch, German, Spanish, Portuguese, Polish & Russian).
- Connectivity to additional AHD and IPC channels via adapter cable. (i.e. connecting to a Driver Facing Camera).
- Compatibility with current Power Box Max Firmware.
- Password Protection for the Micro-SD cards.
- SD card Error detection.
- Multiple Wi-Fi connections (up to 8 connections)
- Option to enable AI Alerts without recording the footage.
- Individual channel configurations for recording resolution, frame rate and quality.
- Operation log files for troubleshooting.
- Built-in 6-axis G-Sensor.
- Pre-alarm recording 1 to 60 minutes and post-alarm recording 1 to 30 minutes.
- Video quality selectable at 8 different levels for recording.
- Video/Audio compression H.264/H.265/ADPCM/G711U/G711A/G726.
- Normal, Alarm or Timer recording modes.
- Alarm recordings configurable for trigger, speed, G-Force, video loss, blind detection, panic button and AI alerts.
- Low voltage protection with shut-down delay and minimum restart voltage.
- ignition (shutdown) delay configurable from 0 seconds to 24 hours.
- Operating Voltage 9V-36V.
- Power Consumption
    - standby mode:13.5V@5.67mA, 27V@3.39mA
    - sleep mode (4G and MCU powered):13.5V@62~124mA, 27V@32~61mA
    - Typical power consumption (with dual SD cards installed and SIM card for dialling): 7.56W

2 Kit Contents

2.1 DC-204-AI(XXXXX)

4ch 1080P Connected AI Dash Camera
(UK/EU / North America)

2.2 Accessories

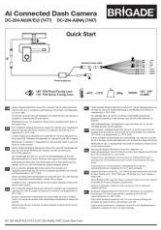
2 x128 GB Micro SD Card
DC-204-AI-128GB-MSD

Power Lead
DC-204-AI-PL-01

Bracket Assembly
DC-204-AI-B-01

Power Box with cable
DC-204-AI-PB-01

Torx Driver (T6)
DC-204-AI-TD



DC-204-AI-QSG Link Card
QR-QSG

2.3 Optional Accessories

AV Expansion Cable
DC-2XX-AV-01

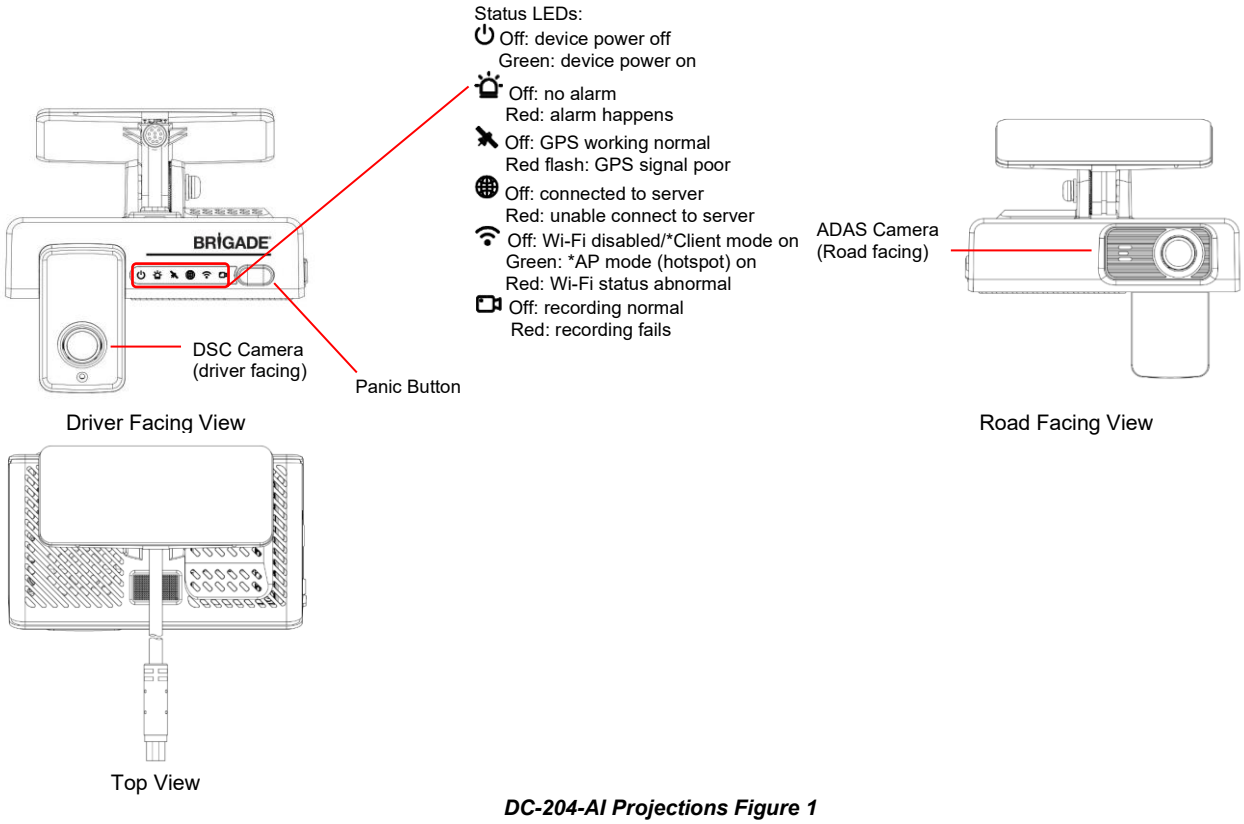
CMS Adapter Cable
AC-075

USB Download Cable
DC-2XX-USB-01

Connector Cable for
Hazard Warning Unit
HWU-CB-01

3 Hardware Installation

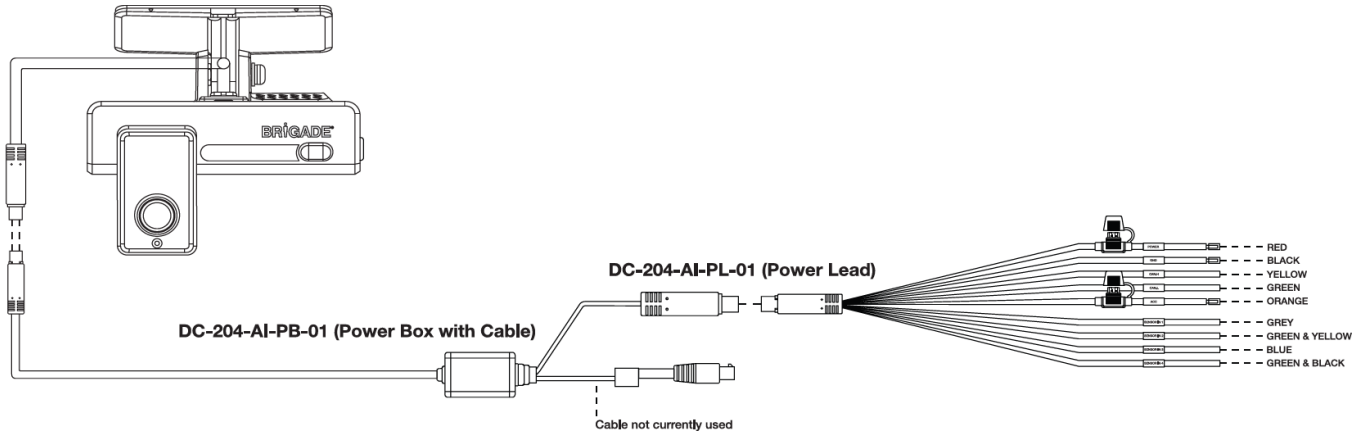
3.1 Product Perspectives



DC-204-AI Projections Figure 1

**Note: See Section 4.2.6.3 for detailed description of Wi-Fi's Client mode and AP Mode.*

3.2 DC-204-AI(XXXXX) Connection diagram



DC-204-AI Connection Diagram Figure 2

Table 2: Description of Power Lead wires

No.	Colour	Signal Name	Description
(1)	Red	Power	Vehicle power suitable for +12V/+24V vehicles.
(2)	Black	GND	0V - vehicle ground
(3)	Yellow	CANH	For future use when CAN functionality is available and should be electrically isolated.
(4)	Green	CANL	For future use when CAN functionality is available and should be electrically isolated.
(5)	Orange	ACC	Ignition
(6)	Grey	Sensor 1	Trigger input typically for left indicator signal
(7)	Green & Yellow	Sensor 2	Trigger input typically for right indicator signal
(8)	Blue	*Sensor 3	Trigger input: can be used for reverse or **privacy feature
(9)	Green & Black	*Sensor 4	Trigger input: can be used for reverse or **privacy feature

Notes:

1. **If not in use, isolate electrically.*
2. ***See section 4.5.2.3 for details.*

3.3 Micro-SD Card and SIM Card Installation

Note: It is strongly recommended that the Micro-SD cards and the SIM card be inserted into the dashcam before the unit is powered and before installation of dashcam to vehicle.

Step 1: turn off the device.

Step 2: use torx driver loosen the screw.

Step 3: Open the latch.

Micro SD Card Installation:

Note 1: Install micro-SD card into the slot. Each device supports two micro-SD cards.

Note 2: Ensure that you insert the micro-SD cards in the direction depicted for each slot. Push the micro-SD cards into the slots and wait for the “click” sound which indicates that they are inserted properly.

SIM Card Installation:

Note 1: Ensure that you insert the SIM card in the direction depicted beside it slot.

Note 2: Device must be turned off before installing the sim card, else it will be unable to dial up.

Micro-SD Card and SIM Card Installation Figure 3

3.4 Installation of DC-204-AI

3.4.1 Preparation

It is recommended that the installer reads and understands this installation and operation guide before commencing the installation process. This will ensure that the dashcam is installed in the correct position during the first attempt to fit the dashcam to the vehicle. The Dashcam fits to the windshield using an adhesive tape which could be difficult to remove if the dashcam is positioned wrongly. **It is strongly recommended that the installer adheres to the positioning requirements recommended in section 3.4.2**.

3.4.1.1 Kit and Tools

The AI Connected Dashcam kit content mentioned in section 2 is needed. The device requires connection from the power lead to vehicle battery for power, to ignition with the ACC wire and to left indicator and right indicator signals with sensor 1 and sensor 2 wires respectively. These connections require standard installer tools and a smart mobile device such as tablet or smart phone. The standard installer tools include but are not limited to screwdriver kit, cable ties, steel measuring tape to measure some dimensions required to calibrate the forward facing ADAS camera, multi-meter to locate vehicle power supply, non-permanent marker for marking out the location to which the dashcam will be connected etc.

A mobile device is listed as one of the requirements because the installer needs the SmartController app to successfully install and calibrate the AI connected dashcam. The installer can download the SmartController app from the iOS or Android App store. The app is available for both Apple and Android devices, see section 3.4.2 for details on the appearance and usage of the SmartController app.

It is recommended that the AI connected dashcam be fitted by an installer who has read the Installation guide before attempting to fit the device. This is because the dashcam needs to be installed in the recommended position stated in section 3.4.2. It is advised that the installer follows the recommendations stated in this installation and operation guide.

Also, it is recommended that the micro-SD card and SIM card be inserted in the dashcam before installation, see section 3.3 for detailed instruction on how to insert them.

3.4.1.2 Location of Installation

Ensure that the vehicle to which the dashcam is to be installed is parked on a levelled / horizontal surface. This will be useful when checking the dashcam positioning is correct before permanently fitting it to the windshield and is also useful during calibration.

3.4.1.3 Dashcam Cable Wiring

It is recommended that the installer carry out a pre-installation survey of the vehicle to which the dashcam is to be installed prior to installation to get familiar with the location of the vehicle power and other signals to make the installation go smoothly and prevent damage to the vehicle during installation and assess the position to which the dashcam is to be installed.

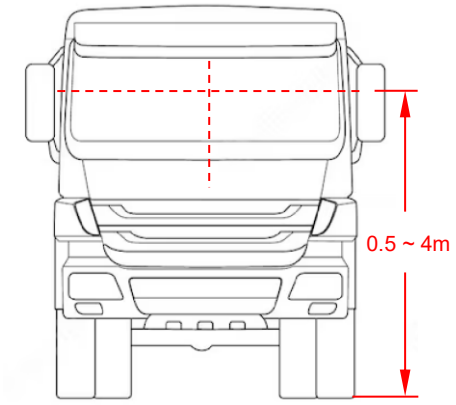
The power lead of the dashcam consist of wires which when connected to the vehicle provides power and other signals that are required for the dashcam to function correctly. The power lead connects to the power box which in turn connects to the dashcam as shown in the connection diagram in section 3.2. The red power wire which consists of a 3A fuse connects to the vehicle power (+12V or +24V) while the black wire connects to vehicle ground. The orange wire (ACC) which also consist of a 3A fuse connects to ignition signal, the grey wire (sensor 1) and the green and yellow wire (sensor 2) connect to left indicator and right indicator signals respectively.

3.4.2 Selection of Dashcam Installation Area

The device must be installed inside the vehicle cabin on the windshield. The device must be installed in a position such that the road facing ADAS camera and the driver facing DSC camera can capture correct targets; Lane lines and vehicles in front for the ADAS camera and driver's face and hand gestures for the DSC camera. Therefore, the device needs to be powered during the installation process after the cable wirings

have been completed (see section 3.4.1.3) so that the installer will be able to check camera images to confirm if position is acceptable. For checking viewing images, please download Brigade SmartController App from app store first. It is available on both iOS and Android devices.

How to locate the most suitable position for the device see illustrations below:



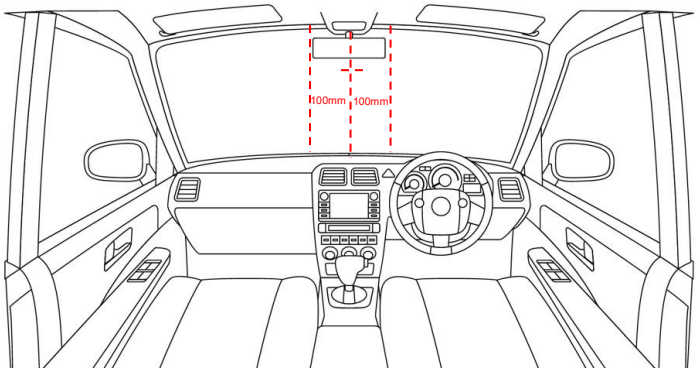
Road facing ADAS camera positioning requirements Figure 4

For road facing ADAS camera, the position needs to follow rules below:

1) The dashcam must be in the centre of the windshield. Left or right 100mm offset is acceptable; this means that the distance between the centre of the front facing lens and centre of windshield must not exceed 100mm.

2) The height from the camera lens to the ground must within 0.5 - 4m range.

3) The device shall be mounted on the windshield in a position that ensures a clear view of the road, does not obstruct the driver's line of sight and is in line with applicable fitting guidelines / requirements for the target vehicle.



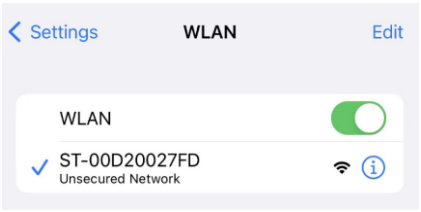
Driver facing DSC camera positioning requirements Figure 5

For driver-facing DSC camera, the position needs to follow rules below:

1) The camera lens must be in the centre of the windshield. Left or right 100mm offset is acceptable.

2) The camera view must be able to capture the driver's face and both eyes. For optimal performance the distance between camera and driver's face is recommended to be within 0.5 – 1m.

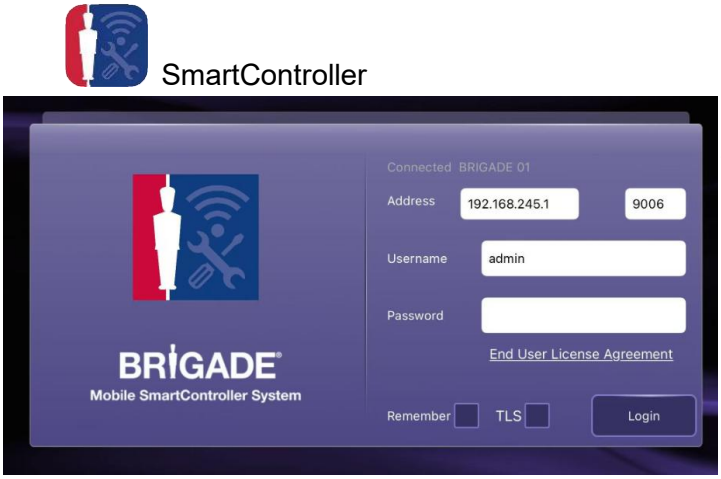
3) The driver's face must be in a good proportion in the camera view, not too high up which may lead to failure to detect eyes and mouth movement; not too low down which the device may obstruct drivers' view.



DC-204-AI Wi-Fi Hotspot (AP Mode) Figure 6

To confirm the position is appropriate, power on the device to check the live view on mobile devices.

After the device is powered on, the first 3 minutes it generates a Wi-Fi hotspot which smart mobile devices can search out in WLAN interface. The Wi-Fi signal named after the device serial number. If installer cannot find the Wi-Fi signal or missed the first 3 minutes, installers can quickly press the panic button on the front panel of the device twice to force it into AP mode, which gives Wi-Fi hotspot for connecting the SmartController app to the device.

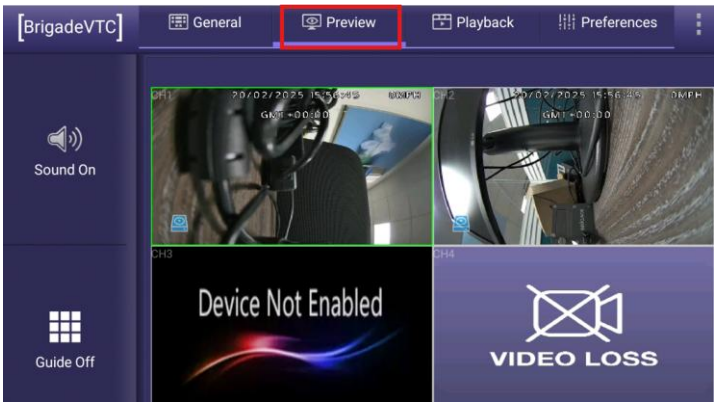


SmartController app login page Figure 7

Open the SmartController app, user need to input default credential **admin/admin**. After verified, the app will have a prompted to request modify your password at first login to the device. The user is required to set a not less than eight-character password consisting of numbers, uppercase and lowercase letters. Please see section 4.1 for detailed instructions.

Note: it is highly recommended that the user ensure that the new password is only distributed on a need-to-know basis. User should also make note of the new password as Brigade Electronics PLC does not have access to this information.

Enter Preview tab to check if both cameras are in the right position (CH1 is ADAS – road facing camera; CH2 is DSC – driver facing camera).



SmartController app preview page Figure 8

3.5 Installation of Dashcam Bracket

Installer must ensure that section 3.4.2 has been read and understood before installing the dashcam bracket. It is essential that the installer uses the guidelines stated in that section to determine the location of the dashcam bracket. Do not remove the adhesive protective sheet, or permanently secure bracket, until the correct position has been confirmed. See section 3.4.2 for detailed outline of the installation location requirements. It is also advised that the installer check the live view of the camera whilst carrying out this exercise to ensure correct fitting of the bracket when the protective sleeve is later removed.

DC-204-AI-B-01 Bracket Figure 9

After confirmation of the correct installation position:

1. Ensure that the vehicle is parked on a horizontal/levelled surface.
2. Use the alcohol wipe to clean inside and outside of the installation area.
3. Make sure the “UP “inscription and arrows are pointing to the top of the cabin.
4. Take out the bracket from the kit and peel off the 3M protective sleeve.
5. Stick the bracket (using the adhesive 3M pad surface) to the windshield in the confirmed installation area.
6. Install the bracket horizontally in the confirmed installation area such that the upper edge of the bracket is parallel to the upper edge of the windshield.
7. Press the bracket to the windshield for 10s to ensure good contact between the bracket and the windshield and that air bubbles does not form between the windshield and the bracket.

3.6 Installation of Dashcam

The installer should ensure that the following has been done before installing the dashcam on bracket:

1. Start the vehicle to power up the dashcam.
2. Connect to the SmartController app as stated in section 3.4.2

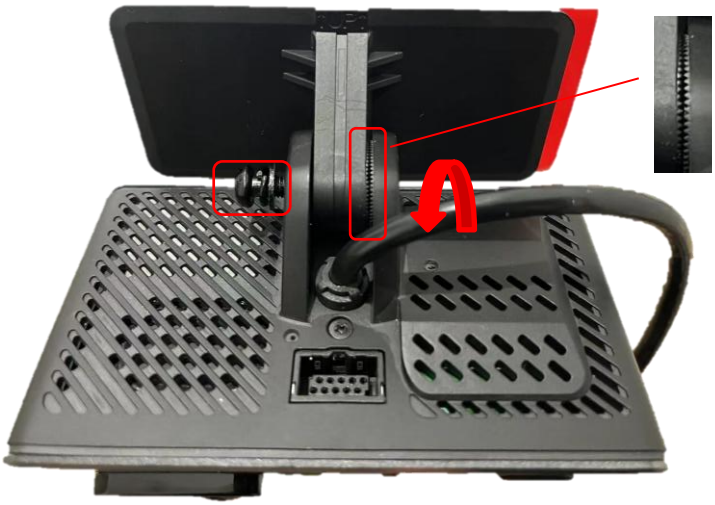
The dashcam is fitted to the bracket with the front side of the dashcam with LEDs and button facing inward so that the lens of the DSC camera is facing the driver – driver facing and the ADAS camera lens is facing the road – road facing.

DC-204-AI Front view showing LEDs and button and driver facing lens of DSC camera Figure 10

Driver facing lens of the DSC camera should be facing the driver.

DC-204-AI Rear view showing the road facing lens of the ADAS camera Figure 11

Road facing lens of the ADAS camera should be facing the road (close to the windshield)



Picture showing the fixing screw, angle of rotation of DC-204-AI Figure 12

It is important to ensure that the bracket is firmly fitted to the windshield so that it can carry the weight of the dashcam and the dashcam is securely fastened to the bracket using the supplied screw.

Install the device onto the bracket, using the black screw and washers provided in the AI connected dashcam kit and the corresponding screwdriver that would fix the screw appropriately.

The screw should be fastened in such a way that it is possible to adjust the dashcam.

The device is adjustable. The installer can adjust it into the correct angle based on observation from the SmartController live view.

Once the correct position is confirmed, the installer should fasten the screw to ensure that the dashcam in fixed in the correct position confirmed by the live view on the SmartController app.

Note: Please pay attention to the driver facing and road facing lenses, they are used for different purposes. If the direction is correct, the touching surface between the device and the bracket are teethed.

Picture Showing the right positioning of the Dashcam Figure 13

When fixing the dashcam in place, ensure that the following criteria are met when looking at the live view footage from the SmartController app:

1. The centre of the cab is in the middle of the screen.
2. The cab is levelled (horizontal).
3. The steering wheel is visible at the bottom left /right corner of the screen.

3.7 Calibration

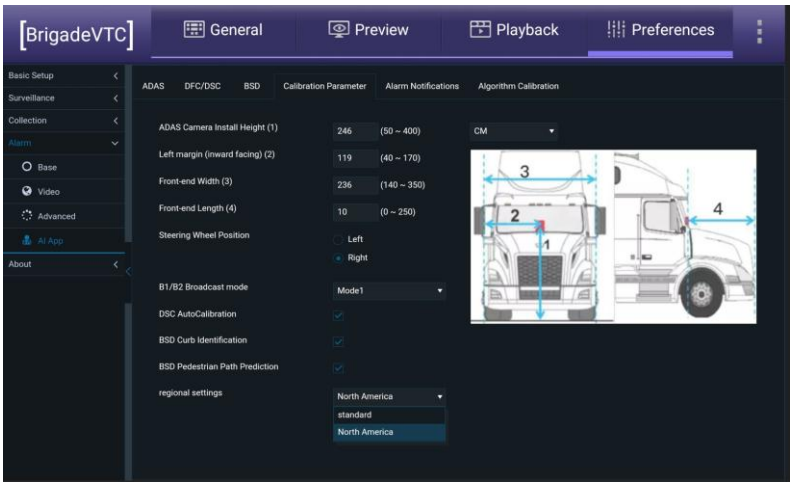
Every device must be calibrated during installation, or it may not work as expected; it may give too many or too few AI alerts. The dashcam calibrates automatically during driving however, the instructions detailed in the sub-sections below **must** be followed before the calibration drive for the device to function correctly.

3.7.1 Critical Measurements

After the device is properly installed on the windshield, the installer needs to take some critical measurement and input them into the calibration parameter settings of the dashcam using the SmartController app. These measurements are important to the ADAS and DSC features functioning as designed. These parameters are not going to change when importing configuration files from one device to another therefore the values need to be inputted manually for each vehicle. Each measurement is depicted in **Error! Reference source not found.** and explained in the notes on the right-hand side of the figure.

Inputting the parameters into the dashcam settings require that the device is turned on. This can be achieved by switching the vehicle's ignition on or starting the vehicle on which the dashcam is installed. Once the dashcam is on and the Wi-Fi LED is green to indicate Wi-Fi hotspot mode, connect the SmartController app to the dashcam as explained in section 3.4.2. The tab where the measured values need to inputted is known as the **Calibration Parameter** tab. To find the tab on the SmartController app go to: *SmartController app –> Preference –> Alarm –> AI App –> Calibration Parameter.*

3.7.2 Testing Left and Right Indicators Connections



AI Calibration Parameter Figure 14

ADAS Camera Install Height (1): this is the height from the middle of the ADAS camera lens to the ground.

Left margin (inward facing) (2): this is the horizontal distance between the device and the left end of the vehicle body.

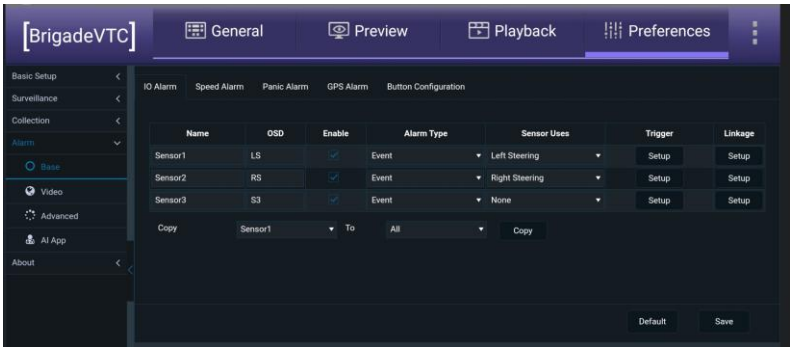
Front-end Width (3): this is the vehicle body width.

Front-end Length (4): this is the distance between the device and the front end of the vehicle, which is the distance between the ADAS camera lens and the license plate of the vehicle.

Steering Wheel Position: this is the position of the steering wheel, the driver's side of the vehicle. Please select as appropriate for the vehicle to which the dashcam is installed.

The rest of the settings are not crucial for setup, details refer to Chapter 4.5.4.4.

Ensure that the left and right indicator signals are connected to sensor 1 and sensor 2 respectively as stated in section 3.4.1.3.
Ensure that there is still power to the dashcam and the mobile device on which the SmartController app is being used.

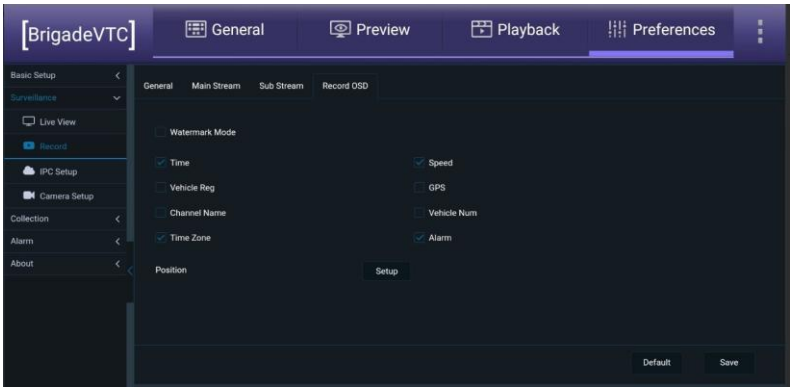


SmartController App IO Alarm Figure 15

Go to the IO Alarm settings on the SmartController app which is: *SmartController app –> Preference –> Alarm –> Base –> IO Alarm.*

See section 4.5.1.1 for detailed description of the IO alarms settings and see figure 16 for the required settings for testing the indicator signals are connected correctly and are functional. Remember to save these setting before exiting the menu for the changes to take effect.

Please note that the signals of interest here are sensor 1 and sensor 2.



SmartController app Record OSD tab Figure 16

Once the IO Alarm settings have been changed to match SmartController App IO Alarm Figure 15; go to the Record OSD tab: *SmartController app->preferences-> Surveillance-> Record-> Record OSD*

Ensure that the alarm option is enabled (blue tick) as shown in **Error! Reference source not found.**. Remember to save these setting before exiting the menu for the changes to take effect.

For details about the functionality and usage of record OSD please see section 4.3.2.4

Left Indicator Signal Triggered Figure 17

Carryout the following steps to test the indicator signals

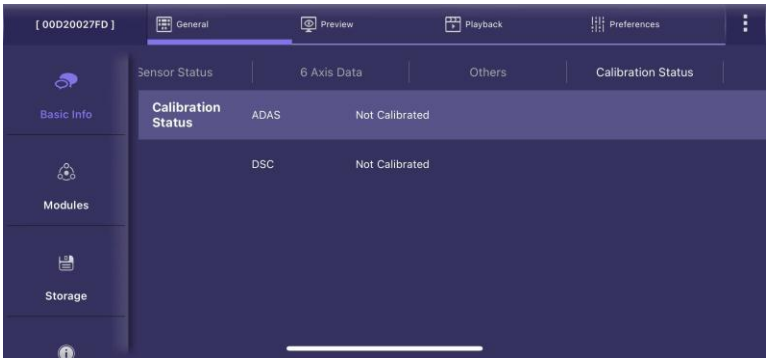
- Go to the preview page: SmartController app-> Preview.
- Tap channel 1 footage twice to make it full screen.
- Switch on the left indicator
- Observe footage on channel 1 and check that S1 shows up on the screen.
- Switch on the right indicator
- Observe footage on channel 1 and check that S2 shows up on the screen.

Right Indicator Signal Triggered Figure 18

If the sensors are connected wrongly i.e left indicator signal to sensor 2 and right indicator signal to sensor 1. Carryout the following to correct the connection error:

- Switch off power to the vehicle.
- Swap the left indicator signal connections from sensor 2 to sensor 1 and vice versa.
- Repeat the left and right indicator signal connection test to verify that the signals are connected as instructed.

3.7.3 Auto-Calibration



Auto-Calibration Status Figure 19

The ADAS auto-calibration will start when the vehicle speed reaches 10mph (15km/h) with a vehicle in front which is between 10 – 40 metres away. The auto-calibration can take up to 4 minutes depending on road and environment condition.

The DSM auto-calibration will start when the vehicle speed reaches 12mph (20km/h) and it will be completed after the driver's face has been detected for approximately 5 minutes.

The calibration will only happen once unless there are changes to the Calibration Parameters. In this case the calibration will re-start automatically.

The calibration status can be checked using the SmartController App: *SmartController General - Basic Info – Calibration Status menu*.

4 Dashcam Settings and Parameters (Preference)

4.1 Login

The dashcam needs to be configured using the SmartController apps.

It is required that a new password be set at first login for dashcam firmware released in 2025 onwards. Please input **admin/admin** to trigger the password reset procedure.

The new password should contain 8 to 16 characters. It should consist of numbers, uppercase and lowercase letters (special characters optional). The password can be changed later. Clicking on the eye symbols allow the password to be displayed to check that the password entered and the confirmation match.

The default password for the **user** account is **user** due to user account has limited capabilities of the Dashcam and has no access to settings.

It is advised that customers with older firmware contact Brigade to arrange for a firmware upgrade.

The link to the **End User License Agreement** is also now located at the login screen of the SmartController app. User only need to click on the link to access the EULA.

By default, **TLS** encryption is enabled for communication between the device and the SmartController app. Please keep the **TLS** checkbox selected. If login issues occur, uncheck the **TLS** checkbox and try logging in again.

All settings are under Preference, other tabs in the app please refer to SmartController manual for usage explanations.

SmartController Login Screen Figure 20

SmartController Modify Password Prompt Figure 21

4.2 Basic Setup

4.2.1 Regist Info

This area is for capturing device and vehicle related information.

Device Info contains:

Serial Number which is a 10-digits unique identifier for each device. It is automatically generated and unchangeable.

Device ID is for users to have customised marker on each device for differentiation purposes.

Vehicle Info contains:

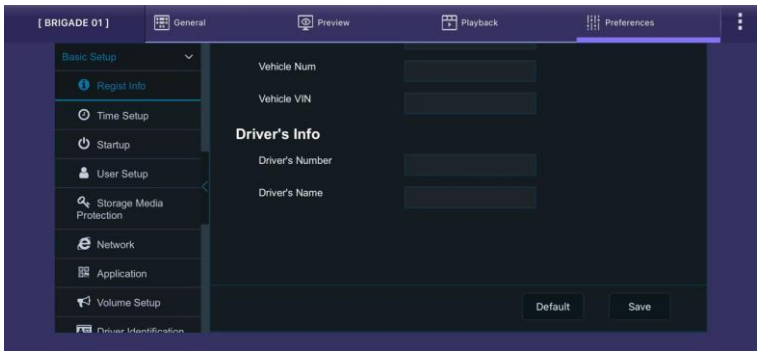
Vehicle Reg to input the current vehicle registration number of the vehicle to which the dashcam is installed.

Vehicle Num and **Vehicle VIN** are typically used in fleet/bus applications. These can be captured in this field to assist in identifying the vehicle.

Driver's Info is also area to store driver related information for fleet/bus applications.

Only **Serial Number** and **Vehicle Reg** will be transmitted to server and displays in MDR-Dashboard live view interface. Everything else is kept in device.

Regist Info - 1 Figure 22



Regist Info - 2 Figure 23

4.2.2 Time Setup

4.2.2.1 General

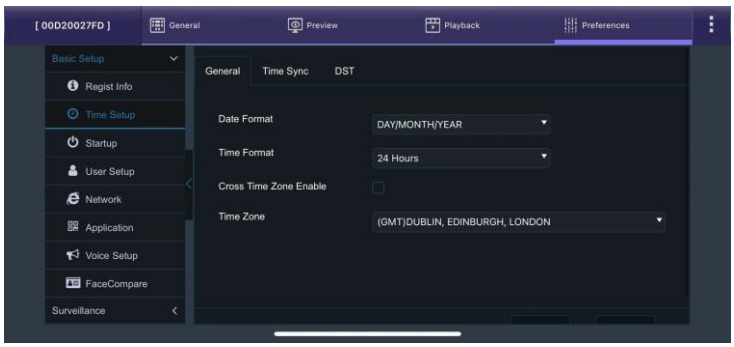
Date Format can be set to either DAY/MONTH/YEAR, YEAR-MONTH-DAY or MONTH/DAY/YEAR. By default, it is set to DAY/MONTH/YEAR.

Time Format can be either 24 Hours or 12 Hours. By default, it is set to 24 Hours.

Time Zone includes worldwide time zone options. By default, this is set to (GMT) DUBLIN, EDINBURGH, LONDON.

Cross Time Zone Enable currently not in use.

Default is found on most settings pages. This allows you to easily restore the factory settings.



Time Setup - General Figure 24

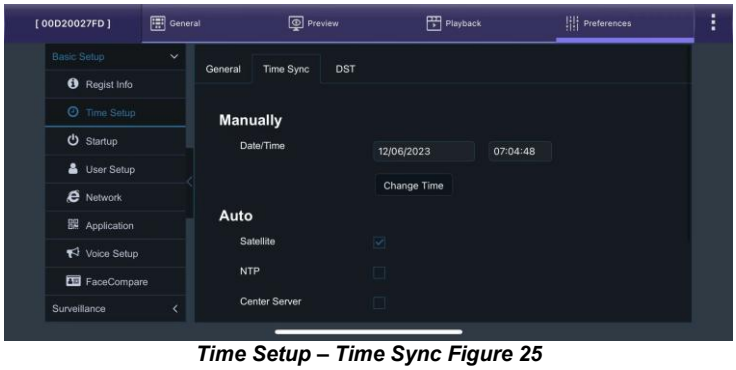
4.2.2.2 Time Sync

Date/Time can be entered manually here.

Satellite should be ticked by default. The device is embedded with a GPS module and antenna, therefore can obtain speed and location easily. This is the simplest and most reliable option.

NTP refers to network time protocol that is used to synchronise time with NTP Server PC time. By ticking the box, a list will be available for users to choose NTP servers from or user can input a different server address, if the one required is not on the list provided. This should only be used when mobile network or Wi-Fi enabled.

Center Server allows device to synchronize the time with current connected MDR servers.
Note: When Satellite, NTP and Center Server are enabled simultaneously, Satellite takes the highest priority. The priority between them is Satellite>NTP>Center Server.



Time Setup – Time Sync Figure 25

4.2.2.3 DST

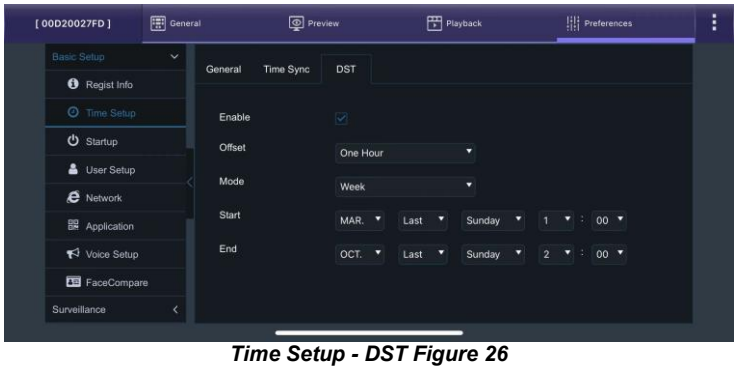
DST (Daylight Saving Time) allows users to enter the date and time in which the Daylight-Saving Time will be activated. In the U.K, it starts on the last Sunday of March at 1:00 AM and ends on the last Sunday of October at 2:00 AM. Enter the correct time and date of the country in which the vehicle will be utilised. Whenever **DST** is not in use, turn this option to off.

Enable is enabled by default. This setting determines whether daylight savings time is active.

Offset is to determine how many hours to be forward / backward when reaching DST. **One Hour** or **Two Hours** optional.

Start represents the month, day and time at which DST begins. By default, this is set to UK DST. If the time zone has been changed to another country, other than the UK, then the DST settings will need to be amended to reflect the selected country.

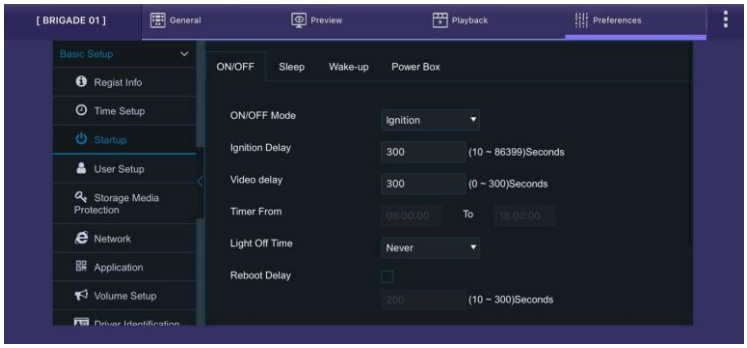
End represents the month, day and time at which DST finishes.



Time Setup - DST Figure 26

4.2.3 Startup

4.2.3.1 ON/OFF



Startup – ON/OFF Figure 27

ON/OFF Mode only supports one mode – **Ignition**. It means the device will power up when receiving vehicle ignition signal (orange wire).

Ignition Delay refers to the period the device will remain on and recording once the ignition has been turned off. The range is 0 to 86399 seconds (24 hours). By default, this is 300 seconds (5 minutes).

Note: If the ignition is turned off right after the device is powered on and the ignition delay is set to less than 6 minutes, the device will shutdown after about 6 minutes + ignition delay. This is because the device has a circuit protection time of 5 minutes after boot-up to ensure that its electronics are not damaged due to abrupt power loss during start-up. If the ignition delay is longer than 6 minutes, the device will count down the exact ignition delay value.

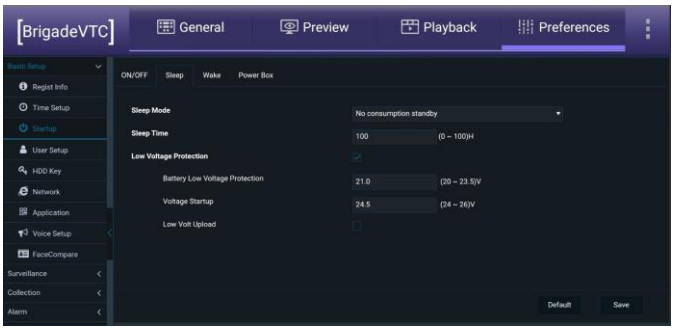
Video Delay allows device to stop recording before reaching the end of the **Ignition Delay** period for better utilise storage space. The range is between 0 to the value user set for **Ignition Delay**.

Timer From currently not in use.

Light Off Time to define video output duration. When this is enabled, the video out can be used with external monitors to display live view images. Options are **Custom** which can choose from 1 – 3600 seconds or **Never** which will have constant signal output to the monitor.

Reboot Delay is designed to trigger a system reboot during the shutdown delay period. In some cases, the shutdown delay period may be configured to a long duration (e.g. up to 24 hours). To prevent potential instability caused by prolonged continuous operation, the device performs a reboot after a defined delay within this period.

4.2.3.2 Sleep



Startup – Sleep - 1 Figure 28

Sleep is a standby status which enables the device to use minimum electrical current to maintain activity of core system after vehicle ignition is switched off.

By default, this feature set to **No consumption standby** which means the device will be completely off after turning off the ignition to protect the vehicle battery. Another option is **Low consumption standby** which will let the device enter sleep mode after turning off ignition.

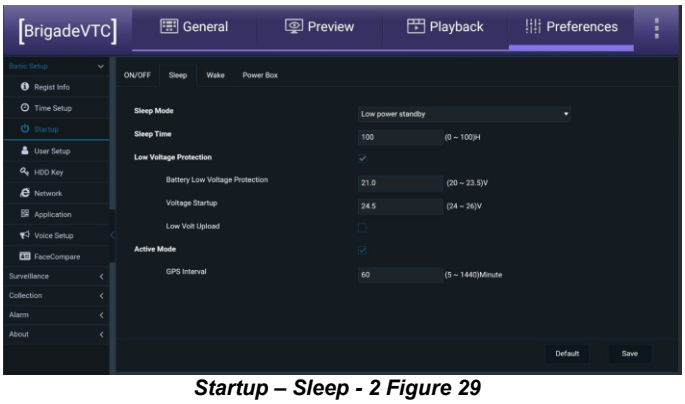
During the **Sleep mode**, the device will shut down all the functions except online reporting, GPS reporting and mobile network connectivity. These features that are left functioning so that the platform or mobile phone can remotely wake-up the device for normal operation or Auto-Download tasks. For how to wake up the device, please refer to section 4.2.3.3.

Sleep Time is the duration of the device stays in sleep mode.

Low Voltage Protection is enabled by default. This feature is important to use to protect the vehicle's battery from damage.

Battery Low Voltage Protection is the voltage level which is dangerously low for vehicles. For a 24V vehicle, the limits are from 20V to 23.5V. For a 12V vehicle, the limits are from 8V to11.5V. If power supply voltage is lower than the set value, the device will wait for 600 milliseconds to observe if it is a random dip, or an unrecoverable voltage drop situation. After the waiting period, if the voltage does not return to normal operating voltage, the device will shut down to protect itself from low voltage.

Voltage Startup refers to the minimum voltage the device must receive before powering on. For a 24V vehicle, the limits are 24V to 26V. For a 12V vehicle, the limits are 12V to 14V. If the device last shutdown is because of low voltage, the next



Startup – Sleep - 2 Figure 29

time supply voltage must higher than the Voltage Startup value, or it will not boot up.

Low Volt Upload can only be used if mobile network or Wi-Fi is enabled. MDR Server software has a requirement for this feature. Once the device detects a low voltage level, it will send this data back to the MDR Server where it gets stored.

Proposed Low Voltage Protection Settings for lead-acid batteries (Note: Please check if these are suitable for your vehicle):

12V Vehicles	24V Vehicles
Low Voltage:9.5V	Low Voltage:21V
Voltage of Start:12.5V	Voltage of Start:24.5V

Active Mode – GPS Interval defines when the device under Sleep status, it should report its GPS location to the platform every 60 minutes (default). This interval time is customisable between 5 minutes to 1440 minutes. The reason this setting is 60 minutes rather than the default of 10 seconds is to reduce data and power consumption during **Sleep** mode.

4.2.3.3 Wake-up

Wake-up is used to boot up the device when it is under **Low consumption standby** mode. This feature is often used when the user needs to urgently check video footage or ask the device to start auto-download task assigned from the server.

It supports various methods to wake up the device.

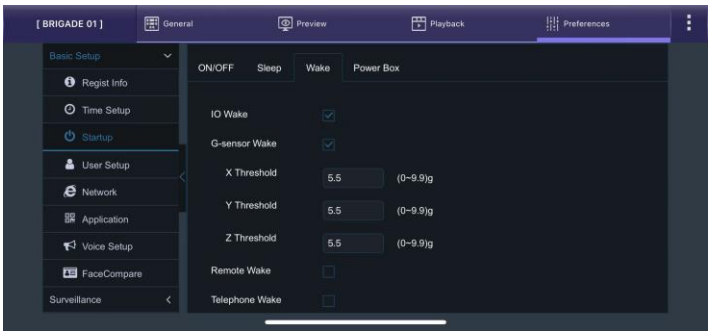
IO Wake-up is waking up the device when any enabled IO alarm/event triggered.

G-Sensor Wake-up the device wakes up and start functioning when it detects impact or acceleration that exceeds the set threshold.

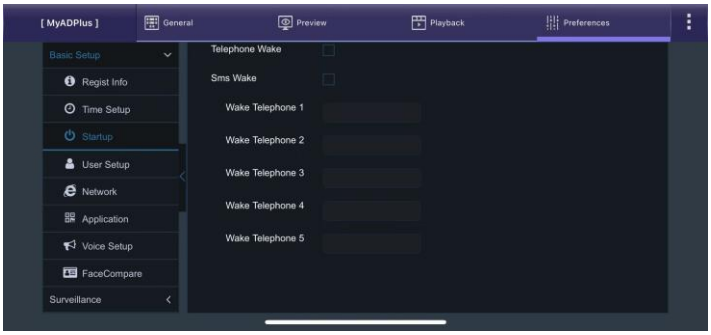
Remote Wake is currently not supported.

Telephone Wake-up and **SMS Wake-up** requires pre-defining the acceptable wake telephone numbers from which SMS or call would trigger the device to wake up, prior to the using the feature (**Wake-up Telephone 1** - **5**). After numbers being filled in, when the device is under **Low Consumption Standby** status, a call or a "WAKEUP" content message sent from the predefined numbers which will activate the device and put it back to fully ON mode.

***Note:** after the device wakes up, it will use vehicle battery power and keep running, and it starts to count down the **Ignition Delay** users defined previously. After the count down time completed, the device will go back to **Sleep** mode again.*



Startup – Wake 1 Figure 30



Startup – Wake 2 Figure 31

4.2.3.4 Power Box

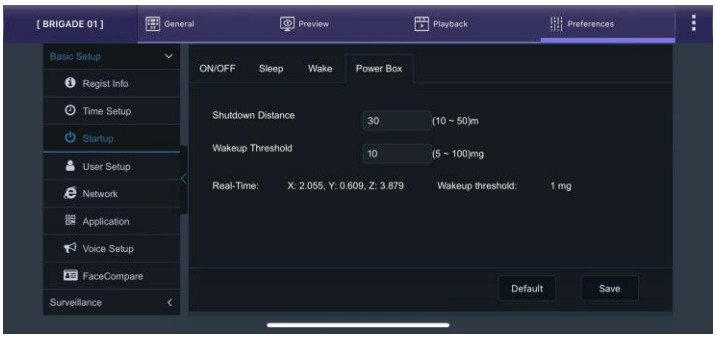
Power Box is the hardware part on the device power cable.

This Power Box hardware has its own internal G-Sensor and microcontroller with which it accumulates data and can make the decision to shut down the device if the conditions below are met.

***Note:** these settings will only be valid if using OBD connector power cable. It won't work if the power cable tail has been used.*

Shutdown Distance is to define if, within 1 minute, the vehicle movement distance is no greater than 30 metres (default), the device will be prepared to shut down.

Wakeup Threshold is if the acceleration it received no greater than 10mg (default), the device should be prepared to shut down. 1g equals to 9.8m/s^2.



Startup – Power Box Figure 32

4.2.4 User Setup

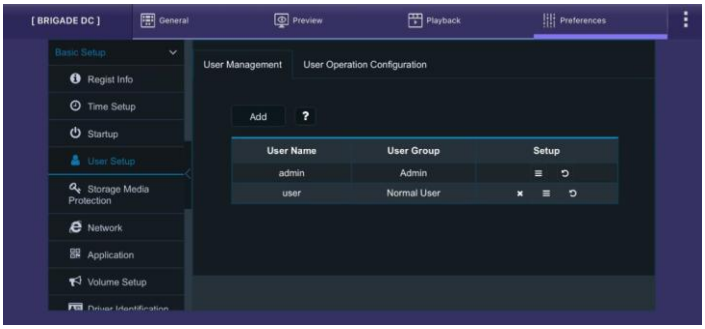
4.2.4.1 User Management

User Management – **Add** is used to create additional user accounts. A maximum of three user accounts can exist.

Username is the name you use to log onto the MDR. By default, there are two usernames: **admin** and **user**.

User Group represents the level of access to the OSD. There are only two types: Admin and Normal User. Admin has access to all settings and features. Normal User has restricted access to view device status such as module status, storage, version info, live view and playback; but unable to do any actions like export logs, upgrading device or changing configurations etc.

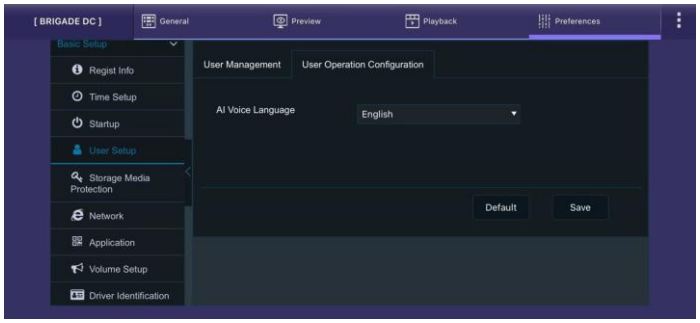
Setup is used to change existing user account details.



User Setup Figure 33

4.2.4.2 User Operation Configuration

AI Voice Language supports voice alerts or warning broadcasted by the dashcam in the following languages: **English**, **French**, **German**, **Italian**, **Dutch**, **Spanish**, **Polish**, **Portuguese** and **Russian**. These voice alerts/warnings are usually broadcasted by the dashcam when the respective trigger conditions are met. The current firmware only supports **English** on screen display (OSD)/Menu options.



User Operation Configuration Figure 34

4.2.5 Storage Media Protection

Storage Media Protection is used for encrypting stored data such that a password is required for viewing the recoded data on the MDR-Dashboard. This feature is disabled by default.

After this feature is enabled:

1) The MDR-Dashboard will request that the user inputs the correct password when they attempt to playback the footage on the storage medium/media on which the protection is enabled.

2) The MDR-Dashboard client will have a verification window pop up before loading video data. The storage media protection feature cannot be removed by formatting the micro-SD cards.

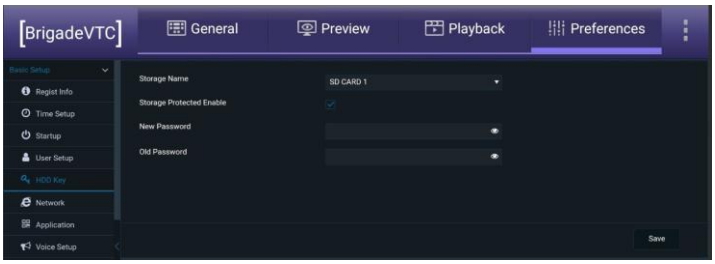
Storage Name enables the user to choose between Micro-SD Card 1 and Micro-SD Card 2.

Storage Protection Status currently disabled by default. When enabled allows the user to set the encryption password for the Micro- SD cards.

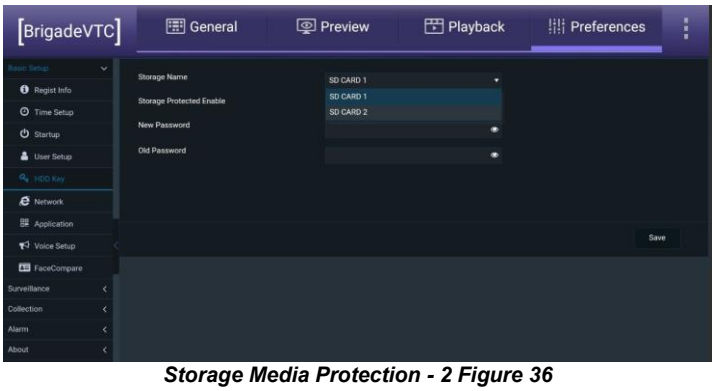
New Password is used to set up new password or reset current password. Password combination must contain numbers, capital and lower-case characters.

Old Password is used for confirming previous password before resetting to a new password or disabling the protection. If the user does not input the old password or typed it incorrectly, the reset process or disabling of the feature will not happen.

Storage Media Protection feature is auto adapted to every Micro-SD card. Swapping Micro-SD cards will not affect its current setting. If the Micro-SD card previously enabled the storage media protection feature, then in this section, the Storage Protection Status will be ticked automatically, but password section will not be populated for data security purposes. If the Micro-SD Card does not have the Storage Media protection enabled previously, then the Storage Protection Status will be disabled by default after inserting the micro-SD cards into another Dashcam.



Storage Media Protection -1 Figure 35



Storage Media Protection - 2 Figure 36

4.2.6 Network

4.2.6.1 Server Setup

The device can support reporting to a maximum of 4 servers simultaneously.

 adds another centre server, a new blank page is displayed with a new number.

 removes the currently displayed centre server.

ON enables the current centre server.

Protocol Type refers to the protocol used by the unit to send its data (video and metadata) to the Server. By default, this is set to **MDR6**.

TLS Enable encrypts communication between the device and the Server. This is recommended to enable if the server deployed with HTTPS.

Verify Certificate ensures the authenticity of the server's certificate during every TLS connection attempt once the server's root certificate and revocation list (CRL optional) are imported into the device. The connection is allowed only after successful verification. This feature is disabled by default.

Note: If enable this feature, importing the server's root certificate is mandatory prior to use; otherwise, server connections will fail. For importing toot certificate and CRLs, please refer to Chapter **Error! Reference source not found. Error! Reference source not found.**

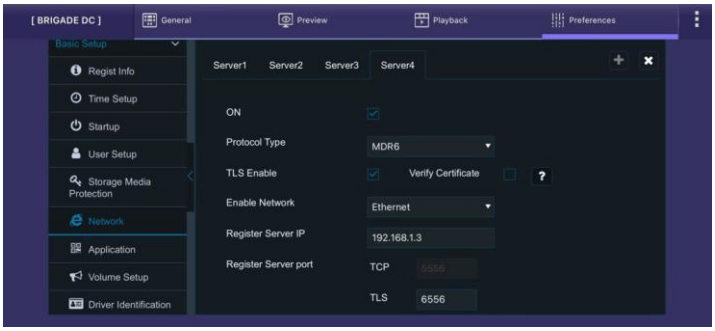
Enable Network refers to the network method used to communicate with the Server. The options are:
Ethernet – Ethernet cable connected method (hardly used);
Wi-Fi – through Wi-Fi connection;
Mob Net – through SIM card data;
Auto Adaptation – Auto-adapts to the three network methods above, if it has internet access. The select priority is Wi-Fi>Ethernet>Mob Net.

Register Server IP Public IP address of the firewall which forwards any traffic to the server PC. (IP address and Domain name supported)

Register Server Port is used for device access to server. When TLS function is enabled, it uses TLS port, by default, it is 6556. When TLS function is disabled, it uses TCP port, by default, it is 5556.

Media Server IP should be the same as Register Server IP.

Media Server Port should be the same as Register Server Port. By default, it is 6556 or 5556, depends on whether enabled TLS.



Server 1 - 1 Figure 37

Server 1 - 2 Figure 38

4.2.6.2 Ethernet

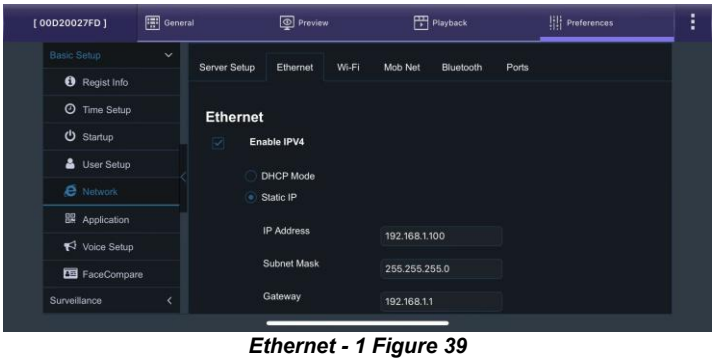
By default, the device is using IPv4. There are two modes available for Ethernet adaptor addressing, DHCP and Static.

DHCP Mode refers to the Ethernet adaptor of the device obtaining an IP address automatically from the network.

Static IP is used to specify the exact network details you would like the device adaptor to use.

IP Address refers to the internet protocol address of the Ethernet adaptor. This address is used to access the device setting menu via LAN cable. Recommended to use SmartController app (Wi-Fi) to access, the LAN cable solution requires an adapter cable and additional computer operations. If having difficulties, please ask your internal IT for information and assistance.

Subnet Mask is used to identify network address of an IP address. By default, this is 255.255.255.0.



Ethernet - 1 Figure 39

Gateway helps route the network traffic. By default, this is 192.168.1.1.

Auto Get DNS refers to the domain name system. A DNS server takes the website addresses that you type in and converts them into the actual IP address of the site. While the device attempts to get an IP address from the DHCP server, it will simultaneously attempt to resolve address.

Use Following DNS the device will use these DNS addresses regardless of what the DHCP server is using.

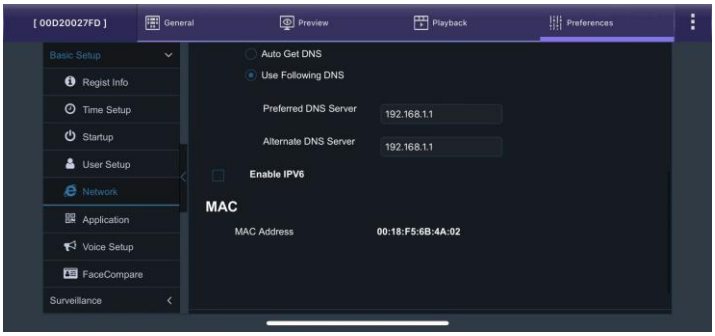
Preferred DNS Server by default, this is 192.168.1.1.

Alternate DNS Server by default, this is 192.168.1.1.

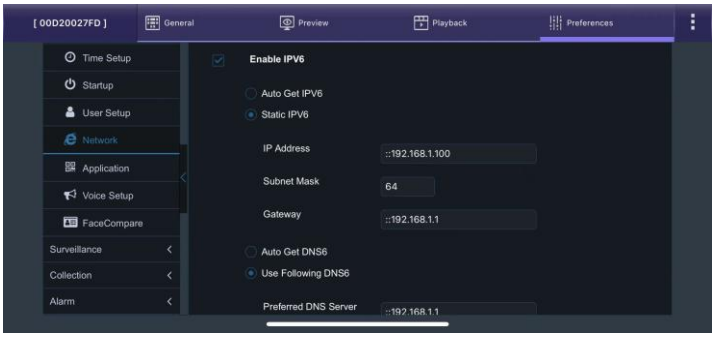
The device is also support IPv6. When using IPv6 address, tick the **Enable IPV6** box to expand setting menu.

The parameters under IPv6 are the same as for IPv4, recommend consulting with IT department before making any changes.

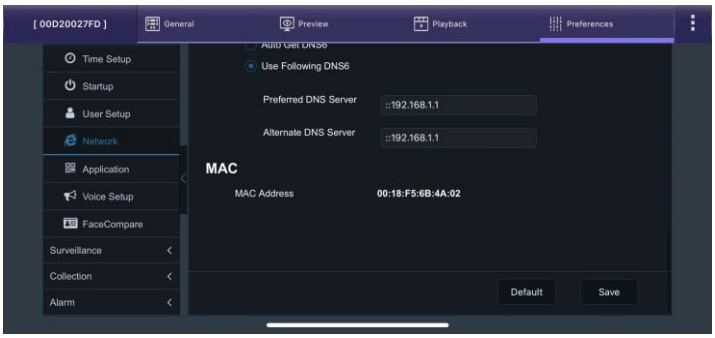
MAC Address refers to media access control address which is a unique identifier. This is assigned to network interfaces for communications at the data link layer of a network segment. This consists of 12 alphanumeric characters.



Ethernet - 2 Figure 40



Ethernet - 3 Figure 41



Ethernet - 4 Figure 42

4.2.6.3 Wi-Fi

By default, the device is on Wi-Fi Client mode.

Lock can fix the Wi-Fi settings and parameters below, and not let it be overwritten when user imports config files.

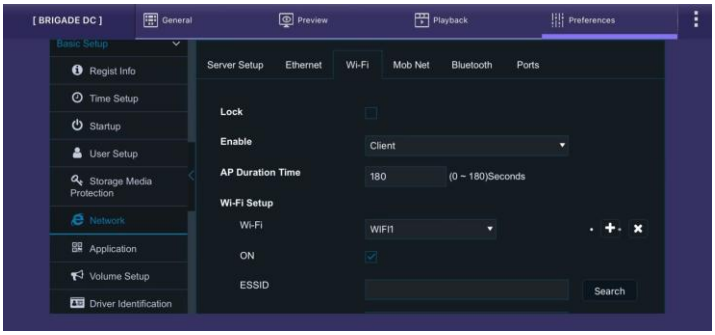
***Note:** this **Lock** status is saved on the device and does not go into the config file. This means if a user turned this Lock on, the device would not overwrite any Wi-Fi parameters in the future by importing config files. It can only be able to change by manually change those parameters or manually disable **Lock** to allow it to be able to accept config files again.*

Enable is used to turn the Wi-Fi module to one of 3 different statuses, Disable, Client and AP. Once chosen Client or AP, the settings found below will become active.

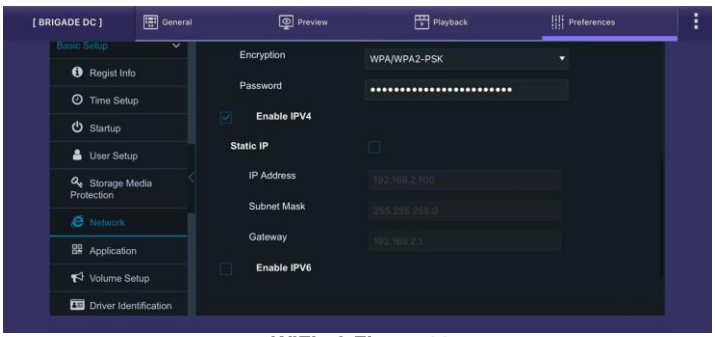
Enable (Client) activates the Wi-Fi module and enter client mode. Afterwards the device will have the ability to connect to an external Wi-Fi signal for data transmission.

Enable (AP) activates the Wi-Fi module and enter AP mode which will make the device create a Wi-Fi hotspot for any mobile device to connect to it. Once activated, users can use mobile phones to connect to the Wi-Fi hotspot and access setup menus via the SmartController App.

By default, the device is set to **Disable** which means no Wi-Fi access initially. To let users have access for configuration, the device will have two ways to enter the AP mode:
1) When the device boots up, the first 180 seconds



WIFI - 1 Figure 43



WIFI - 2 Figure 44

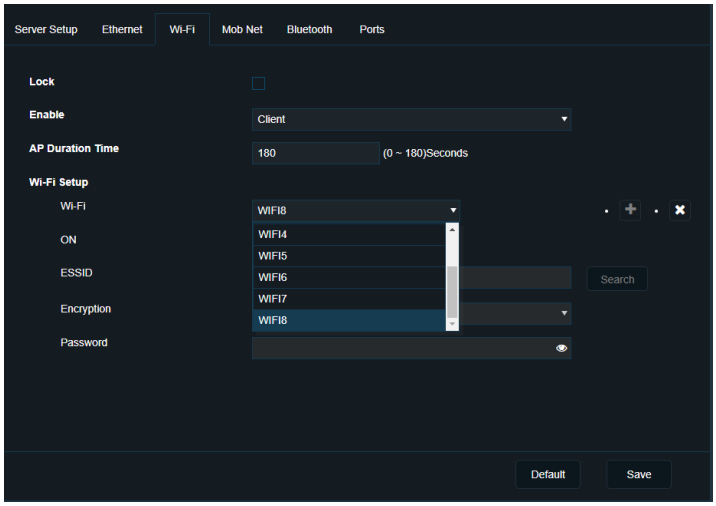
(configurable) are in AP mode. Users can use this time slot to connect to the hotspot and login the App. If the SmartController connection has not been built over this period, the AP mode will be switched off after time runs out. If it's been connected by a mobile phone and logged in Apps, the signal will remain until the connection cut off.
2) By double clicking the button on the device front panel.

AP Duration Time is to define how many seconds the boot up AP mode and button press AP mode should remain. By default, this set to 180 seconds.

Wi-Fi allows the addition of up to 8 Wi-Fi connections to the device.

SSID is the service set identifier.

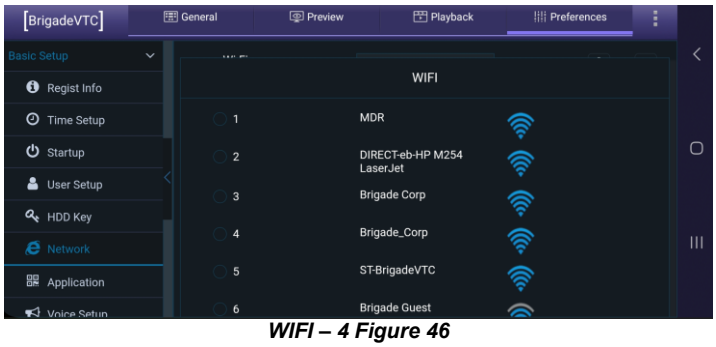
SSID (Client) It is used to identify a wireless LAN and is usually unique to an area. This is where you will enter the name of the wireless network that the device will connect to.



WIFI - 3 Figure 45

Search enables the device to search for Wi-fi Connections within the immediate vicinity of the device as a mobile phone or laptop would.

SSID (AP) is to set the name of the MDR wireless network hotspot which mobile devices can look for when trying to connect. If left open, the default SSID follows this format "ST-*Vehicle Registration Number*".



WIFI – 4 Figure 46

Encryption refers to protocols used to protect your network.

Encryption (Client) supports WEP, WPA/WPA2-PSK and WPA2_Enterprise. This is case-sensitive.

Encryption (AP) supports None, WEP and WPA/WPA2-PSK. None means no password needed when trying to connect to this hotspot. WEP and WPA/WPA2-PSK need minimum 8 characters password.

Password is the wireless network password; this should be entered carefully as it is case-sensitive.

Static IP is used to turn the Wi-Fi module off or on. Once enabled, the settings found below will become active.

Enable IPv4 is to setup the Wi-Fi network address. By ticking this box means your device will automatically obtain an IP address from the Wi-Fi network router. Static IP allows users to manually define the IP address, but this is not recommended. The simplest way is to stay on auto-get IP address.

IP Address refers to the internet protocol address of the Wireless module. This address is used to join the wireless network.

Subnet Mask is used to identify network address of an IP address. By default, this is 255.255.255.0.

Gateway helps route the network traffic. Enable IPv6 is also supported by the device. Usually, IPv4 should be sufficient for daily use. If want to switch on IPv6, recommend consulting with the users' IT department before making any changes.

4.2.6.4 Mob Net

Lock can fix the mobile network settings and parameters below and will not be overwritten when user imports config files.

Server Type is an auto-populated field, indicates the mobile network connection type.

Network Type is **Mix**, which means when a SIM card being inserted, the device will auto-adapt the strongest network signal for data transmission.

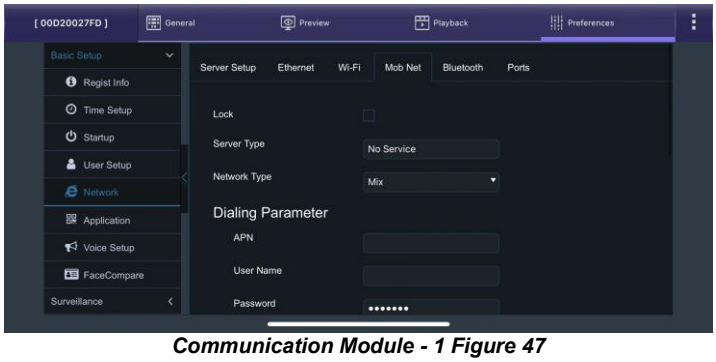
APN refers to Access Point Name. This information is dependent on your mobile carrier network.

User Name is obtained from your SIM card provider.

Password is obtained from your SIM card provider.

Number refers to the dial up phone number needed to connect to the network. Users can leave it as "*99#" if not wanting to input actual numbers.

Certification refers to the authentication mode, this can be set to either None, CHAP (Challenge Handshake Authentication Protocol), PAP (Password Authentication Protocol) or Mix. This is chosen by the network operator.



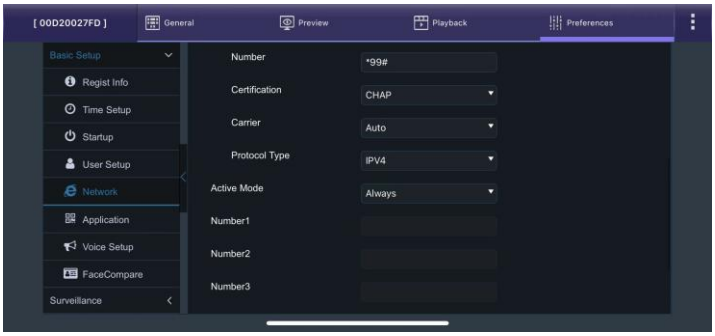
Communication Module - 1 Figure 47

Carrier refers to the SIM card provider, which should be selected manually, or leave it as **Auto** which is compatible for all carrier types.

Protocol Type default is IPv4. This can be selected to IPv6 or IPv4/IPv6 according to actual usage.

Active Mode provides different connection type of mobile network. By default, the connection mode is Always which represents the device will immediately connecting to mobile network when a valid sim card has been installed. Other options are Phone/SMS and Sensor which can let the device stay no connection until certain phone call / message comes in or the dedicated usage sensor has been triggered (the sensor needs to be setup in advance).

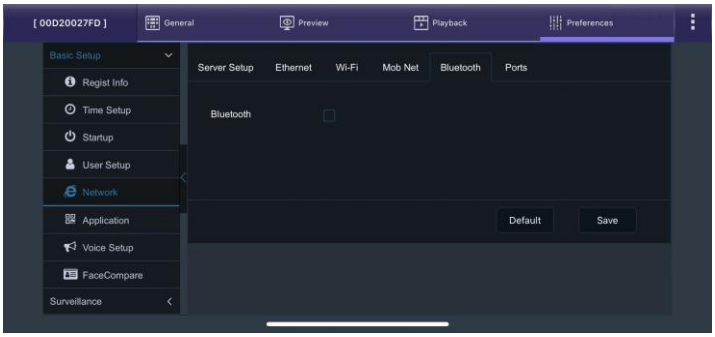
Number1/2/3 link with above Active mode. If chosen Phone/SMS in active mode, users can fill in 3 different mobile numbers here. When these number calls or send messages to the installed SIM card, the mobile network connection will be created, and the device can start using mobile data for online features.



Communication Module - 2 Figure 48

4.2.6.5 Bluetooth

Bluetooth is a reserved feature for future use, currently not in use.



Bluetooth Figure 49

4.2.6.6 Ports

Ethernet HTTPS ensures that communication between the MDR and its Ethernet page is encrypted. By default, this is enabled for communication security.

Web Port is used for when a PC is connecting to the device via Ethernet cable for accessing configuration menu. If this is incorrect, the web page will not open. When **Ethernet HTTPS** is enabled, the port is 443 by default. When it is disabled, the default port is 80 for non-HTTPS communication.

RTSP Port is used for Real Time Streaming feature. By default, this is 554.

RTSP feature: if the device has a fixed Local IP address, the RTSP feature can be used for real-time live view via commands below:

Main streaming video:
rtsp://username:pwd@IP:554/mainstreamX

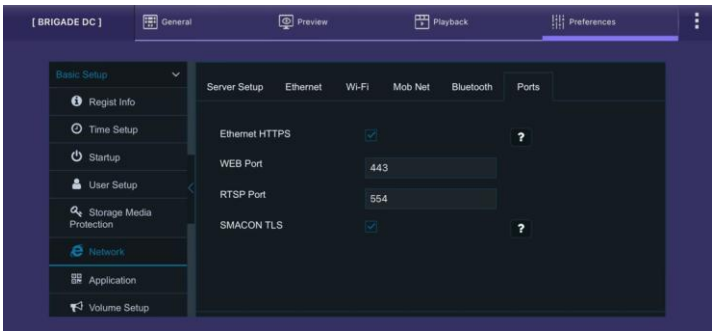
Sub streaming video:
rtsp://username:pwd@IP:554/substreamX

X represents for channel number, starts from zero.

Example (obtain live video from channel 1):
rtsp://admin:admin@192.168.1.100:554/mainstream0

SMACON TLS is used for when Smartcontroller APP is connecting to the MDR via TLS encryption. By default, this is enabled for communication security.

Note: After SMACON TLS has been enabled, please make sure to enable TLS on the SmartController Apps login page before operation; otherwise, the login will fail.



Bluetooth Figure 50

4.2.7 Application

4.2.7.1 FTP Server

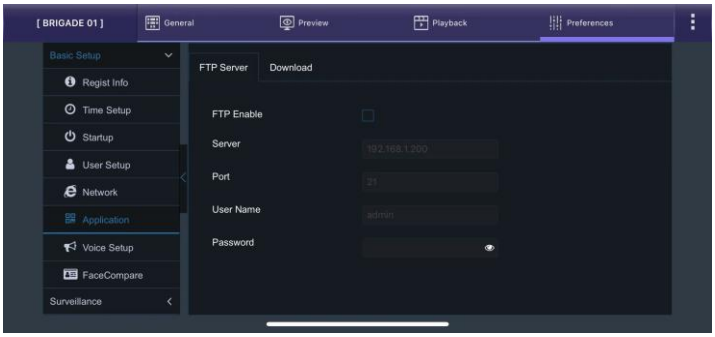
FTP Enable is for connecting to an FTP server for storing snapshots. By default, this is off, for reducing external connectivity for data protection.

Server to input existing FTP server address.

Port default is 21.

User name based on existing FTP server information.

Password based on existing FTP server information.

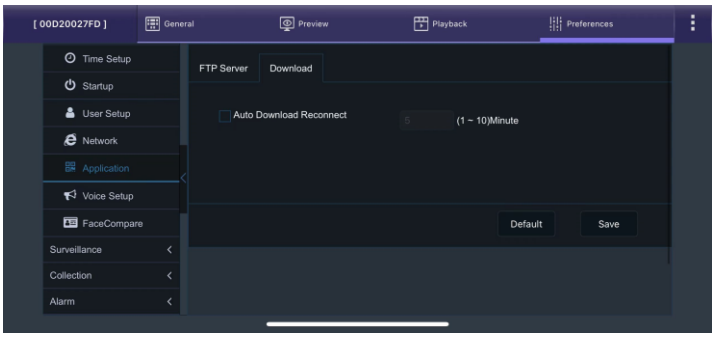


FTP Server Figure 51

4.2.7.2 Download

Download is to wake up the device when in **Sleep** mode to complete the auto-download tasks assigned to it by the server software.

Auto Download Reconnect is by default off. After enabling it, the device in sleep mode will wake up and try to connect to the server to start the download task. If the server reaches the maximum connection amount currently, the device will go back to **Sleep** status and wake up after 5 minutes (default) before next try.



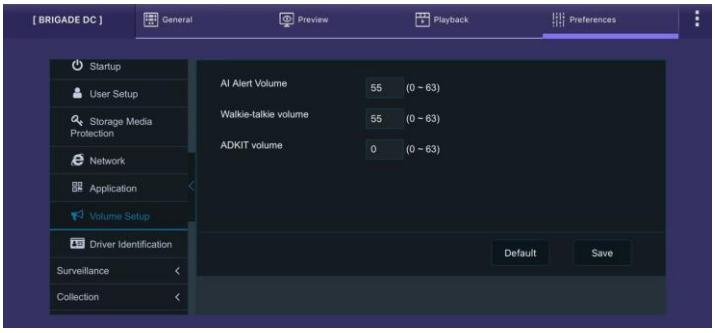
Download Figure 52

4.2.8 Volume Setup

AI Alert Volume by default is 55. This controls the volume of the broadcasting Text to speech (TTS)/ mp3 messages such as AI alarm alerts and notification messages “AP Mode Enabled”.

Walkie-talkie volume currently not in use.

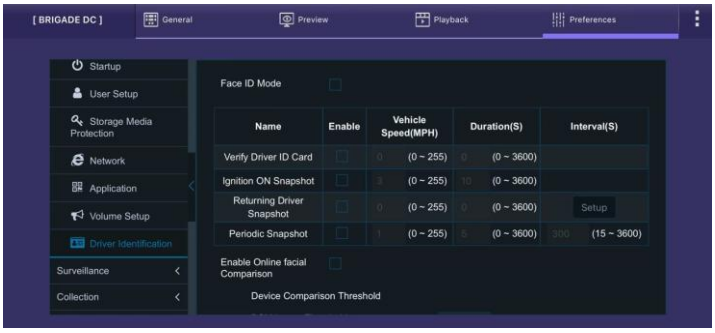
ADKIT Volume currently not in use.



Voice Setup Figure 53

4.2.9 Driver Identification

Driver Identification is currently not functional.



FaceCompare Figure 54

4.3 Surveillance

4.3.1 Live View

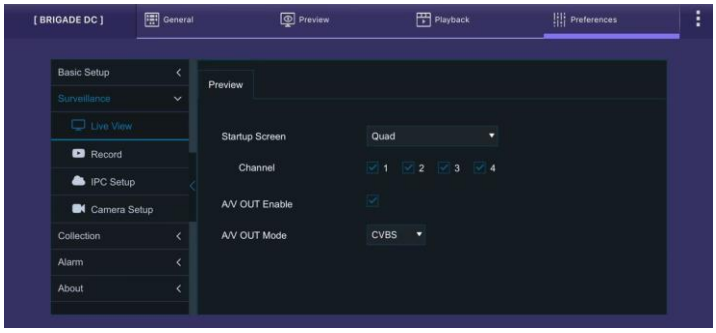
4.3.1.1 Preview

Start-up Screen refers to the display once the device has fully booted up. The options are SINGLE, QUAD and 9-SPLIT. By default, it has quad view.

Channel controls which channels is visible at boot up. If the **Start-up Screen** set to **Single**, the user can choose which channels to display. The feature is useful for viewing the desired channel without accessing the device all the time.

A/V OUT Enable allows the device to output a live preview to an external monitor. This is enabled by default.

A/V OUT Mode determines the output image quality. Currently only supports **CVBS**.



Preview Figure 55

4.3.2 Record

4.3.2.1 General

System is used to choose the input/output video format. The options are PAL or NTSC. By default, PAL is chosen. This will be the same for all camera inputs.

Overwrite refers to when internal SD cards will overwrite its stored data. The options are BY CAPACITY, BY DAYS, NEVER and BY MINUTES. By default, BY CAPACITY has been selected which means once the SD card has less than 1% of its storage space remaining, older recordings are erased and replaced by newer recordings except locked files. The NEVER option means the overwrite is deactivated.

Locked Duration This represents the length of time (in days) for which alarms cannot be overwritten by the MDR. When the retention expires, the locked files will automatically be unlocked and deleted.

Pre-recording This value specifies the length of time prior to an alarm recording. This will be added before the actual alarm. For example, if ALARM PRE-REC is set to 10 minutes and an alarm of 5 minutes is triggered at 4:00pm and ALARM POST REC is 180 seconds, the alarm recording will begin at 3:50pm and will end after 4:08pm.

SD Record Mode is to define how to use the second SD card in the device. The device has 2 micro-SD cards capability, both will be used for Main Stream Recording.

SD Record Mode options are **Sub-Record**, **Mirror Record**, **Alarm Backup** and **Loop-Record**. By default, Loop-Record is chosen. Once the record mode has been chosen, tick the channel to be recorded to the SD card.

Sub-Record lets the SD card record video based on parameters set up in Sub Stream tab. It usually has a rather low resolution and framerates compared to the Main Stream.

Mirror Record mode will let the second SD card record the same thing as the first SD card, where the parameters are set up in the Main Stream tab.

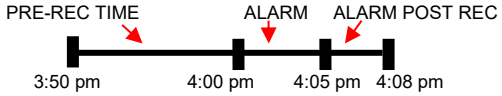
Alarm Backup only the alarms will be recorded onto the second SD card.

Loop-Record let the second SD card to continue recording after the first one is full. This is recommended to use as it can prolong the recording data duration.

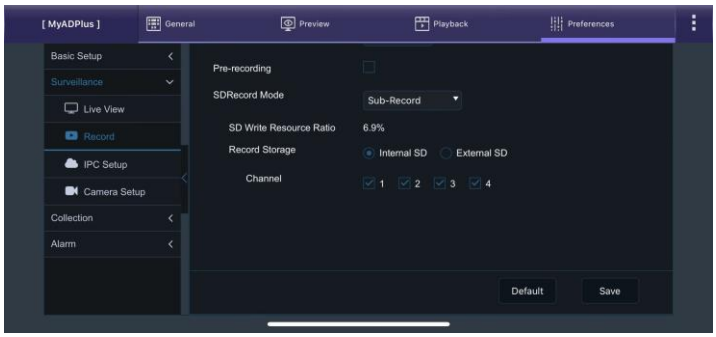
Note: When SD cards are replaced, they must be formatted before using.

SD Write Resource Ratio calculated by (Stream bitrate / SD card full write speed). Bitrate determined by resolution, framerates and quality; SD card full write speed is a fixed value of Brigade SD card (12Mbps). This is a reference value for user to see and configure

Record Figure 56



Alarm Recording Consist of Figure 57



Record – Sub-Record Figure 58

settings accordingly. Recommend this is set to a value lower than 80%, if the data rate exceeds SD card writing speed and results in data loss.

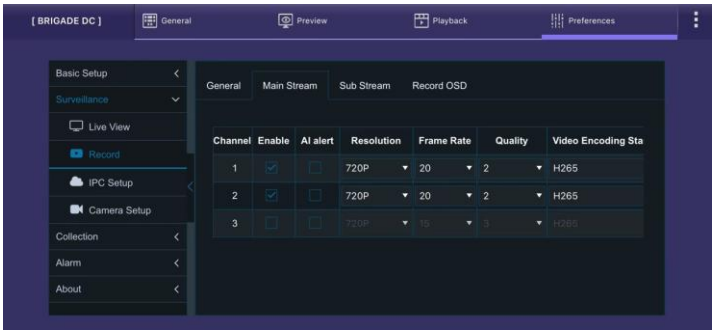
Note: This value cannot reflect correct status if using a 3rd party micro-SD card.

Record Storage options are **Internal SD** or **External SD** (fireproof box). Currently the External SD is not in use.

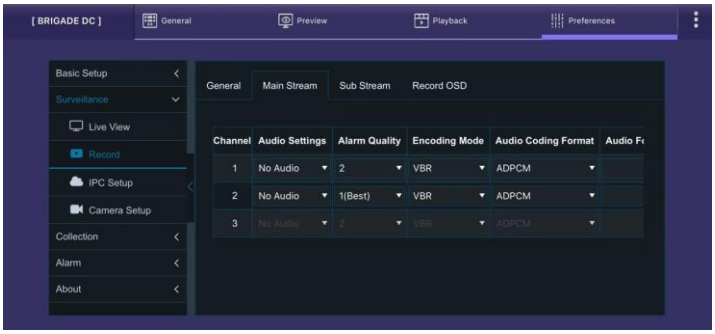
Channel by default enables all available channels.

4.3.2.2 Main Stream

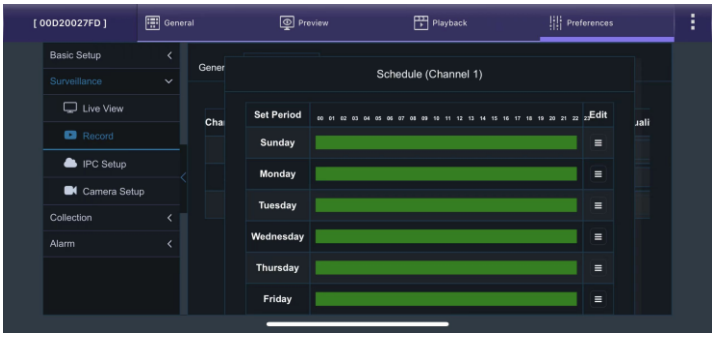
These settings are used to set the resolution, frame rate and quality per channel independently for **Main Stream** which is stored on the SD card.



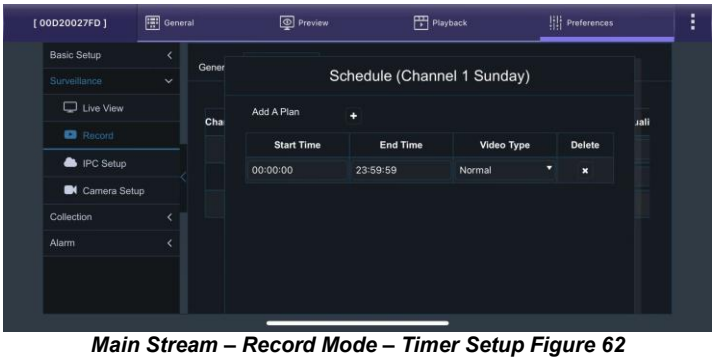
Main Stream -1 Figure 59



Main Stream -2 Figure 60



Main Stream – Record Mode – Timer Schedule Figure 61



Main Stream – Record Mode – Timer Setup Figure 62

Resolution allows users to choose the resolution for each channel. The options auto adjust based on camera inputs. The options are CIF (lowest), WCIF, HD1, WHD1, D1, WD1 and AHD (720p, 960p, 1080p and 1920p) (highest). The recording resolution will not affect AI detecting accuracy.

Frame Rate allows users to choose different frame rates for different channels depending on resolution settings. Options are 1 to 25 for PAL and 1 to 30 for NTSC. By default, it is 20 for Channel 1 and Channel 2.

Quality has 8 levels. Level 1 is the best quality whereas level 8 is the lowest quality. **Quality** represents stream data bitrate based on current setting (**Resolution**, **Framerate**, **Quality**, **Encode Standard**). This value can help users to estimate the video file size.

Video Encoding Standard options are H.265 and H.264. By default, set to H.265 as it supports higher compression rate and able to reduce the recording file size.

Channel Name is used for an 8-character name which each camera channel can be associated with. These can include lower/upper alphanumeric characters. This is displayed on the Live and Record OSD.

***Note:** For IP camera channels, since the IP camera has its own settings embedded, after connecting, the channel settings will automatically change to IP camera. Users may need to manually adjust the settings after connection.*

Record Mode has three modes available – all modes require the **IGNITION** signal to be applied, or timer auto-boot to be set up:

- **Power Up** - allows continuous recording after powering up until the device shuts down.
- **ALARM** - allows users to record only when an alarm has been triggered. Alarms can be configured to be activated by triggers or other alarms (such as G-Force, Panic Alarm, see section 4.5 for details on alarms)
- **TIMER** - allows users to specify timeframes in which the recording will be activated.

Record Mode – Timer - Schedule allows users to choose schedules based on different days.

Click on the day and choose the desired day of the week. Then setup the **Start Time**, **End Time** and **Video Type**.

Record Mode – Timer - Video Type can be Normal or Alarm.

Note: This record mode timer will not prevent the device from turning off if ignition signal has been removed.

Audio Settings activation allows users to enable/disable the audio recording from the camera channels individually. This setting depends on the utilised cameras having microphones. There are 2 options, **Continuous** (Main Stream always has audio recorded) and **No Audio** (Main Stream recording has no audio).

Alarm Quality has 8 levels. Level 1 is the best quality whereas level 8 is the lowest quality. Brigade recommends using a higher quality for Alarms for a higher level of image detail.

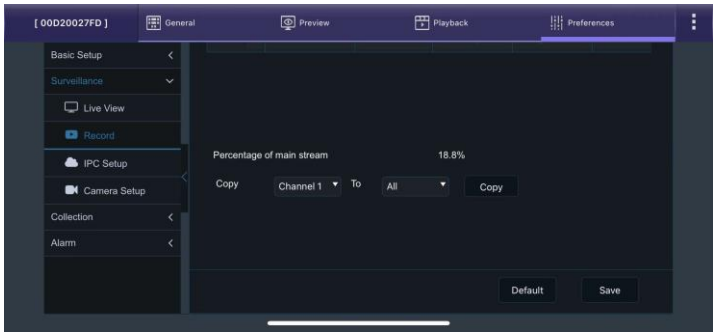
Encoding Mode allows users to choose between Constant Bit Rate (**CBR**) and Variable Bit Rate (**VBR**). The difference is minimal as the Variable Bit Rate is not efficient as it involves more processing power and may introduce some visible artefacts due to higher compression rates.

Audio Coding Format support 4 types of audio format: ADPCM, G711U, G711A and G726. By default, it is set to ADPCM.

Audio Format Sub Type works when choosing **G726**. Available options are 16K, 32K, MEDIA_16K and MEDIA_32K. By default, set to 32K.

Percentage of Main Stream displays resource occupation which calculated based on each channel settings. Main Stream resource and Sub stream resource are calculated separately, each of them can go up to 100%.

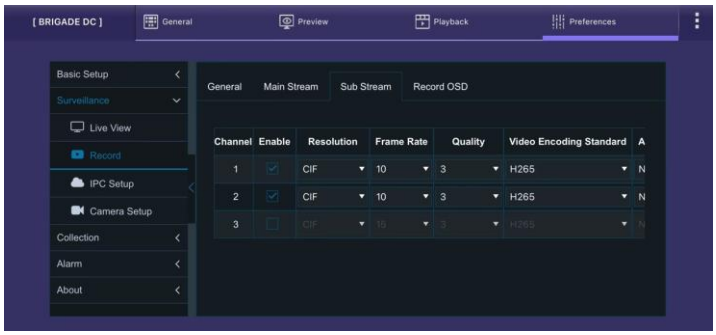
Copy can duplicate one channel's setting to every other channels.



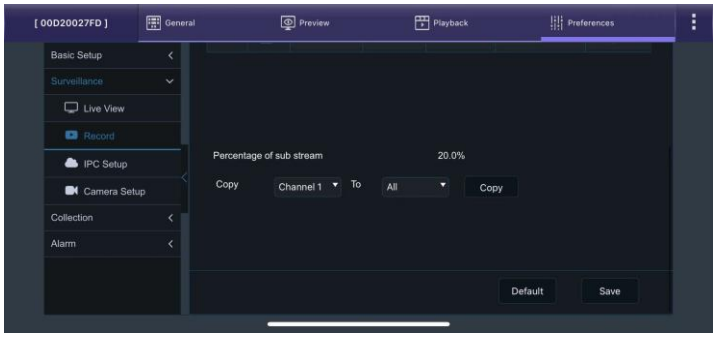
Main Stream -3 Figure 63

4.3.2.3 Sub Stream

These parameters define sub stream, which is typically used for the secondary SD card or online **Live View** via MDR-Dashboard 6.0. If the second SD card used for alarm recording, mirror recording or Loop-Record, it will take Main Stream parameters.



Sub Stream - 1 Figure 64



Sub Stream - 2 Figure 65

Channel is used to identify the channel.

Enable this controls which channels are to have sub-stream video and save to the second SD card.

Resolution can be setup per channel. Options are CIF, HD1, D1.

Frame Rate allows users to choose different frame rates for different channels depending on resolution settings. Options are 1 to 25 for PAL and 1 to 30 for NTSC. The default framerate is 20 for Main Stream and 10 for Sub Stream.

Quality has 8 levels. Level 1 is the best quality whereas level 8 is the lowest quality. **Quality** represents stream data bitrate based on current setting (**Resolution**, **Framerate**, **Quality**, **Encode Standard**). This value can help users to estimate the video file size.

Video Encoding Standard options are H.265 and H.264. By default, set to H.265 as it supports a higher compression rate and is able to reduce the recording file size.

Audio Settings activation allows users to enable/disable the audio recording from the camera channels individually. This setting depends on the utilised cameras having microphones. There are 2 options, **Continuous** (Main Stream always has audio recorded) and **No Audio** (main Stream recording has no audio).

Percentage of Sub Stream displays resource occupation which calculated based on each channel settings. Main Stream resource and Sub Stream resource are calculated separately, each of them can go

to 100%. If this value exceeds 100%, MDR will notify the user and the setting cannot be saved.

Copy can duplicate one channel's setting to every other channels.

4.3.2.4 Record OSD

Record OSD refers to information that will be "burned" onto the video image. This means that if footage is exported as MP4, then the enabled information will be shown on the image.

The options are **Time**, **Vehicle Reg**, **Channel Name**, **Time Zone**, **Speed**, **GPS**, **Vehicle Num** and **Alarms**.

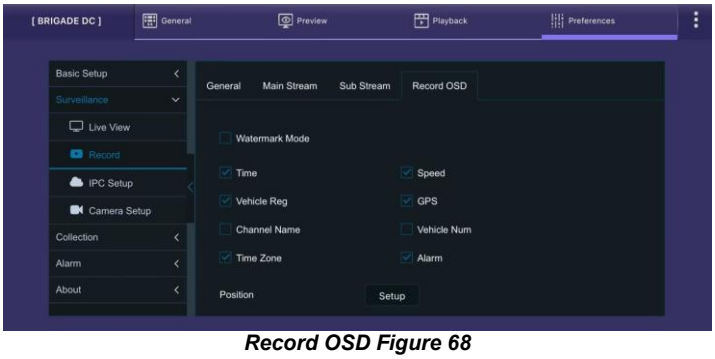
Watermark Mode can shrink the text size to minimum to avoid blocking video details.

Record OSD without Watermark Mode Figure 66

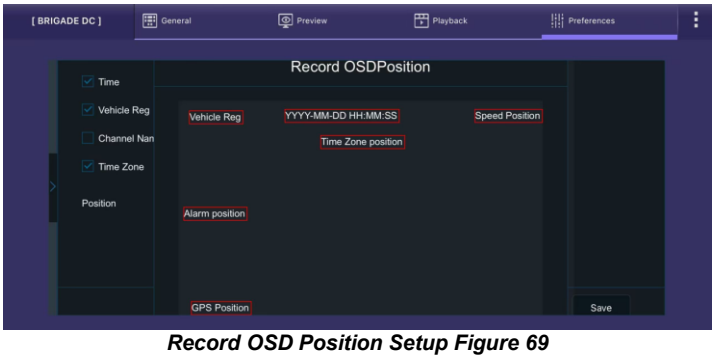
Record OSD with Watermark Mode Figure 67

You can change the position of each live OSD by using the **Setup** button.

By default, **TIME, VEHICLE REG, TIME ZONE, SPEED, GPS** are enabled.



Record OSD Figure 68



Record OSD Position Setup Figure 69

4.3.3 IPC Setup

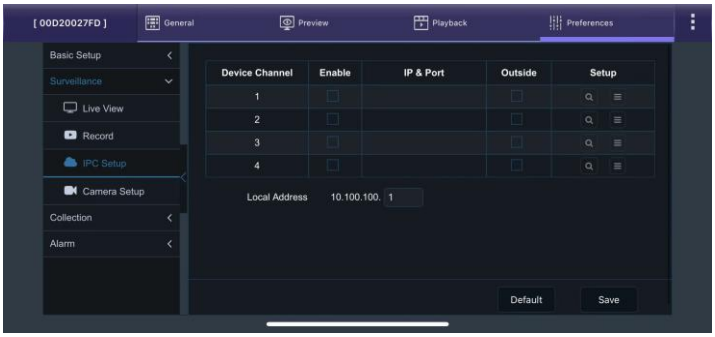
The device supports direct connection with one IP camera via 6pin connector on the adapter cable.

IP connection is plug-and-play. After connected, the image will appear on the screen after approx. 20s without extra operations required.

IP channels are also flexible compared to analogue channels. Users can manually allocate it to any other channel in the IPC Setup page. Brigade Electronics PLC recommend allocating the IP camera to Channel 4 as Channels 1 and 2 are for built-in cameras, Channel 3 usually reserved for AHD/CVBS cameras.

By default, the **LOCAL ADDRESS** for the device is 10.100.100.1. Therefore, the connected IP camera IP address range should within 10.100.100.x.

For more IP camera setup and operation, please refer to *IP Camera Operational Guide.*



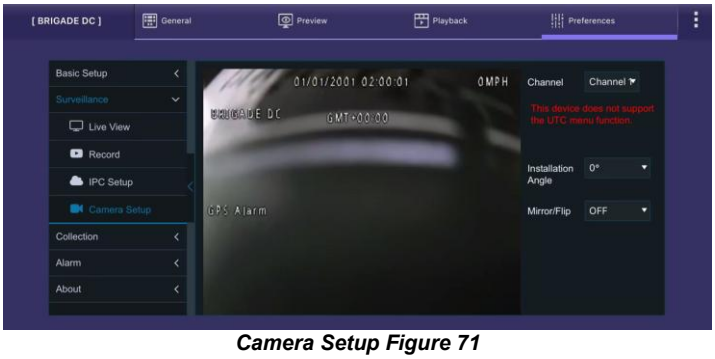
IPC Setup Figure 70

4.3.4 Camera Setup

This interface can be set as mirror, flip or rotating image for each channel. Those settings affects both live and recorded videos.

Install Angle can rotate the image to 0°, +90°, and -90°.

Mirror / **Flip** supports Mirror, Flip, Mirror+Flip.



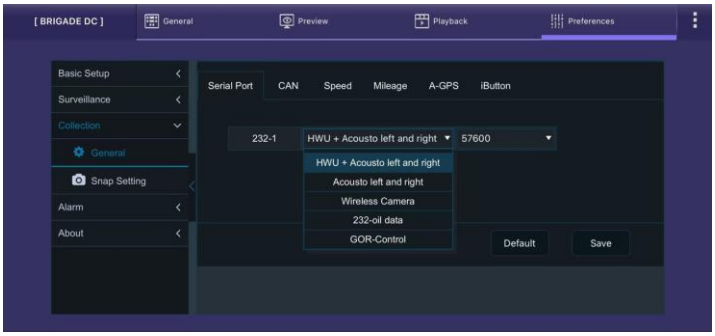
Camera Setup Figure 71

4.4 Collection

4.4.1 General

4.4.1.1 Serial Port

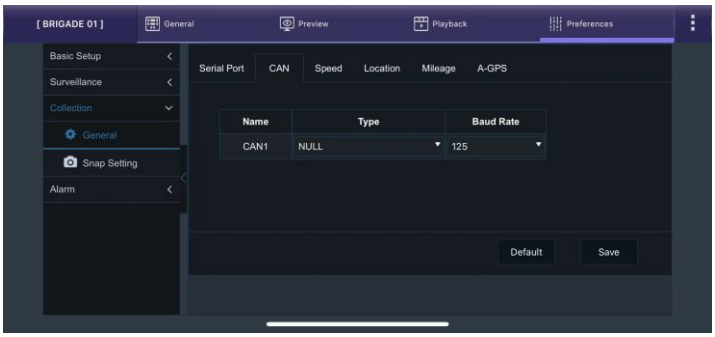
This device supports 1x RS232 signal input which can be used for various accessories. If the device is used with the Brigade Hazard Warning Unit (HWU), a transfer cable (HWU-CB-01) is required.



Serial Port Figure 72

4.4.1.2 CAN

This feature is currently under development.



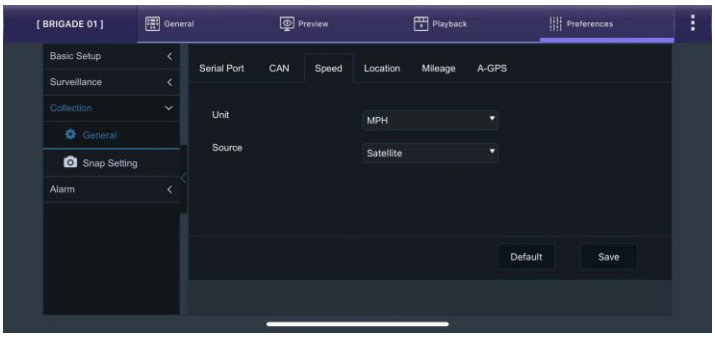
CAN Figure 73

4.4.1.3 Speed

Unit refers to the speed setting. This can either be in miles per hour (MPH) or kilometres per hour (km/h). By default, this is set to MPH.

Source has three options. Satellite (GPS), OBD, CAN or MIX. In the majority of applications GPS signal is the simplest to use. OBD option can be chosen when the device is installed with OBD connectors rather than cable wires. By default, Satellite is chosen as source.

***Note**: this device does not support Speed Pulse.*



Speed Figure 74

4.4.1.4 Mileage

Total displays the total distance travelled of the vehicle once it has been confirmed in mileage setup. The speed unit controls whether this value is displayed in miles or kilometres.

Base Value is a field that is manually entered. Type the current distance value once the device is installed.

Operation is used to submit the distance value to the device memory. Click **Correct** once you are happy with the value. Click **clear** to zero the total distance value. Prompts will display to ask for user's confirmation.

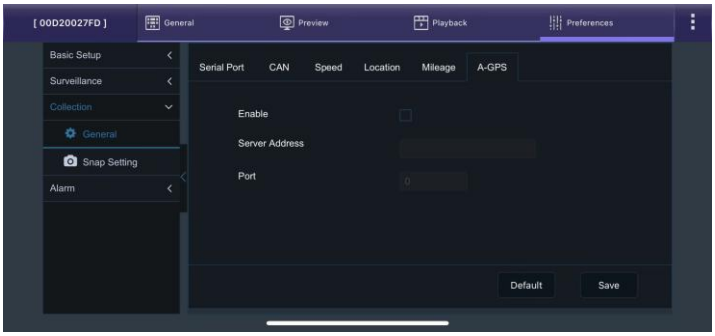
Mileage Figure 75

4.4.1.5 A-GPS

A-GPS is a method to improve GPS transmission by connecting to a nearby mobile base station to download satellite data. Common satellite signal is only 50bit/s, with supports from mobile base station, the downloading speed can be drastically improved. After it is enabled, users can input an A-GPS server address and port. Afterwards, the device will be able to connect to the A-GPS server and downloading GPS data while the vehicle is moving. There are a lot of public A-GPS services that can be chosen. Users can decide which one to use as required.

***Note:** to use the A-GPS feature requires the mobile network enabled in the device.*

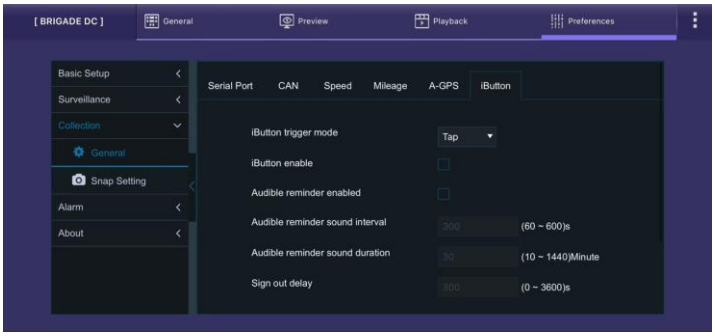
If enabled the A-GPS, the additional data consumption is less than 1MB/day.



A-GPS Figure 76

4.4.1.6 iButton

iButton is a feature used for logging driver check-in and check-out status. It typically works with an accessory consisting of a base and a key. To check-in or check-out, the driver taps the key onto the base to trigger the status. The status change is accompanied by audible notification. By default, this set to disabled.



A-GPS Figure 77

iButton trigger mode can select **Tap** or **Hold**.

iButton to enable the feature on the device.

Audible reminder enabled allows the device to play audible notification for check-in or check-out events, or to remind the driver to check in if no action is taken for an extended period.

Audible reminder sound interval defines how many seconds between each reminding notification when no action is taken for check in.

Audible reminder sound duration defines how long the device will keep reminding the driver for taking actions. If the time has been exceeded, the device will longer remind the driver.

Sign out delay is used after the ignition off, it will count down for a set period before automatically check out the driver. This is used when the ignition off set for too long, if driver forget to check out, his status will remain unchanged for an excessive period of time.

Note:

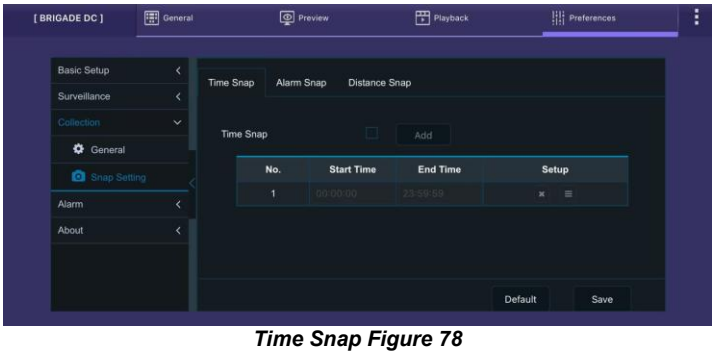
1. After check-in, the status will not change for 1 minute even if the key is tapped again. This is to prevent accidental activation.

2. If the MDR shuts down unexpectedly, it will automatically check out the driver after reboot.

4.4.2 Snap Setting

4.4.2.1 Time Snap

Time Snap needs be ticked to enable all the options. Users can have a maximum of 8 snap entries. By default, time snaps are disabled.



Time Snap Figure 78

Start time refers to the time you would like time snaps to start.

End time refers to the time you would like time snaps to end.

Delete removes a time snap entry. Entry 1 cannot be deleted.

Snap Link Setup is where the time snap is setup.

There is no limitation of the number of snaps, but this uses the same storage limit as recordings. If the storage is full, then the oldest snap will be written over. Snaps are stored by vehicle registrations and time.

When exporting snaps to a USB flash drive. A folder named picture found in the following path

F:\DC204AI\"vehicle registration"\"date"\picture will be created.

Channel is the channel option for which the user would like to set time snapshots..

Snap Enable controls whether time snaps are enabled for that channel. To activate the other menu options, snap enabled must be ticked.

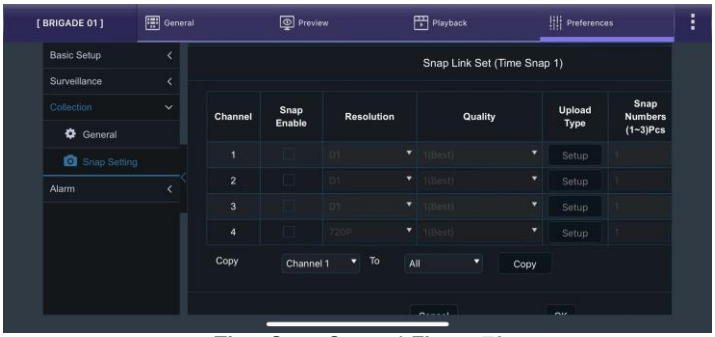
Resolution refers to the time snap resolution. The options are CIF, WCIF, HD1, WHD1, D1, WD1 and AHD (720p, 960p and 1080p). This is dependent on the input resolution of the cameras connected.

Quality represents the image quality of the snapshot. There are 8 levels. Level 1 is the highest quality whereas level 8 is the lowest quality. By default, this is 1.

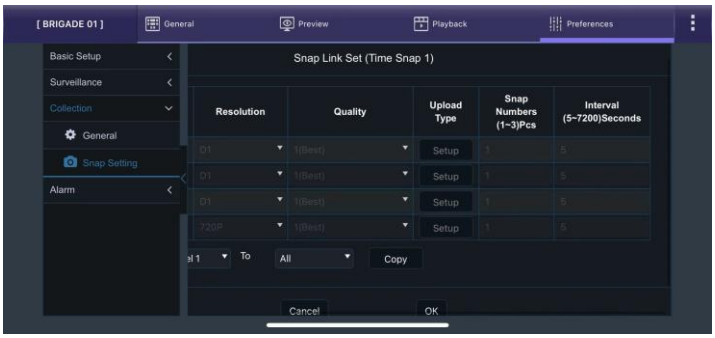
Upload Type support to save snapshot to FTP server or HTTP server. FTP server has been defined in *Chapter 4.2.7.1 FTP Server.* HTTP server is currently not in use.

Snap Numbers refers to how many snaps will be taken. A maximum of 3 snaps can be taken for a minimum of 5 seconds. By default, this is 1.

Interval is the period between each snap which can be between 5 and 7200 seconds. By default, this is 5 seconds.



Time Snap Setup 1 Figure 79

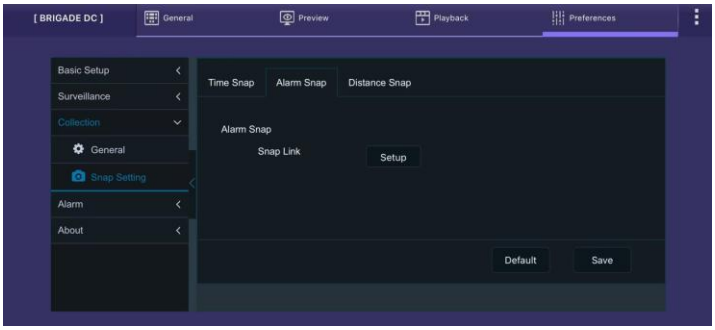


Time Snap Setup 2 Figure 80

4.4.2.2 Alarm Snap

Alarm Snap is used for taking snaps based on triggered alarms only. When any alarm enabled as Alarm Snap on its setting, the device will take snapshots when that alarm triggered.

Setup follows the same interface and structure as above **Time Snap**, please refer to section 4.4.2.1 for detailed explanations.



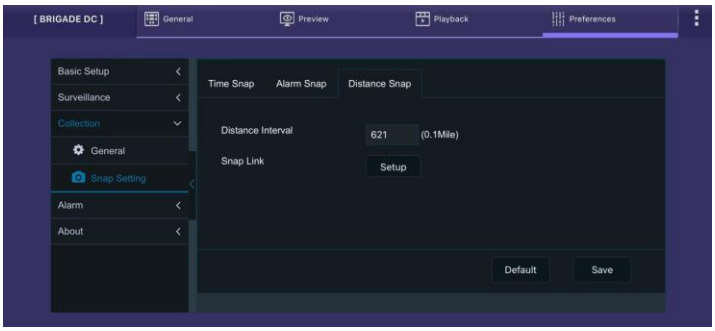
Trigger Snap Figure 81

4.4.2.3 Distance Snap

Distance Snap is used for taking snaps based on vehicle driving distance.

Distance Interval to define how frequently the device will create a single snapshots.

Setup follows the same interface and structure as above **Time Snap**, please refer to section 4.4.2.1 for detailed explanations.



Distance Snap Figure 82

4.5 Alarms

4.5.1 Base

4.5.1.1 IO alarm

By default, this alarm is on.

Name is filled in for input sensor information. This is usually completed by the installer to aid in identifying an input trigger in the future. Up to 8 alphanumeric characters can be used. This is an important field to be filled in, it is displayed under alarm type in the event log within MDR-Dashboard software.

Time	Alarm Type
07:17:16 03-10-202	name2
07:17:03 03-10-202	name1

OSD Name is a 2-alphanumeric character identifier. This is an important field to be filled in as this information is then carried over to the MDR-Dashboard software. This is shown on the LIVE OSD and the RECORD OSD.

IO Enable allows users to set which trigger input wires are used. If a wire is not used, set enable to off.

For Trigger:

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

Sensor Uses select Left or Right Steering when wanting to use AI features. Other options are currently not in use.

Trigger is a field that controls whether an input trigger will trigger on a low or high signal. The user can choose between **Source Voltage** or **Source Pulse**. Under **Source Voltage**, high/low voltage level can trigger the sensor. Under **Source Pulse**, some pulse signal such as left / right indicators can trigger the sensor.

Alarm Off -Delay during this period, the device only allows this alarm to be triggered once. If this alarm is tiggered multiple times within this set period, only one alarm is recorded.

Lock Alarm Off -Delay when this is enabled the **Alarm Off -Delay** duration is refreshed when alarm is triggered within the set time, and the set period has passed. However, if this feature is disabled the period of the **Alarm Off-Delay** can be extended if the period between two consecutive alarms of the same type are less than the set **Alarm Off-Delay** duration period.

For Alarm Linkage:

Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

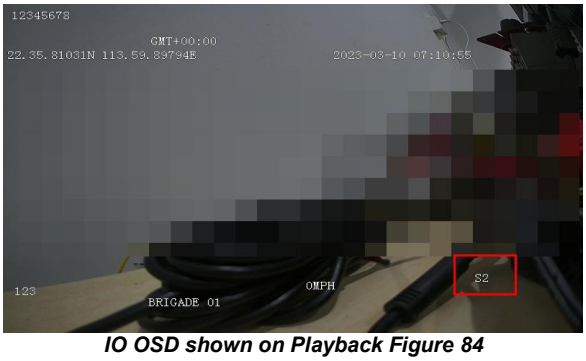
Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.

Linkage Screen currently not in use.

Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.

IO Alarm Figure 83



IO OSD shown on Playback Figure 84

IO Alarm Trigger Figure 85

IO Alarm Linkage Figure 86

4.5.1.2 Speed Alarm

By default, this alarm is off.

Overspeed Enable is used to activate overspeed alarms or events.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

For Triger:

Preload Speed Difference is an early warning for drivers to curb their speed. For example, if you set the speed to 50mph, and early difference is set to 10mph, then when your speed reaches 40mph, the device will give a TTS voice message “Speed warning” to warn the driver.

Speed refers to threshold value for which speed will be considered an overspeed and recorded as an alarm.

Duration Time specifies different lengths of time which allow for longer/shorter alarm durations. If the alarm duration is set to 30 seconds and a short 2 second alarm occurs, this would be treated as a 30 second alarm. Can be set between 0 to 255 seconds. By default, the duration time is 10 seconds.

For Alarm Linkage:

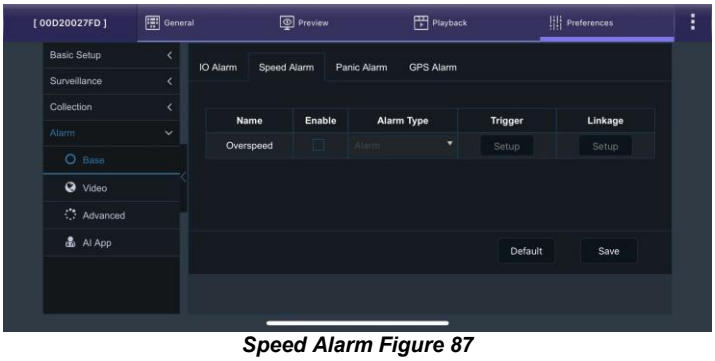
Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds.

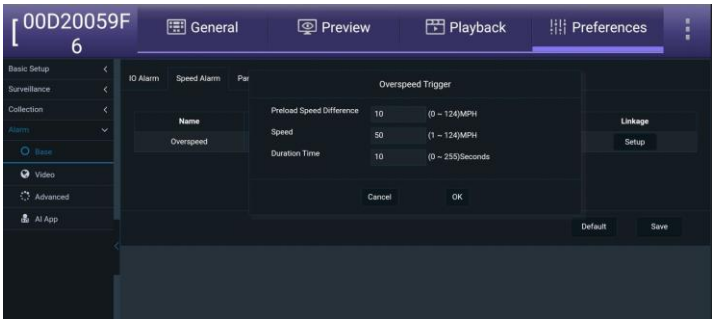
Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.

Linkage Screen currently not in use.

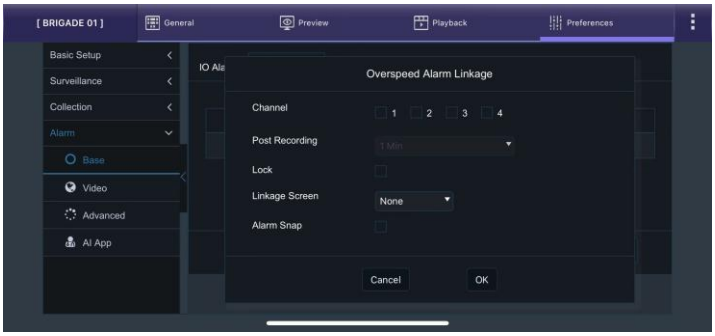
Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.



Speed Alarm Figure 87



Speed Alarm Trigger Figure 88



Speed Alarm Linkage Figure 89

4.5.1.3 Panic Alarm

By default, this alarm is on.

Panic Enable refers to the panic button found on the device, near to the LED indicators. After enabling this alarm, pressing the button once will trigger it.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

For Trigger:

Any key refers to how long the panic button needs to be pressed. This is fixed to 1 second.

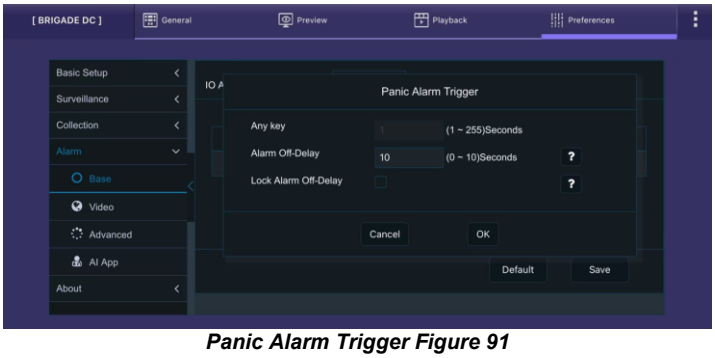
Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once.

Lock Alarm Off -Delay when this is enabled the **Alarm Off -Delay** duration is refreshed when alarm is triggered within the set time, and the set period has passed. However, if this feature is disabled the period of the **Alarm Off-Delay** can be extended if the period between two consecutive alarms of the same type are less than the set **Alarm Off-Delay** duration period.

For Alarm Linkage:

Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Panic Alarm Figure 90



Panic Alarm Trigger Figure 91

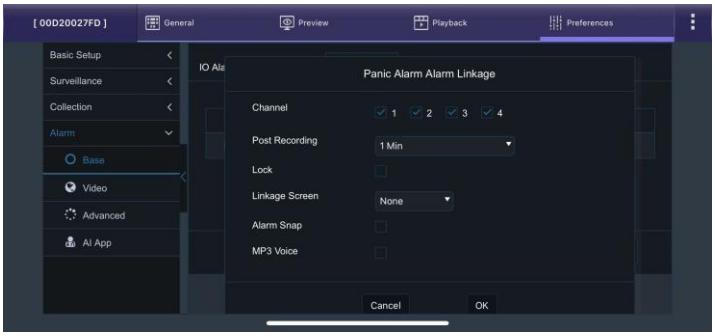
Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.

Linkage Screen currently not in use.

Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.

MP3 Voice enables when the alarm triggered, there will be a voice alert produced by the device to notify the driver.



Panic Alarm Linkage Figure 92

4.5.1.4 GPS Alarm

By default, this alarm is on.

GPS Alarm Enable is used to generate instant alarm when the device lost GPS signal.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

For Trigger:

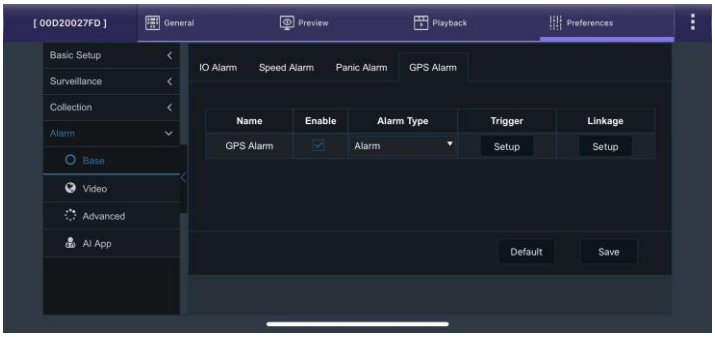
Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once.

For Alarm Linkage:

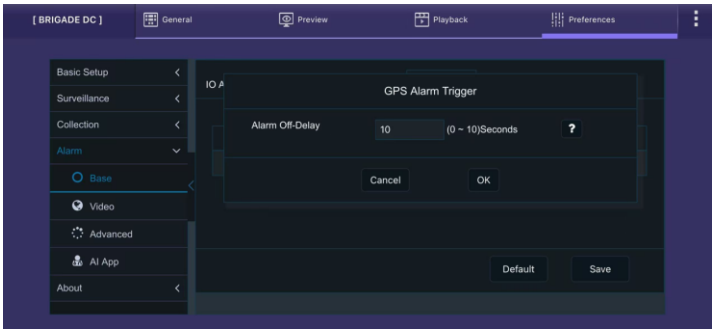
Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.



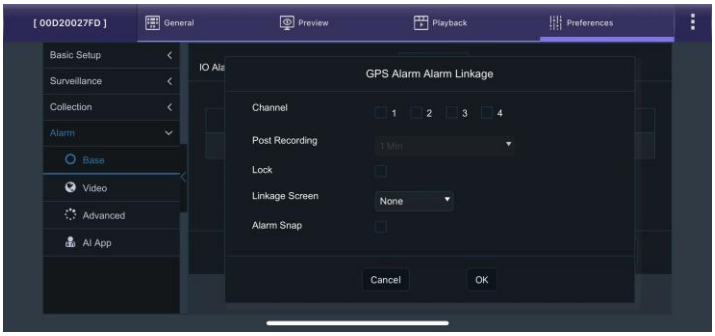
GPS Alarm Figure 93



GPS Alarm Trigger Figure 94

Linkage Screen currently not in use.

Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.



GPS Alarm Linkage Figure 95

4.5.1.5 Button Configuration

The Button Configuration page allows the function of each button action to be defined. Two modes are available under **Mode Selection**: Hybrid Mode and Single Mode.

In **Hybrid Mode**, multiple button actions can be configured, including press, double press, triple press, and long press, each assigned to a different function. In **Single Mode**, only a single press action is supported, allowing one function to be assigned to the button.

Hybrid Mode is recommended, as it supports multiple functions including Panic Alarm, AP Mode, and Privacy Mode.

Button Configuration Figure 96

4.5.2 Video

4.5.2.1 Video Loss

By default, this alarm is on.

Video Loss Enable is used to alert users to a loss of video signal on any of the enabled camera input channels.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

For Trigger:

Channel is used to choose which channels the alarms are to be triggered from. Channels 1 and 2 ticked by default.

Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once.

Lock Alarm Off -Delay when this is enabled the **Alarm Off -Delay** duration is refreshed when alarm is triggered within the set time, and the set period has passed. However, if this feature is disabled the period of the **Alarm Off-Delay** can be extended if the period between two consecutive alarms of the same type are less than the set **Alarm Off-Delay** duration period.

For Alarm Linkage:

Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.

Linkage Screen currently not in use.

Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.

Video Loss Alarm Figure 97

GPS Alarm Trigger Figure 98

GPS Alarm Linkage Figure 99

4.5.2.2 Blind Detection

By default, this alarm is on.

Blind Detection Enable is used to analyse camera inputs for blind images. Blind detection occurs when a camera is obstructed by a large object or deliberately blocked the image. It is mostly used to tackle acts of vandalism.

Note: Rapid light changes will also cause Blind Detection triggered, therefore, it is not recommended when using cameras with infrared illumination.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

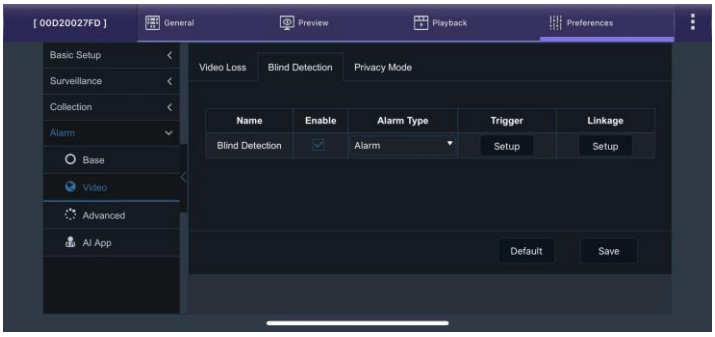
For Trigger:

Channel is used to choose which channels you would like the alarms to be triggered.

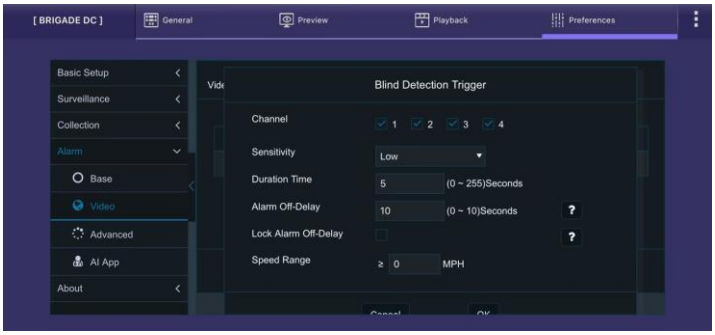
Sensitivity has three options: **High**, **Middle** and **Low**. By default, this set to **Low**.

Duration Time specifies different lengths of time which allow for longer/shorter alarm durations. If the alarm duration is set to 30 seconds and a short 2-seconds alarm occurs, this would be treated as a 30 second alarm. Can be set between 0 to 255 seconds. By default, this is 5 seconds.

Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once.



Cover Alarm Figure 100



Cover Alarm Trigger Figure 101

Lock Alarm Off -Delay when this is enabled the **Alarm Off -Delay** duration is refreshed when alarm is triggered within the set time, and the set period has passed. However, if this feature is disabled the period of the **Alarm Off-Delay** can be extended if the period between two consecutive alarms of the same type are less than the set **Alarm Off-Delay** duration period.

Speed Range define this alarm will be able to trigger when the vehicle speed reaches certain value.

For Alarm Linkage:

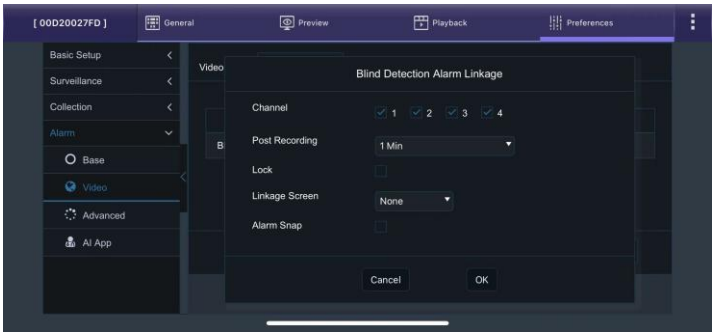
Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds. By default, this is 1 minute.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.

Linkage Screen currently not in use.

Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.



Cover Alarm Linkage Figure 102

4.5.2.3 Privacy Mode

By default, this alarm is off and set to Event rather than Alarm.

Privacy Mode Enable is used for closing camera and stop recording when the driver does not want to be recorded.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

For Trigger:

Channel is used to choose which channels will be shut down when the privacy mode is activated.

Privacy Method has two options: **IO** and **ACC OFF**. If **IO** is selected the driver can activate the privacy mode by triggering the dedicated IO (the Sensor Usage in IO alarm must be set to “Privacy Mode”). If **ACC OFF** is selected, the privacy mode will be activated when the ignition signal cuts off.

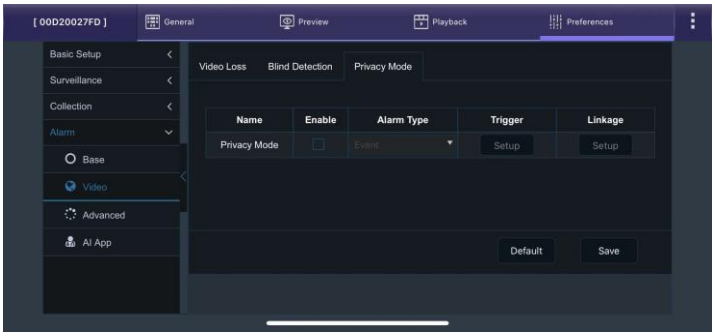
Exit Method explains how to deactivate the privacy mode. If multiple methods have been chosen here, then if either one of them has been satisfied Privacy Mode will be deactivated.

Enable AI MP3 Voice since the AI alarm detection is still ongoing, even if the device enters Privacy Mode, the device will still give AI voice alerts to driver.

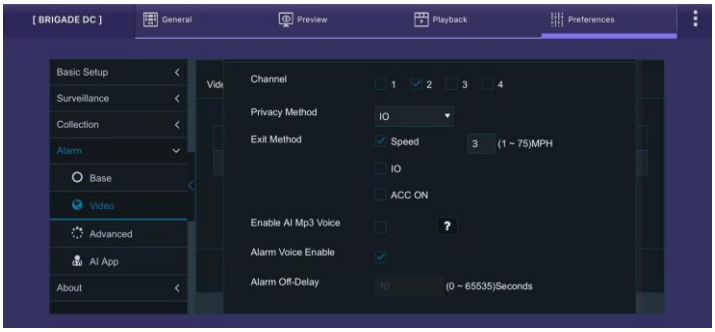
Alarm Voice Enable when the Privacy Mode activated or deactivated, there will be a voice alert produced by the device to notify the driver: “Privacy Mode Enable”, “Privacy Mode Disable”.

Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once.

There is no Alarm Linkage for **Privacy Mode**.



Privacy Mode Figure 103



Privacy Mode Trigger Figure 104

4.5.3 Advanced

4.5.3.1 G-Force

By default, this alarm is off.

G-Force Enable is used to analyse the driving behaviour based on the G-Force values recorded by the device.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

For Trigger:

Based on the accumulated data obtained from built-in G-Sensor, the device can make a judgment and reports alarm on the driver's driving behaviour such as **Harsh Braking**, **Hard Acceleration**, **Harsh Left Turn** and **Harsh Right Turn**.

Offset is defined by complex algorithms and Brigade Electronics PLC recommend leaving the value as default. By default, there are three sets of Offset values that can be chosen, determined by vehicle's weight: **Light Duty**, **Medium Duty** and **Heavy Duty**. Users can select the setting based on their condition.

Note: The offset value can be increased or decreased if the alarm is too easy/hard to trigger. But the effect is not linear, it must be tested and determined for the users' specific vehicle.

Speed defines this alarm will be able to trigger when the vehicle speed reaches certain value.

Shock represents collision warning based on received G-Force data. The X, Y, Z values refer to the G value which will trigger the alarm. By default, all three values are 1G.

Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once.

For Alarm Linkage:

Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds. By default, this is 1 minute.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted.

Linkage Screen currently not in use.

Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.

MP3 Voice enables when the alarm triggered, there will be a voice alert produced by the device to notify the driver.

Real-Time displays current reading for X, Y, Z axis.

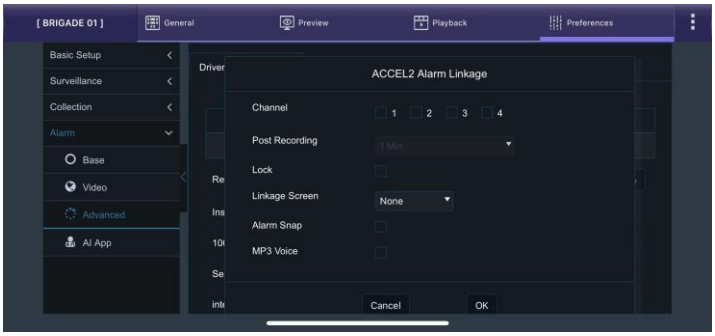
Auto-Calibration is on by default, the device will use accumulated G-Force data and internal algorithm to calibrate the value.

[Manual] **Calibration** is greyed out if Auto-Calibration is on. If Auto-Calibration is failed, users can disable it and use manual Calibration button to refresh the value.

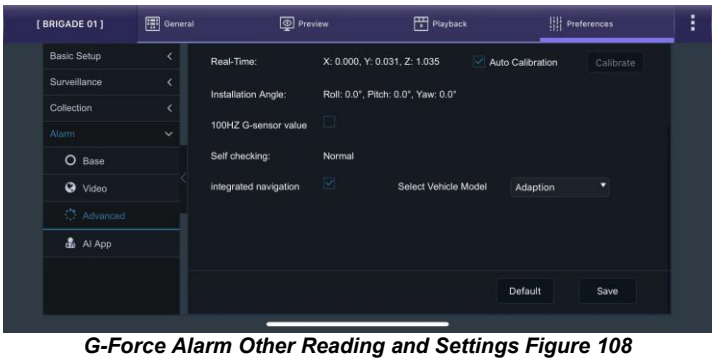
Installation Angle displays the angle of the installed device. Roll-pitch-yaw angles obtained from internal 6-axis G-Sensor.

G-Force Alarm Figure 105

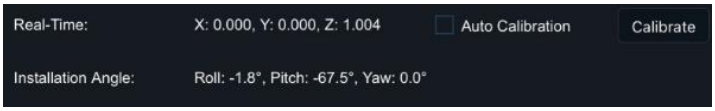
G-Force Trigger Figure 106



G-Force Alarm Linkage Figure 107



G-Force Alarm Other Reading and Settings Figure 108

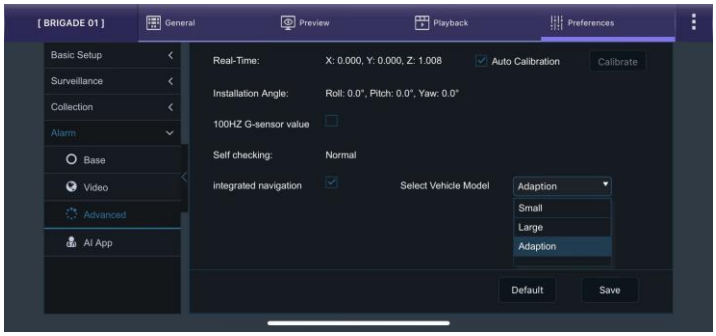


G-Force Alarm Other Reading and Settings Figure 109

100GZ G-sensor value enabled to let the G-sensor work on maximum sampling rate. This will create G-Force data 100 piece per second, which improves the accuracy of the G-sensor greatly but also increased the size of the metadata drastically. It is recommended that this feature be disabled for everyday use. The default sampling rate is 10Hz.

Self-checking is to examine if the Auto-Calibration works well. Especially when the auto-calibration result is abnormal, the G-Sensor will check 6-axis data to make sure if it matches with the auto-calibration value.

Integrated navigation represents for inertial guidance module inside GPS module. Usually the G-Force data is generated by the G-Sensor. However, in the device GPS, it supports an inertial guidance module which can be supplemented for the G-Sensor. By enabling it, the device can receive data from both sensor/module and be able to make a more precise judgement of current driving status. By default, the **Select Vehicle Model** is set to **Adaption** which works for all different vehicle types.



G-Force Integrated Navigation Figure 110

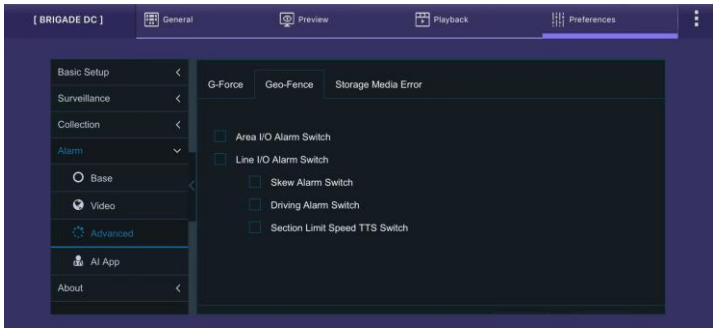
4.5.3.2 Geo-Fence

Geo-Fence Enable is used to send an alarm if a vehicle leaves or enters a geographical region. This region is setup by the user in MDR-Dashboard software. Please refer to the MDR 600 Series Network Connectivity SW & Infrastructure Manual.

In **Geo-Fence Alarm** setup, different alarm conditions can be chosen from:

Area I/O Alarm Switch: trigger the alarm when vehicle in / out the region.

Line I/O Alarm Switch: trigger the alarm when vehicle enter / exit from the route. This is currently not in use.

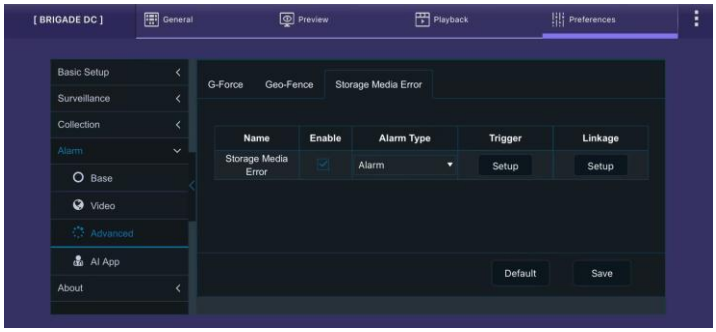


Geo-Fence Alarm Figure 111

4.5.3.3 Storage Media Error

Storage Media Error Enable is an alarm which indicates when the SD cards have a major malfunction where data can no longer be written to the storage medium. When the system detects the SD failing to connect / work, it will cut power to the SD and supply power again to reset and see if the action can bring it back to normal. This process runs 3 times, if the SD has still not recovered, then this alarm will be generated and output.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

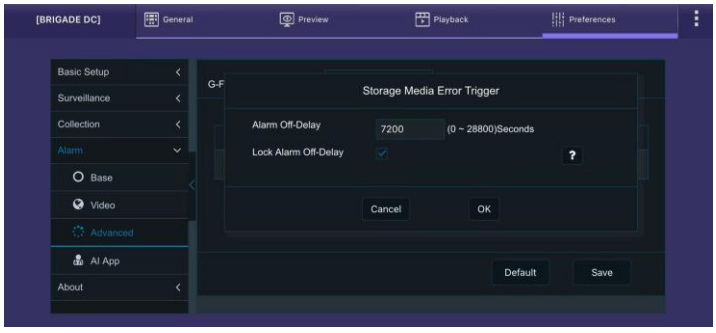


Storage Media Error Alarm Figure 112

For Trigger:

Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once. By default, this set to 7200 seconds.

Lock Alarm Off -Delay when this is enabled the **Alarm Off -Delay** duration is refreshed when alarm is triggered within the set time, and the set period has passed. However, if this feature is disabled the period of the **Alarm Off-Delay** can be extended if the period between two consecutive alarms of the same type are less than the set **Alarm Off-Delay** duration period.



Storage Media Error Trigger Figure 113

For Alarm Linkage:

Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds. By default, this is 1 minute.

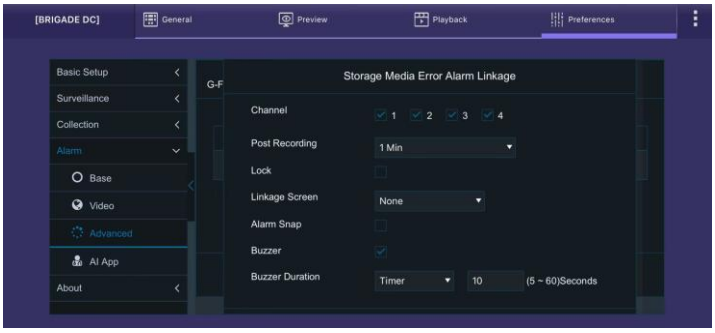
Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted.

Linkage Screen currently not in use.

Alarm Snap can be enabled, the settings are based on the Trigger Snap setup.

Buzzer refers to the built-in buzzer inside the device. Once this is enabled the duration can be configured.

Buzzer Duration can be configured in two ways depending on the type of alarm being triggered. The options are ALWAYS (the buzzer will sound continuously without interruption) or TIMER (the buzzer will sound for the defined period). **Timer** can be set between 5 and 60 seconds. For example, video loss is a catastrophic failure, and Brigade suggests using ALWAYS for such an alarm.



Storage Media Error Linkage Figure 114

4.5.4 AI App

The device has two built-in cameras, the road-facing camera is 1920P resolution for capturing front vehicle images and detecting road lanes. Another driver-facing camera is 1080P with infrared to monitor and detect driver behaviours. With infrared support, it adapts to day/night. glasses/sunglasses different conditions.

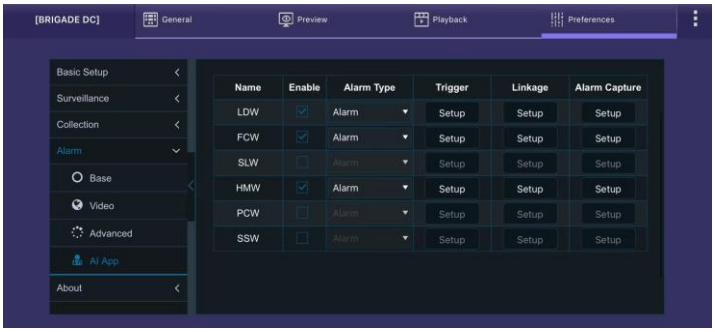
Different AI alarms have different setup and warning methods. Most AI alarms have 2 levels of notification (**Lvl1** and **Lvl2**). Level 1 is less harm and mainly for notifying the driver to be careful. Level 2 is more dangerous, and the alerts are harsher and more frequent. By using this device, the main notification is sound alerts and TTS broadcasts. Details will be explained below for each alarm type.

4.5.4.1 ADAS

ADAS Enable (Advance Driving Assistant System) supports various alarm/alerts by image analysing and processing from the front view camera.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

Trigger settings are different for each individual alarm.



AI App Figure 115

LDW (Lane Departure Warning) by detecting road lanes and left/right turning signals to give alerts when it detects current lane departure that is not intended. By default, this is on.

Judgement: vehicle is crossing lanes without left/right turning signal enabled.

Lvl1 alerts: TTS broadcast “Beep, Lane Departure.”

Lvl2 alerts: high pitch “beep beep”.

FCW (Forward Collision Warning) by detecting the distance between the front vehicle and the driver, calculating with the vehicle speed to give alerts. By default, this is on.

Judgement: vehicle has great possible to crash within seconds if vehicle in front brakes abruptly.

Lvl1 alerts: TTS broadcast “Collision warning, collision warning.”

Lvl2 alerts: high pitch “beep beep”.

HMW (Headway Monitoring Warning) by detecting the relative distance between the vehicle in front and the driver, calculating with vehicle speed to give alerts. By default, this is on.

Judgement: vehicle has great possibility to crash within seconds.

Lvl1 alerts: TTS broadcast “Beep, unsafe following distance.”

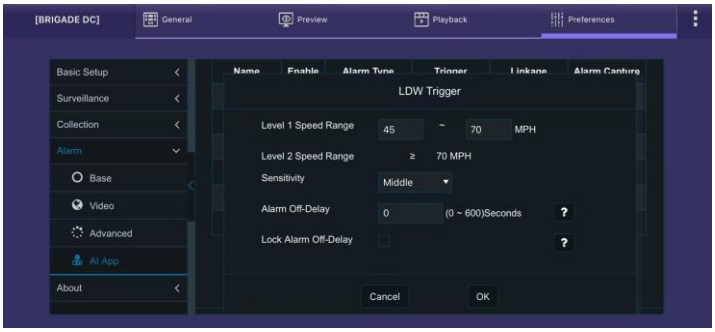
Lvl2 alerts: high pitch “beep beep”.

SLW (Speed Limit Warning), **PCW** (Pedestrian Collision Warning), **SSW** (Speed Sign Warning) currently under development, not in use.

Sensitivity refers to how sensitive this alarm should be triggered. Options are High, Medium, Low and User-defined. Recommend keeping default settings and if wanting to change the sensitivity, it must be tested before using.

Duration specifies when to trigger this alarm after the detection fulfils for how many seconds. This setting only exists on HMW. If the dangerous following distance keeps on for 2 (default value) seconds, the HWM alarm will go off.

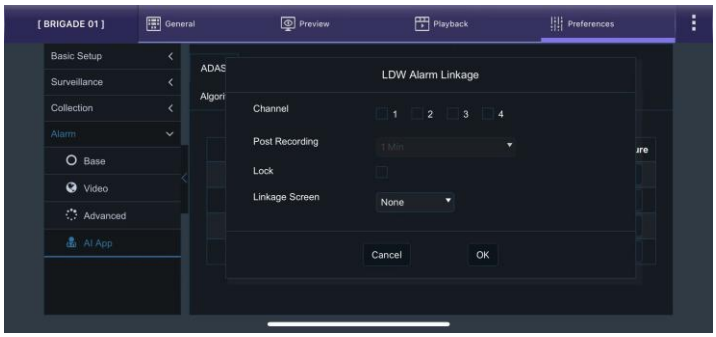
Alarm Off-Delay defines during this period, the device only allows this alarm to be triggered once.



ADAS Alarm Trigger Figure 116

Lock Alarm Off -Delay when this is enabled the **Alarm Off -Delay** duration is refreshed when alarm is triggered within the set time, and the set period has passed. However, if this feature is disabled the period of the **Alarm Off-Delay** can be extended if the period between two consecutive alarms of the same type are less than the set **Alarm Off-Delay** duration period.

The **Alarm Linkage** interface are the same for every ADAS alarms.



AI Alarm Linkage Figure 117

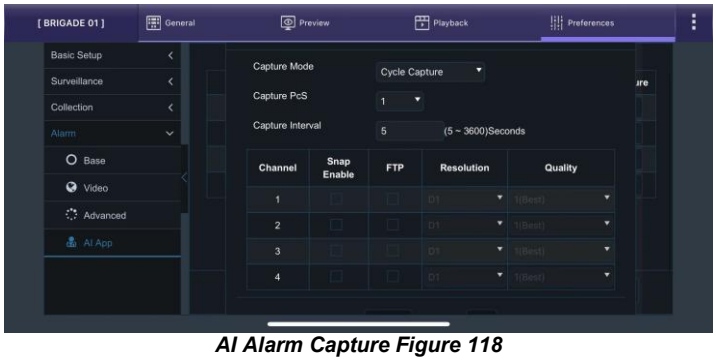
Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.

Linkage Screen currently not in use.

Alarm Capture are settings that enable the camera to create snapshots when certain alarm happens. This interface is the same for every ADAS alarms.



AI Alarm Capture Figure 118

Capture Mode supports **Cycling Capture** and **Single Capture**. Cycling Capture to capture snapshots every few seconds. Single Capture to only capture snapshots once alarm has been activated.

The **Channel** table is to define which channel users want to get snapshots from, and for what resolution and Quality.

FTP only used when the device connected with an FTP server. For details, please refer to *Chapter 4.2.7.1*.

4.5.4.2 DMS/DSC

DMS/DSC Enable (Driver Monitoring System / Driving Safety Cockpit) supports various alarm/alerts by image analysing and processing from the driver facing camera.

Alarm Type can either be alarm or event. Alarms are reported to the Server Centre. Events are stored but do not get reported to the Server Centre.

Trigger settings are different for each individual alarm.

DMS/DSC Figure 119

Fatigue detecting driver eye movements to determine if there is a driver that is drowsy or falling asleep. By default, this is off.

Judgement: Eye closure, continuous or intermittent, exceeds the defined threshold within a set period. Mouth opening (yawning) is used as a supplementary indicator.

Lvl1 alerts: TTS broadcast “Fatigue.”

Lvl2 alerts: high pitch “beep beep”.

No Driver by detecting driver face movements to determine if there’s a driver seated at the driving seat. By default, this is on.

Judgement: No face has been detected.

Lvl1 alerts: TTS broadcast “No driver”

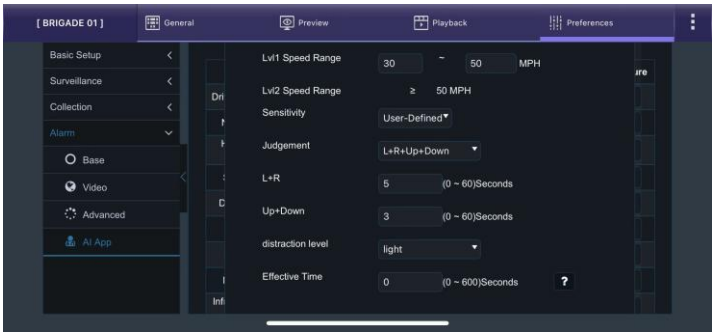
Handheld Devices by detecting the moving object around drivers' face/ear. **Judgement:** An object shaped like a mobile phone has been detected close to drivers' ear or in hands. **Lvl1 alerts:** TTS broadcast "Phone detected." **Lvl2 alerts:** high pitch "beep beep".	**Smoking** by detecting the cigarette stick features and body gestures. **Judgement:** A cigarette feature has been detected for a period. **Lvl1 alerts:** TTS broadcast "Smoking detected." **Lvl2 alerts:** high pitch "beep beep".
Distraction by detecting driver face and eyes movement. Supports to custom moving condition: Left, Right, Up and Down. **Judgement:** certain movement has been detected and no left / right turning signal has been enabled (rule out the legal observation movement before turning the vehicle). **Lvl1 alerts:** TTS broadcast "Distraction." **Lvl2 alerts:** high pitch "beep beep".	**Yawn** by detecting the position of the upper and lower lips and its opening amplitude value. **Judgement:** when the amplitude value exceeds a certain threshold and lasts for the certain duration. **Lvl1 alerts:** TTS broadcast "Yawning, please drive carefully." **Lvl2 alerts:** high pitch "beep beep".
Seatbelt by detecting seatbelt shape across drivers' body. **Judgement:** No seatbelt has been detected for a period. **Lvl1 alerts:** TTS broadcast "Please fasten seatbelt." **Lvl2 alerts:** high pitch "beep beep".	**No Mask** and **Infrared block alarm** are currently not in use.

Sensitivity refers to how sensitive this alarm should be triggered. Options are High, Medium, Low and User-defined. Recommend keeping default settings and if want to change the sensitivity, it must be tested before using.

Effective Time defines during this period, the device only allows this alarm to be triggered once.

Judgement (available on Distraction) has options **L+R**, **Up+Down** and **L+R+Up+Down**. They refer to different conditions of left / right / up / down head movement. Each condition can define detecting periods.

Distraction Level refers to the tuning degrees of drivers' head. Putting to **light** will trigger the alarm when head slightly turned. Putting to **medium** or **high** can allow larger tuning angle without triggering the alarm. This is used to avoid false alarms triggered by normal head movement.



DSM Alarm Trigger Figure 120

The **Alarm Linkage** interface are the same for every ADAS alarms.

Channel is used to choose which channels users would like to mark as alarm recordings. (Alarm recordings will show as red on playback time bar on both OSD and MDR-Dashboard software).

Post Recording specifies the period of recording added at the end of an alarm. For instance, if a sensor is triggered for 1 sec and the effective time is 30 seconds and the post recording is 15 seconds, the total amount of recording time will be 45 seconds. By default, this is 1 minute.

Lock represents whether the alarm footage can be overwritten. When the retention expires, the locked files will automatically be unlocked and deleted. See section 4.3.2.1 for details on lock duration.

Linkage Screen currently not in use.

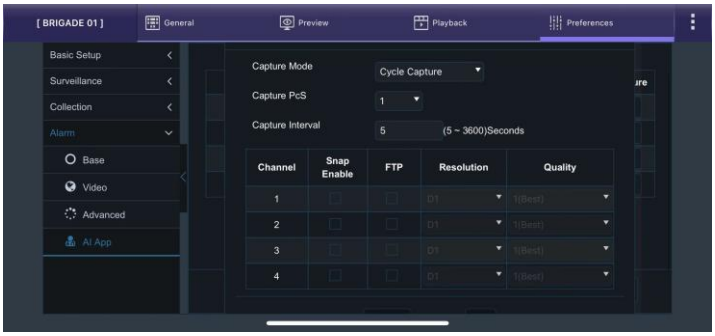
AI Alarm Linkage Figure 121

Alarm Capture are settings that enables the camera to create snapshots when certain alarm happens. This interface is the same for every ADAS alarms.

Capture Mode supports **Cycling Capture** and **Single Capture**. Cycling Capture to capture snapshots in every few seconds. Single Capture to only capture snapshots once after alarm happened.

The **Channel** table is to define which channel users want to get snapshots from, and for what resolution and Quality.

FTP only used when the device connected with an FTP server. For details, please refer to *Chapter 4.2.7.1*.



AI Alarm Capture Figure 122

4.5.4.3 BSD

BSD (Blind Spot Detection) requires dedicated cameras to support, currently this feature is not in use.

4.5.4.4 Calibration Parameter

This section is required to fill in before using AI features. Please make sure all measurements are accurate because the system will use these values to run algorithms on and do auto-calibration to make the AI feature works. If any parameters are incorrect, it will result in feature failure.

ADAS Camera Install Height (1) for filling in the device installation height, values can be in **CM** or **Inch**. Illustration refers to measurement 1 in *Calibration Parameter* - 1 Figure 123.

Left Margin (inward facing) (2) refer to the measurement from the left side vehicle to the device. Illustration refers to measurement 2 in *Calibration Parameter* - 1 Figure 123.

Front-end Width (3) refer to measurement 3 in *Calibration Parameter* - 1 Figure 123.

Front-end Length (4) refer to measurement 4 in *Calibration Parameter* - 1 Figure 123.

Steering Wheel Position to choose whether the vehicle is running on left steering (**Left**) or right steering (**Right**). This will be used for DSM/DSC feature working on the right detection area.

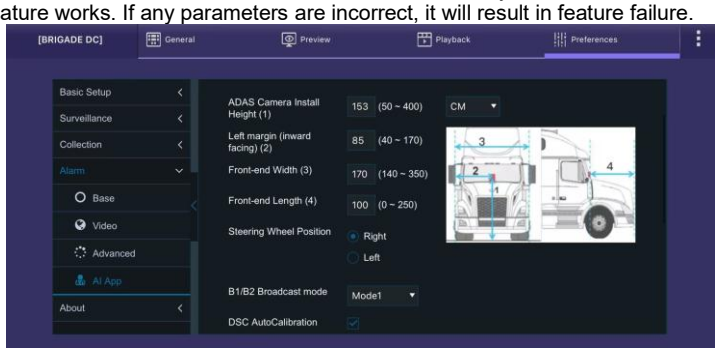
B1/B2 Broadcast mode currently not in use.

DSC AutoCalibration by default is enabled. This will allow the device to calibrate the DSC/DSM features automatically. Brigade Electronics PLC recommend keeping this feature on for less effort and avoiding human mistakes during calibration process.

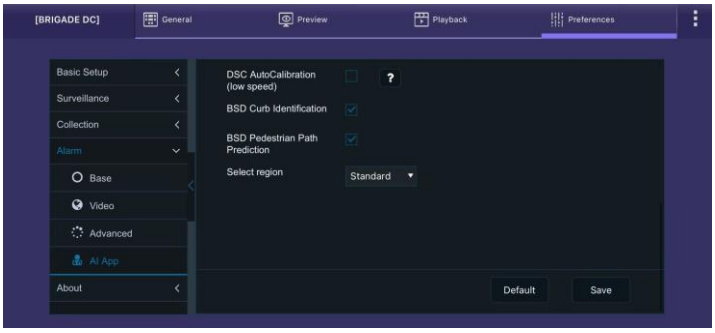
DSC AutoCalibration (low speed) by default is disabled. This feature enables automatic calibration of DSC/DSM functions at low speeds (10 km/h) for specific use cases. For optimal accuracy, Brigade recommends using the standard Auto Calibration method.

BSD Curb Identification, **BSD Pedestrian Path** Prediction are not in use currently.

Select Region option is used to define the operating region of the device. Two options are available: **Standard** and **North America**. This setting determines the SSW (Speed Sign Warning) target. A rectangular shape is used for North America, while a circular shape is used for other regions.



Calibration Parameter - 1 Figure 123



Calibration Parameter - 2 Figure 124

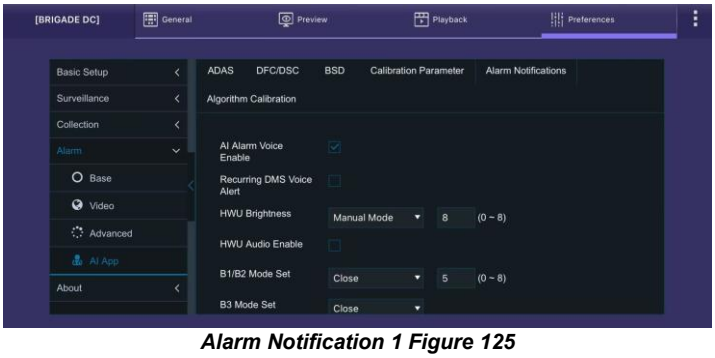
4.5.4.5 Alarm Notification

AI Alarm Voice Enable is audio main switch to allow the device to make TTS broadcast and audio alerts for AI alarms.

Recurring DMS Voice enables continuous audible alerts for DSM alarms, which will repeat until the triggering condition is no longer present.

HWU Brightness adjustable from level 0 – 8, higher the number, brighter the display screen. 0 is completely dark, no visual display available. By default, it is set to 8.

HWU Voice Enable allows a connected Hazard Warning Unit making a beep noise to notify the driver.

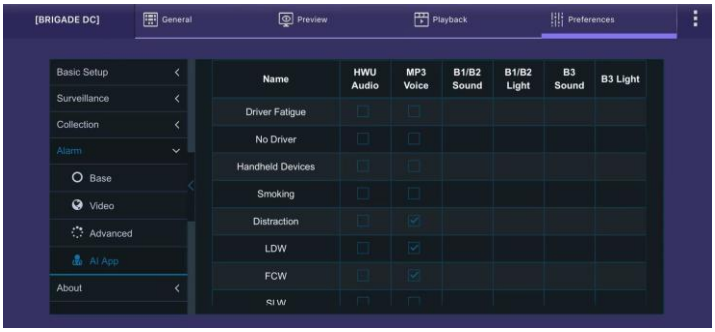


Alarm Notification 1 Figure 125

Disabling it will curb the voice alert, but not the visual alerts from Hazard Warning Unit screen.

B1/B2 Mode Set and **B3 Mode Set** currently not in use.

Voice Setting table below can detailed manage whether to voice alert and TTS broadcast for each AI alarm type.

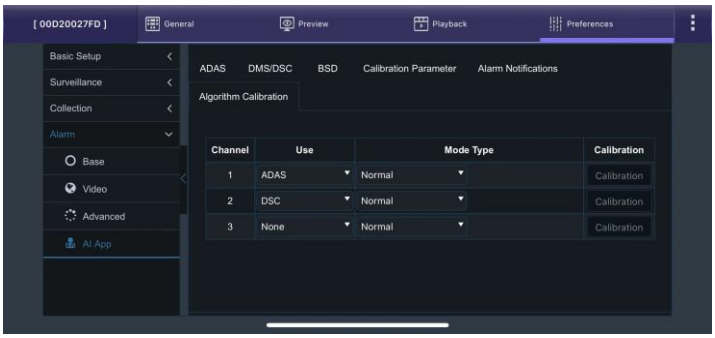


Alarm Notification 2 Figure 126

4.5.4.6 Algorithm Calibration

This page defines each channel's usage. By default, Channel 1 is used for ADAS feature and Channel 2 is used for DSC feature.

Brigade Electronics PLC recommend not changing the setting as the system will run auto-calibration according to this setup. If channels have been assigned to incorrect usage, it will result AI feature failure.



Algorithm Calibration 1 Figure 127

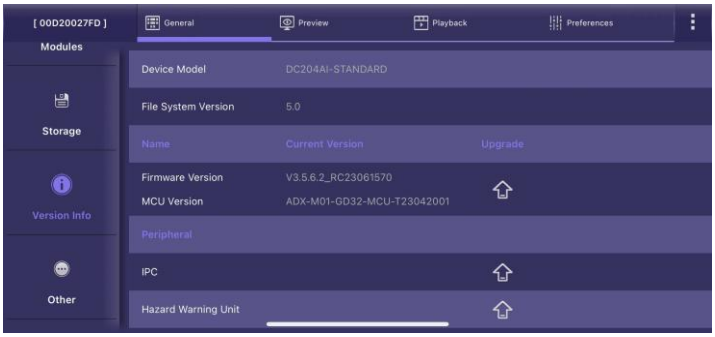
5 Other Operations

The SmartController App supports live view, Playback and status checking for connected devices. Please refer to *MDR SmartController Installation & Operation Guide - v1.0 – ENG* on Brigade Electronics website for further details. Below will introduce one of the essential features often used.

5.1 Upgrade

General contains various Status tabs for displaying device information. **Version Info** is the most used.

This interface contains multiple firmware and can be upgraded, such as device **Firmware**, **IPC** firmware, **GPS** firmware, **Power Box** firmware. To upgrade them, the user needs to create a folder in a flash drive root directory and name the folder "upgrade". Copy firmware files into the "upgrade folder", then connect the flash drive with the device USB port. Click on the Upgrade button on this interface will start the upgrade process.



Upgrade 1 Figure 128

6 Appendices

6.1 Storage Calculator

For typical recording sizes for a one-hour duration and HDD recording times in hours versus storage capacity, please use the MDR storage calculator: https://brigade-electronics.com/mdr-hub/.

6.2 Audio Alerts Content

The device is embedded with a speaker which can produce audio alerts for notifying users under certain circumstances. Details listed in table below:

Table 1: audio alerts when alarm has been triggered.

Alarm Type	Audio Alert Content (Level 1)	Audio Alert Content (Level 2)
Yawn	Yawning, please drive carefully	High pitch beeps x2
Fatigue	Fatigue	
Distraction	Distraction	
Handheld Devices	Phone detected	
Smoking	Smoking detected	
Seatbelt	Please fasten seatbelt	
LDW	Lane departure	
FCW	Collision warning	
HMW	Unsafe following distance	
No Driver	No driver	N/A
Overspeed	Speed warning (pre-warn)	

	Overspeed warning (official-warn)	
Panic Alarm	Panic alarm	
G-Force	Harsh Acceleration	
	Harsh Braking	
	Harsh cornering	

Table 2 audio alerts for normal operations.

Operation	Audio Alert Content
AP mode	AP mode enabled
	AP mode disabled
Privacy Mode	Privacy mode enabled
	Privacy mode disabled

7 On-Screen Display Map

Note: ***GREEN ARIAL BLACK ITALICS*** represents default settings

Lucida Handwriting Font represents mobile network and/or Wi-Fi menu options

7.1 General

7.1.1 Basic Info

7.1.1.1 Server Status

Centre Server #	
TITLE	OPTION No 1
Safety Server	*DISABLE*
	Enable
Server Status	*DISCONNECTED*
	Connected
Network Type	*Wi-Fi*
	Ethernet
	Mob Net
	Auto-adapt
Server Protocol Type	*MDR6*
Server IP Address	XXX.XXX.XXX.XXX
Port	XXXXX (usually 5 characters, depends on port specification)

7.1.1.2 Sensor Status

IO #		
TITLE	OPTION No 1	
IO Status	***LOW LEVEL***	
	High Level	
IO Use	IO1 Left Turn	
	IO2 Right Turn	
	IO3 None	

7.1.1.3 6 Axis Data

6 Axis Data		
TITLE	OPTION No 1	
X	***x.xx g***	
y	***x.xx g***	
Z	***x.xx g***	
AX	***x.xx rad/s***	
AY	***x.xx rad/s***	
AZ	***xx.x rad/s***	
Calibrate		CALIBRATE

7.1.1.4 Others

Others	
TITLE	OPTION No 1
Ignition Status	***On***
Pulse Count (Speed Pulse)	***0***
Voltage	***xx.xx V***
Temperature	***xx.xx °C***
	DISCONNECTED
iButton Status	Connected
iButton ID	-

7.1.1.5 Calibration Status

Calibration Status	
TITLE	OPTION No 1
	Not Calibrated
ADAS	Calibrated
	Not Calibrated
DSC	Calibrated

7.1.2 Modules

7.1.2.1 Mob Net

Mob Net	
TITLE	OPTION No 1

Module Status	Detected
	Not Detected
SIM Card Status	Not Existed
	SIM Detected
	SIM Available
	SIM Not Available
	SIM Busy
Dial Status	Dialled Up
	Failed Dail Up
	Unknown
Module	EC25
Connection Type	GPRS/EDGE
	CDMA
	EVDO
	WCDMA
	TDSCDMA
	FDD
	TDD
	Unknown
Signal	 (xxdBm)
Protocol Stack	IPV4
IPV4	xx.xx.xxx.xx
Version Info	XXXXXXXXXXXXXXXX
Version Identification	xx.xxx.xx.xxx
IMEI	xxxxxxxxxxxxxx
IMSI	xxxxxxxxxxxxxx

7.1.2.2 Wi-Fi Module

Wi-Fi Module	
TITLE	OPTION No 1
Module Status (Physical State)	Existed
	Not Detected
	Connecting
	Connection Failed
	Connected
	Obtaining IP Address (DHCP)
ESSID	xxxxxxxxxx
IPV4	XXX.XXX.XXX.X
MAC Address	XX:XX:XX:XX:XX:XX (12 characters)

7.1.2.3 GPS Module

GPS Module	
TITLE	OPTION No 1
Module Status (Physical State)	Detected
	Not Detected
	No GPS Module
	Invalid Signal
Data Source	GPS
Satellite Number	0-24
Satellite Angle	X.X
Speed	X.X

7.1.2.4 Bluetooth Module

Bluetooth Module	
TITLE	OPTION No 1
Bluetooth Name	
Module Status	***CONNECTED***
	Not Connected
Connected Device	/

7.1.3 Storage

Storage	
TITLE	OPTION No 1
Storage Type	SD (Internal)1
	SD (Internal)2
Status	Recording
	Normal

	Failed
	Full
Free/Total (in Megabytes, Gigabytes or Terabytes)	XXX.X/XXX.XGB
Format	

7.1.4 Version Info

Version Info		
TITLE	OPTION No 1	
Device Model	DC204AI-STANDARD	
File System	5.0	
Name	**Current Version**	**Upgrade**
Firmware Version	XX.X.X.XX_XXXXXXXXX	
MCU Version	XXX-XXX-XXXX-XXX-XXXXXXXXX	
Peripheral		
IPC		
Hazard Warning Unit		
SLA (outside the car)		
SLA (in-car)		
Mob Net 1	XXXXXXXXXXXXXXXX	
GPS	XXX:XXXXXXXX	
Power Box	XXX-XXX-XXXX-XXX-XXXXXXXXX	

7.1.4.1 Upgrade

Upgrade				
TITLE	OPTION No 1			
FMW/MCU	Upgrade	Firmware version (Message box gives information about impact of upgrade)		
Peripheral				
IPC (Camera must be connected)	Upgrade	Select All	Enabled	Upgrade
			Disabled	
		Choose from the avaialble IP cameras	Enabled	Upgrade
			Disabled	
Hazard Warning Unit (HWU must be connected)	Upgrade	Choose from the avaialble Hazard Warning Unit	Enabled	Upgrade
			Disabled	
SLA (outside the car) (device must be connected)	Upgrade	Choose from the avaialble Unit	Enabled	Upgrade
			Disabled	
SLA (in-car) (device must be connected)	Upgrade	Choose from the avaialble Unit	Enabled	Upgrade
			Disabled	
Mob Net	Upgrade	Are you sure about upgrade?		
GPS	Upgrade	Are you sure you want to upgrade?		
Power Box	Upgrade	Power Box (Message Box gives information about the impact of upgrade) Note: Power Box Max need to be upgraded using the IPC upgrade feature		

7.1.5 Other

Name	Operation
Export Alarm Log	Operate
Export Operation Log	Operate
Export Metadata File	Operate
Export Snapshots	Operate
Export Config File	Operate
Import Config File	Operate
Export Geo-Fence File	Operate
Import Geo-Fence File	Operate
Export AI Config File	Operate
Import AI Config File	Operate
Factory Settings	Operate
Export Debug Log	Operate
System Restart	Operate
Import Ethernet HTTPS Certificate and Key	Operate
Remove Ethernet HTTPS Certificate and Key	Operate
Import Root Certificate	Operate
Remove All Root Certificates	Operate
Import CRL	Operate
Remove CRL	Operate
Import SmartController TLS Certificate and Key	Operate
Remove SmartController TLS Certificate and Key	Operate

7.2 Preview

Preview	
TITLE	OPTION No 1
Sound	***On***
	Off
Guide	On
	Off

7.3 Playback

Playback	
TITLE	OPTION No 1
Select Date	Month
	Year
Storage	Main Storage
	Sub Storage-Sub
	Sub Storage-Main
Legend	Locked Video
	Alarm Video
	Normal Video

7.3.1 Search Term

Search Term		
TITLE	OPTION No 1	
Date	yyyy-mm-dd	
Channel	Channel #	Select all
		Next

7.3.2 Next

Next	
TITLE	OPTION No 1
Channel	Channel #
Selected time range	xx:xx:xx

Zoom in	+	
Zoom Out	-	 >>
>>Start Time	xx:xx:xx	Previous (allows move between Start Time, End Time and Video Export)
End Time	xx:xx:xx	
Export Time Stamp	xx:xx:xx To xx:xx:xx	
File Size	xx.xxMB (MegaByte/Gigabyte)	
Total/Remaining	xx.xGB/xx.xGB (size of the external USB Flash drive)	
Proprietary Data (can only choose one or the other)	***Enabled***	Disable
Video(MP4) Data (can only choose one or the other)	***Disabled***	Enable

7.4 Preferences

7.4.1 Basic Setup

7.4.1.1 Regist Info

Device Info	
TITLE	OPTION No 1
Serial Number	XXXXXXXXXX
Device ID	0

Vehicle Info	
TITLE	OPTION No 1
Vehicle Reg	XXXXXXXXXXXXXX (15 characters)
Vehicle Num	
Vehicle VIN	XXXXXXXXXXXXXXXXXXX (20 characters)

Driver's Info	
TITLE	OPTION No 1
Driver's Number	XXXXXXXXX (10 characters)
Driver's Name	XXXXXXXXX (10 characters)

7.4.1.2 Time Setup

7.4.1.2.1 General

General	
TITLE	OPTION No 1
Date Format	***DAY/MONTH/YEAR***
	MONTH/DAY/YEAR
	YEAR-MONTH-DAY
Time Format	***24 HOURS***
	12 Hours
Cross Time Zone Enable	***DISABLED***
	Enabled
Time Zone	***(GMT) DUBLIN, EDINBURGH, LONDON***
	(GMT/±HH:MM) "City [Cities]"

7.4.1.2.2 Time Sync

Time Sync		
TITLE	OPTION No 1	
Manually		
Date/Time	dd/mm/yyyy	XX:XX:XX
Auto		
Satellite	***ENABLED***	
	DISABLED	
NTP	***DISABLED***	
	Enabled	
Center Server	***DISABLED***	

	Enabled	

7.4.1.2.3 DST

DST			
TITLE	OPTION No 1		
Enable	***ENABLED***----------→	Offset	***One Hour***
	Disabled		Two Hours
		Mode	***Week***
			Date
		Start	***MAR.*** Choose Calendar Month = XXX
			1st, 2nd; 3RD; 4TH; ***LAST***
			SUNDAY Choose Day of Week
			01:00:00 Choose time hh:mm:ss
		End	***OCT.*** Choose Calendar Month = XXX
			1st, 2nd; 3RD; 4TH; ***LAST***
			SUNDAY Choose Day of Week
			02:00:00 Choose time hh:mm:ss

7.4.1.3 Startup

7.4.1.3.1 ON/OFF

On/Off			
TITLE	OPTION No 1		
ON/OFF Mode	***IGNITION***		
Ignition Delay	***300 Seconds*** (10 ~ 86399) Seconds		
Video delay	***300 Seconds*** (0 ~ 300) Seconds		
Timer From	***08:00:00*** To ***18:00:00***		
	hh:mm:ss To hh:mm:ss		
Light Off Time	***Never***		
	Custom	Custom	***30 Seconds*** (1 ~ 3600) Seconds
Reboot Delay	***DISABLED***		
	Enabled	***200 Seconds*** (5 ~ 300) econds	

7.4.1.3.2 Sleep

Sleep	
TITLE	OPTION No 1
Sleep Mode	***No consumption standby***
	Low power standby
Sleep Time	***100 H*** (0 ~ 100) H
Low Voltage Protection	***ENABLED***
	DISABLED
Battery Low Voltage Protection	***9.5 V*** (8 ~ 11.5) V / ***21.0 V*** (20~23.5)V
Voltage Startup	***12.5 V*** (12 ~ 14) V / ***24.5 V*** (24-26)V
Low Volt Upload	***DISABLED***
	Enabled

7.4.1.3.3 Wake-up

Wake-up	
TITLE	OPTION No 1
IO Wake-up	***ENABLED***
	DISABLED
G-sensor Wake-up	***ENABLED***
	DISABLED
X Threshold	***5.5 g*** (0 ~ 9.9) g
Y Threshold	***5.5 g*** (0 ~ 9.9) g
Z Threshold	***5.5 g*** (0 ~ 9.9) g
Remote Wake-up	***DISABLED***
	Enabled
Telephone Wake-up	***DISABLED***

	Enabled
SMS Wake-up	***DISABLED***
	Enabled
Wake-up Telephone #	Telephone number

7.4.1.3.4 Power Box

Wake		
TITLE	OPTION No 1	
Shutdown Distance	***30 m*** (10 ~ 50) m	
Wakeup Threshold	***10 mg*** (5 ~ 100) mg	
Real-Time	X: X.XXX, Y: X.XXX, Z: X.XXX	Wakeup threshold: X mg

7.4.1.4 User Setup

7.4.1.4.1 User Management

User Management		
TITLE	OPTION No 1	
Add / Setup	User Name	
	User Group	Normal User
	Password	
	Confirm Password	
Admin Setup	Edit	
	Restore	
User Setup	Delete	
	Edit	
	Restore	

7.4.1.4.2 User Operation Configuration

User Operation Configuration	
TITLE	OPTION No 1
AI Voice Language	***English***
	Italiano
	Deutsch
	Português
	Français
	Русский
	Nederlandse
	Polski
	Español
	Choose language (only affects the AI Voice Alert language when changed, OSD language remains in English)

7.4.1.5 Storage Media Protection

Storage Media Protection			
TITLE	OPTION No 1		
Storage Name	***SD CARD #***		
Storage Protection Status	***DISABLED***		
	Enabled	New Password	XXXXXXX (8 - 16 characters)
		Old Password	XXXXXXX (8 - 16 characters)

7.4.1.6 Network

7.4.1.6.1 Server Setup

Server #			
TITLE	*OPTION No 1*		
Server Setup	*Server 1*	*Add/Delete*	
	Server 2	*Add/Delete*	
	Server 3	*Add/Delete*	
	Server 4	*Add/Delete*	
ON	*DISABLED*		
	ENABLED	*Protocol Type*	***MDR6***
		TLS Enable	***DISABLED***
			Enabled
		Enable Network	***AUTO ADAPTATION***
			Wi-Fi
			Ethernet

	Mob Net	
Register Server IP	XXX.XXX.XXX.XXXX	
Register Server Port	TCP	5556
	TLS	6556
Media Server IP	XXX.XXX.XXX.XXXX	
Media Server Port	TCP	5556
	TLS	6556

7.4.1.6.2 Ethernet

Ethernet						
TITLE	OPTION No 1					
Enable IPV4	***ENABLED***	DHCP Mode	Enabled	Auto-Detect DNS		
	Disabled			***Specify DNS***	Preferred DNS Server	***192.168.1.1***
					Alternate DNS Server	***192.168.1.1***
			DISABLED			
		Static IP	***ENABLED***	IP Address	***192.168.001.100***	
			Disabled	Subnet Mask	***255.255.255.0***	
				Gateway	***192.168.1.1***	
				Specify DNS	Preferred DNS Server	***192.168.1.1***
					Alternate DNS Server	***192.168.1.1***
Enable IPV6	Enabled	Auto-Detect IPV6	Enabled	Auto-Detect DNS6		
	DISABLED		***DISABLED***	***Static IPV6***	IP Address	***::192.168.1.100***
					Subnet Mask	***64***
					Gateway	***:192.168.1.100***
				Specify DNS6	Preferred DNS Server	***::192.168.1.1***
					Alternate DNS Server	***::192.168.1.1***

MAC	MAC Address	00:18:F5:6B:4A:02

7.4.1.6.3 Wi-Fi

Wi-Fi						
TITLE	OPTION No 1					
Lock	*DISABLED*					
	Enabled					
Enable	*DISABLE*					
	AP	Wi-Fi Mode	*2.4G*			
			5G			
			Auto			
		Wi-Fi Setup	ESSID	XXXXX…XXXXX (32 characters)		
			Encryption	*None*		
				WEP	Password	XXXX…XXX
				WPA/WPA2-PSK	Password	XXXX…XXX
		Hotspot	*DISABLED*			
			Enabled	Whitelist	*DISABLED*	
					Enabled	IP list # XXX.XXX.XXX.XXX
	Client	AP Duration	*180 Seconds* (0~180) Seconds			
		Wi-Fi Setup	Wi-Fi	Wi-Fi #		

			ON	*DISABLED*				
				Enabled	ESSID	XXXXX…XXXXX (32 characters)		
					Encryption	*None*		
						WEP	Password	XXXX…XXXX
						WPA/WPA2-PSK	Password	XXXX…XXXX
						WPA2.ENTERPRISE	User Name	XXXX…XXXX
							Password	XXXX…XXXX
	Enable IPV4	*DISABLED*						
		Enabled	Static IP	*DISABLED*				
				Enabled	IP Address	192.168.2.100		
					Subnet Mask	255.255.255.0		
					Gateway	192.168.2.1		
	Enable IPV6	*DISABLED*						
		Enabled	Static IPV6	*DISABLED*				
				Enabled	IP Address	::192.168.2.100		
					Subnet Mask	64		
					Gateway	::192.168.2.1		

7.4.1.6.4 Mob Net

Mob Net			
TITLE	OPTION No 1		
Lock	*DISABLED*		
	Enabled		
Server Type	No Service		
Network Type	*4G*		
	3G		
	Mix		
Dialling Parameter			
APN	XXXX…XXXX (32 characters)		
Username	XXXX…XXXX (32 characters)		
Password	XXXX…XXXX (32 characters)		
Number	**99#*		
Certification	NONE		
	PAP		
	CHAP		
	Mix		
Carrier	*Auto*		
	AT&T		
	Verizon		
	T-mobile/Generic		
	Sprint		
	USCC		
Protocol Type	*IPV4*		
	IPV6		
	IPV4/IPv6		
Active Mode	Phone/SMS	Number1	XX…XXX (16 characters)
	Sensor	Number2	XX…XXX (16 characters)

	Always	Number3	XX…XXX (16 characters)
MTU value of SIM card	*1500* (100~1500)		

7.4.1.6.5 Bluetooth

Bluetooth	
TITLE	OPTION No 1
Bluetooth	***DISABLED***
	Enabled

7.4.1.6.6 Ports

Ports	
TITLE	OPTION No 1
Ethernet HTTPS (?)	***ENABLED***
	Disabled
Web Port (IE access to MDR using Ethernet)	***443***
	80 (If Ethernet HTTPS is disabled)
RTSP Port	***554***
SAMCON TLS (?)	***ENABLED***
	Disabled

7.4.1.7 Application

7.4.1.7.1 FTP Server

FTP Server	
TITLE	OPTION No 1
FTP Enable	***DISABLED***
	Enabled
Server	***192.168.1.200***
port	***21***
Username	***admin***
Password	XXXX…XXXX (32 characters)

7.4.1.7.2 Download

Download		
TITLE	OPTION No 1	
Auto Download Reconnect	***DISABLED***	
	Enabled	***5 Minute*** (1~10) Minute

7.4.1.8 Volume Setup

Volume Setup	
TITLE	OPTION No 1
AI Alert Volume	***55*** (0~63)
Walkie-talkie volume	***55*** (0~63)
ADKIT volume	***0*** (0~63)

7.4.1.9 Driver Identification

Driver Identification			
TITLE	OPTION No 1		
Face ID Mode	***DISABLED***		
	Enabled		
Verify Driver ID Card (Face ID Method)	***DISABLED***		
	Enabled	Vehicle Speed(MPH)	3 (0 ~ 255)
		Duration(S)	10 (0 ~ 3600)
Ignition ON Snapshot (Face ID Method)	***DISABLED***		
	Enabled	Vehicle Speed(MPH)	3 (0 ~ 255)
		Duration(S)	10 (0 ~ 3600)

Returning Driver Snapshot (Face ID Method)	***DISABLED***					
	Enabled	***0 MPH*** (0~255) MPH [Vehicle Speed]	***0 S*** (0~3600) S [Duration]	Setup (Return Back Snap Trigger)	Leave Sensitivity	***15 Seconds*** (0~60) Seconds
					Return Sensitivity	***30 Seconds*** (0~60) Seconds
Periodic Snapshot (Face ID Method)	***DISABLED***					
	Enabled	***1 MPH*** (0~255) MPH [Vehicle Speed]	***5 S*** (0~3600) S [Duration]	***300 S*** (15~3600) S [Interval]		
Enable Online facial Comparison	Enabled					
	Disabled	DSM Image Threshold	***60%*** (0~100) %			
		Colour Image Threshold	***45%*** (0~100) %			

7.4.2 Surveillance

7.4.2.1 Live View

Preview		
TITLE	OPTION No 1	
Startup Screen	***Quad***	***Choose available Channel***
	Single	***Choose available Channel***
	6-Split	***Choose available Channel***
	9-Split	***Choose available Channel***
A/V OUT Enable	***ENABLED***	
	Disabled	
A/V OUT Mode	***CVBS***	

7.4.2.2 Record

7.4.2.2.1 General

General			
TITLE	OPTION No 1		
System	***PAL***		
	NTSC		
Overwrite	***By Capacity***		
	By Days	***7 Day*** (1~31) Day	
	By Minutes	***30 Minute*** (1~1440) Minute	
	Never		
Lock Duration	***7 Day*** (1~31) Day		
Pre-recording	Disabled		
	ENABLED	***1 Min*** (3, 5, 10, 15, 30 Min, 1 Hour)	
The Second SD Record Mode	***LOOP-RECORD***		
	Sub-Record	SD Write Resource Ratio	***xx.x%***
		Record Storage	***Internal SD***
			External SD
		Channel	***CHOOSE AVAILABLE CHANNEL***
	Mirror Record	SD Write Resource Ratio	***xx.x%***
		Record Storage	***INTERNAL SD***

		External SD
	Channel	***Choose 1~4 Channel***
Alarm Backup	SD Write Resource Ratio	***xx.x%***
	Record Storage	***Internal SD***
		External SD
	Channel	***Choose 1~4 Channel***

7.4.2.2.2 Main Stream

Main Stream			
TITLE	OPTION No 1		
Channel #	Disabled		
	ENABLED	AI alert	***DISABLED***
			Enabled
		Resolution	Choose for Resolution (***720P***, 960P, 1080P, 1920P)
		Frame Rate	***20*** (1-25)
		Quality	***2*** (1 [Best] - 8)
		Video Encoding Standard	(H264/***H265***)
		Channel Name	CH#
		Record Mode	***POWER UP*** (Power Up, Timer, Alarm)
		Audio Settings	***NO AUDIO*** (No Audio, Continuous)
		Alarm Quality	***2*** (1 [Best] - 8)
		Encoding Mode	***VBR*** (CBR, VBR)
		Audio Coding Format	***ADPCM*** (G711A, G711U, ADPCM, G726)
		Audio Format Sub Type	-
Percentage of main stream	***xx.x%***		
Copy	Choose from Channel 1 to Channel 4	To (All, 1-4) Channel	

7.4.2.2.3 Sub Stream

Sub Stream			
TITLE	OPTION No 1		
Channel #	Disabled		
	ENABLED	Resolution	Choose for Resolution (***CIF***, HD1, D1, 640*360)
		Frame Rate	***10*** (1-25)
		Quality	***3*** (1 [Best] - 8)
		Video Encoding Standard	(H264/***H265***)
		Audio Settings	***NO AUDIO***
			Continuous

Percentage of sub stream	***xx.x%***	
Copy	Choose from Channel 1 to Channel 4	To (All, 1-4) Channel

7.4.2.2.4 Record OSD

Record OSD	
TITLE	OPTION No 1
Watermark Mode	***DISABLED***
	Enabled
Time	Disabled
	ENABLED
Speed	Disabled
	ENABLED
Vehicle Reg	Disabled
	ENABLED
GPS	Disabled
	ENABLED
Channel Name	***DISABLED***
	Enabled
Vehicle Num	***DISABLED***
	Enabled
Time Zone	Disabled
	ENABLED
Alarm	Disabled
	ENABLED
Position	Setup for Record OSD Position

7.4.2.3 IPC Setup

IPC Setup				
TITLE	OPTION No 1			
Device Channel #	***DISABLED***			
	Enabled	IP & Port	xx.xxx.xxx.xxx.xxxx.x	
		Outside	***DISABLED***	
			Enabled	
		Setup		

7.4.2.3.1 IPC Search (Channel #)

IPC Search (Channel #)			
TITLE	OPTION No 1		
Remote Chn	***DISABLED***		
	Enabled	MAC Address	xx:xx:xx:xx:xx:xx
		IP Address	xx.xxx.xxx.xxx
		Port	xxxx
		Protocol Type	***MDR6***

7.4.2.3.2 Network Setup (Channel #)

Network Setup (Channel #)	
TITLE	OPTION No 1
Remote Device	Default
	DSM
	MDR
Protocol Type	MDR6
IP Address	xx.xxx.xxxx.xxx
Port	9006
User Name	admin
Password	(Blank - No Password)
Remote Chn	Channel # (1-12)

7.4.2.4 Camera Setup

Camera Setup #	
TITLE	OPTION No 1
Installation Angle	***0°***
	+90°
	-90°
Mirror / Flip	***OFF***
	Mirror
	Flip
	Mirror+Flip

7.4.3 Collection

7.4.3.1 General

7.4.3.1.1 Serial Port

Serial Port		
TITLE	OPTION No 1	
232-1	***HWU + Acousto left and right***	***57600***
	None	***57600***
	Control Panel	***9600***
	External GPS	***4800***
	HWU	***57600***
	Acousto left and right	***57600***
	Wireless Camera	***115200***
	232-oil data	***19200***
	GOR-Control	***19200***

7.4.3.1.2 CAN (not currently available, for future use)

CAN				
TITLE	OPTION No 1			
CAN #	Type	***NULL***	Baud Rate	(100, ***125,*** 250, 500, 1000)
		CAN J1939	Baud Rate	(100, 125, ***250,*** 500, 1000)
		CAN BUS	Baud Rate	(100, 125, ***250,*** 500, 1000)

7.4.3.1.3 Speed

Speed				
TITLE	OPTION No 1			
Unit	***MPH***			
	KM/H			
Source	Satellite			
	Mix	Choose from ***GPS>PULSE>OBD,*** GPS>OBD>PULSE, PULSE>GPS>OBD, PULSE>OBD>GPS, OBS>GPS>PULSE, OBD>PULSE>GPS		
		Calibration Mode	***Input Manually***	Start
				Calculate
			Auto-Correct	Correct
		Pulse Ratio	***57936 Per Mile***	
	OBD			
	CAN			

7.4.3.1.4 Mileage

Mileage	
TITLE	OPTION No 1

Total	X.XXXX Mile
Base Value	***0 Mile*** (0~2485490) Mile
Operation	Correct
	Clear

7.4.3.1.5 A-GPS

A-GPS			
TITLE	OPTION No 1		
Enable	***Disabled***		
	Enabled	Server Address	XXX.XXX.XXX.XXX
		Port	***0*** (XXXXX)

7.4.3.1.6 iButton

iButton					
TITLE	OPTION No 1				
iButton trigger mode	***Tap***				
	Hold				
iButton enable	***DISABLED***				
	Enabled	Audible reminder enabled	***DISABLED***		
			Enabled	Audible reminder sound interval	***300 s*** (60~600) s
				Audible reminder sound duration	***30 Minute*** (10~1440) Minute
		Sign out delay	***300 s*** (0~3600) s		

7.4.3.2 Snap Setting

7.4.3.2.1 Time Snap

Time Snap							
TITLE	OPTION No 1						
Time Snap	***DISABLED***						
	Enabled	Add No.#	Start Time	XX:XX:XX ***(00:00:00)***			
			Edd Time	XX:XX:XX ***(23:59:59)***			
			Setup	Remove			
				Snap Link Set (Time Snap #)	Channel #	Snap Enable	***DISABLED***
							Enabled>>

>>Resolution (***D1,*** 720P, CIF, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)		
Quality (***1***, 2, 3, 4 ,5 ,6 ,7, 8)		
Upload Type>> Setup	Upload Type (Channel #)	Choose from FTP and HTTP
Snap Numbers (***1***~3) Pcs		
Interval (***5***~7200) Seconds		
Copy	Choose from Channel 1 to Channel 4	To (All, 1-4) Channel

7.4.3.2.2 Alarm Snap

Alarm Snap						
TITLE	OPTION No 1					
Alarm Snap	Snap Link	Setup	Snap Link Set	Channel #	Snap Enable	***DISABLED***

			(Alarm Snap #)			
						Enabled>>

>>Resolution (***D1***, 720P, CIF, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
Quality (***1***, 2, 3, 4 ,5 ,6 ,7, 8)

Upload Type>> Setup	Upload Type (Channel #)	Choose from FTP and HTTP
Snap Numbers (***1***~3) Pcs		
Interval (***5***~7200) Seconds		
Copy	Choose from Channel 1 to Channel 4	To (All, 1-4) Channel

7.4.3.2.3 Distance Snap

Distance Snap	
TITLE	OPTION No 1
Distance Interval	***621*** (0.1 Mile)

Snap Link	Setup	Snap Link Set (Distance Snap #)	Channel #	Snap Enable	***DISABLED***
					Enabled>>

>>Resolution (***CIF,*** 720P, D1, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
Quality (***1***, 2, 3, 4 ,5 ,6 ,7, 8)

Upload Type>> Setup	Upload Type (Channel #)	Choose from FTP and HTTP
Snap Numbers (***1***~3) Pcs		
Copy	Choose from Channel 1 to Channel 4	To (All, 1-4) Channel

7.4.4 Alarm

7.4.4.1 Base

7.4.4.1.1 IO Alarm

IO Alarm	
TITLE	OPTION No 1

Sensor #	***ENABLED***→	Alarm Type	Alarm
	Disabled		***EVENT***
		OSD Name	LS RS S3

		Sensor Uses	Choose from the options (None, Panic Alarm, Neutral Taxiing, Door # Open (1-4), Door # Close (1-4), Passing Light, Distance Light, Right Steering, Left Steering, Braking, Reverse, Seat Belt, Privacy, Flight Mode)		
		Trigger>> >>Trigger Setup (Sensor# Trigger)			
			Trigger Source	***Source Pulse***	
				Source Voltage	
			Trigger	***High***	
				Low	
			Alarm Off-Delay (?)	***5 Seconds***	
				(0¬10) Seconds	
			Lock Alarm Off-Delay (?)	***DISABLED***	
				Enabled	
		Linkage Setup (Sensor# Alarm Linkage)	Channel	***TICK AVAILABLE CHANNELS***	
			Post Recording	***1 Min***	
				3 Min	
				5 Min	
				10 MIN	
				15 Min	
				30 Min	
				30 Min	
			Lock	Enabled	
				DISABLED	
			Linkage Screen	***None***	
				Single	
				Three	
				Quad	
			Alarm Snap	Enabled	
				DISABLED	
Copy	Sensor #	***ALL*** -------→	Copy		
		Choose from 1 to 3 Sensor--→			

7.4.4.1.2 Speed Alarm

Speed Alarm					
TITLE	OPTION No 1				
Overspeed	***Disabled***				
	Enabled	Alarm Type	***Alarm***		
			Event		
		Trigger>> >>Trigger Setup (Overspeed Trigger)			
			Preload Speed Difference	***6 MPH*** (0¬124) MPH	
			Speed	***62 MPH*** (0¬124) MPH	

		Duration Time	***10 Seconds*** (0¬255) Seconds
	Linkage Setup (Overspeed Alarm Linkage)	Channel	***UNTICK AVAILABLE CHANNELS***
		Post Recording	***1 Min***
			3 Min
			5 Min
			10 MIN
			15 Min
			30 Min
			30 Min
		Lock	Enabled
			DISABLED
		Linkage Screen	***None***
			Single
			Three
			Quad
		Alarm Snap	Enabled
			DISABLED

7.4.4.1.3 Panic Alarm

Panic Alarm				
TITLE	OPTION No 1			
Overspeed	Disabled			
	ENABLED	Alarm Type	***Alarm***	
			Event	
		Trigger>> >>Trigger Setup (Panic Alarm Trigger)		
			Any key	***1 Seconds*** (1¬255) Seconds
			Alarm Off-Delay (?)	***10 Seconds*** (0¬10) Seconds
			Lock Alarm Off-Delay (?)	***DISABLED***
				Enabled
		Linkage Setup (Panic Alarm Alarm Linkage)	Channel	***TICK AVAILABLE CHANNELS***
			Post Recording	***1 Min***
				3 Min
				5 Min
				10 MIN
				15 Min
				30 Min
				30 Min
			Lock	Enabled
				DISABLED
			Linkage Screen	***None***
				Single
				Three
				Quad
			Alarm Snap	Enabled
				DISABLED
			MP3 Voice	Enabled
				DISABLED

7.4.4.1.4 GPS Alarm

GPS Alarm			
TITLE	OPTION No 1		
GPS Alarm	Disabled		
	ENABLED	Alarm Type	***Alarm***

		Event	
	Trigger>>		
		Alarm Off-Delay ?	***10 Seconds*** (0~10) Seconds
	Linkage Setup (GPS Alarm Alarm Linkage)	Channel	***UNTICK AVAILABLE CHANNELS***
		Post Recording	***1 Min***
			3 Min
			5 Min
			10 MIN
			15 Min
			30 Min
			30 Min
		Lock	Enabled
			DISABLED
		Linkage Screen	***None***
			Single
			Three
			Quad
		Alarm Snap	Enabled
			DISABLED

7.4.4.1.5 Button Configuration

Button Configuration TITLE	OPTION No 1				
Mode Selection	Single Mode	Button Mode	Press	Function	***Panic Alarm***
					None
					AP
					Privacy Mode
	Hybrid Mode	Button Mode	Press	Function	***Panic Alarm***
					None
					AP
					Privacy Mode
			Double Press		Panic Alarm
					None
					AP
					Privacy Mode
			Triple Press		Panic Alarm
					None
					AP
					Privacy Mode
			Long Press (Press and hold for 3 seconds or more)		Panic Alarm
					None
					AP
					Privacy Mode

7.4.4.2 Video

7.4.4.2.1 Video Loss

Video Loss TITLE	OPTION No 1				
Video Loss	***ENABLED***→	Alarm Type	***ALARM***		
	Disabled		Event		
		Trigger Setup	Video Loss Trigger	Channel	***TICK CHANNELS 1 & 2***
				Alarm Off-Delay ?	***10*** (0~10) seconds

		Lock Alarm Off-Delay ?	***DISABLED***
			Enabled
Linkage Setup	Video Loss Alarm Linkage →	Channel	***UNTICK AVAILABLE CHANNELS***
		Post Recording	***1 Min***
			3 Min
			5 Min
			10 MIN
			15 Min
			30 Min
			30 Min
		Lock	Enabled
			DISABLED
		Linkage Screen	***None***
			Single
			Three
			Quad
		Alarm Snap	Enabled
			DISABLED

7.4.4.2.2 Blind Detection

Blind Detection					
TITLE	OPTION No 1				
Blind Detection	***Enabled***→	Alarm Type	***ALARM***		
	DISABLED		Event		
		Trigger Setup (Blind Detection Trigger)	Channel	***TICK AVAILABLE CHANNELS***	
				Sensitivity	High
					Middle
					Low
				Duration Time	***5*** (0~255) seconds
				Alarm Off-Delay ?	***10*** (0~10) seconds
				Lock Alarm Off-Delay ?	***DISABLED***
					Enabled
				Speed Range	⩾***0*** MPH
		Linkage Setup	Blind Detection Alarm Linkage	Channel	***TICK AVAILABLE CHANNELS***
				Post Recording	***1 Min***
					3 Min
					5 Min
					10 MIN
					15 Min
					30 Min
				Lock	Enabled
					DISABLED
				Linkage Screen	***None***
					Single
					Three
					Quad
				Alarm Snap	Enabled
					DISABLED

7.4.4.2.3 Privacy Mode

Privacy Mode

TITLE	OPTION No 1					
Privacy Mode	Enabled---→	Alarm Type	***Event***			
	DISABLED		Alarm			
		Trigger Setup (Privacy Mode Trigger)	Channel (1 to 4)	Enabled Channel ***2***-------→	Privacy Method	***IO***
						ACC OFF
					Exit Method	***Speed 3***(1-75MPH)
						IO
						ACC ON
					Enable AI Mp3 Voice ⓘ	***DISABLED***
						Enabled
					Alarm Voice Enable	***ENABLED***
						Disabled
					Alarm Off-Delay	***10*** (0-65535 Seconds)

7.4.4.3 Advanced

7.4.4.3.1 G-Force

G-Force								
TITLE	OPTION No 1						Offset	Speed
G-Force	Enabled-----→	Alarm Type	***ALARM***					
			Event					
	DISABLED							
		Trigger Setup	G-Force Trigger	Harsh Braking	***ENABLED***		***0.500 (0.001~1)***	***12~31 (0~124) MPH***
					Disabled			
				Hard Acceleration	***ENABLED***		***0.500 (0.001~1)***	***12~31 (0~124) MPH***
					Disabled			
				Harsh Left Turn	***ENABLED***		***0.500 (0.001~1)***	***12~31 (0~124) MPH***
					Disabled			
				Harsh Right Turn	***ENABLED***		***0.500 (0.001~1)***	***12~31 (0~124) MPH***
					Disabled			
				Shock	Enabled		X: 1.0 (0.1~8)	
							Y: 1.0 (0.1~8)	
							Z: 2.0 (0.1~8)	
					DISABLED			
				Alarm Off-Delay	***10*** (0~10) seconds			
				Recommend Settings (Here the offset value is set based on the vehicles weight category)	Light Duty			
					Medium Duty			

				Heavy Duty	
	Linkage Setup	G-Force Linkage Setup	----------→	Channel #	***NONE***
				Post Recording	***1 Min***
					3 Min
					5 Min
					10 MIN
					15 Min
					30 Min
				Lock	Enabled
					DISABLED
				Linkage Screen	***None***
					Single
					Three
					Quad
				Alarm Snap	Enabled
					DISABLED
				MP3 Voice	Enabled
					DISABLED
	Real-Time	X: x.xxx	Y:x.xxx	Z:x.xxx	Auto calibration	***ENABLED***
	Installation Angle	***ROLL: 0.0°***	***PITCH: 0.0°***	***YAW: 0.0°***		Disabled
	100Hz G-sensor Value	***DISABLED***			Select Vehicle Model	Small
		Enabled				Large
	Self-checking:	***NORMAL***				***ADAPTATION***
	Integrated navigation	***ENABLED***				
		Disabled				

7.4.4.3.2 Geo-Fence

Geo-Fence	
TITLE	OPTION No 1
Area I/O Alarm Switch	Enabled
	DISABLED
Line I/O Alarm Switch	Enabled
	DISABLED
Skew Alarm Switch	Enabled
	DISABLED
Driving Alarm Switch	Enabled
	DISABLED
Section Limit Speed TTS Switch	Enabled
	DISABLED

7.4.4.3.3 Storage Media Error

Storage Media Error	
TITLE	OPTION No 1

Storage Media Error	***ENABLED***→	Alarm Type	***ALARM***				
	Disabled		Event				
		Trigger Setup (Storage Media Error Trigger)	Alarm Off-Delay	***7200*** (0~28800) seconds			
			Lock Alarm Off-Delay ?	***ENABLED***			
				Disabled			
		Linkage Setup (Storage Media Error Alarm Linkage)	----------→	Channel	***TICK AVAILABLE CHANNELS***		
				Post Recording	***1 Min***		
					3 Min		
					5 Min		
					10 MIN		
					15 Min		
					30 Min		
				Lock	Enabled		
					DISABLED		
				Linkage Screen	***None***		
					Single		
					Three		
					Quad		
				Alarm Snap	Enabled		
					DISABLED		
				Buzzer	***ENABLED***	Buzzer Duration	Always
					Disabled		***Timer*** ***10 Seconds*** (5~60) Seconds

7.4.4.4 AI App

7.4.4.4.1 ADAS

LDW						
TITLE	OPTION No.1					
LDW	***ENABLED***	Alarm Type	***ALARM***			
	Disabled		Event			
		LDW Trigger	Level 1 Speed Range	***45*** ~ ***70*** MPH		
			Level 2 Speed Range	>= ***70***MPH		
			Sensitivity	***MIDDLE***		
				Low		
				High		
			Alarm Off-Delay	***0*** (0~600) Seconds		
			Lock Alarm Off-Delay	***DISABLED***		
				Enabled		
		LDW Alarm Linkage	----------→	Channel#	***UNTICK AVAILABLE CHANNELS***	
				Post Recording	None	
					1 MIN	
					3 Min	
					5 Min	
					10 Min	
					15 Min	
					30 Min	
				Lock	Enabled	
					DISABLED	
				Linkage Screen	***None***	
					Single	
					Three	
					Quad	
					Capture PcS ↓	
		LDW Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3	
				Single capture	Choose from 1 to 10	
				Capture Interval	***5*** (5~3600) Seconds	
			Channel (Choose from 1 - 4)	***DISABLED***		
				Enabled-------→	FTP	***DISABLED***
						Enabled
					Resolution	***D1***
						CIF
						HD1
						WCIF
						WHD1
						WD1(960H)
						960P
						720P
						1080P
					Quality	***1(Best)***
						2
						3
						4
						5
						6
						7
						8

FCW					
TITLE	OPTION No.1				
FCW	***ENABLED***	Alarm Type	***ALARM***		
	Disabled		Event		
		FCW Trigger	Level 1 Speed Range	***31*** ~ ***50*** MPH	
			Level 2 Speed Range	>= ***50*** MPH	
			Alarm Off-Delay (?)	***0*** (0~600) Seconds	
			Lock Alarm Off-Delay (?)	***DISABLED***	
				Enabled	
		FCW Alarm Linkage	----------→	Channel#	***NONE***
				Post Recording	None
					1 MIN
					3 Min
					5 Min
					10 Min
					15 Min
					30 Min
				Lock	Enabled
					DISABLED
				Linkage Screen	***None***
					Single
					Three
					Quad
					Capture PcS ↓
		FCW Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3
				Single Capture	Choose from 1 to 10
				Capture Interval	***5*** (5~3600) Seconds
			Channel # Snap Enable	***Disabled***	
				Enabled	FTP (***DISABLED***/Enabled)
					Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
					Quality	(***1 [Best]***-8)

SLW					
TITLE	OPTION No.1				
SLW	***DISABLED***	Alarm Type	***ALARM***		
	Enabled		Event		
		SLW Trigger	Detection Effective Time	***10*** (5~600) Seconds	
			Big Icon Reminder Time	***1*** (1~10) Seconds	
			Warn Speed	Choose from (***0***, 5, 10, 15, 20) MPH	(0~20MPH) Below Limit Speed
			Alarm Speed	Choose from (***0***, 5, 10, 15, 20) MPH	(0~20MPH) Than Limit Speed
			Duration	***0*** (0~15) Seconds	

		Alarm Off-Delay	***0*** (0~600) Seconds		
		Lock Alarm Off-Delay	***DISABLED***		
			Enabled		
		Discard the Speed Limit	***DISABLED***		
			Enabled	Orientation Change	***30*** (0~90) Degrees
				within	***5*** (0~20) Seconds
	SLW Alarm Linkage	----------→	Channel#	***NONE***	
			Post Recording	None	
				1 MIN	
				3 Min	
				5 Min	
				10 Min	
				15 Min	
				30 Min	
			Lock	Enabled	
				DISABLED	
			Linkage Screen	***None*** Single	
				Three	
				Quad	
				Capture PcS ↓	
	Alarm Capture Setup (SLW Alarm Capture)	Capture Mode	***Cycle Capture***	Choose from 1, 2, 3	
			Single Capture	Choose from 1 to 10	
			Capture Interval	***5*** (5~3600) Seconds	
		Channel # Snap Enable	***Disabled***		
			Enabled	FTP (***DISABLED***/Enabled)	
				Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	(***1 [Best]***-8)

HMW					
TITLE	OPTION No.1				
HMW	***ENABLED***	Alarm Type	***ALARM***		
	Disabled		Event		
		HMW Trigger	Level 1 Speed Range	***31*** ~ ***50*** MPH	
			Level 2 Speed Range	>= ***50*** MPH	
			Sensitivity	Low	
				Middle	
				High	
				USER-DEFINED	***0.6*** (0.6~4) Seconds
			Duration	***2.00*** (0.1~30.0) Seconds	

	Alarm Off-Delay (?)	***0*** (0~600) Seconds		
	Lock Alarm Off-Delay (?)	***DISABLED***		
		Enabled		
HMW Alarm Linkage	----------→	Channel#	***NONE***	
		Post Recording	None	
			1 MIN	
			3 Min	
			5 Min	
			10 Min	
			15 Min	
			30 Min	
		Lock	Enabled	
			DISABLED	
		Linkage Screen	***None*** Single	
			Three	
			Quad	
			Capture PcS ↓	
HMW Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3	
		Single Capture	Choose from 1 to 10	
		Capture Interval	***5*** (5~3600) Seconds	
	Channel # Snap Enable	***Disabled***		
		Enabled	FTP (***DISABLED***/Enabled)	
			Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
			Quality	(***1 [Best]*** - 8)

PCW	
TITLE	OPTION No.1
PCW	***DISABLED***
	Enabled

Alarm Type	***ALARM***		
Event			
PCW Trigger	Level 1 Speed Range	***12*** ~ ***31***MPH	
	Level 2 Speed Range	>= ***31*** MPH	
	Alarm Off-Delay (?)	***0*** (0~600) Seconds	
	Lock Alarm Off-Delay (?)	***DISABLED***	
		Enabled	
PCW Alarm Linkage	----------→	Channel#	***NONE***
		Post Recording	None
			1 MIN
			3 Min
			5 Min
			10 Min
			15 Min
			30 Min
		Lock	Enabled

				DISABLED	
			Linkage Screen	***None*** Single	
				Three	
				Quad	
				Capture PcS ↓	
PCW Alarm Capture	Capture Mode		***Cycle Capture***	Choose from ***1,*** 2, 3	
			Single Capture	Choose from 1 to 10	
			Capture Interval	***5*** (5~3600) Seconds	
	Channel # Snap Enable		***Disabled***		
			Enabled	FTP (***DISABLED***/Enabled)	
				Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	(***1 [Best]*** - 8)

SSW					
TITLE	OPTION No.1				
SSW	***DISABLED***	Alarm Type	***ALARM***		
	Enabled		Event		
		SSW Trigger	Detection Distance	***10*** (3~20) m	
			The Minimum Speed is Greater than	***0*** (0~5) MPH	
			in	***5*** (1~10) Seconds	
			Alarm Off-Delay (?)	***10*** (0~600) Seconds	
			Lock Alarm Off-Delay (?)	***DISABLED***	
				Enabled	
		SSW Alarm Linkage	----------→	Channel#	***NONE***
				Post Recording	None
					1 MIN
					3 Min
					5 Min
					10 Min
					15 Min
					30 Min
				Lock	Enabled
					DISABLED
				Linkage Screen	***None*** Single
					Three
					Quad
					Capture PcS ↓
		SSW Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1,*** 2, 3
				Single Capture	Choose from 1 to 10
				Capture Interval	***5*** (5~3600) Seconds
			Channel # Snap Enable	***Disabled***	

	Enabled	FTP (***DISABLED*** / Enabled)	
		Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
		Quality	(***1 [Best]*** - 8)

7.4.4.4.2 DFC/DSC

Driver Fatigue						
TITLE	OPTION No.1					
Driver Fatigue	Enabled	Alarm Type	***ALARM***			
	DISABLED		Event			
		Trigger Setup (Driver Fatigue Trigger)	Level 1 Speed Range	***19*** ~ ***100*** MPH		
			Level 2 Speed Range	>= ***100*** MPH		
			Sensitivity	Low		
				Middle		
				High		
				USER-DEFINED	***15*** (10 ~255)*100ms	
			Alarm Off-Delay ?	***0*** (0~600) Seconds		
			Lock Alarm Off-Delay ?	***DISABLED***		
				Enabled		
			Close eyes frequently	***DISABLED***		
				Enabled	Single eye closing time	***3*** (2~5) *100ms
			Enable high-risk time period	***DISABLED***		
				Enabled	Start time of high-risk time period	***00:00:00***
					End time of high-risk time period	***05:00:00***
		Driver Fatigue Alarm Linkage	----------→	Channel#	***NONE***	
				Post Recording	None	
					1 MIN	
					3 Min	
					5 Min	
					10 Min	
					15 Min	
					30 Min	
				Lock	Enabled	
					DISABLED	
				Linkage Screen	***None***	
					Single	
					Three	
					Quad	
					Capture PcS ↓	
		Driver Fatigue Alarm Capture	Capture Mode	***Cycle Capture***	Choose from 1, 2, 3	
				Single Capture	Choose from 1 to 10	
				Capture Interval	***5*** (5~3600) Seconds	
			Channel # Snap Enable	***Disabled***		
				Enabled	FTP (***DISABLED***/Enabled)	
					Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF,

					HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	(***1 [Best]*** - 8)

No Driver						
TITLE	OPTION No.1					
No Driver	***ENABLED***	Alarm Type	***ALARM***			
	Disabled		Event			
		No Driver Trigger	Level 1 Speed Range	>= ***30*** MPH		
			Sensitivity	Low		
				Middle		
				High		
				USER-DEFINED	***60*** (0~60) Seconds	
			Alarm Off-Delay (?)	***0*** (0~600) Seconds		
			Lock Alarm Off-Delay (?)	***DISABLED***		
				Enabled		
		No Driver Alarm Linkage	----------→	Channel#	***NONE***	
				Post Recording	None	
					1 MIN	
					3 Min	
					5 Min	
					10 Min	
					15 Min	
					30 Min	
				Lock	Enabled	
					DISABLED	
				Linkage Screen	***None*** Single	
					Three	
					Quad	
					Capture PcS ↓	
		No Driver Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3	
				Single Capture	Choose from 1 to 10	
				Capture Interval	***5*** (5~3600) Seconds	
			Channel # Snap Enable	***Disabled***		
				Enabled	FTP (***DISABLED***/Enabled)	
					Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
					Quality	(***1 [Best]*** - 8)

Handheld Devices					
TITLE	OPTION No.1				
Handheld Devices	***ENABLED***	Alarm Type	***ALARM***		
	Disabled		Event		
		Handheld Devices Trigger	Level 1 Speed Range	***3*** ~ ***100*** MPH	

	Level 2 Speed Range	>= ***100*** MPH	
	Sensitivity	Low	
		Middle	
		High	
		USER-DEFINED	***2*** (0~24) Seconds
	Alarm Off-Delay ?	***0*** (0~600) Seconds	
	Lock Alarm Off-Delay ?	***DISABLED***	
		Enabled	
Handheld Devices Alarm Linkage	----------→	Channel#	***NONE***
		Post Recording	None
			1 MIN
			3 Min
			5 Min
			10 Min
			15 Min
			30 Min
		Lock	Enabled
			DISABLED
		Linkage Screen	***None*** Single
			Three
			Quad
			Capture PcS ↓
Driver Fatigue Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1,*** 2, 3
		Single Capture	Choose from 1 to 10
		Capture Interval	***5*** (5~3600) Seconds
	Channel # Snap Enable	***Disabled***	
		Enabled	FTP (***DISABLED***/Enabled)
			Resolution: Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
			Quality: (***1 [Best]***-8)

Smoking					
TITLE	OPTION No.1				
Smoking	***ENABLED***	Alarm Type	***ALARM***		
	Disabled		Event		
		Trigger Setup (Smoking Trigger)	Level 1 Speed Range	***0*** ~ ***100*** MPH	
			Level 2 Speed Range	>= ***100*** MPH	
			Sensitivity	Low	
				Middle	
				High	
				USER-DEFINED	***0*** (0~24) Seconds

	Alarm Off-Delay (?)	***0*** (0~600) Seconds		
	Lock Alarm Off-Delay (?)	***DISABLED***		
		Enabled		
Linkage Setup (Smoking Alarm Linkage)	----------→	Channel	***NONE***	
		Post Recording	None	
			1 MIN	
			3 Min	
			5 Min	
			10 Min	
			15 Min	
			30 Min	
		Lock	Enabled	
			DISABLED	
		Linkage Screen	***None***	
			Single	
			Three	
			Quad	
			Capture PcS ↓	
Alarm Capture Setup (Driver Fatigue Alarm Capture)	Capture Mode	***Cycle Capture***	Choose from ***1,*** 2, 3	
		Single Capture	Choose from 1 to 10	
		Capture Interval	***5*** (5~3600) Seconds	
	Channel # Snap Enable	***Disabled***		
		Enabled	FTP (***DISABLED***/Enabled)	
			Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
			Quality	(***1 [Best]***-8)

Distraction						
TITLE	OPTION No.1					
Distraction	***ENABLED***	Alarm Type	***ALARM***			
	Disabled		Event			
		Distraction Trigger	Level 1 Speed Range	***19*** ~ ***100*** MPH		
			Level 2 Speed Range	>= ***100*** MPH		
			Sensitivity	Low		
				Middle		
				High		
				USER-DEFINED	Judgement (Choose from) ***L+R+UP+DOWN***, L+R, Up+Down)	Lane departure suppression (***DISABLED*** / Enabled)

			L+R	***5*** (5~60) Seconds
			Up+Down	***3*** (5~60) Seconds
	Distraction level	Light ***MEDIUM*** high		
	Alarm Delay	***0*** (0~600) Seconds		
	Lock Alarm Delay	***DISABLED***		
		Enabled		
Distraction Alarm Linkage	----------→	Channel#	***NONE***	
		Post Recording	None	
			1 MIN	
			3 Min	
			5 Min	
			10 Min	
			15 Min	
			30 Min	
		Lock	Enabled	
			DISABLED	
		Linkage Screen	***None*** Single	
			Three	
			Quad	
			Capture PcS ↓	
Distraction Alarm Capture)	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3	
		Single Capture	Choose from 1 to 10	
		Capture Interval	***5*** (5~3600) Seconds	
	Channel # Snap Enable	***Disabled***		
		Enabled	FTP (***DISABLED***/Enabled)	
			Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
			Quality	(***1 [Best]*** - 8)

Yawn					
TITLE	OPTION No.1				
Yawn	***ENABLED***	Alarm Type	***ALARM***		
	Disabled		Event		
		Yawn Trigger	Level 1 Speed Range	***3*** ~ ***100*** MPH	
			Level 2 Speed Range	>= ***100*** MPH	
			Sensitivity	Low	
				Middle	
				High	
				USER-DEFINED	***2*** (0~60) Seconds
			Alarm Off-Delay	***180*** (0~600) Seconds	
			Lock Alarm Off-Delay	***DISABLED***	

		Enabled		
Yawn Alarm Linkage	----------→	Channel#	***NONE***	
		Post Recording	None	
			1 MIN	
			3 Min	
			5 Min	
			10 Min	
			15 Min	
			30 Min	
		Lock	Enabled	
			DISABLED	
		Linkage Screen	***None***	
			Single	
			Three	
			Quad	
			Capture PcS ↓	
Yawn Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1,*** 2, 3	
		Single Capture	Choose from 1 to 10	
		Capture Interval	***5*** (5~3600) Seconds	
	Channel # Snap Enable	***Disabled***		
		Enabled	FTP (***DISABLED***/Enabled)	
			Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
			Quality	(***1 [Best]***-8)

Seatbelt						
TITLE	OPTION No.1					
Seatbelt	***ENABLED***	Alarm Type	***ALARM***			
	Disabled		Event			
		Seatbelt Trigger	Alarm Mode	***NORMAL MODE***--→	Alarm Off-Delay (?)	***0*** (0~600) Seconds
					Lock Alarm Off-Delay (?)	***DISABLED***
						Enabled
				Regular Inspection---→	Inspection Interval	***60*** (5 ~240) Minute
			Level 1 Speed Range	***3*** ~ ***100*** MPH		
			Level 2 Speed Range	>= ***100*** MPH		
			Sensitivity	Low		
				Middle		
				High		
				USER-DEFINED	***10*** (0 ~60) Seconds	
			Copilot detection enable (?)	***DISABLED***		
				Enabled		
		Seatbelt Alarm Linkage	----------→	Channel	***NONE***	
				Post Recording	None	
					1 MIN	

				3 Min	
				5 Min	
				10 Min	
				15 Min	
				30 Min	
			Lock	Enabled	
				DISABLED	
			Linkage Screen	***None***	
				Single	
				Three	
				Quad	
				Capture PcS ↓	
Seatbelt Alarm Capture	Capture Mode		***Cycle Capture***	Choose from ***1***, 2, 3	
			Single Capture	Choose from 1 to 10	
			Capture Interval	***5*** (5~3600) Seconds	
	Channel # Snap Enable		***Disabled***		
			Enabled	FTP (***DISABLED***/Enabled)	
				Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	(***1 [Best]*** - 8)

No Mask						
TITLE	OPTION No.1					
No Mask	Enabled	Alarm Type	***ALARM***			
	DISABLED		Event			
		No Mask Trigger	Level 1 Speed Range	***12*** ~ ***31*** MPH		
			Level 2 Speed Range	>= ***31*** MPH		
			Sensitivity	Low		
				MIDDLE		
				High		
				User-Defined	***5*** (0~60) Seconds	
			Alarm Off-Delay (?)	***0*** (0~600) Seconds		
			Lock Alarm Off-Delay (?)	***DISABLED***		
				Enabled		
		No Mask Alarm Linkage	----------→	Channel	***NONE***	
				Post Recording	None	
					1 MIN	
					3 Min	
					5 Min	
					10 Min	
					15 Min	
					30 Min	
				Lock	Enabled	
					DISABLED	
				Linkage Screen	***None***	
					Single	
					Three	
					Quad	

				Capture PcS ↓	
	Alarm Capture Setup (No Mask Alarm Capture)	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3	
			Single Capture	Choose from 1 to 10	
			Capture Interval	***5*** (5~3600) Seconds	
		Channel # Snap Enable	***Disabled***		
			Enabled	FTP (***DISABLED*** / Enabled)	
				Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	(***1 [Best]***-8)

Infrared block alarm						
TITLE	OPTION No.1					
Infrared block alarm	Enabled	Alarm Type	***ALARM***			
	DISABLED		Event			
		Infrared block alarm Trigger	Level 1 Speed Range	***12*** ~ ***31*** MPH		
			Level 2 Speed Range	>= ***31*** MPH		
			Sensitivity	Low		
				MIDDLE		
				High		
				User-Defined	***5*** (0~60) Seconds	
			Alarm Off-Delay (?)	***0*** (0~600) Seconds		
			Lock Alarm Off-Delay (?)	***DISABLED***		
				Enabled		
		Infrared block alarm (Alarm Linkage)	----------→	Channel	***NONE***	
				Post Recording	None	
					1 MIN	
					3 Min	
					5 Min	
					10 Min	
					15 Min	
					30 Min	
				Lock	Enabled	
					DISABLED	
				Linkage Screen	***None***	
					Single	
					Three	
					Quad	
					Capture PcS ↓	
		Infrared block alarm	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3	

(Alarm Capture)				
		Single Capture	Choose from 1 to 10	
		Capture Interval	***5*** (5~3600) Seconds	
	Channel # Snap Enable	***Disabled***		
		Enabled	FTP (***DISABLED*** / Enabled)	
			Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
			Quality	(***1 [Best]*** -8)

7.4.4.4.3 BSD

BSD					
TITLE	OPTION No 1				
Right blind spot detection	Enabled---→	Alarm Type	***ALARM***		
	DISABLED		Event		
		Right blind spot detection Trigger	Alarm Speed Range	XX ~ XX MPH	
			Duration	***0*** (0~600) Seconds	
			Alarm Off-Delay ?	***0*** (0~600) Seconds	
			Lock Alarm Off-Delay ?	***DISABLED*** Enabled	
		Right blind spot detection Alarm Linkage	----------→	Channel	***UNTICK AVAILABLE CHANNELS***
				Post Recording	***1 Min***
					3 Min
					5 Min
					10 MIN
					15 Min
					30 Min
				Lock	Enabled
					DISABLED
				Linkage Screen	***None***
					Single
					Three
					Quad
					Capture PcS ↓
		Right blind spot detection Alarm Capture	Capture Mode	***Cycle Capture***	Choose from 1, 2, 3
				Single Capture	Choose from 1 to 10
				Capture Interval	***5*** (5~3600) Seconds

		Channel # Snap Enable	***DISABLED***		
			Enabled	FTP (***DISABLED*** /Enabled)	
				Resolution	Select Resolution (CIF, 720P, ***D1,*** WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	***1(Best)*** (1 [Best] - 8)

Left blind spot detection	Enabled---→ ***DISABLED***	Alarm Type	***ALARM***		
			Event		
		Left blind spot detection Trigger	Alarm Speed Range	XX ~ XX MPH	
			Duration	***0*** (0~600) Seconds	
			Alarm Off-Delay (?)	***0*** (0~600) Seconds	
			Lock Alarm Off-Delay (?)	***DISABLED***	
				Enabled	
		Left blind spot detection Alarm Linkage	----------→	Channel	***UNTICK AVAILABLE CHANNELS***
				Post Recording	***1 Min***
					3 Min
					5 Min
					10 MIN
					15 Min
					30 Min
				Lock	Enabled
					DISABLED
				Linkage Screen	***None***
					Single
					Three
					Quad
					Capture PcS ↓
		Left blind spot detection Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3
				Single Capture	Choose from 1 to 10
				Capture Interval	***5*** (5~3600) Seconds
			Channel # Snap Enable	***Disabled***	
				Enabled	FTP (***DISABLED*** /Enabled)

				Resolution	Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	(1 [Best] - 8)

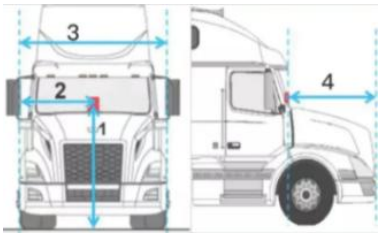
Front Blind Area	Enabled---→	Alarm Type	***ALARM***		
	DISABLED		Event		
		Front Blind Area Trigger	Alarm Speed Range	⩽ XX (0~12) MPH	
			Alarm Off-Delay ?	***0*** (0~600) Seconds	
			Lock Alarm Off-Delay ?	***DISABLED***	
				Enabled	
		Front Blind Area Alarm Linkage	----------→	Channel	***UNTICK AVAILABLE CHANNELS***
				Post Recording	***1 Min***
					3 Min
					5 Min
					10 MIN
					15 Min
					30 Min
				Lock	Enabled
					DISABLED
				Linkage Screen	***None***
					Single
					Three
					Quad
					Capture PcS ↓
		Front blind spot detection Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1***, 2, 3
				Single Capture	Choose from 1 to 10
				Capture Interval	***5*** (5~3600) Seconds
			Channel # Snap Enable	***Disabled***	
				Enabled	FTP (***DISABLED*** /Enabled)
					Resolution: Select Resolution (CIF, 720P, ***D1***, WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
					Quality: ***1 (Best)*** (1 [Best] - 8)

Rear blind spot	Enabled---→	Alarm Type	***ALARM***	
	DISABLED		Event	

	Rear blind spot Trigger	Alarm Speed Range	⩽ XX (0~158) MPH		
		Alarm Off-Delay ?	***0*** (0~600) Seconds		
		Lock Alarm Off-Delay ?	***DISABLED***		
			Enabled		
		Associated Reverse Signal	***ENABLED***		
			Disabled		
	Rear blind spot Alarm Linkage	----------→	Channel	***UNTICK AVAILABLE CHANNELS***	
			Post Recording	***1 Min***	
				3 Min	
				5 Min	
				10 MIN	
				15 Min	
				30 Min	
			Lock	Enabled	
				DISABLED	
			Linkage Screen	***None***	
				Single	
				Three	
				Quad	
				Capture PcS ↓	
	Rear blind spot Alarm Capture	Capture Mode	***Cycle Capture***	Choose from ***1,*** 2, 3	
			Single Capture	Choose from 1 to 10	
			Capture Interval	***5*** (5~3600) Seconds	
		Channel # Snap Enable	***Disabled***		
			Enabled	FTP (***DISABLED*** /Enabled)	
				Resolution	Select Resolution (CIF, 720P, ***D1,*** WCIF, HD1, WHD1, WD1(960H), 960P, 1080P)
				Quality	***1 (Best)*** (1 [Best] - 8)

7.4.4.4.4 Calibration Parameter

Calibration Parameter			
TITLE	OPTION No 1		
ADAS Camera Install Height (1)	***153*** (50¬400)	Unit	***CM***
Left margin (inward facing) (2)	***85*** (40¬170)		Inches
Front-end Width (3)	***170*** (140¬350)		
Front-end Length (4)	***100*** (0~250)		



Steering Wheel Position	***Right***
	Left
B1/B2 Broadcast mode	***Mode1***
BSD Curb Identification	***ENABLED***
	Disabled
BSD Pedestrian Path Prediction	***ENABLED***
	Disabled
Select Region	***Standard***
	North America

7.4.4.4.5 Alarm Notifications

Alarm Notifications		
TITLE	OPTION No 1	
AI Alarm Voice	***ENABLED***	
	Disabled	
Recurring DMS Voice Alert	Enabled	
	DISABLED	
HWU Brightness	***Manual Mode***	***8*** (0~8)
HWU Audio Enable	Enabled	
	DISABLED	
B1/B2 Mode Set	***CLOSE***	***5*** (0~8)
	Sound	
	Light	
	Sound & Light	
B3 Mode Set	***CLOSE***	
	Sound	
	Light	
	Sound & Light	

Name	HWU Audio	MP3 Voice	B1/B2 Sound	B1/B2 Light	B3 Sound	B3 Light
Driver Fatigue	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
No Driver	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
Handheld Devices	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
Smoking	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
Distraction	***DISABLED*** /Enabled	***ENABLED***/ Disabled				
LDW	***DISABLED*** /Enabled	***ENABLED***/ Disabled				
FCW	***DISABLED*** /Enabled	***ENABLED***/ Disabled				
SLW	***DISABLED*** /Enabled	***DISABLED*** /Enabled				

HMW	***DISABLED*** /Enabled	***ENABLED***/ Disabled				
Yawn	***DISABLED*** /Enabled	***ENABLED***/ Disabled				
PCW	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
Seatbelt	***DISABLED*** /Enabled	***ENABLED***/ Disabled				
No Mask	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
Right blind spot level one	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
Right blind spot level two	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
Right blind spot level three	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
Infrared block alarm	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
Left blind spot level one	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
Left blind spot level two	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
Left blind spot level three	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
SSW	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
Front Blind Area	***DISABLED*** /Enabled	***DISABLED*** /Enabled				
Rear blind spot	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled	***DISABLED*** /Enabled
Blind Detection	***DISABLED*** /Enabled	ⓘ				

7.4.4.4.6 Algorithm Calibration

Algorithm Calibration		
TITLE		OPTION No 1
CH1	None	Calibration
	ADAS	***Normal***
CH2	None	Calibration
	DSC	***Normal***
CH3	***None***	Calibration
	R-BSD	***Normal***
	L-BSD	
	Blind area in front of vehicle	
	Rear blind spot	
	Looking down on BSD (Right)	
	Looking down on BSD(Left)	
CH4	***None***	Calibration
	R-BSD	***Normal***
	DFC (if DFC is connected and IP CH4 is enabled then this becomes the only option available)	
	L-BSD	
	Blind area in front of vehicle	
	Looking down on BSD (Right)	

	Looking down on BSD(Left)

7.4.5 About

7.4.5.1.1 4.4.5.1 FOSS

FOSS	
TITLE	OPTION No 1
Free and Open-Source Software List	Details >>
>> Free and Open-Source Software List	See OSD Map

7.5 About

About	
TITLE	OPTION No 1
Version Info	X.X.X
Date	YYYYMMDDXX (iOS App) YYYYMMDDXX (Android App)

7.6 Free and Open-Source Software List

Free and Open-Source Software List	
TITLE	OPTION No 1
Free and Open-Source Software List	Details see SmartController

7.7 5.3 Logout

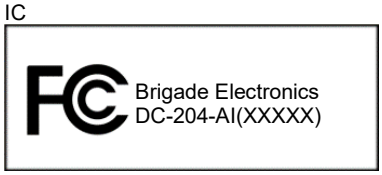
Logout	
TITLE	OPTION No 1
Are you sure to logout?	***OK***
	Cancel

Glossary of Frequently Used Terms

ADAS	Advanced Driver Assistance System
BSD	Blind Spot Detection
DFC	Driver Facing Camera
DSC	Driver Safey Camera
DMS	Driver Monitoring System
EULA	End User License Agreement
FCW	Front Collision Warning
FOSS	Free and Open-Source Software
HMW	Headway Monitoring Warning
HWU	Hazard Warning Unit
ID	Identification
IPC	Internet Protocol camera
LDW	Lane Departure Warning
Mob Net	Mobile Network
OSD	On Screen Display
PCW	Pedestrian Collision Warning
SLA	Sound Light Alert
SLW	Speed Limit Warning
SSW	Stop Sign Warning
VIN	Vehicle Identification Number

8 Approvals

CE
UNECE Regulation No. 10 Revision 06 (“E-marking”)
FCC
IC



FCC Statement:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the 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.

Note: 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.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. 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 & your body.

US Responsible Party	Brigade Electronics Inc
Address	976 W Tyson Rd, Portland, IN 47371, United States
Contact Information	+1 (260) 766-4343 sales@brigade-inc.com
Website	https://brigade-electronics.com/en-us/

ISED Statement:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
This device must accept any interference, including interference that may cause undesired operation of the device.
L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux
CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1) L'appareil ne doit pas produire de brouillage;
2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.*Cet émetteur ne doit pas être colocalisé ou fonctionner en conjonction avec une autre antenne ou un autre émetteur.*
The device meets the exemption from the routine evaluation limits in section 2.5 of RSS-102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 etla conformité à l'exposition de RSS-102 rf, utilisateurs peut obtenir l'information canadienne surl'exposition et la conformité de rf.
Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ouémetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

Canada Responsible Party	Brigade Electronics Canada
Address	2390 Industrial St, Burlington, ON L7P 1A5, Canada
Contact Information	905-319-9993 contact@brigade-electronics.ca
Website	https://brigade-electronics.com/en-ca/

Additional information:

North American Variants:
4G

- Operational Frequency Band: LTE: B2, B4, B5, B12, B13, B14, B66, B71
- Maximum Transmitted Power: 26 dBm EIRP

3G

- Operational Frequency Band: WCDMA: B2, B4, B5
- Maximum Transmitted Power: 26dBm EIRP

Wi-Fi

- Operational Frequency Band: 2412 - 2472 MHz
- Maximum Transmitted Power: 10 dBm EIRP

European Variants:

4G

- Operational Frequency Band: LTE: B1, B3, B7, B8, B20, B28
- Maximum Transmitted Power: 25 dBm EIRP

3G

- Operational Frequency Band: WCDMA: B1, B8
- Maximum Transmitted Power: 27dBm EIRP

Wi-Fi

- Operational Frequency Band: 2412 - 2472 MHz
- Maximum Transmitted Power: 10 dBm EIRP

The above equipment should be installed and operated with a minimum distance of 20cm between the mobile digital recorder and any human body.

9 Glossary

3G – Third Generation
4G – Fourth Generation
AC – Adaptor Cable
ADPCM – Adaptive Differential Pulse-code Modulation
AI - Artificial Intelligence
G711U – Narrowband audio codec
G711A - Narrowband audio codec
Alarms – An "EVENT" that has been configured (in the MDR unit settings) to be an alarm. Alarms are identified as orange video channel data on the playback timeline. These are displayed in the real-time alarm log in the MDR-Dashboard and MDR Mobile Apps. Alarms can generate email alerts and trigger automatic downloads (dependant on MDR-Dashboard configuration).
AHD – Analog High Definition
Automatic Download – A download that is set up in the MDR-Dashboard to automatically download data related to an occurring "Alarm" or "Event" between user-defined times. Configured under Download in MDR-Dashboard.
APN – Access Point Name
AVI – Audio Video Interleaved
BD – Blind Detection
CBR – Constant Bit Rate
CE – Conformité Européenne
CH – Channel
CHAP – Challenge Handshake Authentication Protocol
CIF – Common Intermediate Format (¼ D1 format)
CPU – Central Processing Unit
CU – Control Unit
D1 – D1 is full standard resolution for 25FPS (PAL) and 30FPS (NTSC)
DFOV – Diagonal Field of View
DHCP – Dynamic host configuration protocol
DNS – Domain Name Server
DS – Docking Station
DST – Daylight Saving Time
EDGE – Enhanced Data GSM Environment
EIA – Electronic Industries Alliance
Events – An activation of an input e.g., Sensor input (trigger 1-8), G Sensor, Over speed etc. Events are identified as red vertical lines on the playback timeline. These are not shown in the real-time alarm log.
EXP – Expansion
FCC – Federal Communications Commission
FCW – Front Collision Warning
FTP – File Transfer Protocol
FPB – Fireproof box
GB – Gigabyte
GHz – Gigahertz
GND – Ground
GPIO – General Purpose Input/output
GPRS – General Packet Radio Service
GPS – Global Positioning System
GSC – G-sensor Cable
G-Sensor - measure of acceleration/shock of the vehicle
GSM – Global System for Mobile Communications
GUI - Graphical user interfaces
H.264 – Video compression standard
H.265 - Video compression standard
HD1 – Half Definition compared to Full Definition (See D1)
HD – High Definition
HDD – Hard Disk Drive
HSDPA – High Speed Downlink Packet Access
HSPA – High Speed Packet Access
HSUPA – High Speed Uplink Packet Access
IC – Industry Canada
ID – Identification
IO – Input/output
iOS – iPhone Operating System (Apple Inc.)
IP – Internet Protocol
IR – Infra-red
IT – Information technology
Km/h – Kilometres per hour
LAN – Local Area Network
LED – Light Emitting Diode
LDW – Lane Departure Warning
MAC – Media Access Control
MB – Megabyte
MCU – Mobile Caddy Unit
MD – Motion Detection
MDR – Mobile Digital Recorder
MHz – Megahertz
MPH – Miles per hour
NET – Network
NTSC – National Television System Committee
OSD – On-screen Display
PAL – Phase Alternating Line
PAP – Password Authentication Protocol
PC – Personal Computer
PN – Part Number
PTZ – Pan, Tilt and Zoom
PWR – Power
REC – Record
RES – Resolution
RP – Remote Panel
RPC – Remote Panel Cable
S/N – Serial Number
Scheduled Download – A download that is manually setup from in the MDR-Dashboard (to be downloaded when the selected MDR connects to the server). Configured under Server in MDR-Dashboard.
SD – Secure Digital
SIM – Subscriber Identity Module
SMTP – Simple Mail Transfer Protocol
SPD – Speed
SQL – Structured Query Language
SSL – Secure Sockets Layer
TB – Terabyte
TIA – Telecommunications Industry Association
TLS - Transport Layer Security
TRIG – Trigger
TTS – Text to Speech
UKCA - UK Conformity Assessed
UNECE – United Nations Economic Commission for Europe
USB – Universal Serial Bus
V – Voltage
VBR – Variable Bit Rate
VGA – Video Graphics Array
VIC – Video Input Cable
VL – Video Loss
VOC – Video Output Cable
W – Watt, standard unit of power
WCDMA – Wide Code Division Multiple Access
Wi-Fi – Wireless Fidelity
WEP - Wired Equivalent Privacy
WPA - Wi-Fi Protected Access
WPA2-PSK - Wi-Fi Protected Access II
WPA2-Enterprise - Wi-Fi Protected Access II Enterprise

10 Disclaimer

AI Dashcam systems are an invaluable driver aid but do not exempt the driver from taking every normal precaution when conducting a manoeuvre. No liability arising out of the use or failure of the product can in any way be attached to Brigade or to the distributor.

Dénégation
Les systèmes de dashcam IA sont une aide précieuse pour le conducteur, mais celui- ci doit toutefois prendre toutes les précautions nécessaires pendant les manœuvres. Brigade ou ses distributeurs n'assument aucune responsabilité résultant de l'utilisation ou d'un défaut du produit.

Haftungsausschluss
KI-Dashcam Systeme sind für den Fahrer eine unschätzbare Hilfe, ersetzen aber beim Manövrieren keinesfalls die üblichen Vorsichtsmaßnahmen. Für Schäden aufgrund der Verwendung oder eines Defekts dieses Produkts übernehmen Brigade oder der Vertriebshändler keinerlei Haftung.

Condizioni di Utilizzo
I sistemi di dashcam costituiscono un prezioso ausilio alla guida, ma il conducente deve comunque assicurarsi di prendere tutte le normali precauzioni quando esegue una manovra. Né Brigade né il suo distributore saranno responsabili per eventuali danni di qualsiasi natura causati dall'utilizzo o dal mancato utilizzo del prodotto.

Aviso legal
Os sistemas de dashcam com IA son una ayuda inestimable driver pero no exime al conductor de tomar todas las precauciones normales al realizar una maniobra. Ninguna responsabilidad que surja del uso o fallo del producto puede de alguna manera acoplarse a la brigada o al distribuidor.

Declinación de responsabilidad
Los sistemas de dashcam con IA são uma inestimável driver de auxílio, mas não isentam o driver de tomar todas normal precaução ao realizar uma manobra. Nenhuma responsabilidade decorrente da utilização ou falha do produto pode de qualquer maneira ser anexado ao de bombeiros ou para o distribuidor.

Verwerping
AI-dashcam systemen zijn een waardevolle hulp voor de bestuurder, maar stelt de bestuurder niet vrij van de normale voorzorgsmaatregelen bij het uitvoeren van een manoeuvre. Geen aansprakelijkheid voortvloeiend uit het gebruik of falen van het product kan op één of andere manier aan Brigade of aan de distributeur worden toegekend.

Отказ от обязательств
Системы видеорегистраторов с функцией ИИ оказывают водителю неоценимую помощь при маневрировании, но не освобождают его от обязанности соблюдения обычных мер предосторожности.
В ином случае компания Brigade или дистрибьютор не несет ответственность, возникающую в ходе использования или по причине неисправности данного продукта.

Hatırlatma
Yapay Zeka Destekli Araç Kamera Sistemleri sürücünün önemli bir yardımcısı olmakla birlikte, manevra esnasında sürücü bir kaza olmaması için her türlü önlemi almalıdır.Brigade veya bölgesel dağıtıcıları yapılacak yanlış bir uygulama ve sonucunda oluşabilecek maddi ve/veya manevi kayıplardan sorumlu tutulamaz.

Uwaga
Systemy mobilnych cyfrowych są niezastąpioną pomocą dla kierowcy, ale jego posiadanie nie zwalnia kierowcy z zachowania szczególnej ostrożności podczas manewrów. Żadna kolizja drogowa ani jej skutki nie mogą obciążać producenta urządzenia oraz jego dystrybutorów.

Specifications subject to change. Sous réserve de modifications techniques. Änderungen der technischen Daten vorbehalten. Specifiche soggette a variazioni. Las especificaciones están sujetas a cambios. Wijzigingen in specificaties voorbehouden. As especificações estão sujeitas a alterações. Спецификация может изменяться. Brigade Electronics belirttiği özellikleri haber vermeksizin istediği zaman değiştirebilir. Specyfikacja techniczna może ulec zmianie.