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4&8 Channel Hybrid Mobile Digital Video Recorder

Installation and Programming Manual

SRH-04020A & SRH-08020A

Version1 08/2023 .

4&8 Channel Hybrid MDVR

Installation and Programming Manual

Disclaimer

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

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

Important Safety Instructions

1. Read, keep, and follow these instructions.
2. Only use the power supplies that are recommended in the manual, failure to do so could cause damage to the product.
3. Before cleaning, remove all cable connections from the control box.
4. When cleaning the product's surface, use a soft, dry cloth or a damp cloth. Do not use detergent or products that contain alcohol, solvents or surfactants or oil constituents. They may damage the product. Especially the viewing bubble/window)
5. Do not use excessive force when installing the product, the camera may be damaged and fail to work. If the warranty seal is damaged, the warrantee will become void.
6. Install or uninstall the product as described in the manual, failure to do so may damage the product, affect the functions and performance that could invalidate the warrantee.
7. Install the product by referring to "Installation & connection" in the user manual.
8. This product is designed to be installed by trained professionals, incorrect installation may cause the product not to perform as expected or to malfunction.

Contents

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- Product Features
- Recommended PC Specifications
- Packaging List

Installation

- Installation

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- Specification

Overview

Basic Features

All settings and operations can be completed through a touch-screen monitor.

- 4 & 8 Channel 1080P Resolution.
- 25 ips H.264
- SD Card x 1 (512GB), SSD x 1 (2TB Capacity)
- AI Algorithms - Driver Monitoring System / Advanced Driving Assistance System / Driver Assistance System / Blind Spot Detection / Around View Monitoring (360°)
- 4 & 8 Audio inputs / 2 - outputs
- Automatic Upgrade via USB
- 10 – 32V DC
- Weatherproof IP69K

Main Features

Video and Audio

- 4 & 8 x 1080P video inputs
- 4 & 8 x audio inputs
- 2 x audio outputs
- 2 video outputs (1 x CVBS -6pin, 1 x VGA-1080P)

Recording

- 4 & 8 CH Video & Audio Recorder, G-Sensor data, and GPS data.
- Multiple recording modes:
  - Power on recording, normal recording, schedule recording and event recording
    - G-Sensor, Overspeed, Motion detection, Alarm 1~6 and Panic button, radar, alarm, inappropriate drivers' action warning, driving safety risk, FCW alarm, DMS detection alarm, Lane departure warning alarm, BSD detection alarm, recordings.
  - Cyclic recording and 15 seconds pre-recording are also supported.
- Recording files are stored in the SSD/HDD or SD card.
- Real-time license plate numbers, driving speed, G-Sensor/Gyroscope 3D accelerated speed, longitude/latitude, & GPS tracking recordings.

Preview and Playback

- Supports simultaneously single or 4/8 channels audio and video playing back.
- Support searching of recorded files by dates and recording types.
- Record status, alarm status and etc indication.

Storage Types

- Supports 1 x SSD/HDD (2TB) and 1 x SD card (128GB, SDHC, SDXC).
- SSD/HDD is preferred. SD card could be put into use if there is no SSD/HDD connected/detected.
- SD card can be easily removed from DVR.
- Recommended SSD 2.5" BIWIN CP001 or CP1004 250GB – 2TB or equivalent/better.

Backup

- Supports USB external storage for recorded files backup.

Network

- Supports LAN, Wi-Fi, and 2G / 3G / 4G.
- LAN, Wi-Fi and 2G / 3G / 4G have sequence priority of connections. Automatically switching to save the data once LAN, Wi-Fi or 2G/3G/4G is connected.
- Recording files can be uploaded to the server. Searched/downloaded by CMS Client.
- Wi-Fi supports STATION and AP mode. Wi-Fi AP mode enables mobile devices to be connected. Mobile devices can be used to preview and configure the recorder.
- Supports remote real-time video streaming and previewing.
- Supports automatic uploading of alarm recording files, alarm & log information, and GPS trajectory, to track the vehicle and analyse any abnormal vehicle situations.
- Supports remote configuration and remote upgrading.
- Supports PC Windows Client, mobile iOS and Android app. Users could remotely monitor vehicles by computers or mobile phones.

Alarm

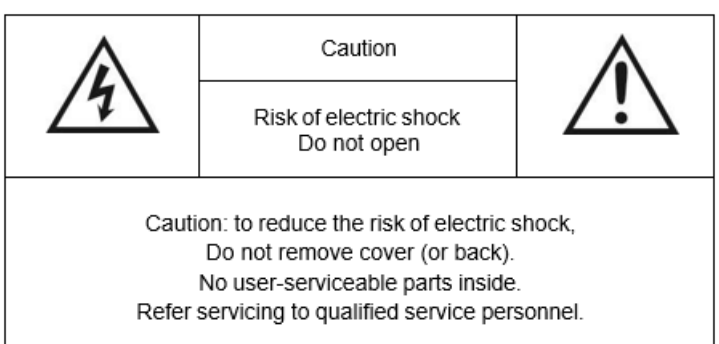
- 6 alarm input channels, 1 buzzer output and 2 of alarm outputs.
- Overspeed alarm.
- Motion detection alarm.
- G-Sensor alarm.
- Panic button alarm.
- DMS alarm (no driver, fatigue, distraction, phone call, smoke, no mask, no-seatbelt, sunglass).
- ADAS Alarm (Forward collision warning, Pedestrian detection warning, Lane departure warning).
- BSD Alarm.

Security

- Users' password protection. The device could not be accessed without password.
- Support account management.

Packaging List

- Recorder x 1
- Remote control 1



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute risk of electric shock to persons.

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

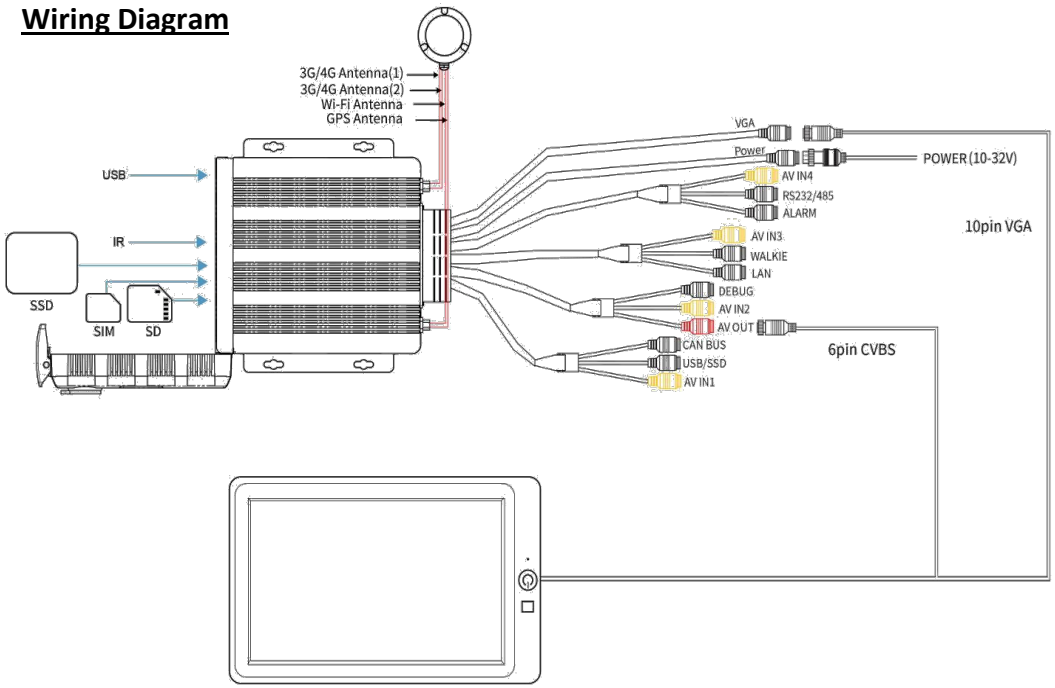
This symbol is intended to alert the user not to dispose of electrical and electronic equipment.

CAUTION

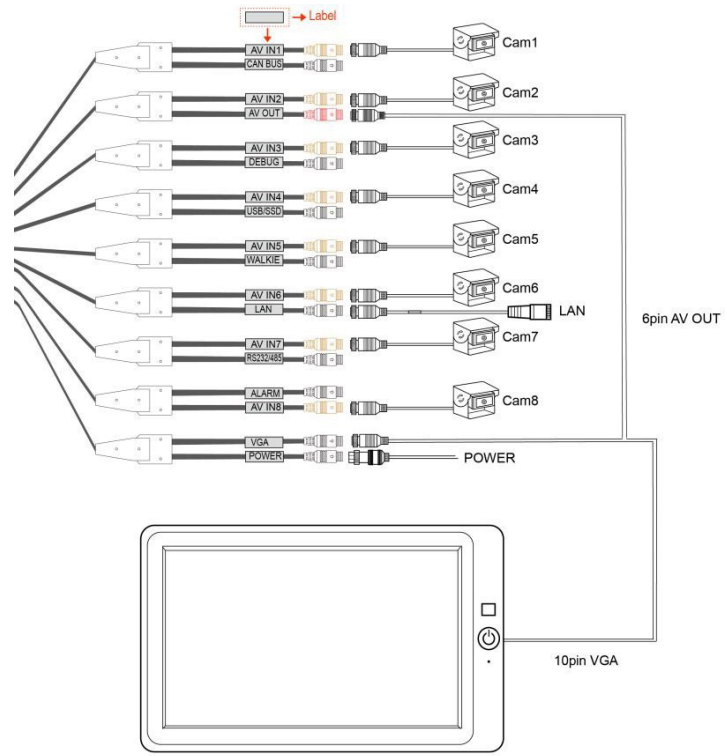
You are cautioned that any changes or modifications not expressly approved in this manual could void your warrant and necessitate expensive repairs.

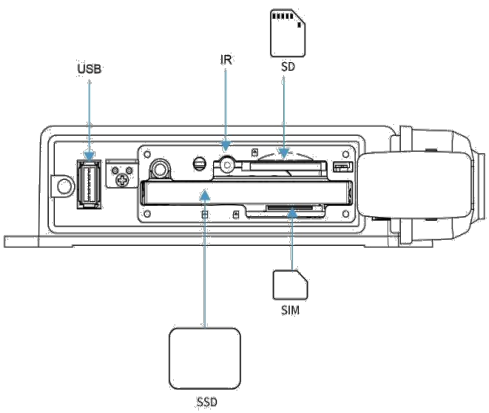
Overview

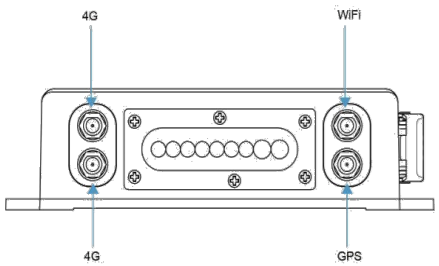
Wiring Diagram



SRH-08020A 8-Channel version







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Overview

Mechanical lock ②

- Close the front cover, and then lock the device with the key.
- The device will stop recording and the buzzer will beep when the front cover is open, If the front cover is still open or the electronic lock is not closed after 2 minutes, DVR will resume recording.

LED ①

- When the DVR is working normally, the red light is On, and the green light is flashing. During a DVR firmware upgrade, the red light is On and the green light is Off.

SSD/HDD Slot

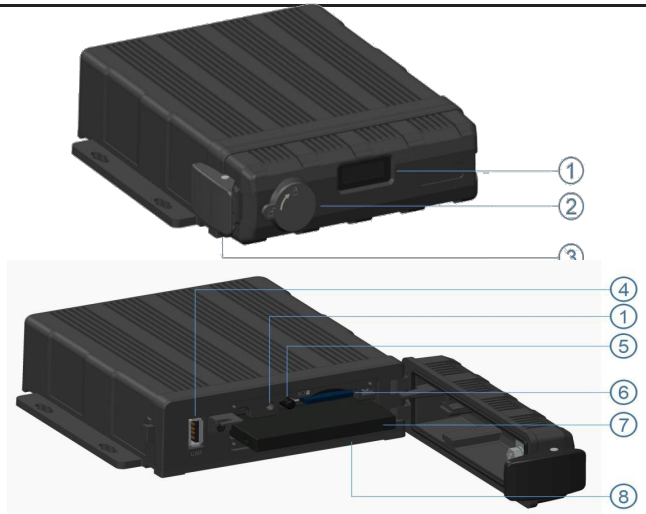
- 1 x 2.5" SSD/HSS (Max 2TB)

SD Card Slot.

- 1 x SD (Max 256GB)
- Insert/remove the SD card.
  - Step 1: Unlock the device with the key & open the front cover.
  - Step 2: Insert SD Card into SD card slot.
  - Step 3: Close and then lock front cover.

USB Slot.

- USB 2.0

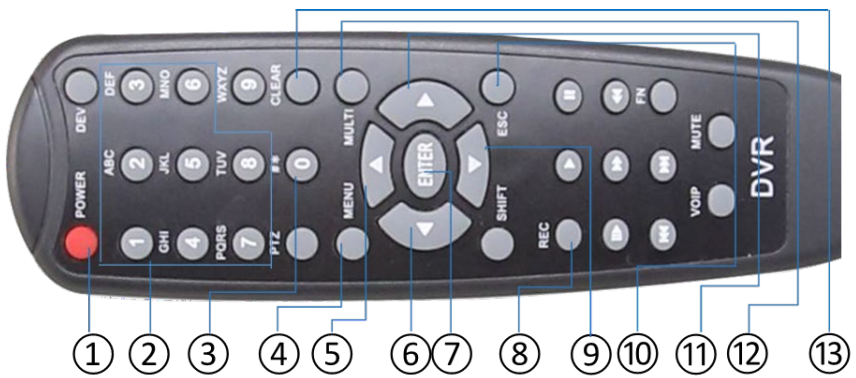


① LED indicator
② Mechanical lock
③ SSD lock cover
④ USB2.0 port
⑤ IR receiver
⑥ SD Card slot
⑦ SSD slot
⑧ SIM card slot

Remote Controller

Note: the remote controller must be close enough to the DVR to enable it to work.

Description	No	Button
Reserved for future use	①	POWER
Switch to Ch 1 ~ 8 for single channel display	②	1 ~ 8
Switch to eight-segment display	③	0
Enter menu	④	MENU
Move up	⑤	Up
Move to left	⑥	Left
Enter submenu to set and confirm	⑦	ENTER
Reserved for future use	⑧	REC
Move down	⑨	Down
Exit	⑩	ESC
Move to right	⑪	Right
Reserved for future use	⑫	MULTI
Clear input	⑬	Clear

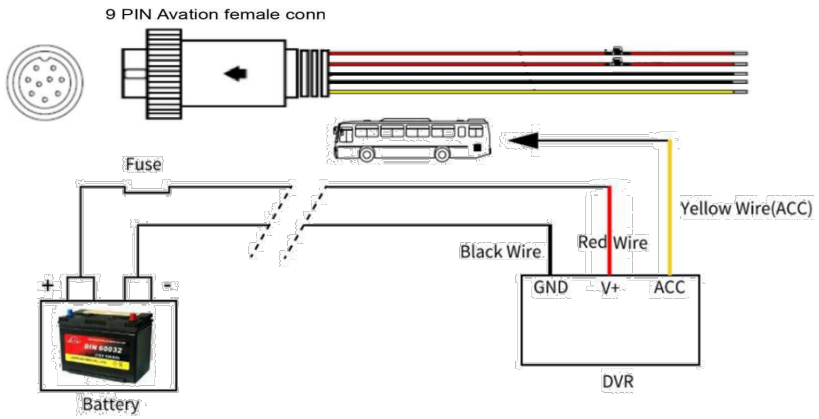


Connection – Back Panel

Description	No
2G/3G/4G antenna 1	①
2G/3G/4G antenna 2	②
Wi-Fi antenna	③
GPS antenna	④

Power

- Power Input
- Connect the 9-pin female to the 9-pin male on the device.
- Connection Method
  - Connect ignition wire to yellow ACC, battery Positive to V+ (Red wire) and Negative to GND (back wire).
- When testing the recorder in the lab (away from the vehicle). Ensure you pair up the Red cable and Yellow ACC (ignition) cable to ensure the recorder powers up.

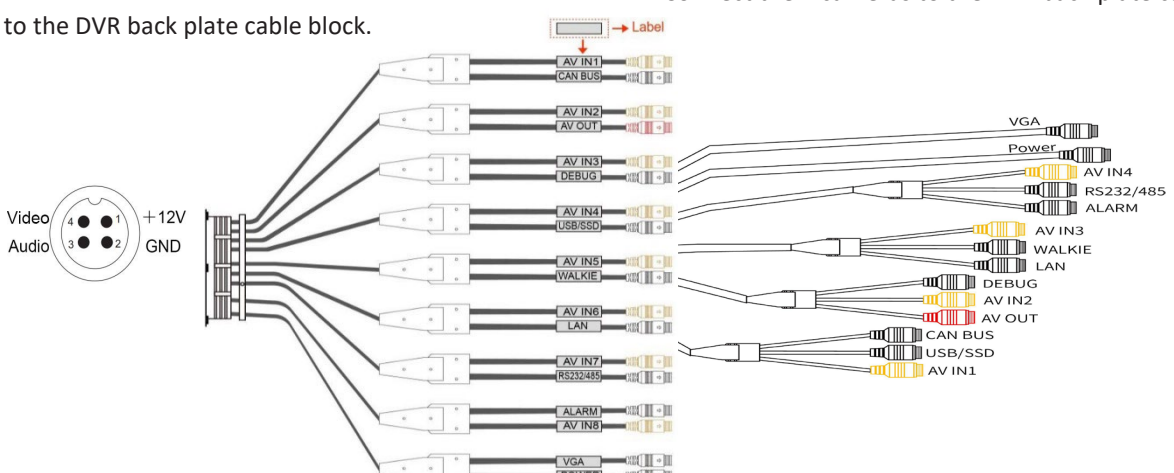


Cameras (AVIN 1 ~ 8)

- Camera input (male)
- Connect the 8 cameras to the DVR back plate cable block.

Cameras (AVIN 1 ~ 4)

- Camera input (male)
- Connect the 4 cameras to the DVR back plate cable block.



LCD Monitor

- High-definition touchscreen monitors are recommended to work with this device.

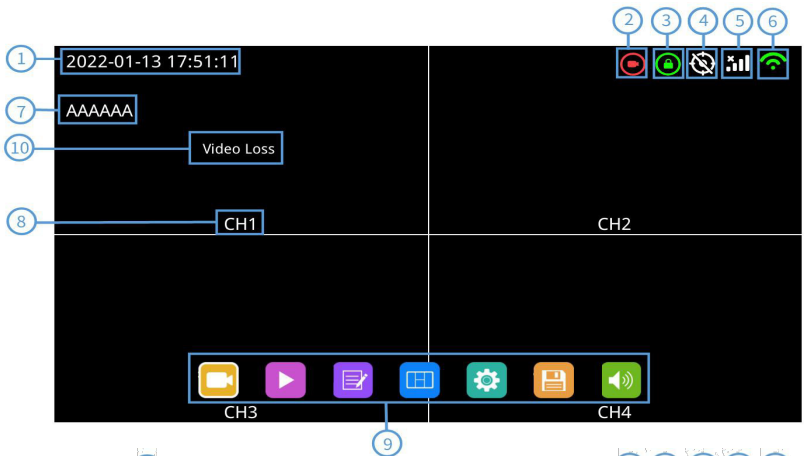
- The DVR output resolution to the LCD monitor can be selected.
  - With an auto support of:

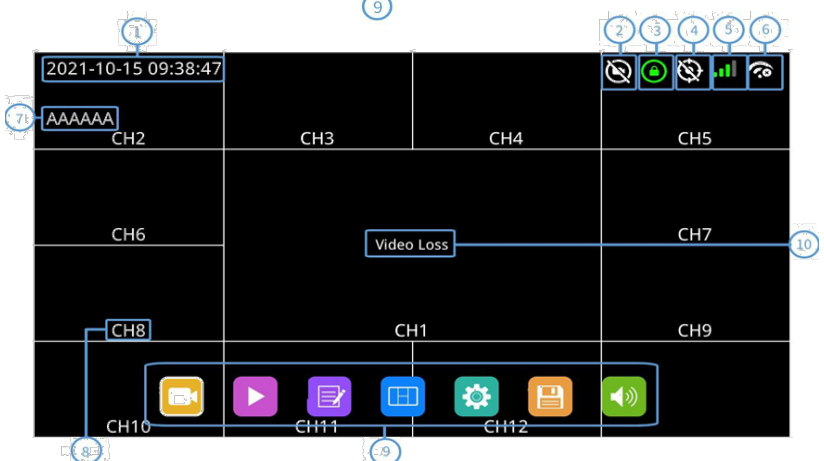
System Format		
CVBS	HD	AHD
NTSC/PAL/AUTO	1080P/720P	1080P

The Menu

Menu Introduction

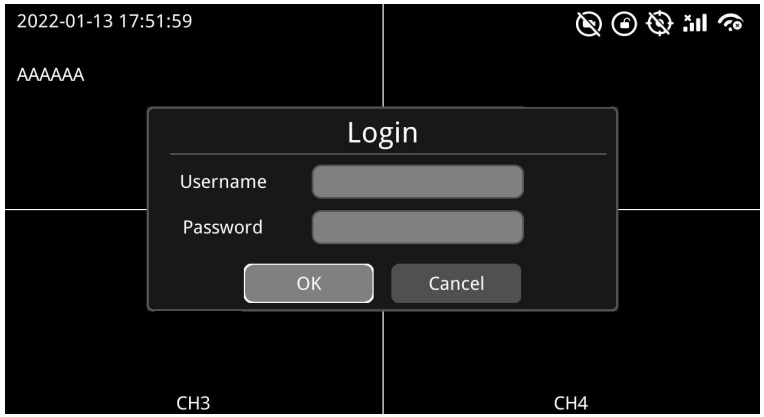
Press [MENU] on the remote control or touch the bottom area on a connected LCD screen, the Menu will be shown as Right. Please log in before entering the menu





Description	No
System time display	①
Recording	②
Lock	③
• When front cover is closed, lock indicator turns green.	④
• Mechanical lock is different from menu lock.	
GPS	⑤
Flashes during connection in process, when connected LEDs permanently On.	
2G/3G/4G	⑥
Wi-Fi	⑦
License plate number display	⑧
Channel name	⑨
• Click in this area to display menu icons	
Video Loss	⑩

Menu Lock



- The device has two levels of access, admin, and guest.
- User Account List

	Admin Permission	Guest Permission
Username	admin	guest
Password Modification	Yes	No
Initial Password	123	321
Permissions	Access to all menus	Access limited to Playback, Display mode, Image Switching & Volume

  - Usernames cannot be changed, only the users' password is changeable by the Admin.
  - Guests do not have permission to enter the setup menu.

Only the Admin can change the 'Menu Lock' status.

Manual Recording - Recording Icon: With the current software version, this button is "permanently" set to record. You cannot open or close the record function.

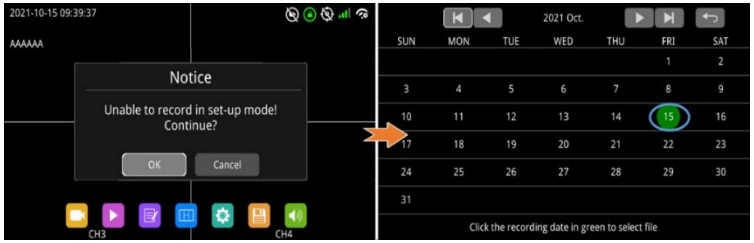
Playback - Video playback Icon Clicking this icon will open the calendar menu.

- A green date indicates recorded video files on that day.
- Select a file and click the play icon to play the video.
- Single or multiple files can be selected. If multiple files are selected, each will play in sequence, files skipped to next or previous as per the grey icons. (Right).

There are four main menu areas: Record, Display, Network and System. Each area will be discussed in a separate chapter. Each area includes:

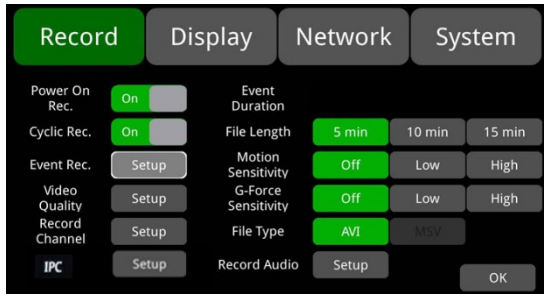
Search by Year

Search by month



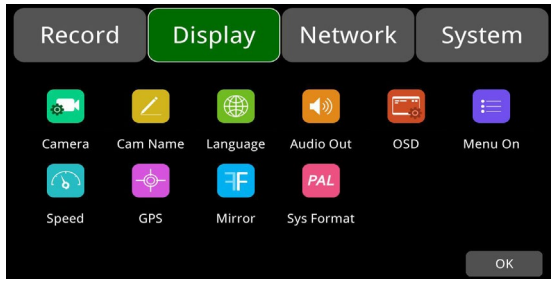
RECORD

Power on Record	Cycle Record	Event Record
Video Quality	Record Channel	IPC (Network Camera).
Event Duration	File Length	Motion Sensitivity
G-Force Sensitivity	File Type	Record Audio



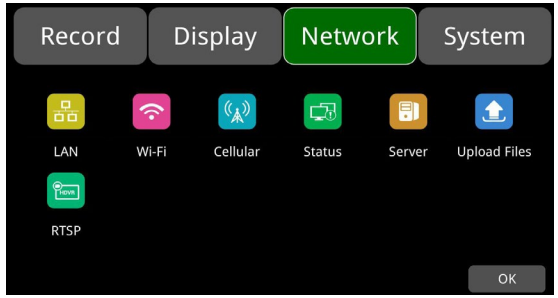
DISPLAY

Camera	Audio Out	Speed	Sys Format
Camera Name	OSD	GPS	Radar
Language	Menu On	Mirror	



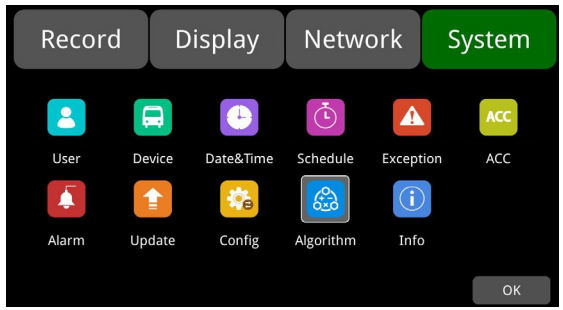
NETWORK

LAN	Cellular	Server	RTSP
Wi-Fi	Status	Upload Files	



SYSTEM

User	Schedule	Alarm	Application
Device	Exceptions	Update	Info
Date & Time	ACC	Config	



RECORD

Power on Record	Cycle Record	Event Record
Video Quality	Record Channel	IPC (Network Camera).
Event Duration	File Length	Motion Sensitivity
G-Force Sensitivity	File Type	Record Audio

Power On Record – When the MDVR powers up it will automatically go into record mode.

Cycle Record – Once the SD-card, ISB or SSD drive are "Full" it will automatically start recording over the oldest recorded video data.

Event Record – There are three options.

Event Rec: On / Off. When On once an even occurs the MDVR will go into Record mode.

Event Rec. Lock: On / Off. When On, recorded events will not be automatically over written as per "Cycle Record", but saved.

Filter Time: Between 1 ~ 300 Seconds. This is the length of time between "Events". This prevents the same event being listed multiple times in a short period of time.

Event Record Duration - This is the length of time each "Event" recording will record for. Set between 5 ~ 180 Sec.

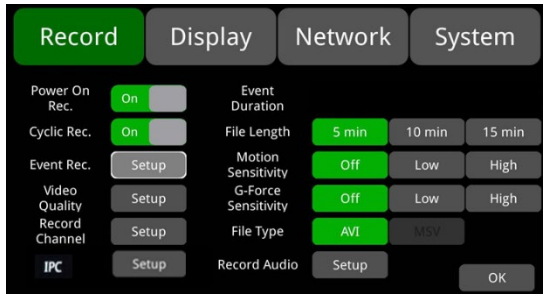
Video Quality – Setting the video recording quality for the Main, Sub and JPG streams. These are global settings across all cameras.

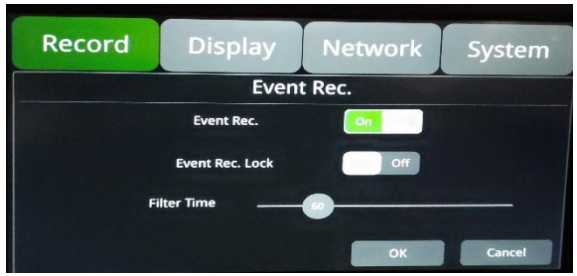
Resolution: 1080p, 720p, D1 (PAL), D1 (NTSC), Auto.

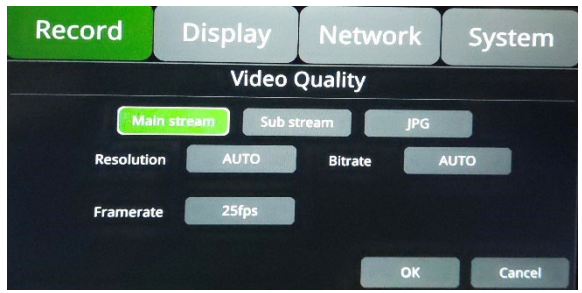
Bitrate: 4Mbps, 2Mbps, 1Mbps, 512Kbps. 256Kbps, 128Kbps, 64Kbps, Auto.

Frame rate: 30fps, 28fps, 25fps, 20fps, 15fps, 14fps, 10fps, 5fps.

Record Channel – Recording On / off per channel. If the camera name is highlighted in Green, the camera will record. If it is Gray the recording for that camera is Off.



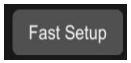




IPC (Network cameras) – There are 4 ports for Network / IP cameras inputs 9, 10, 11 & 12.

Host IP: The MDVR default IP address 192.168.88.1, where each IP camera must be in the same range.

Clear All: Will disconnect all connected IP cameras from the MDVR.



Fast Setup: Quickly connect to all IP / Network cameras on the MDVR network and with the appropriate IP address range. (See above).

OK: This must be clicked to save any changes made on this screen. If will automatically exit once done.

Status: The status or the selected IPC explained below.

: The IP address is in a different range as the DVR's address.

: The IP address is in the same range as the DVR's address.

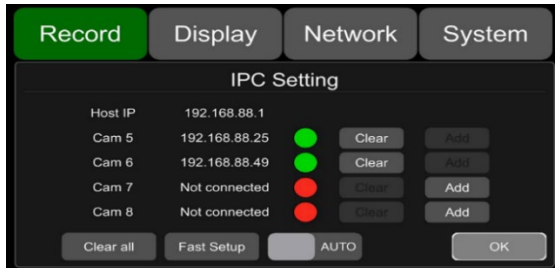
: The IPC has been successfully connected.

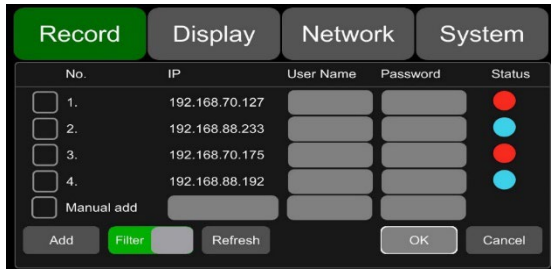
: There is a connection problem.

AUTO: When AUTO is set to On, "Clear", "Add", "Clear All, and "Fast Setup" are disabled. AUTO is Off by default.

Add: On the IPC Setting screen. If the DVR cannot automatically find the IPC. The right-hand image will appear. Manually enter the IPC, IP address, username, and password of the camera. If there is no username and password, just enter the IP address.

Add: On the Manual Add screen. After clicking the "Add" button, the right-hand image will appear, and the IP address of the selected IPC will be displayed showing a successful connection.





File Length	5 - Min	10 - min	15 - min
Each Video file length can be a maximum of 15-mins long.			
Motion Sensitivity	Off	Low	High
G-Force Sensitivity	Off	Low	High
File Type	AVI	MSV	MP4

Motion Sensitivity

Default setting Off.

Motion detection recording and sensitivity level setting: When an objects movement amplitude exceeds the preset motion detection sensitivity level, then motion detection recording will be triggered.

- For this type of event recording, the pre-recording time is set as 10 sec, and the post-recording time is set in the Event Duration (see above).
- Total video file length equals to the pre-recording file length (default time 10 sec) plus the file length configured in Event Duration.
- If motion detection is set to OFF, event recording will not be triggered. Motion detection sensitivity can be set to two levels, low or high.
- Motion detection recording will be on when Low / High is selected. And it will be off when OFF is selected.

G-Sensor Sensitivity

There are two optional setting modes for G-force. Simple and Advanced modes.
Simple mode for the trigger level change (Off, Low, High).

- The G-force recording will not be triggered (if set to Off)
- The G-force recording will be triggered (if set to Low or High) once the devices acceleration or gyroscope reaches the preset sensitivity level. This will include a pre-record time of 10 sec and a post record time dependent on the Event Duration configuration.

Record Audio – Recording On / off per channel. If the camera name is highlighted in Green, the camera will record audio. If it is Gray the audio recording for that camera is Off.

DISPLAY

Camera	Audio Out	Speed	Sys Format
Camera Name	OSD	GPS	Radar
Language	Menu On	Mirror	

Camera Display Settings - Per camera. Each setting can be adjusted between 0 ~ 99. Brightness, Contrast, Saturation, Hue.

Cam Name – Each of the 12 cameras can be individually names, with a maximum of 10 characters. Alpha, Numeric and symbol.

Language - There are currently 8 languages in the OSD menu. English, Russian, Turkish, Chinese, Japanese, Spanish, Portuguese, and French.

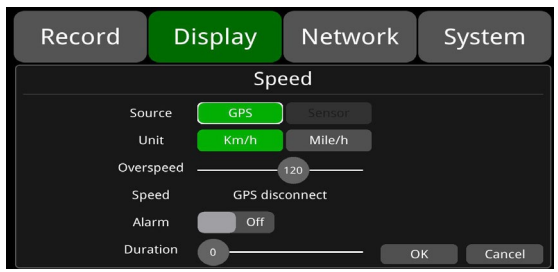
Audio Out – There is one Audio out channel and this can be allocated to any of the 12 cameras. The camera name highlighted in green indicates the "audio out camera." The rest will be highlighted in grey.

OSD Display Settings – There are eight types of information/data that can be displayed on the screen. These are selected between On / Off.

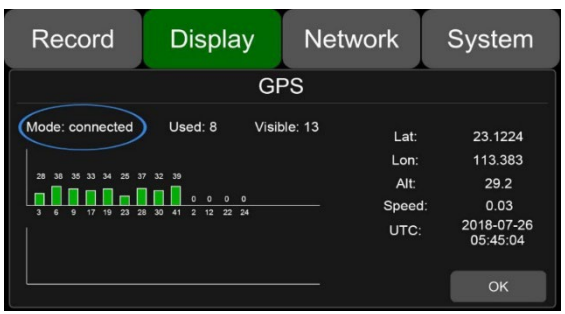
Time	License plate No	ADAS	BSD
Camera Name	Speed (Vehicle)	DMS	APC

Manu On – This sets to menu display duration. Default 30 Sec. Note. When the menu is being used recording will stop. Operators are warned of this when then enter the OSD menu settings.
Menu On: There are 4-time settings. 30 sec, 60 sec, 120 sec and Always. It is advised that when setting up the MDVR set the duration to “Always”. When set up is complete set back to a numerical time.
Menu Lock: When On. A username and password are needed to access the menu.

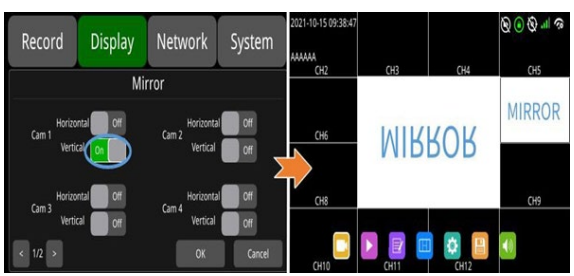
Speed - The data source for the vehicle’s speed comes from the GPS. The
Source: GPS or Sensor.
Unit: Km/h or Mile/h.
Overspeed: This is the threshold value at which the vehicle is deemed to be “Speeding”**.**
Speed: This is the value given by the vehicle’s current speed. (Determined by the GPS.
Alarm: When set to On, once the speed threshold has been passed alarm recording will start.
Duration: The duration between 0 ˜ 60 sec that Alarm recording takes place.



GPS – When the GPS is correctly installed the latitude, longitude, altitude, and speed will be recorded.
Mode: The GPS connection status.
Used: The number of available satellites.
Visible: The number of satellites visible to the GPS module.



Mirror – The mirror function will flit by camera the image vertically and/or horizontally. This is determined by the On (green) / Off (Gray) highlights.

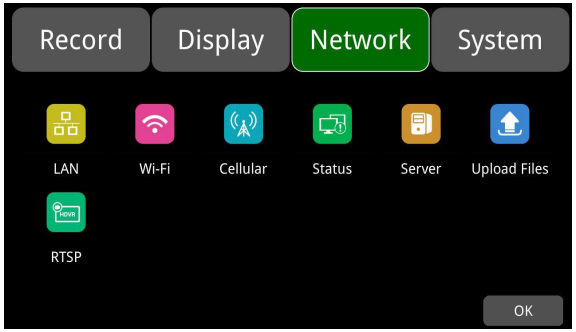


System Format – Input and output video formats for the MDVR.
CVBS: NTSC, PAL, AUTO, Correct.
VGA: 720P, 1080P.
AHD: 1080P.

Radar – Up to 12 radars can be connected to the system.
Alarms/Binds: Each one can be allocated to one or more of the 6 “alarm” inputs.
Position: There is a total of 12 “Positions” on the vehicle, 4 * Left, Right, Front and Back.9Note that more than one radar can be allocated to the same position.
Distance Alarm and Distance Warning: Determine, per radar at what distance from the vehicle the driver must be A) warned of an object approaching 1m ˜ 5m. B) An alarm to sound when the object is too close 0.0m ˜ 2m.

NETWORK

LAN	Cellular	Server	RTSP
Wi-Fi	Status	Upload Files	



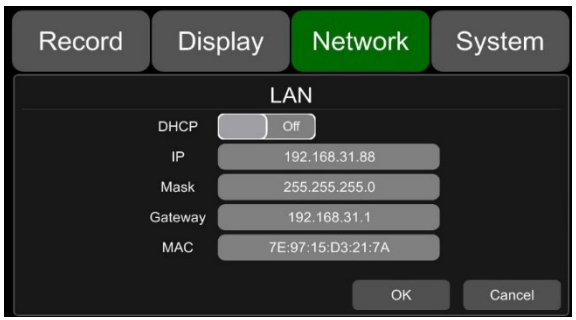
LAN & Server Settings

The default setting is shown Right.

DHCP: Dynamic Host Configuration Protocol. When DHC I s switched on the Static IP addressing will automatically be switched Off.

When DHCP is switched to On the Ip addressing will automatically be matched to the Vehicle/Host server IP address structure.

When DHCP is set to Off, all IP addressing is done manually.



Wi-Fi – On / Off

DHCP: Dynamic Host Configuration Protocol Set On for dynamic IP and Off for Static IP.

If the DHCP is set to On, a dynamic IP will be automatically matched. If set to Off, the input must be done manually.

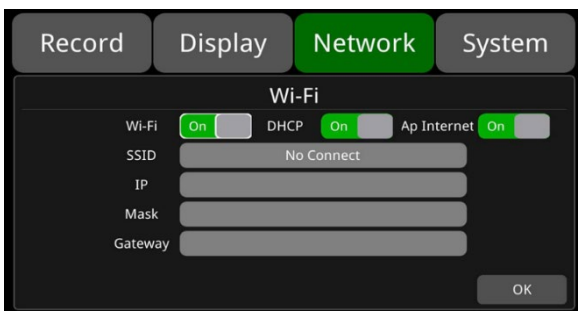
SSID: Wi-Fi hotspot list.

AP Internet: The hotspot of the device can be found via mobile phones when set to On.

Wi-Fi Connections

Step 1: Make sure a Wi-Fi hotspot is available.

Step 2: Connect the Wi-Fi antenna to connector ③ of the device rear panel.



The default configuration is shown Right.

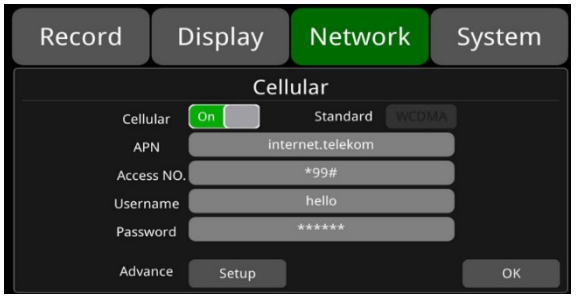
Cellular: Cellular On, means 2G/3G/4G is on

APN & Access No: Normally the user does not need to input a username and password for APN or Access number. The default setting is available. (If a connection is not successful using the default settings, consult your local network provider.

OK: Save the settings and exit.

Cancel: Cancels the settings and exit.

Advance: Each system via the 3/4G module has its own IMEI number.



2G/3G/4G Connection

Step 1: DVR can search for a local 2G/3G/4G signal.

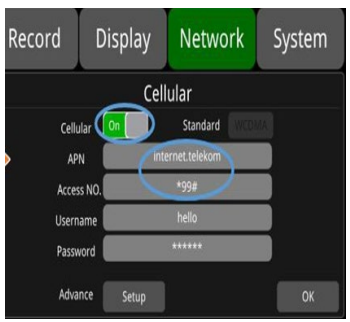
Step 2: Connect the 2G/3G/4G antenna to connector ① & ② of the device's rear panel.

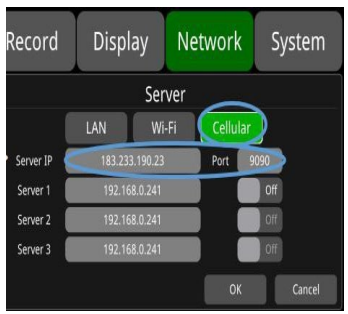
Step 3: Open the device's front panel and insert the SIM card **Cellular –**

Step 4: Go to Cellular setup interface and set Cellular to On.

Step 5: Enter the correct APN.

Step 6: Click OK to exit.

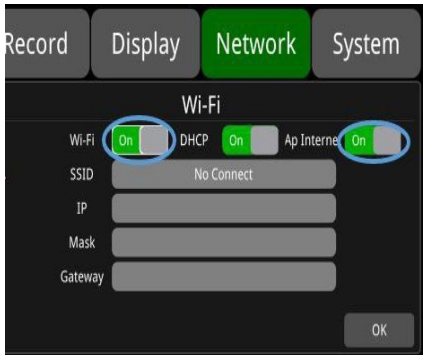




Step 7: Input the 2G/3G/4G Server IP address and Port Number in "Network →Server".

Step 8: Check the Cellular network and Server status in "Network →Status".

AP Internet Setup – Connecting to AP internet.
Step 1: Connect the DVR to the internet through Wi-Fi or 2G/3G/4G. Please refer to the previous chapter for 2G/3G/4G connections.
Step 2: Set the "AP Internet" to On.
Step 3: Search and connect to the Wi-Fi hotspot of the DVR with another mobile device. The SSID hotspot name has a "WFD" prefix, followed by the "WFD" devices serial number. The default password is "ap12345678".

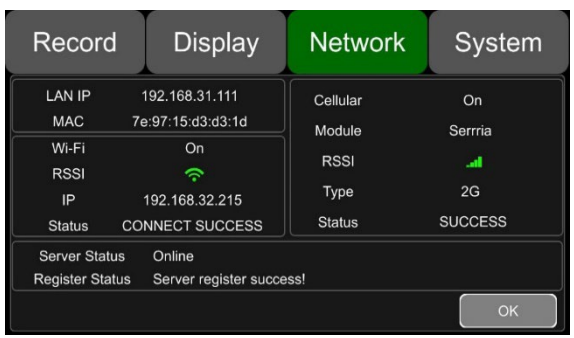


Network Status

LAN IP address, MAC address, Wi-Fi network status, Wi-Fi address, Wi-Fi signal strength, cellular network status, cellular signal strength and server status etc. can be checked.

LAN IP: The static IP set On "Network → LAN" page or dynamic IP address obtained automatically.
MAC Address: The static physical address set on "Network → LAN" page or the dynamic physical address obtained automatically.
Wi-Fi: Static indication
Wi-Fi RSSI: Wi-Fi signal strength indication
Wi-Fi IP: Static IP address obtained from Network → Wi-Fi page or dynamic IP address. Default 192.168.100.140:8080
Wi-Fi status: CONNECT SUCCESS or GET IP ERROR

Cellular: Status module brand.
Module: The Cellular module brand.
Cellular RSSL: 2G/3G/4G signal strength indication
Cellular Type: 2G, 3G, or 4G indicating the actual signal received.

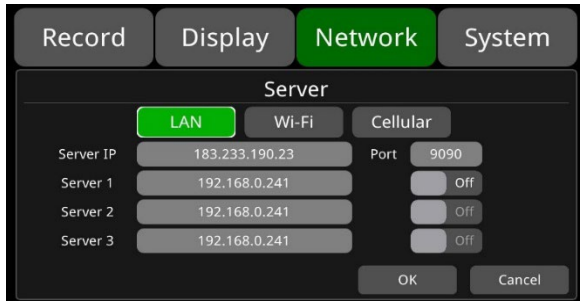


Description	Indication
Module initialization	Cellular module is initializing.
Module exception	Cellular module is in exception.
No SIM card	No SIM card is found in the DVR.
Cpin locked	Cpin is locked.
Signal abnormal	Signal is abnormal.
Networking failure	Network connection is failed.
SUCCESS	Network connection is successful.

Server

The function of the server setting is mentioned in LAN, Wi-Fi and 2G/3G/4G chapters.

The default server LAN IP, Wi-Fi and Cellular address is, “183.233.190.23” and Port number is “9090”.



File Upload

The Upload Files default configuration is shown Right.

Upload Flies: On/Off,

On: When set to On, if the DVR triggers the alarm video. The alarm video file will be uploaded to the server.

Off: When set to Off no alarm triggered video will be sent to the server.

Normal Files: On/Off states

On: Normal video files will be uploaded.

Off: Normal video files will not be uploaded.

Cellular: On/Off states

On: When set to On, if the DVR triggers the alarm video and 2G/3G/4G is online. The alarm video file will be uploaded to the server.

When On, a pop-up box will appear “Network flow consuming. Continue?” Click “OK.” The feature is then turned on. Video data will then be sent to the server using up cellular data.

To preserve cellular data, switch this feature to Off.

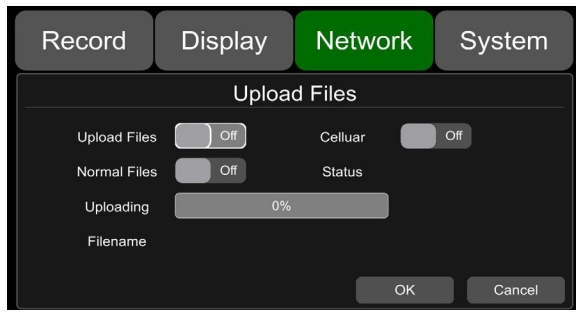
Off: Even if the Cellular is connected to the network normal video files will not be uploaded.

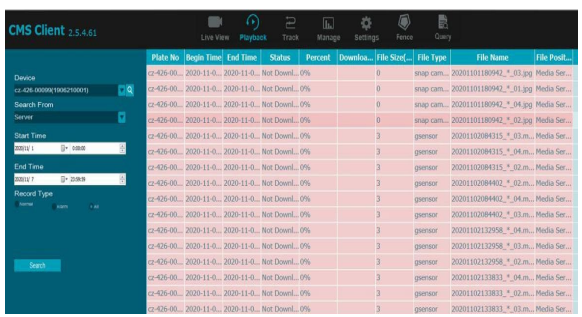
E.g. The settings show Right, normal video files will only be uploaded when the server is connected to a LAN or Wi-Fi and NOT via cellular.

Uploading: Shows the progress bar of the uploading files

Filename: Displays the file name of the uploading file.

Status: Displays the working status of the FTP. Successfully uploaded video files are shown on the client interface Right.





RTSP Streaming

The default configuration shown Right.

RTSP: Set to On/Off

Mode: Set MainStream & SubStream On/Off

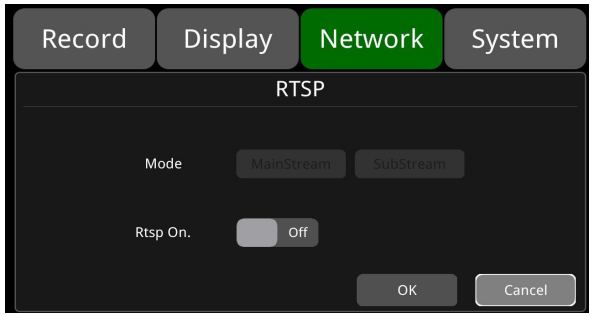
Mode On/Off: Set RTSP On, ensure the streaming device and DVR are on the same LAN settings. Images can be displayed by using the DVRs own hotspot AP.

Or turn RTSP On. Connect the DVR and device to the same router (Note, 192.168.100.140 is the DVR's AP hotspot fixed IP address. Open the network stream setting of the "pull-streaming" device and enter the streaming address under the network URL.

4-MainStreams & 4 SubStream. Using the below formats:

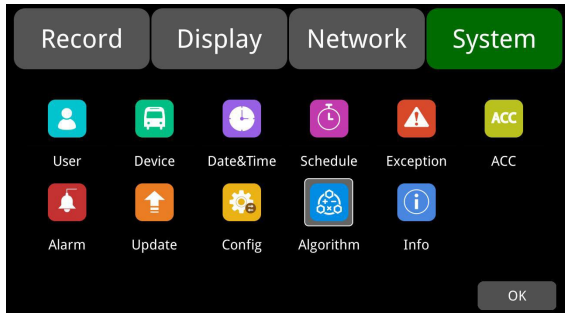
Main-stream: rtsp://Ip Address/cam1/mainstream.

Sub-stream: rtsp://Ip Addr/cam1/SubStream



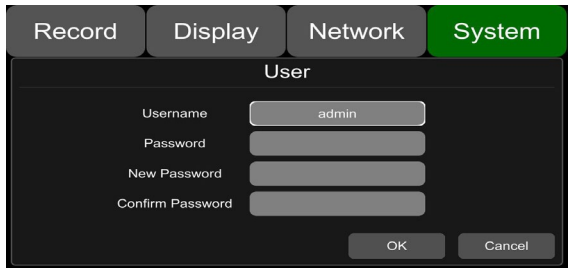
System

User	Schedule	Alarm	Application
Device	Exceptions	Update	Info
Date & Time	ACC	Config	



User (Log in Setup)

Set username and password for booting up. Initial password 123.



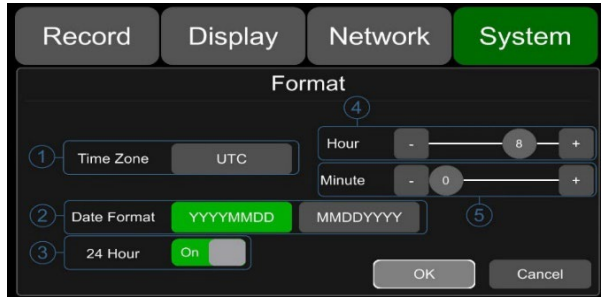
Device name & Vehicle Number plate

Input the license plate number of the host vehicle and ID of the device.

Date & Time

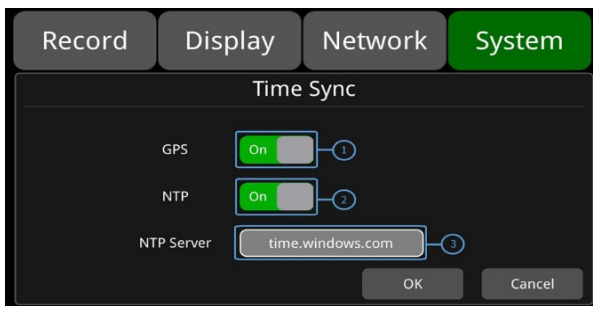
Format Setup: System time format settings

“Format” default configuration shown Right.
Go to “System” → ”Date & Time” →”Format” →”Setup” page.
① **Time Zone:** Time Zone setting.
② **Date Format:** Set the date format.
③ **24 Hour:** On clock viewed in 24Hr format, set to Off clock viewed in 12hr format.
④ & ⑤ **Hour & Minutes:** Time zone setting accurate to minute.



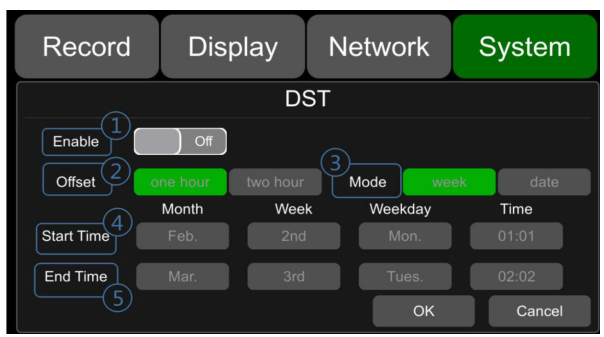
Hours & Minutes	Min.	Max.	Default
Hour	-12	14	8
Minute	0	59	0

Time Sync Setup
Default configuration shown Right.
① **GPS:** Set to On/Off.
② **NTP:** Set to On/Off.
③ **NTP Server:** Shows the URL of the NTP Server
Note: When “Time Sync” → ”GPS” or “Time Sync” → ”NTP” is On, the time zone and daylight-saving time must be set. If not set, the GPS & NTP system time is defaulted to East 8 time zone.



Application Scene	Usage
GPS: Off & NTP: Off	Set the time zone & daylight-saving time **before** setting the date & time.
GPS: On & NTP: On	Once the time zone & daylight-saving is set, there is no need to set the date and time

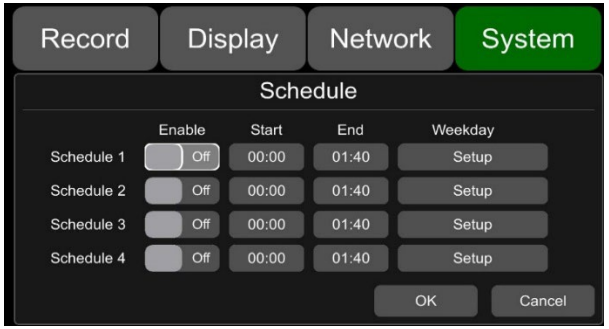
DST Setup:
Default configuration shown Right.
Go to “System” → ”Date & Time” → ”DST-Setup” page.
① **Enable:** Set DST setting to On/Off.
② **Offset:** Adjust the offset after enabling DST.
③ **Mode:** Select the mode of DST (setup DST according to week or date).
④ **Start:** Set start-time of DTS
⑤ **End:** Set end-time of DST



Schedule Recording

Enable: Set recording schedule On/Off.
Start: Set recording schedule start-time
End: Set recording schedule end-time
Weekday: Set recording schedule by weekday, "Setup" (weekdays to a preset).
Schedule recording:

- Supports up to 4 appointed tasks. Recording duration counted in Minutes.
- Recording times can overlap.
- The scheduled record start time must be set before the end-time.

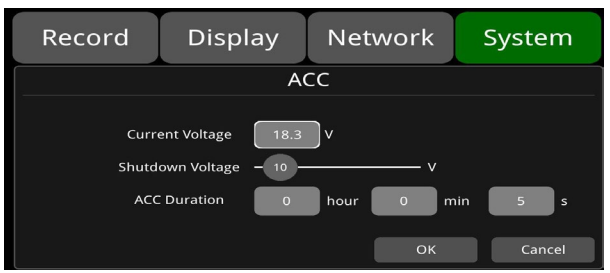


Exception

Default configuration shown Right.
Exception Buzzer: Set the exception buzzer to On/Off.
Power On Buzzer: Set to On/Off.
Duration: Set the duration time for the buzzer 30 sec, 60 sec, 90sec.

ACC Setting

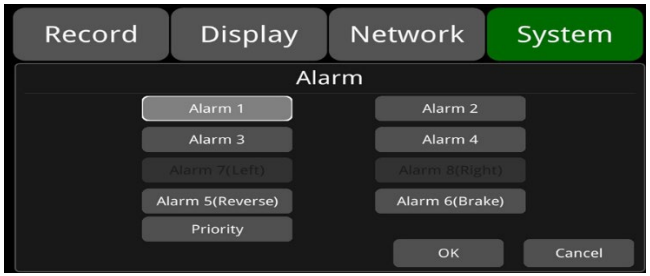
Default configuration for "Shutdown Voltage" and "ACC Duration" shown Right.
Current voltage: Voltage of working DVR. 9 ~ 24 V DC
Shutdown voltage: When the current or voltage is lower than the shutdown voltage, the device will shut down automatically to protect itself. Once this has happened, the operator needs to disconnect the VCC of the device for 1-minute. After re-connecting the device will come back on.
When the current or voltage is higher than the shutdown voltage, the device will work properly.
ACC Duration: The device will continue to reconnect for a few seconds after the ACC has been disconnected.

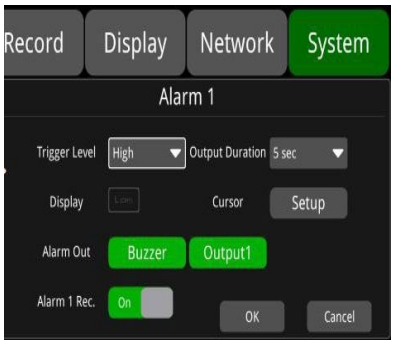


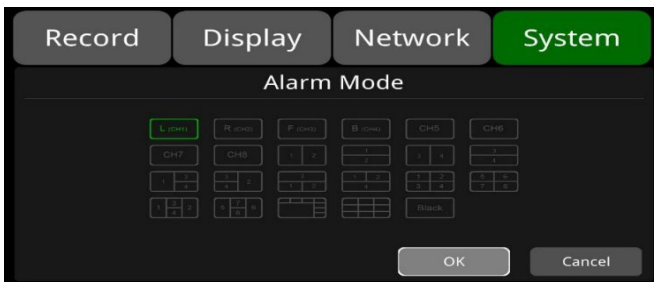
ACC	Min.	Max.	Default
Shutdown Voltage	9V	24V	10V
ACC Duration	5-sec	72Hr	5-sec

Alarm Information Setting

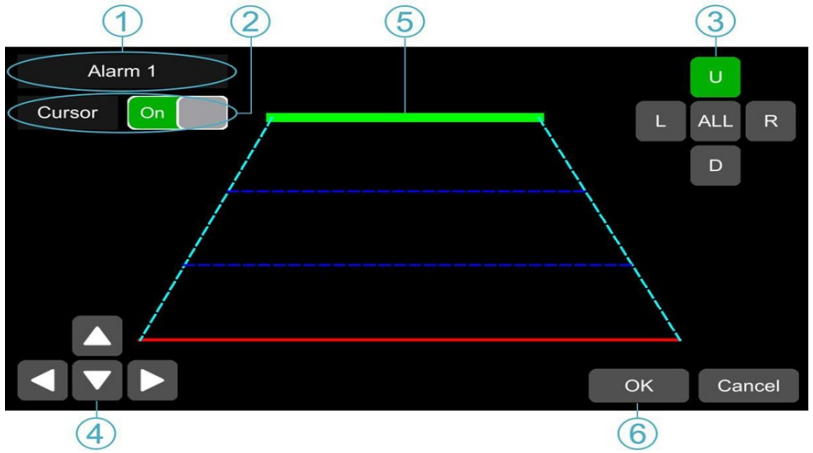
Alarm 1 ~ 4: Customised alarm recording.
Reverse: No 5. Reversing alarm Recording
Brake: Brake alarm recording.
Priority: Setting the alarm priority Alarm 1 ~ 4, Reverse Brake.
This will assist the operator of 1 or more alarms are triggered at the same time.
"Alarm 1" & Reverse "Alarm" default configuration shown Right.
Trigger Level: There are 3-Trigger level options. Options "Low" & "High" are used for turning on the alarm function.
"Low is generally used for debugging, while "High" will be selected to turn on the alarm function for on-road use. "Off," alarm trigger function is Off.
Output Duration: "Display", "Cursor", "Alarm Out" effective durations. (0-sec, 5-sec, 10-sec, 30-sec, 60-sec, 5-min, 10-min, 30-min, 60-min, Always.
Alarm Out-Buzzer: Switch On/Off. The default buzzer sounds for 5-sec.
Alarm Out-Output1: Set On, when a 12V level output is triggered from alarm wire of output 1.
Alarm 1 Rec: Alarm 1 event recording switch, the recording duration is set in "System" → "Record" → "Even Duration".
Display: When the alarm is triggered, the selected split mode will be displayed. The available split modes shown Right.







Cursor Set up: Off by default. The image Right shows the open state.



① Alarm triggered channel's Camera name.
② Touch button On/Off cursor.
③ **Line Selecting:** 5-lines to select, Line U (up), Line D (down), Line L (left), Line R (right) and ALL. When selected the lines turn green.

Can be operated via the remote control.
④ 4-directions to adjust the shape of the cursor. The selected cursor can be moved in these directions.
If Lines L or R are selected, the top point of th selected line can be moved to the left or right, using the directions Up & Down.
The bottom point of the selected line can be moved to the Left or Right with the directions Left and Right
⑤ **Lines of cursor:** The selected line will be 3 x thicker than the others. The 2 middle Lines are not adjustable.
⑥ Click OK to save the settings and exit. Or Click Cancel to exit without saving any settings.

Priority: Default configuration shown Right.

: By Clicking this button, the priority value of the selected alarm will be increased by 1. The greater the value the lower the priority.
: By Clicking this button, the priority value of the selected alarm will be decreased by 1. The lower the value the higher the priority.

- Alarms with the higher priority will trigger first.
- 1 is the highest and 6 is the lowest priority.
- If Alarms A & B are triggered at the same time, and A's priority is higher than B's. A will record first. Once A has finished recording, if B is still in a triggered state, B will be recorded. However, if it is not still in the triggered state it will not record.
- If alarm B is alarm recording due to a trigger, then alarm A is triggered. Alarm B will stop recording and alarm A will start alarm recording.

Updating

For a single device

Step 1: Format the SD card in the DVR 1st. This is to ensure that the SD card uses the correct format to be recognised by the DVR.

Step 2: Once formatted a file/folder system is created on the SD-card. Place the SD-Card/ US then copy the files ("dvxxx_upgrade_201xxxxxxxx_Rename") to the folder USB drive or SD card/upgrade/packet/local directory. Then insert into the DVR.

Step 3: Power Off and reboot the DVR, the upgrade will start automatically. Or go to "Menu" → "System" → "Update" → "Software".

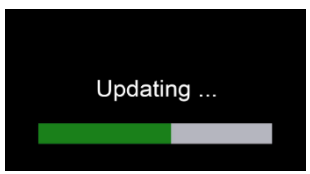
Click OK to confirm the upgrade. Both methods will begin upgrading.

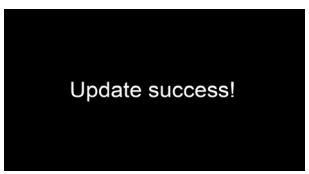
Step 4: On completion, "Update Success" is displayed. The DVR will reboot automatically.

Step 5: Post the reboot, check that the version listed matches the version number in the "upgrade" folder. "Menu" → "System" → "Info to check it".

Step 6: Once updated the monitor output will change to AHD. Use the Wi-Fi hotspot to enter the web menu to adjust the monitor output back to CVBS. Otherwise, the monitor screen will appear "blue".

Note: After the upgrade is completed, the "dvxxx_upgrade_201xxxxxxxx_Rename" upgrade package in the USB drive or SD card /upgrade/packet/local – will be deleted.





Remote Upgrade

Step 1: Connect the DVR to a server.

Step 2: Open the Windows client and log in.

Step 3: Find the license number of the target device in the device list of the client. Right click and select "update" to open the "Batch Upgrade" interface. If upgrading greater than one DVR, click the "Add" button and select additional devices.

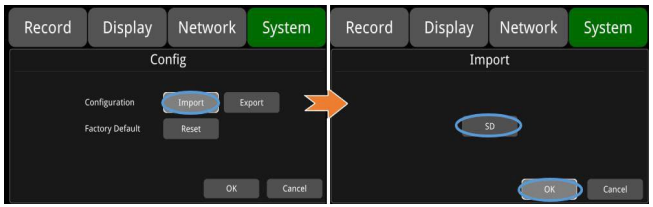
The selected ones will be displayed on the device list to upgrade. If a device has been selected in error, highlight it and click the "Del" button.

Step 4: After selecting the device to upgrade, click the "Browser" button to select the upgrade package "dvxxx_pgrade_201xxxxxxxx_Rename".

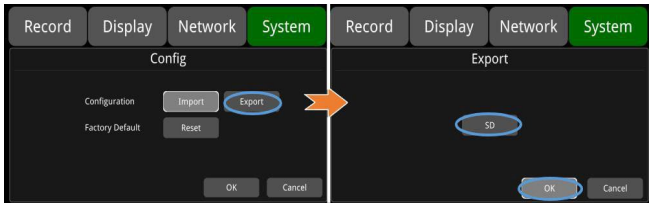
Step 5: To load the upgrade file, click "Start". On completion the DVR will start to upgrade automatically. If the upload fails, the reason for failure is displayed in the "Remarks" column.

Configuration

Configuration Import: Import the configuration file from the flash memory device and place the file in the sd/export_file/cong directory.



Configuration Export: Export Log to SSD/HDD/SD card or USB memory flash devices.



Factory Default: Press reset to restore factory settings.

Application Setting

Application: Algorithm and IPC function are integrated. After selecting the function, the device will automatically restart.

AI: Algorithm function, channel one is preset to display images with the Forward Collision Warning (FCW) and Land Departure Warning (LDW). The channel two is preset to display the Driver Monitoring (DMS) function. Channels three and four are optional and null by default.

Chose the algorithm for the respective channel. Then click OK, before entering “Setup. The system will them reboot. Once this has occurred, return to this screen, and then enter Setup for each Algorithm.

ADAS

Advanced Drivers Assist System (ADAS): The ADAS algorithm function includes channel one displays **Forward Collision Warning** FCW and **Pedestrian Detection** (PDS).

Algo Switch:

Set to On. When the expected collision time TTC Threshold(s) is less than the configured time, the forward collision alarm and blind spot pedestrian detection alarm will be triggered.

Set to Off. The alarm will not be triggered if the expected collision time TTC is less than the configured time.

Set to On: An audio warning will be sent when a FWC alarm and Blind Spot Pedestrian Detection (BSPD) alarms are triggered.

Set to Off: No audio warning will be given when either a FWC or BSPD alarm are triggered.

TTC Threshold(s): Time-to-collision: Default configuration 1.4sec.

Sensitivity: There are three sensitivity levels, Low, medium, High. Default set to Low).

Speed: The FCW working speed value. The default value is 30 (30km/h). This indicates that the FCW will trigger is the vehicle's speed is ≥30km/h.

FCW installation: Installed at a height ≥ 1.4m in front of the windscreen.

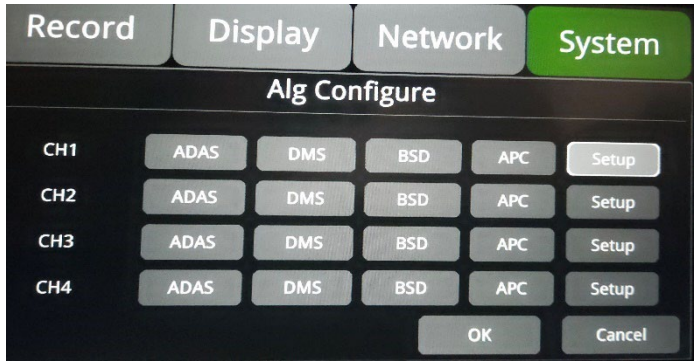
FCW installation Diagram: Refer to the models Right. Select the glass nearest to the red dot as your installation location. Ensure that the area is clean.

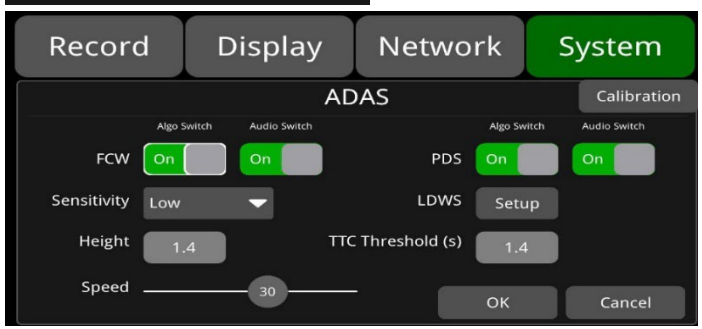
Install the camera horizontally.

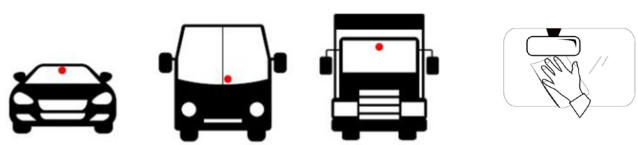
If the installation is in a different location, ensure that is covered by the wiper blade movement.

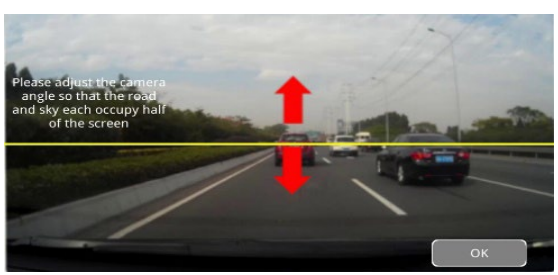
Calibration: Adjust the camera position to the point where the road and sky each occupy half of the screen. Fix the camera's position as seen Right.

LDWS: Lane departure, displayed on channel one. When alarm is set to On, any lane departure alarm will be activated.

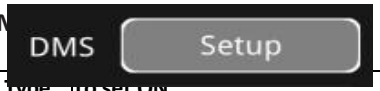




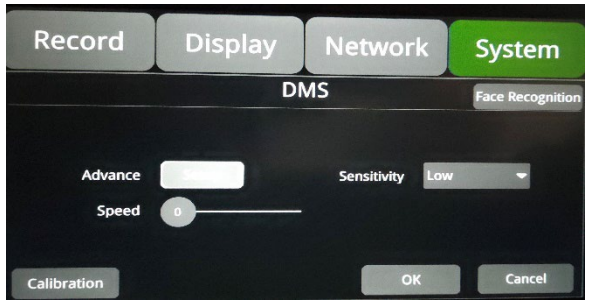


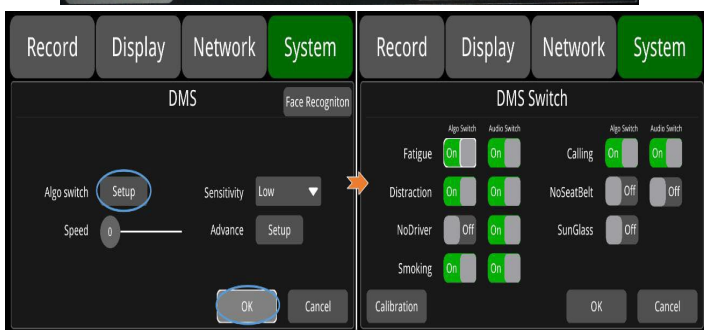


DMS **Driver M**



Alarm Type	To set ON	To set OFF
Fatigue	When driver fatigue is detected, alarm recording will be triggered, with a voice announcement.	A fatigue alarm will not be triggered.
Distraction	When driver's distracted behaviour is detected, alarm recording will be triggered, with a voice announcement.	A distraction alarm will not be triggered.
No Driver	When a driver's absence is detected from the seat, alarm recording will be triggered, with a voice announcement.	No driver alarm will not be triggered.
Smoking	When a driver's smoking is detected, alarm recording will be triggered, with a voice announcement.	A smoking alarm will not be trigger.
Calling	When a driver using a mobile phone is detected, alarm recording will be triggered, with a voice announcement.	A mobile phone alarm will not be triggered.
No Seat Belt	When a driver not using their seat belt is detected a voice broadcast will be triggered.	A voice broadcast will not be triggered.
Sunglass	When a driver is detected wearing sunglasses, alarm recording will be triggered, with a voice announcement.	A driver detected wearing sunglasses alarm will not be triggered.
Yawn	When the driver yawns for longer than a set time.	
No Mask	Driver not wearing a face mask.	
Shelter		



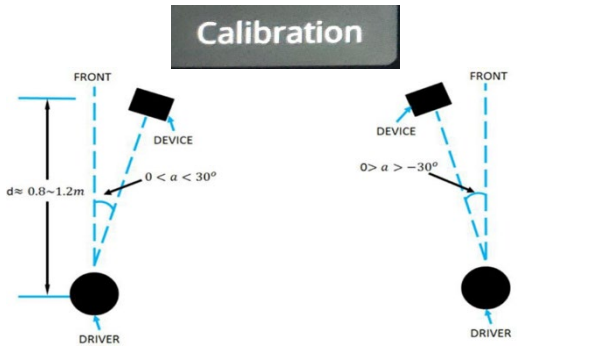


Default Configurations

Alarm Type	Alarm	Min.	Max.	Default	
Fatigue	Time(s)	1	6	On	3
	Threshold	1	99		30
Distraction	Time(s)	1	9	On	5
	Threshold	1	99		35
No Seat Belt	Time(s)	1	20	Off	10
	Threshold	1	99		25
Smoking	Time(s)	1	5	On	2
	Threshold	1	99		50
Calling	Time(s)	1	5	On	3
	Threshold	1	99		72
No Driver	Time(s)	1	30	Off	15
Sun Glass	Time(s)	1	20	On	10
Yawn	Time(s)	1	5	On	5
No Mask	Time(s)	1	15	Off	10
Shelter	Time(s)	1	30	On	1

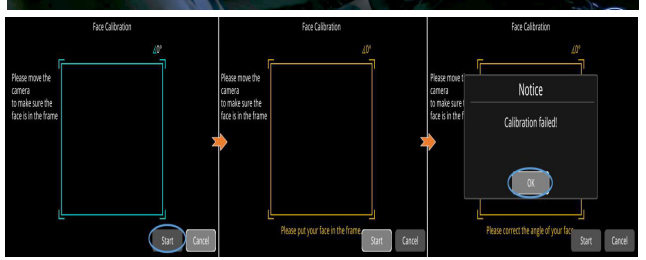
Driver Monitoring System installation

The DMS needs to be installed on the dashboard at a distance of 0.8 ~ 1.2m from the driver, with a front angle of the driver being about ± 30° as shown in the image Right.

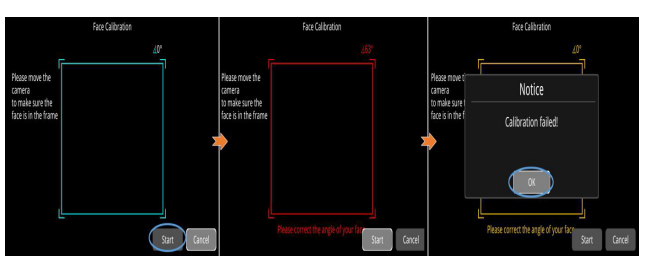


Calibration: Align the face with the calibration frame to conduct calibration. The detection frame is square and blue by default. After the face is aligned with the calibration frame, a green frame will appear on the face.

Click the “Start” button, a pop-up message will appear after 2 ~ 3 Sec and an accompanied voice message will indicate a successful calibration. Click OK to exit the calibration interface.



During set up, maintain the face in the calibration frame. Click the start button to begin calibration. If the face moves out of the frame the calibration frame will turn yellow, if after 2 ~ 3 Sec of being out of range a message will pop up indicating calibration failed.
Click OK to begin calibration again.

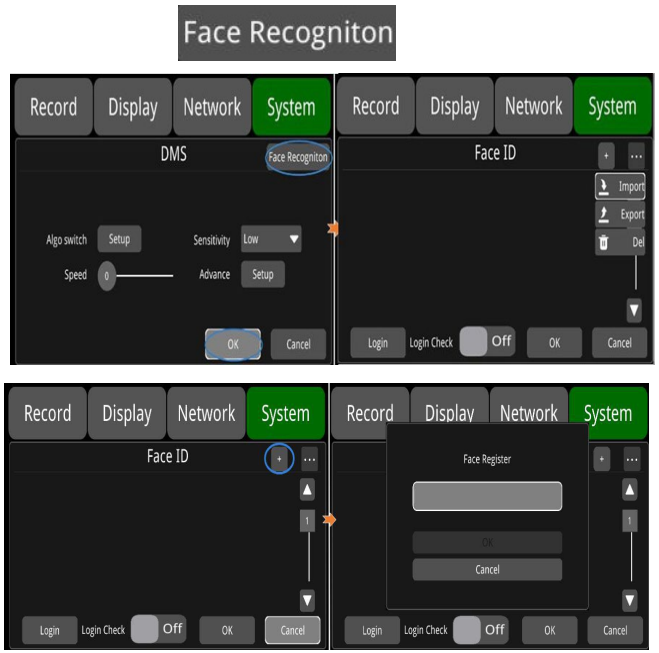


If the face remains in frame during the calibration. The face is required to turn left and right. If during turning the angle exceeds -30° ~ +30°, the calibration frame will turn red, and a voice will indicate the need for a correction. if after 2 ~ 3 Sec of being out of range a message will pop up indicating calibration failed.
Click OK to begin calibration again.

DMS - Face Recognition:

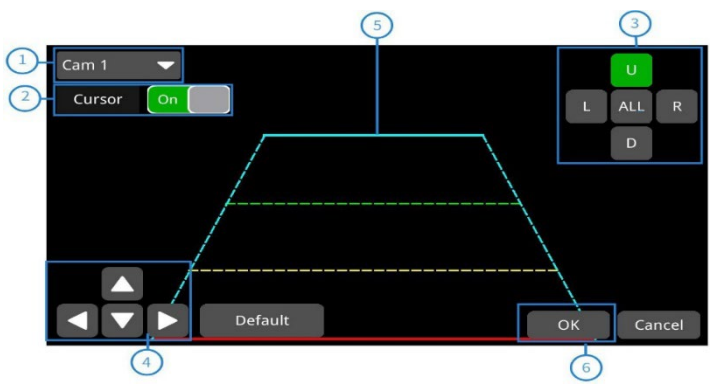
Adding a face: To add a face see image Right.
Click OK after entering the name and reason for adding the face.
Click the start button, move our face up, down, left, right. A window will pop-up and a voice message will sound to notify the success or failure of the input.

Import, export and delete functions. As seen Right. Check the imported face photo and click Import/Export/Del respectively.
The exported file is stored under the disk faceID_Path.
Login: Click to log in through face recognition.
Login Check:
Set to On: Facial recognition will be triggered upon each engine startup, with an accompanying voice message of "Again to Login".
A voice message will be sent to notify the login success when a face is successfully recognised. If no recognised face is found, the message "login fail" will be sent.
Set to Off: Face recognition will not be enabled. Default off.

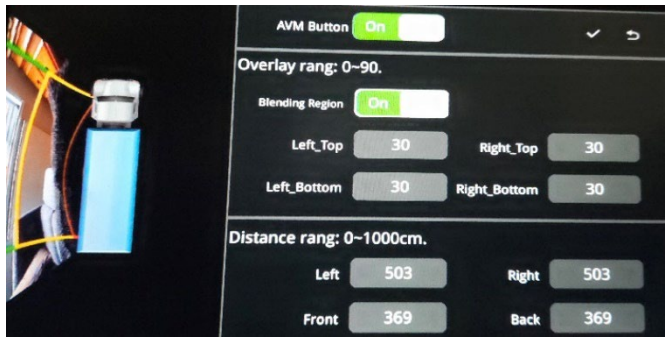


BSD
BSD settings are shown in the image Right.
Speed: Set the speed threshold for the BSD function. If set to 5, the BSD algorithm will only detect pedestrians walking ≥5km/hr. Default value is 0.
Volume: Adjust the volume of the audible and visual alarm. Default value is 3.
Threshold: Pedestrian detection and alarm precision selection.

	Min.	Max.	Default
Speed	0	100	0
Volume	0	8	3
Threshold	50	99	63

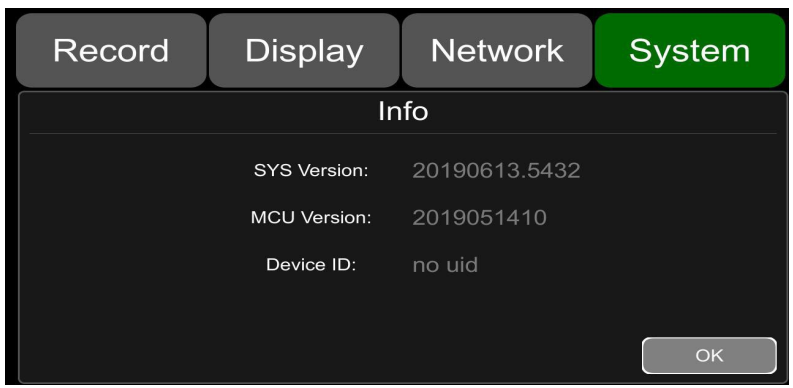


AVS Mode - If AVS mode has not been selected, select then click OK, The system will reboot allowing you to then access the AVS Set up menu.



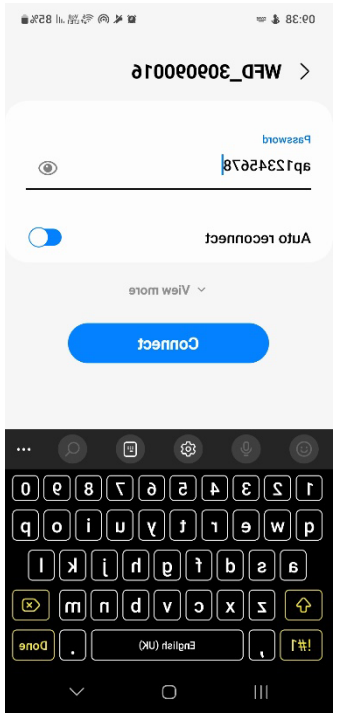
Info

System Version:
MCU Version:
Device ID:

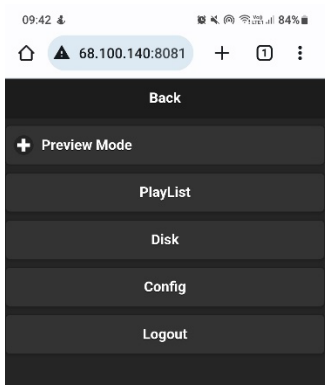


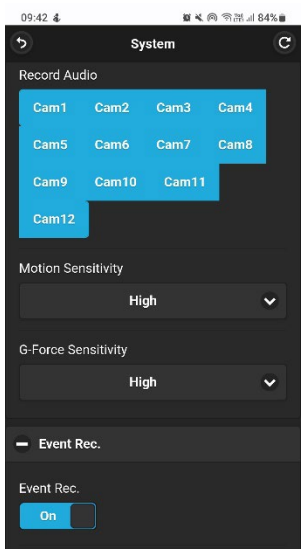
Connection via smartphone

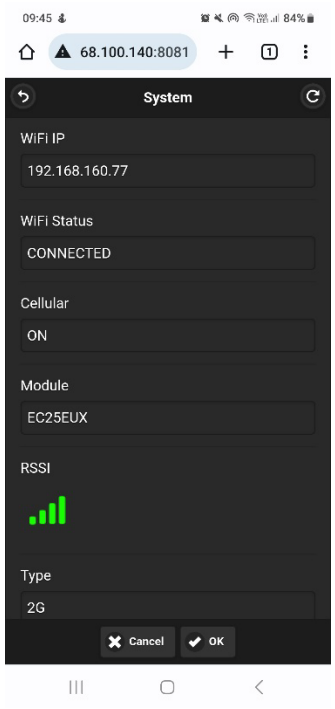
1. Ensure that the 4-in-1 antennae is connected to the MDVR, with the correctly names cables to the associated names sockets.
2. Go-to Connections on your Smartphone > Wi-Fi. Search for the network starting WFD_XXXXX.
3. Select and add the Password ap12345678 and connect.
4. Go to your web browser and enter the IP address: 192.168.100.140:8081.
5. Username and password as per the direct access version admin & 123.

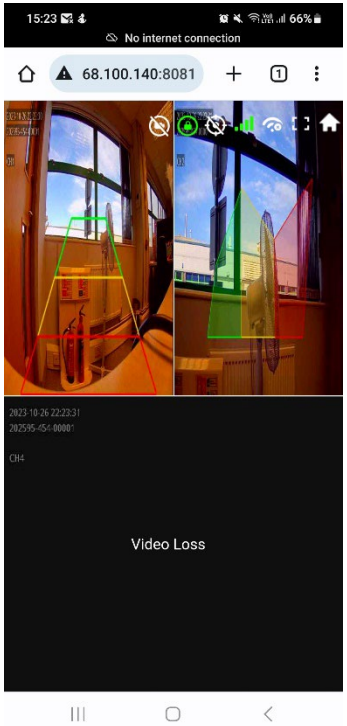


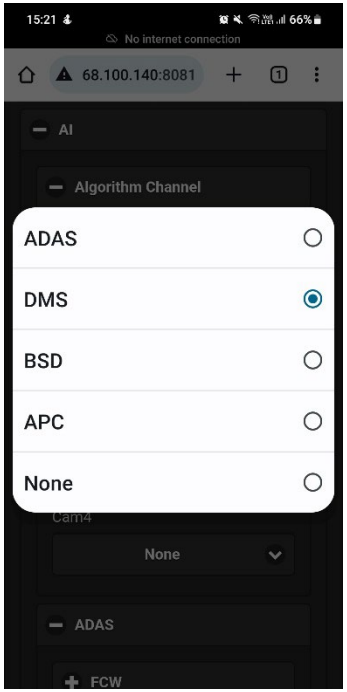
The setup functionalist replicates the set up via the touchscreen monitor.
Below is a selection of screen shots from the OSD as viewed via the Smartphone.

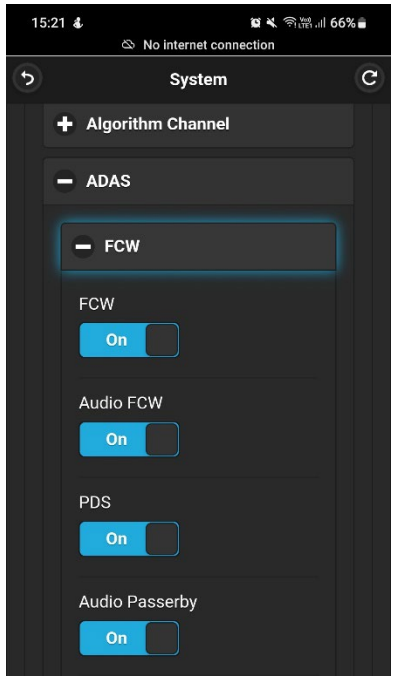


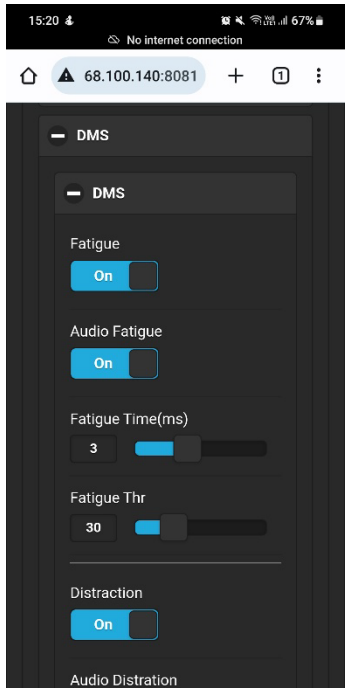





15:23
No internet connection
68.100.140:8081
Video Loss


15:21
No internet connection
68.100.140:8081
AI
Algorithm Channel
ADAS
DMS
BSD
APC
None
Cam4
None
ADAS
FCW


15:21
No internet connection
System
Algorithm Channel
ADAS
FCW
FCW
On
Audio FCW
On
PDS
On
Audio Passerby
On


15:20
No internet connection
68.100.140:8081
DMS
DMS
Fatigue
On
Audio Fatigue
On
Fatigue Time(ms)
3
Fatigue Thr
30
Distraction
On
Audio Distration

Specifications
Specifications

	SRH-04020/MWA	SRH-08020/MWA
Operating System	Linux	
Operating Interface	Graphical menu operation interface (OSD)	
VIDEO		
Input Resolution	4-Channels, 1080P AHD	8-Channels, 1080P AHD
CVBS Output	1 Channel 6pin aviation connector output PAL/NSTC	
VGA Output	1 Channel VGA output, 1080P	
Display Mode	Single/Split/Triple/Quad/8 Cam/9 Cam/Blank Screen	
Standard	25fps (PAL)	
Compression	H.264 (Main Profile)	
Bit rate	64kbps – 4Mbps / Channel	
Streaming	Mainstream (recording), Sub Stream (Network Transmission)	
Algorithms	Driver Monitoring System / Advanced Driving Assistance System / Driver Assistance System / Blind Spot Detection /Around View Monitoring (360°)	
RECORDING/STORAGE		
Storage	56 – 1800MB / Channel/hour	
	SD card x 1 (512GB), SSD x 1 (2TB) (not included as standard)	
Format	Synchronized video & audio recording	
Modes	Power up, schedule and event recording (G-Sensor recording, Overspeed recording, Motion detection recording, Alarm recording 1~6 and Panic button recording etc.).	
Clock	Built-in, Calendar	
AUDIO		
Input	4 Channels	8 Channels
Output	2 Channel (CBVS 6pin aviation or HD VGA 1080P) only one can be used	
Compression	ADPCM	
Bit rate	32kbps	

CONNECTIONS		
Infrared	1 Channel	
RS-232	1 Channel	
RS-485	1 Channel	
CAN	2 Channel	
USB2.0	1 Channel	
RJ45	1 Channel	
2G/3G/4G	Optional	
Wi-Fi & Wi-Fi hotspot	Optional	
GPS	Optional	
3-Axis Acceleration Sensor	Available	
Windows Client	Available	
iOS Client	Available	
Web portal	Available	
ALARM		
Input	6 Channels	
Output	2 Channels, 1 Buzzer	
Motion Detection	High / Low / off, Sensitivity adjustment	
Support automatic uploading	Alarm recording files, alarm information, log information and GPS trajectory	
ENVIRONMENTAL		
Operating temperature	20～70 degree/ <80%	
Vibration Rating	MIL-STD-810G	
IP Rating	IP69K	
ELECTRICAL		
Power in / Out	10 – 32VDC / 12VDC @ 4A	10 – 32VDC / 12VDC @ 5A
Current Consumption	48W	60W
MECHANICAL		
Colour / Material	Black / Metal	
Cable length	38cm	
Dimensions (W x H)	342*194*100mm	
Weight	3.1Kg	
CERTIFICATION		
	CE/UKCA	

FAQ

The System does not start up	Check the input power: If the power cable is connected correctly. Is the ground wire connected to the battery. If the power wire fuse is in good condition.
	Check that the ACC voltage is greater than 6V.
	Check that the input voltage to the DVR is greater than the shutdown voltage set on the device's configuration menu.
The DVR keeps restarting	Check if the Voltage to the DVR is sufficient. If it is too low the DVR will repeatedly restart.
	Restart the DVR.
Unable to Recognise disks	Check if the disk is in good condition. Make sure that when installed the contact is good.
	Has the disk been formatted by the DVR.
	Restart the DVR.
Unable to recognise cameras	Make sure the camera is working and the connection is correct
	Reconnect all cables, between the cameras and the DVR.
	Restart the DVR
GPS Connection issues	Check if the GPS antenna is correctly installed.

Abbreviation & Descriptions

Rec.	Record	APN	Access Point Name	LED	Light Emitting Diode	MEM	Memory
G-sensor	Accelerometer sensor	DHCP	Dynamic Host Configuration Protocol	SD	Secure Digital Memory Card	MMSHOW	Media Player
GPS	Global Positioning System	SSID	Service Set Identifier	USB	Universal Serial Bus	FTP	File Transfer Protocol
Wi-Fi	Wireless-Fidelity	IP	Internet Protocol	ALM	Alarm	DVR	Digital Video Recorder
Cam	Camera	MAC	Media Address Control	VLOSS	Video Loss	IR	Infrared Radiation
AVI	Audio Video Interleaved	RSSI	Received Signal Strength Indication	COMM	Communication	SYS	System
OSD	On-Screen Display	SSD	Solid State Drive			DST	Daylight Saving Time

Supplied Accessories

Parts	Quantity	Description	Parts	Quantity	Description
	1	9 PIN power cable		1	10 PIN alarm wire
	1	5 PIN CAN BUS wire		1	232 & 485 9 PIN cable
	1	6 PIN to RJ45		1	4-in-1 antenna (2G-3G-4G-Wi-Fi-G PS)
	1	Remote control		1	DVR lock keys

Optional Accessories

Parts	Quantity	Description	Parts	Quantity	Description
	Optional	VGA,10 PIN to 15 PIN cable		Optional	Adaptor cable for panic button
	Optional	SSD OUT adaptor cable		Optional	10-inch touch screen monitor
	Optional	Panic button			

Compatibly Storage List

SATA 3.0 SSD

Name	Description
SSD 32GB	MLC, TS32GSSD420I, -45℃~+85℃
SSD 64GB	MLC, TS64GSSD420I, -45℃~+85℃
SSD 128GB	MLC, TS128GSSD420I, -45℃~+85℃
SSD 256GB	MLC, TS256GSSD420I, -45℃~+85℃
SSD 512GB	MLC, TS512GSSD420I, -45℃~+85℃
SSD 1TB	MLC, TS1TSSD420I, -45℃~+85℃
SSD 128GB	3D TLC, TS128GSSD450K, 0℃~+70℃
SSD 256GB	3D TLC, TS256GSSD450K, 0℃~+70℃
SSD 512GB	3D TLC, TS512GSSD450K, 0℃~+70℃
SSD 1TB	3D TLC, TS1TSSD450K, 0℃~+70℃

SD Card Options

Item Name	Description
32GB SD Card	32G, MLC, NCSXDAB-032G, Longsys, -25℃~+85℃
64GB SD Card	64G, MLC, NCSXJAB-064G, Longsys, -25℃~+85℃
128GB SD Card	128G, MLC, NCSXJAB-128G, Longsys, -25℃~+85℃
64GB microSD Card	64G, MLC, NCIXJBB-064G

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