V1284HC

VULCAN™ SERIES

Mobile DVR User Manual

10-16 Sir Joseph Banks Dr, Kurnell NSW 2231, Australia | (02) 9540 9966 | info@angeltrax.com.au | www.angeltrax.com.au

The following instructions should be included in your Vulcan Series MDVR packaging. Please follow these instructions carefully when configuring camera settings for your MDVR.

ATTENTION: Required Menu Settings

NOTE: The CP4 extension cable must be installed, and all cameras must be installed and connected prior to entering menu settings.

1. Set Vehicle ID.

Menu > Setup > Registration Info > Vehicle Info

- Enter Vehicle ID in text box.
- Enter Vehicle License Plate in text box.

SAVE

2. Set Time Zone.

Menu > Setup > Time Setup (Set Time Zone)

SAVE

3. Set Date and Time.

Menu > Setup > Time Setup > Time Sync (Set Date & Time)

SAVE

NOTE:

Before setting camera resolution, disable HDD double record function, and re-enable after camera settings are complete.

4. Set Camera Resolution.

Menu > Surveillance > Record > Main Stream

5. Follow the instructions below:

VULCAN V12

- Set resolution to **1080P** and **Frame Rate** to **10**.
- Set **CAM1**, **SAVE**, then **COPY ALL** and **SAVE**.

  This will set your remaining cameras to the above settings.

VULCAN V1284HC

- With **7** or **8** HD cameras, set HD camera resolution to **1080P** and **Frame Rate** to **10**.
- With **6** or **fewer** HD cameras, set HD camera resolution to **1080P** and **Frame Rate** to **15** or higher.
- Set IP camera resolution to **15**.

VULCAN VX7AI:

- With up to **6** HD cameras and **1** IP camera, set resolution to **1080P** and **Frame Rate** to **10**.
- Set **CAM1**, **SAVE**, then **COPY ALL** and **SAVE**.

  This will set your remaining cameras to the above settings.

  VX7AI Note: IP camera channel must be enabled for use before settings.

VULCAN VX5AI/V8X3:

- Set resolution to **1080P** and **Frame Rate** to **10**.
- Set **CAM1**, **SAVE**, then **COPY ALL** and **SAVE**.

  This will set your remaining cameras to the above settings.

VULCAN V5SD:

- Set resolution to **1080P** and **Frame Rate** to **10**.
- Set **CAM1**, **SAVE**, then **COPY ALL** and **SAVE**.

  This will set your remaining cameras to the above settings.

ALL VULCAN MNVRS:

- Set resolution to **1080P** and **Frame Rate** to **15**.
- Set **CAM1**, **SAVE**, then **COPY ALL** and **SAVE**.

  This will set your remaining cameras to the above settings.

NOTE: Disable any channels not used.

Verify settings are correct on all channels.

6

V1284HC PRODUCT OVERVIEW

12

FIRMWARE OVERVIEW

42

APPENDIX

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Guarantee and Warnings

1) ELECTRICAL APPARATUS SAFETY

All installation and operation should comply with local electrical safety laws.

2) TRANSPORTATION

In the process of transportation, storage and installation, please avoid heavy stress, violent vibration, impact and water splashing.

3) INSTALLATION

Before installation, please open the package and ensure that all parts are included.

Install the equipment in accordance with the requirements. Handle equipment with care until the MDVR installation is complete.

4) REQUIREMENTS OF ENGINEERS AND TECHNICIANS

All installation and setup should be completed by qualified, certified technicians and engineers. **AngelTrax does not assume any responsibility caused by unauthorized modifications.**

5) ENVIRONMENT REQUIREMENTS

The equipment should be installed and stored in a cool and dry place, away from direct sunlight, flammable or explosive substances, etc. Keep gaps no less than 1.2 inches around the device to facilitate ventilation for cooling.

6) ACCESSORIES

For installation and use, make sure to use only the accessories provided or recommended by the manufacturer.

Insulate circuit ground and metal shell for all peripherals.

If warranty service becomes necessary, contact AngelTrax's **Technical Support Department** by phone at **1.800.673.1788** or through the **Contact Us** form on the AngelTrax website (**www.angeltrax.com/contact**).

Abbreviations

Term	Description
MDVR	Mobile Digital Video Recorder
FPS	(Picture) Frames Per Second
GPS	Global Positioning System
HDD	Hard Disk Drive
IR	Infrared
UPS	Uninterruptible Power Supply

Term	Description
LAN	Local Area Network
MPEG	Picture Format
TCP/IP	TCP/IP Protocol
USB	Universal Serial Bus

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V1284HC PRODUCT OVERVIEW

Overview

SERIOUS STORAGE INNOVATION

Specifically designed for the school bus industry, the Vulcan Series V1284HC mobile DVR can store an entire year of high-definition video on one hard drive without overwriting. With twelve camera views of the vehicle's interior and exterior, including individuals inside or outside and traffic in close proximity, this recording workhorse provides an objective eyewitness account to protect the innocent and prosecute those at fault. The V1284HC is tested and proven to represent the AngelTrax name for quality, reliability and performance.

MULTIPLE CAMERA VIEWS

The V1284HC records twelve camera channels: eight HD channels up to 1080P and four IP channels up to 1080P resolution. Recording two types of camera feeds on the same system enables the fleet operator to have IP cameras installed in key locations where clarity is needed most and to maximize storage by capturing the majority of camera views with true high-definition resolution.

STORAGE CAPACITY

The V1284HC comes standard with one 1TB SATA hard drive and one 64GB SD card that are upgradeable.

HYBRID COMPONENT TECHNOLOGY

The MDVR is constructed in a modular configuration with modules for the hard drive and main control board which are fully removable on slide rails to allow upgrades, updates, repair and replacement to be completed without removing the MDVR from the vehicle.

DUAL STREAMING

The latest dual streaming capabilities allow MDVRs to simultaneously store high-resolution and low-resolution video for optimal storage configuration. The storage time and resolution ratio is easily adjusted based on your needs and available storage space.

Features

HARDWARE FEATURES

1) All modules are connected with locking connectors, supporting quick disconnection, which is safe and easy to maintain.
2) Supports DC9~36V wide voltage output featuring protection for over voltage, under voltage, short circuit and over current.
3) Capable of recording to one 3.5-inch SATA hard drive, available in up to 14TB, and one solid-state SD card, available in up to 512GB.
4) Constructed with built-in mechanical anti-vibration technology.
5) Features built-in wireless module, including optional passive or active GPS antenna and optional 3G/4G.
6) Designed for convenient operation and enhanced with optional components: Vulcan Series CP4 Touchscreen backing and firmware control monitor, Wi-Fi cellular GPS tri-mode antenna, mouse and keyboard.

SOFTWARE FEATURES

1) 24-hour single-file recording mode. (Timeline mode playback makes the operation more convenient.)
2) Supports dual streams for main/substream recordings.
3) Built-in H.264/H.265 codec. (User can manually configure the video coding attributes.)
4) A series of synchronous operations: information record, recording playback, file backup, network transmission and more.
5) Supports multiple languages.
6) Adapts dynamic coding technology to adjust the dynamic change of 3G/4G network bandwidth and ensure the fluency of monitoring video remotely via 3G/4G network.
7) Multi-information display including vehicle number, time/date information, channel information, alarm information, GPS information and speed information. User can set video recording overlay and information record.
8) Supports multi-recording modes: vehicle switch recording, timing switch recording, manual recording, alarm recording and shutdown delay recording.
9) Supports continuous record, alarm record, motion record and schedule record.
10) Supports power protection to ensure that the last video data is not lost.
11) Local recording: 1080P/720P/AHD/D1/HD1/CIF resolution optional.
12) Records driver actions such as speed, turning, brake, reverse, opening door, stop arm, amber lights and more.
13) Network function: supports wireless uploading of video, which can realize the remote video surveillance, video download, remote alarming and network timing of the equipment, network setting, remote upgrade, etc.
14) Supports high-speed backup through USB 2.0 and built-in SD card slot.
15) Upgrades all applicable items simultaneously.
16) Alarm linkage: supports linkage switch value output, image display, etc.
17) Formats the MDVR's hard drive, SD card and external USB devices.

TECH SPECS

12-CHANNEL MDVR

Dimensions

- Height: 5.0 inches
- Width: 7.72 inches
- Depth: 12.60 inches
- Weight: 6.61 pounds

Twelve (12) A/V inputs

- (8) HD channels up to 1080P
  + (4) IP channels up to 1080P

Outputs

- 2 video channels
- 2 audio channels (CVBS/VGA)

Camera compatibility

- (8) HD channels up to 1080P
  + (4) IP channels up to 1080P

Recording media

- Supports 3.5" hard disk 1TB (standard) up to 14TB (capable) and one (1) SD card slot

Capacity

- 1TB (standard) up to 14TB (capable)

USB

- 2 x USB2.0

Recording options

- SD card slot for redundant recording

INTERFACE

Camera Connection:

- (4) RJ45 IP camera connections
- (8) 4 Pin HD camera connections

Network Data Connection:

- Ethernet: RJ45 x 1 (10/100M/1000M)
- IPC Ethernet: RJ45 (4 x 10/100M, PON Power Supply)

Expansion

- RS232 × 1, RS485 × 1 (for RFID and iPanel)

GPS interface

- Built-in, compatible with optional active or passive GPS antenna

Panic button

- The remote status indicator (panic button) can be connected to show MDVR power/record status without using a video monitor.
- The driver-operated panic button has the following functions:
  - Solid green LED indicates that the unit has power and is recording.
  - Event marker (panic button)

Driver action detection wires

- 8 signal wires individually programmable to indicate alarm or event

Compression format

- Video: H.264/H.265
- Audio: ADPCM, G.711U

RECORD RESOLUTION

DIGITAL

- Parallax View™ (horizontal resolution exceeds cinema 4K), 4MP (4192X1360), 1080P (1920X1080), 720P (1280X720) @30FPS

NTSC

- 1080P, 720P, WD1 (928X480), WDH1 (928X240), WCIF (464X240), D1 (704X480), HD1 (704X240), CIF (352X240)
- 8x720P@30FPS (HD) + 4x1080P@30FPS (IP) OR 8x1080P@10FPS (HD) + 4x1080P@30FPS (IP)

Recording options

- **Continuous record:** System will record all channels continuously while vehicle is running (factory setting).
- **Alarm record:** System will record when an alarm is triggered.
- **Motion record:** System will record when the cameras detect motion while vehicle is running.
- **Schedule record:** System will boot and record according to user-selectable schedule.

OPERATING & ELECTRICAL REQUIREMENTS

Auto on/off detection

- ACC detection

Delay off setting

- User selectable up to 24 hours

Operating temperature

- -40°F (-40°C) ~ 158°F (70°C) with heater or 14°F (-10°C) ~ 158°F (70°C)

Operating humidity

- 15% - 90%

Built-in G-Force Sensor

Built-in Wi-Fi Module

Built-in Power Protection

Built-in GPS Module (requires antenna)

POWER SUPPLY

Power consumption

- Standby: 0W
- Maximum: 100W
- Maximum (with heater): 125W

Input range

- DC 9~36V, ACC

Output range

- 5V@500mA, 12V@500mA

Low voltage protection

- User selectable and programmed at installation

HYBRID COMPONENT TECHNOLOGY

Modular design for on-site service, maintenance and upgrades in minutes

Housing/Casing

- Removable, shock-mounted
- Vandal-resistant locking hard drive
- Shock-resistant: MIL-STD-810F
- Aluminum
- 2 built-in fans for temperature regulation

OPTIONAL AI FEATURES

OPTIONAL COMPONENTS

Virtual Synchronized Mapping

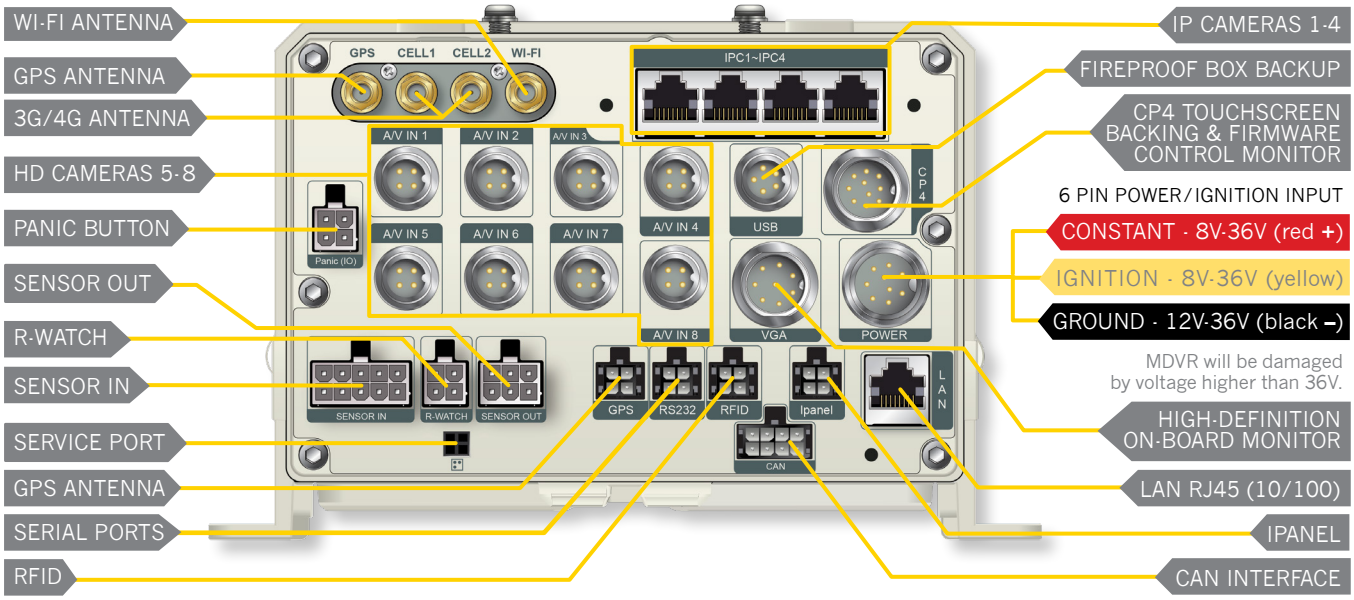
- External Virtual Synchronized Mapping™ module with North American maps
- Includes GPSV1 antenna
- Embeds GPS tracking information synchronized with recorded video footage

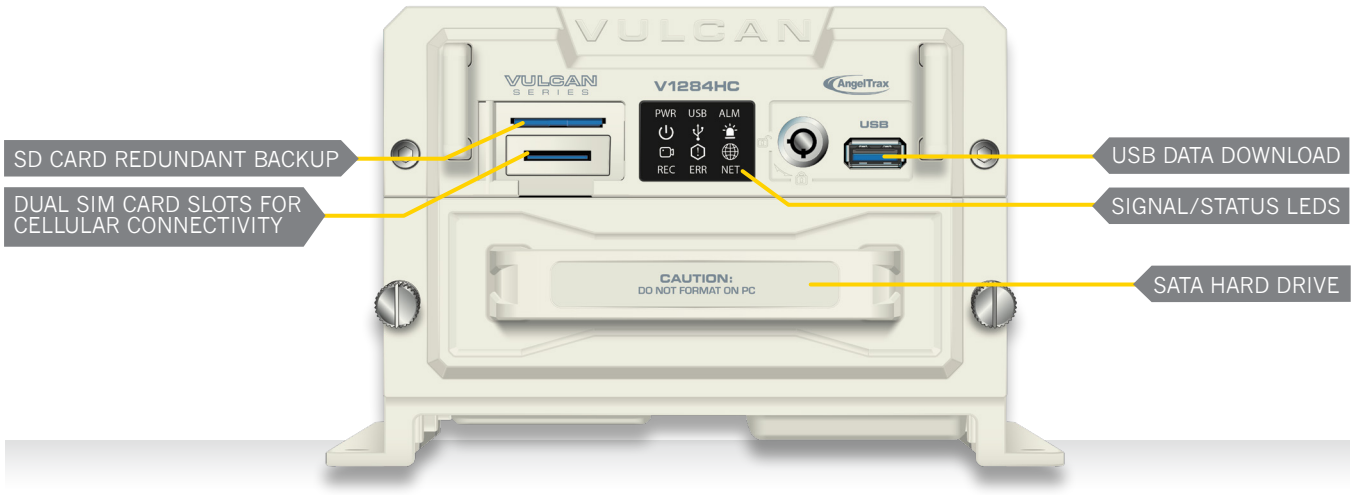
Optional GPS Antenna (active or passive)

Optional Celluar Modem (compatible with SI6GM)

Vulcan™ Series V1284HC HD/IP Mobile DVR

MDVR INSTALLATION WIRING GUIDE





STANDARD

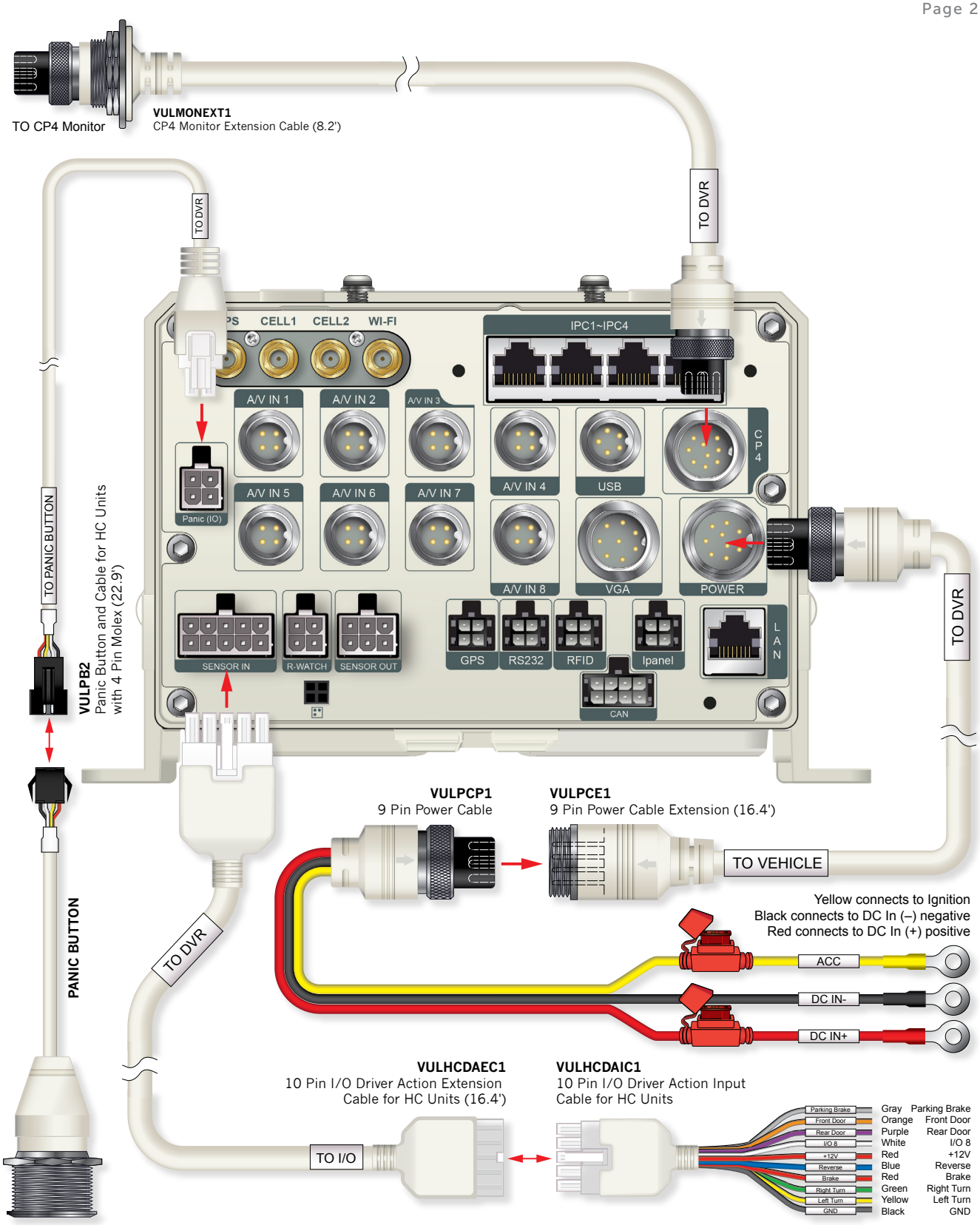
ACCESSORY PACKAGE

- **VULPCP1** 9 Pin Power Cable Pigtail
- **VULPCE1** 9 Pin Power Cable Extension 16.4'
- **VULPB2** Panic Button and Cable for HC Units with 4 Pin Molex 22.9'
- **VULMONEXT1** CP4 Monitor Extension Cable 8.2'
- **VULHCDAIC1** 10 Pin I/O Driver Action Input Cable for HC Units
- **VULHCDAEC1** 10 Pin I/O Driver Action Extension Cable for HC Units 16.4'
- **VULFUSE15** 15A Fuse (2)
- **VULFUSE7** 7.5A Fuse (1)
- **VULSCR1** Screws
- **VULKEY2** Keys to HC MDVR Hard Drive
- **VULWL1** Warning Labels
- Allen Wrench

OPTIONAL

- CP4 Touchscreen Backing & Firmware Control Monitor
- 3G/4G Antenna Cable
- Wi-Fi Antenna Cable
- GPS Antenna
- Tri-Mode Antenna (GPS, Wi-Fi & Cellular)
- External G-Force Sensor
- Backing Camera Monitor
- Vulcan Series Uninterruptible Power Supply
- Internal Cellular Modem

Vulcan™ Series V1284HC



FIRMWARE OVERVIEW

Local Management

The Vulcan Series MDVR protocol supports three types of local setting methods:

1) **Monitor**
   Connect the monitor to the mobile DVR and make sure it can play real-time output image. Then connect the mouse to the USB interface at the front panel to set MDVR parameters.

2) **CP4**
   Connect the touch panel CP4 to the mobile DVR to show live display and set parameters.

3) **Remote**
   Set the V1284HC's parameters using the MDVR's remote control.

NOTE: *Due to firmware updates, some screens on your device may vary from screens in this manual. To confirm and/or update your firmware version, contact the AngelTrax* ***Technical Support Department*** *by phone at* ***1.800.673.1788*** *or through the* ***Contact Us*** *form on the AngelTrax website:* ***www.angeltrax.com/contact****.*

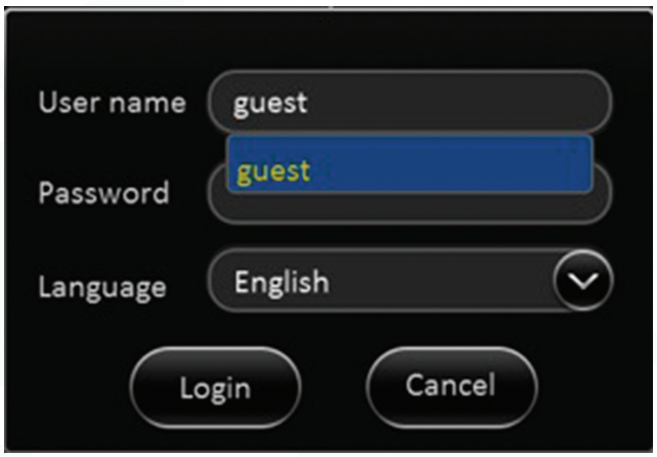
Login Interface

To operate the device, the user must have permission and a user name and password.

1) On the remote control, if applicable, press **LOGIN / LOCK** or **SETUP** to display the login screen.

2) Right click the mouse to display the shortcut menu, and left click the login image to display the login screen.

3) Left click on the login button to login and right click to log out.



LOGIN NOTICE

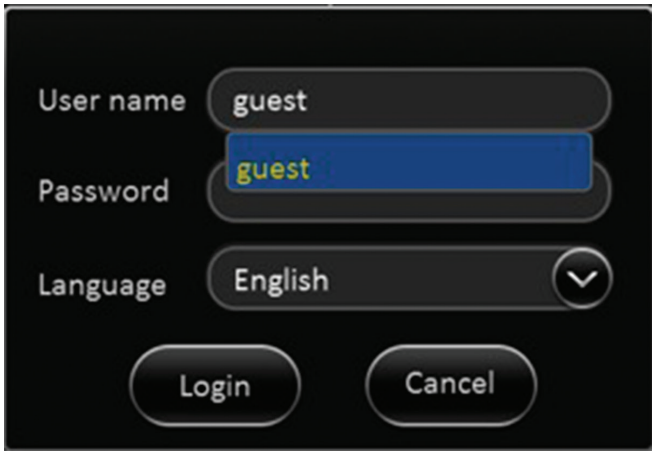
1) Software is automatically assigned by user name and password and can be divided into user and administrator privileges.

2) Password options cannot be removed, but can be set to blank. If the password field is empty, user does not need to enter the password to login.

DEFAULTS AND PERMISSIONS

Default User Name	admin	user
Default Password	admin	user
Related Authority	All Authorities	Search & playback

LOGIN INTERFACE INTRODUCTION



User Name

1) Select users from the dropdown box. Admin and User are set as login defaults.

2) Currently, the login can display two users and one admin.

Password

1) User can enter the operation interface by entering the correct password.

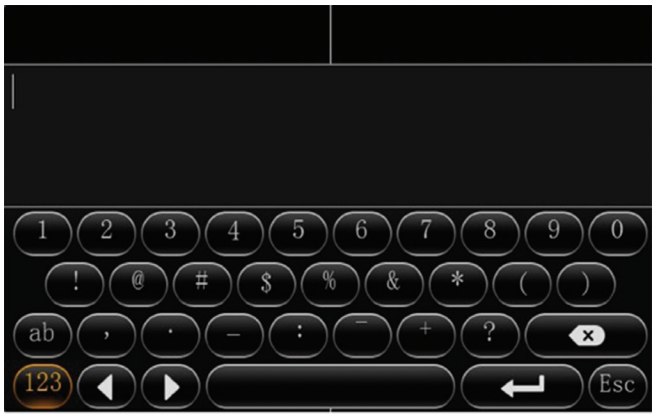
2) User must re-enter the correct password if an incorrect password has been entered.

3) Click **Cancel** to exit the login interface.

Language

Select English.

PASSWORD INPUT



1) User can set password with remote (if applicable), mouse or touch panel CP4. Move cursor to password, click **Enter** and enter the desired password.

2) Move the cursor to the number position and press **Enter** or left click the mouse button to select the corresponding number.

3) Move the cursor to **123** and press **Enter** or use mouse to choose input type, such as numbers, letters or special characters.

4) Select **ab** for lower case letters, **123** for numbers or **AB** for capital letters. The highlighted area in the background refers to the current cursor position.

5) Move cursor to ◀▶. Press **Enter** or left click mouse to move between the contents that have been entered.

6) Move cursor to ⌫. Press **Enter** or left click mouse to delete the previous input contents.

7) Move cursor to ↵. Press **Enter** or left click mouse to exit the keypad. The entered contents will be written to the edit box.

8) Move cursor to the **Esc** position and press **Enter** or left click the mouse to exit the keypad. The entered contents will not be written to the edit box.

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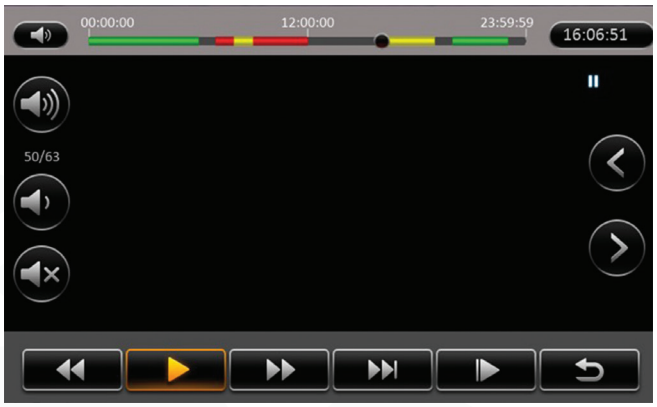
Live Preview Interface

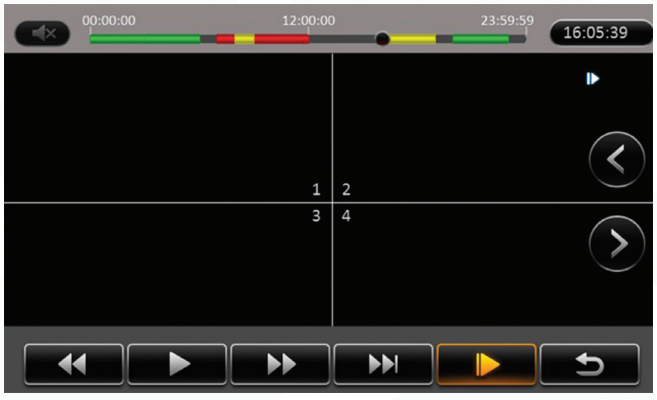
Enter the Live Preview interface and click anywhere in the video window. User can hide or display the menu.

- Select Single, Quad or 9-Split display option.
- Click to switch to the playback interface and play the last two minutes of recording.
- To display a single channel, click then click .
- To view multiple channels simultaneously, click then click .
- To view additional camera channels, click on display option twice.

- Information can be shown in the interface, such as time, date, vehicle speed, vehicle ID, location information, alarm status, channel name, vehicle number and ACC, as selected by the user in the parameter setting.



- The image of each channel will have a superimposed recording mark if the device is recording. Two superimposed recording marks will indicate dual streams recording, one to indicate mainstream and the other for substream. Green indicates normal recording, and red indicates alarm recording.

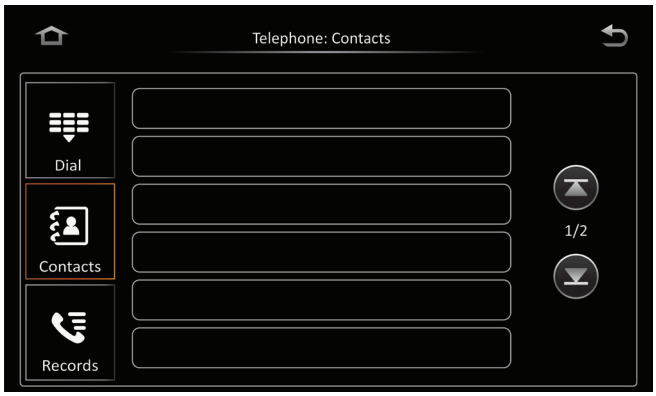


Biz Menu

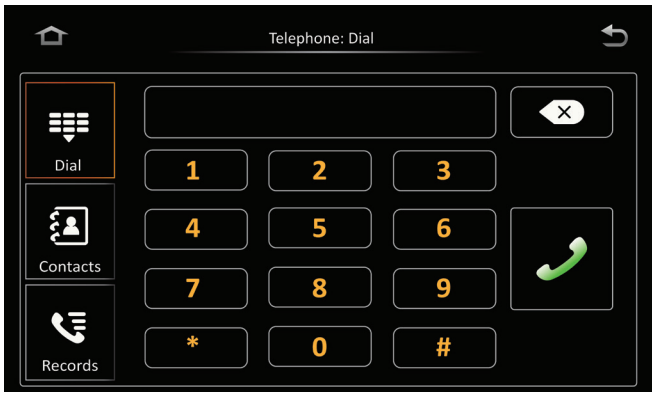
- Click **Biz Menu** to select Telephone, SMS or System.

> ***NOTE:*** *The System will return to the Live Preview screen after idling in any menu for one (1) minute.*

Telephone



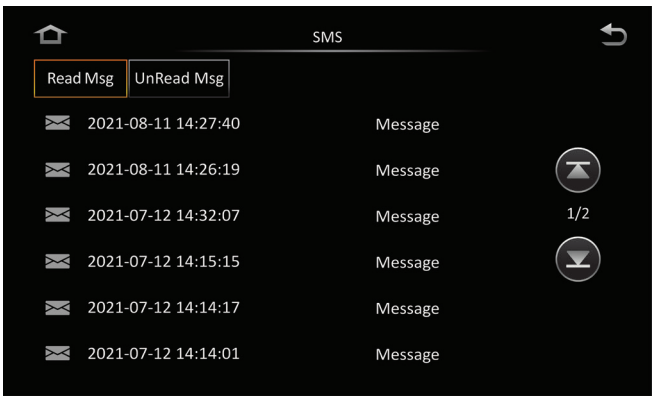
- Click **Contacts** to select contacts from the contact list. **Records** will display the call history.



- Select **Dial** to use the keypad.

SMS

- Select **Read Msg** or **UnRead Msg** SMS messages. An SMS message can be sent by business platform but cannot be edited or sent automatically.

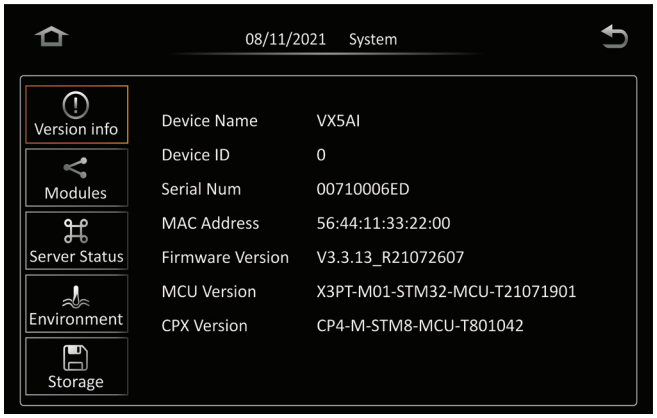


System

Click **System** to display the following information:

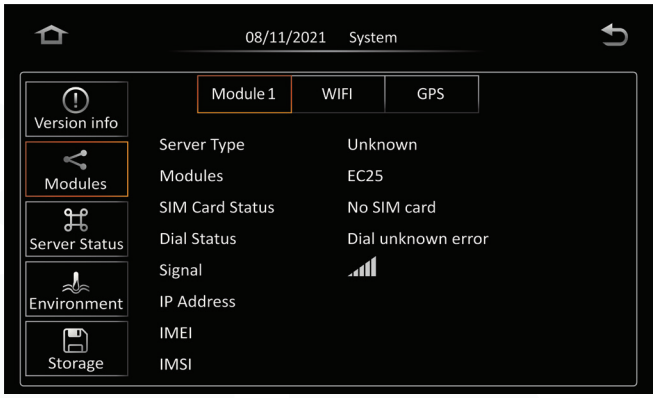
Version Info

- Software/Hardware version, Device ID, Serial Number, MAC Address, etc.



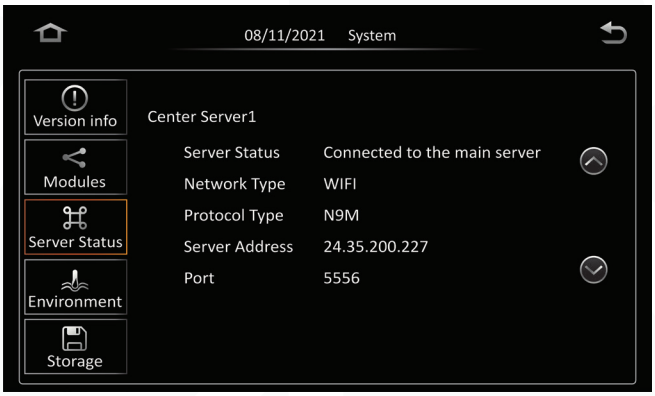
Modules

- 3G/4G communication module (running status, SIM, dial status, signal strength)
- Wi-Fi module (signal strength, ESSID, IP address, module status)
- GPS module (location status, location data source, satellite numbers, speed)



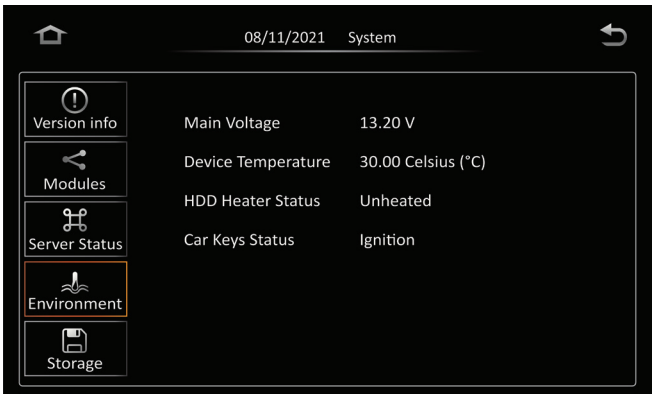
Server Status

- Device connection status, network type (wiring, Wi-Fi or 3G/4G), connection protocol type, server IP address and port



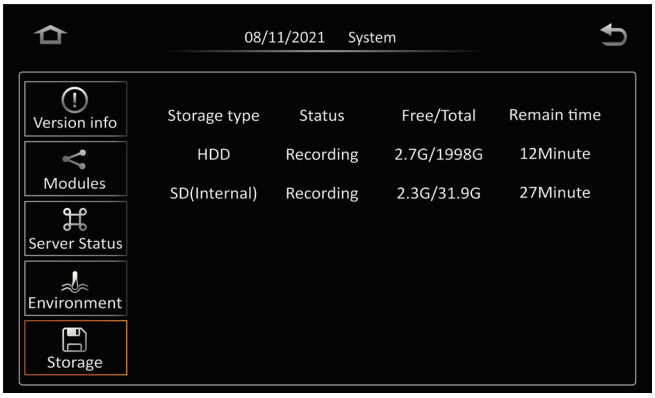
Environment

- Main Voltage, Device Temperature, HDD Heater Status and Car Keys Status



Storage

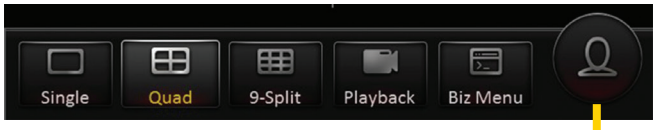
- Storage type, status, capacity and remaining time of recording, which is estimated and depends on the recording setting.



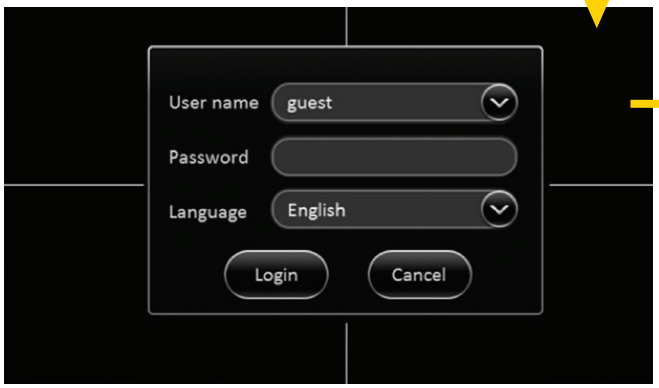
User Login

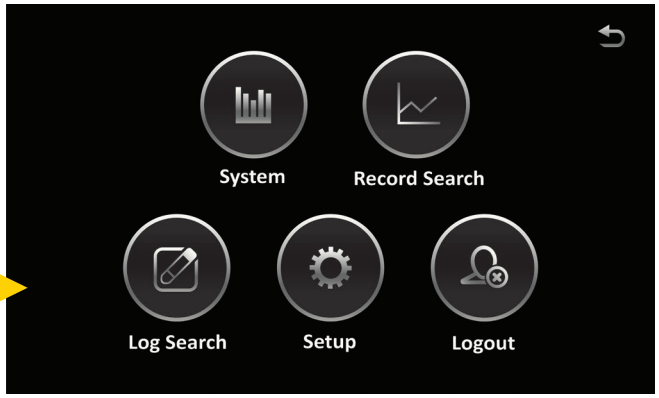
Click and enter user name and password.

User name cannot be entered manually and must be chosen from the menu.



(User management can be set in Setup interface.)





Main Interface

After logging in, click to return to the main interface. The user name and password are not required when re-entering the interface.

User name and password are required for access if user has clicked to log out.

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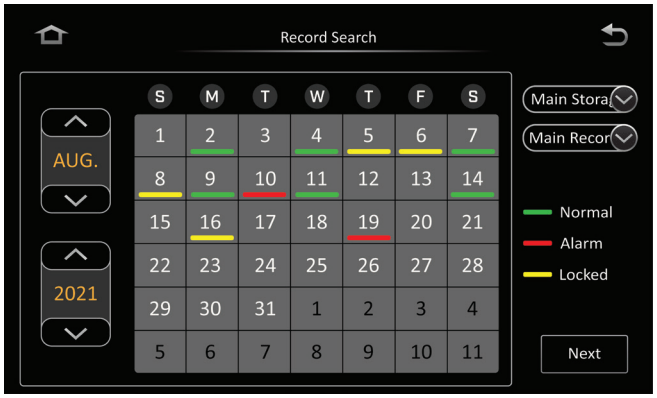
Recording Search

RECORDING (REC) SEARCH



Storage: Main Storage or Sub Storage

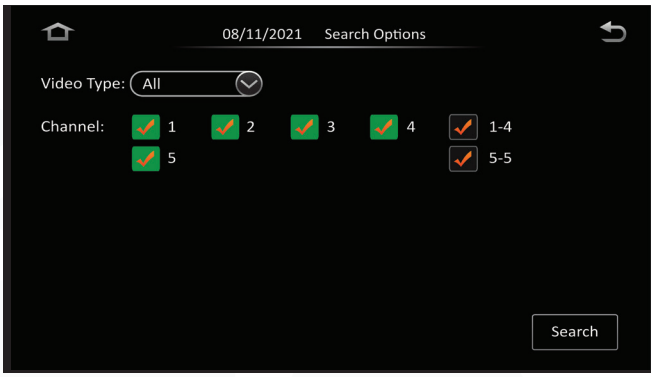
Recording: Main Recording or Sub Recording (Mirror recording is not available.)

Select the date of the recording to be reviewed.

Search condition is assorted by recording type, not by storage means.

- **No color** = No video
- **Green** = Normal recording
- **Red** = Alarm recording without lock
- **Yellow** = Locked alarm recording

Click **Next**.



Select **Video Type** from the dropdown menu:

- **All** searches all channels.
- **Alarm** searches only alarm recordings.
- **Normal** searches all except alarm recordings.

Click **Search.**

Click “**+**” or “**–**” to enlarge or narrow the searching range.

Click ⏫⏬ to search all channels for recordings.

- **No color** = No video
- **Green** = Normal recording
- **Red** = Alarm recording without lock
- **Yellow** = Locked alarm recording

RECORDING EXPORT

Click **Export**.

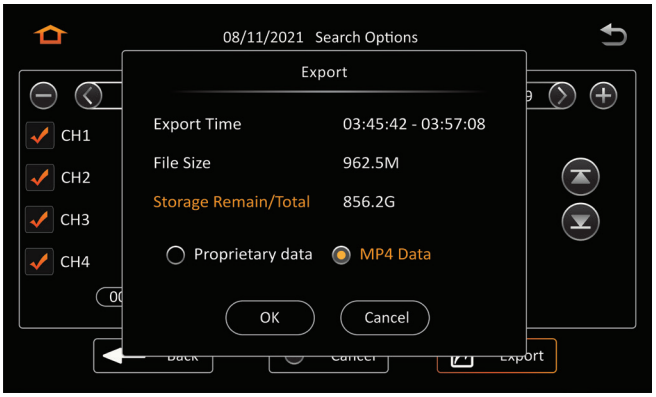
While exporting video, user can enter the start time manually or drag the time bar.

Click **Start Time** to proceed.

Click **End Time** to display the recording duration and capacity. Click **Export**.

Select the data type to be exported.

- **Proprietary data** refers to the H.264/H.265 data stream and black box data, which can be played in the FlexPlay Pro 8™ (Pro 8) playback system. In addition, the video data will link with black box data.
- **AVI data** refers to .avi mode, which can be played in any player.



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RECORDING PLAYBACK

Click ▶ **Playback**.

Play video by dragging the time bar.

Click ⟨⟩ to switch to different channels.

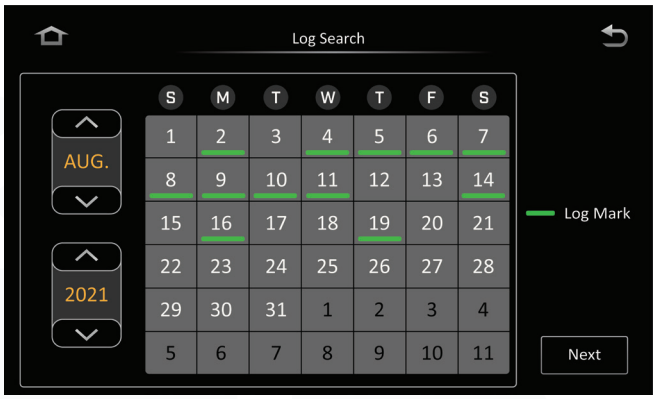
Select play, pause, fast forward (x2, x4, x8, x16), fast reverse (x2, x4, x8, x16), slow play (1/2, 1/4, 1/8, 1/16) or frame play.

AUDIO TOGGLE

- Mute
- Decrease Volume
- Increase Volume

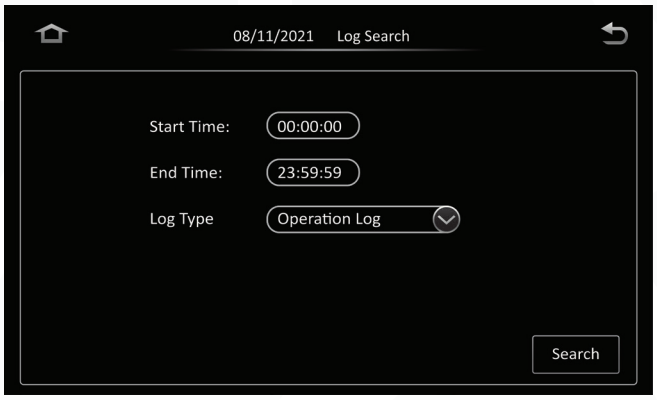
Log Search

Select date and click **Next**. Dates with video logs are marked with a green underscore.

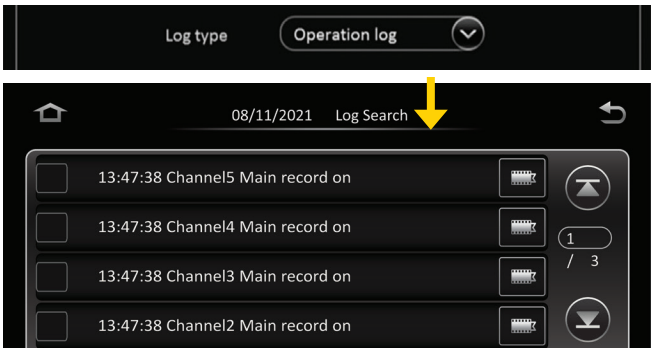


Logs can be searched by time period. Enter the **Start Time** and **End Time**.

Select **Log type** from the dropdown menu: **Operation Log**, **Alarm Log** or **Locked Log**.

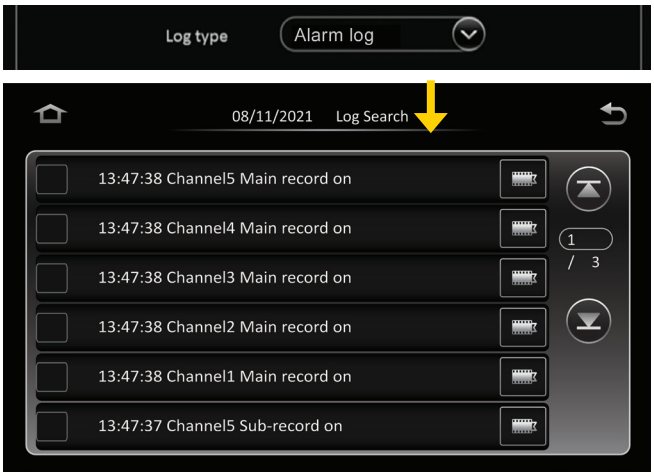


OPERATION LOG



- **Log Time:** The time when an event is triggered.
- **Log Name:** Event content.
- Click page up or page down button to scroll.
- Click the export button to export all log files of the specified date.

ALARM LOG

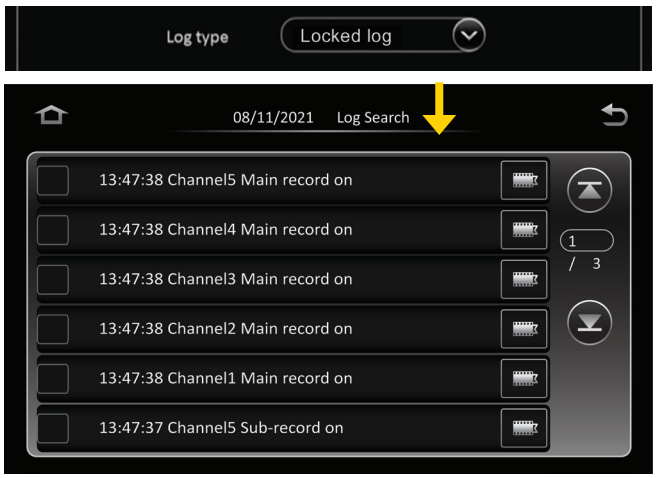


Includes all alarms, IO alarm, urgent (panic) alarm and speed alarm.

Log includes the following information:

- **Log Time:** The time when an event is triggered.
- **Log Name:** Event content.
- Click page up or page down button to scroll.
- Click the export button to export all log files of the specified date.
- Click the button to playback video files.

LOCK LOG SEARCH



- **Log Time:** The time when an event is triggered.
- **Log Name:** Event content.
- Log will be recorded according to channel number, and each channel will have a locked log file.
- Click page up or page down button to scroll.

Note: The system cannot export all log files of the specified date.

- Click the button to playback video files.
- Select log and unlock it.

Note: When locking the video file, system will record alarm log and locked log. The locked video file can only be unlocked from alarm log.

After selecting **Alarm Log**, user can play the log if it is linked with recording.

Alarm Log with video can be played or exported.

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Basic Setup

REGISTRATION INFORMATION

Device Info

- Not Applicable

Vehicle Info

- **Vehicle ID:** Input manually.
- **Vehicle License Plate:** Input manually.
- **Route Number:** Input manually.

Driver Info

- **Driver Number:** Input manually.
- **Driver Name:** Input manually.
- **Plate Color:** Select that which applies.
- **Province ID:** Input manually.
- **City ID:** Input manually.

(Scroll down to see additonal options.)

Client ID

- Input manually.

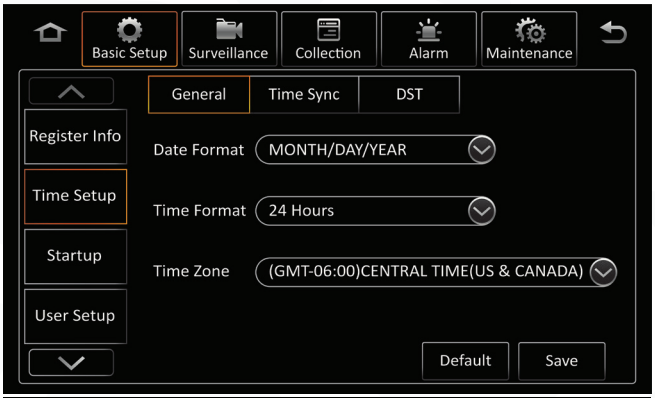
TIME SETUP

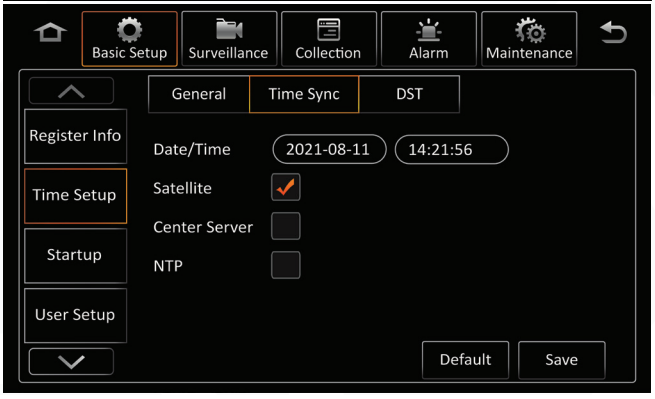
General

- **Date Format:** Set up the date format of device.
- **Time Format:** Select 24 hours or 12 hours.
- **Time Zone:** Select time zone from dropdown.

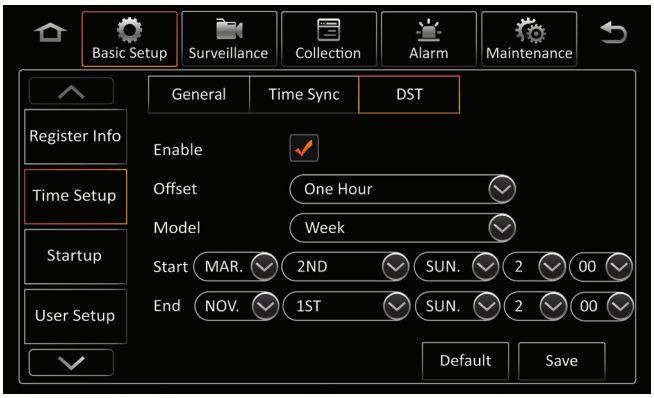
Time Sync

- Select one or more **Time Sync** options: **Satellite**, **NTP** and **Center Server**.
- If Satellite time sync fails, select NTP time sync.
- Select Center Server time sync to sync using the PRO8CMS server.
- This option requires the MDVR to be connected to the Internet via Wi-Fi or 3G/4G.





DST



- **Enable:** Select to enable.
- **Offset:** After enabling DST, adjust the hour manually.
- **Model:** Set up DST according to week or date.
- **Start:** Enter time to start DST.
- **End:** Enter time to end DST.

STARTUP

ON/OFF

- **ON/OFF MODE:** Select one of the following from the dropdown: Ignition, Timer, Ignition or Timer.
- **Ignition Delay:** This setting allows the MDVR to shut down after a set period of time after the vehicle is turned off.
- **Shutdown Recording Delay:** This setting allows the MDVR to keep recording for a set period of time after the vehicle is turned off.

Note: This feature is only used in Wi-Fi downloading.

- **Timer From:** This setting allows the MDVR to turn on and off at a pre-defined time.
- **Light Off Time:** Select from the dropdown to set the CP4 screen's backlight for use in a vehicle traveling at night, to prevent night-time driver distraction, or to configure the CP4 screen's backlight to turn off automatically when no operation is detected.

Note: If you choose Ignition or Timer Mode, Ignition ON or Timer start time can trigger MDVR start up.

If these settings are selected, the MDVR will shut down only when Ignition is off and the Timer end time is reached.

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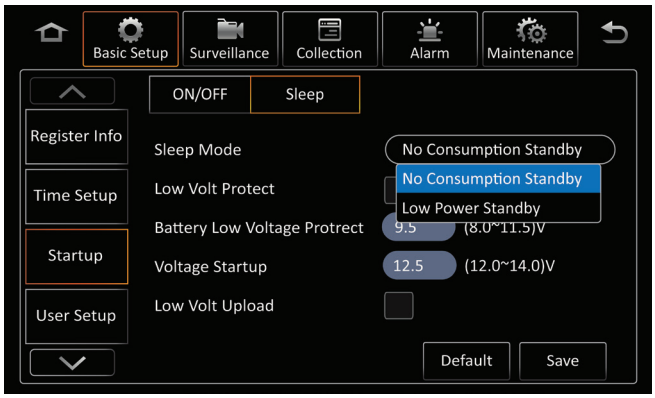
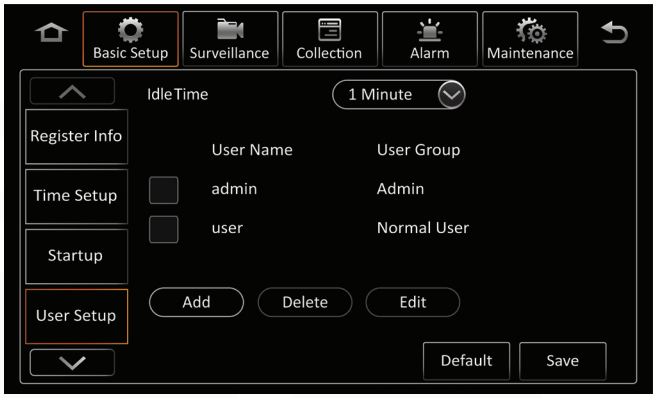
Sleep



- **No Consumption Standby (recommended):** The MDVR does not draw power when in this mode.
- **Low Power Standby:** When Low Power Standby is selected, the MDVR is not completely shut down but is operating with low power.
- **Low Volt Protect:** When low voltage protection is enabled, the MDVR will shut down at the pre-set low voltage threshold to protect the unit and the vehicle.
- **Battery Low-Voltage Protection:** Do not adjust. The MDVR is automatically set to 9.5V.
- **Low Volt Upload:** The low-voltage protection will be reported to the PRO8CMS server after the box is clicked.

USER SETUP

Basic Setup



- **Idle Time:** Select the amount of time the MDVR displays the menu on the monitor without any user input.
- **User Name:** Select, add, delete or edit a user name. The default options are **admin** and **user**.
  - **NOTE:** The **admin** (administrator) user cannot be deleted.
  - **CAUTION:** The **admin** password can be edited. Save the new password in a secure location. If the password is lost or forgotten, the unit must be reset by AngelTrax.

Only administrators can add users. Only two users can be added.

Admin users may add, edit or delete normal users and query parameters but not set permissions.

The user name field cannot be empty, but an existing user name can have an empty password field.

User name and password can be modified. Select a user and click **Edit User** to enter the Edit menu.

Modify the user name and password to confirm the operation temporarily. There is no need to verify the old password. Administrator user name cannot be modified.

- **User Group:** The user group is pre-set.

NETWORK SETTING

Server

Select settings for MDVR communication with the PRO8CMS server.

Center Server: A maximum of six (6) servers can be configured; however only two (2) can be active at a time and server 1 cannot be deleted manually.

ON: Enable the current server.

Protocol Type: The default is N9M.

Enable Network: Select local, Wi-Fi or module.

Register Server IP: Input the IP address of the PRO8CMS Server.

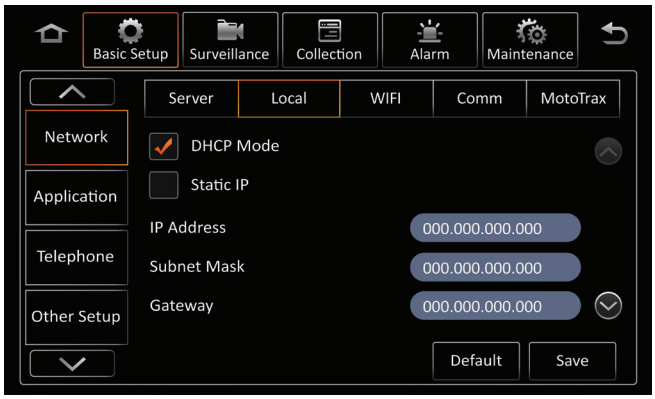
Scroll down for the following fields:

Registration Server Port: Default is 5556.

Media Server Address: Input the IP address of the PRO8CMS server.

Media Server Port: Default is 5556.

Local



In the basic settings, click Network Settings to enter the following interface and set network parameters.

Automatically Obtain IP: Automatically receives an IP address from DHCP Server. DNS can also be assigned by DHCP Server.

Use the Following IP: Click static IP to use a static IP address. This will require you to set the DNS server's address.

Remark: Switch from static IP to automatically obtain IP mode, it can display dynamic IP, but the static IP parameters will not be covered, to restore the last saved static IP after switching back.

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Wi-Fi

Enable: Select to enable Wi-Fi.

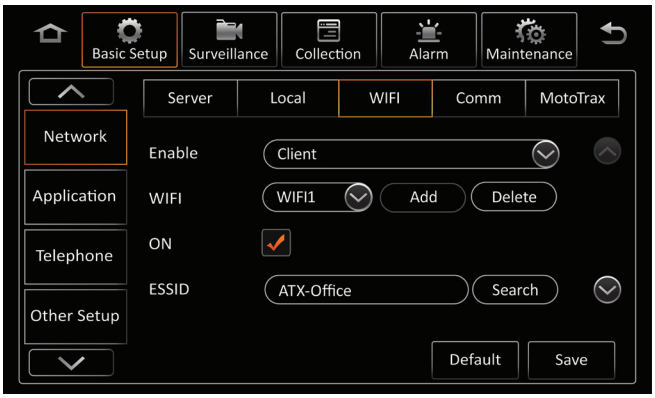
ESSID: Manually input the ESSID of the wireless network.

Encryption: Select NONE, WEP or WPA.

Password: Manually input the password.

Scroll down for the following field:

Static IP: Select to use static IP or MDVR will get dynamic IP.



Communication

Module: Select the module type and set dialing parameters.

Note: When entering the dialing setup interface, the system will automatically search the wireless module type. If no module is available, No Service will be displayed.

Server Type: Displayed but non-selectable.

Network Type: Default is Mix. 3G/4G are also available.

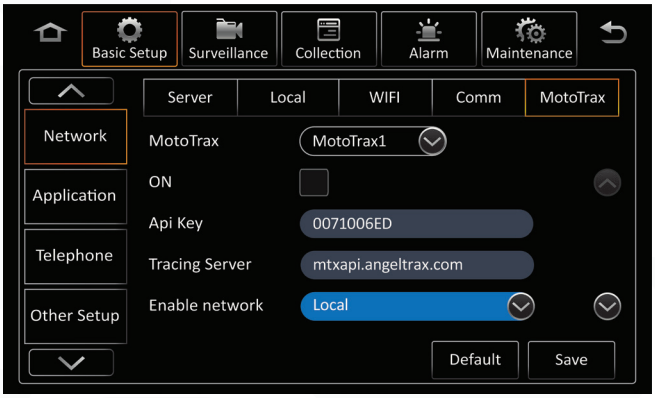
APN: If your wireless carrier has provided you with an Access Point Name, enter it here.

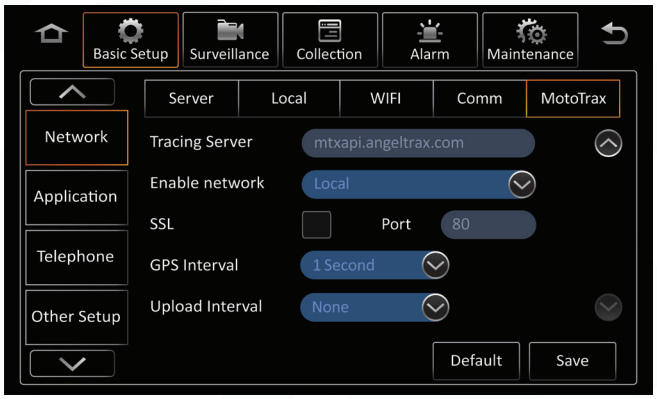
Using the up and down arrows on the right, scroll to enter more information if needed.

MotoTrax

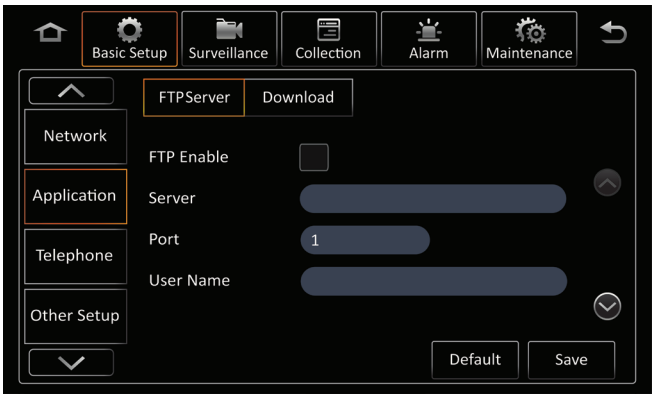
MotoTrax is an optional feature. When you purchase an MDVR coupled with MotoTrax, AngelTrax technicians will establish the connection to the MDVR prior to shipment.

To connect an existing MDVR to MotoTrax, provide the **API key** listed on this menu to AngelTrax Technical Support by calling **1.800.673.1788**.





APPLICATION



FTP Enable: Click to enable FTP.

Server: Enter FTP server address.

Port: Enter FTP server port. (Default is 21.)

User Name: Enter a User name distributed by FTP server.

Connect to desired server by setting FTP parameters. For example, the photos captured can be uploaded to FTP server, but the FTP server is based on the configuration of this parameter upload.

The Download function must interact with the PRO8CMS server. User can create an auto download task using the PRO8CMS server, and the server will manage the device download, such as the vehicle or the network (3G/4G, Wi-Fi).

Auto Download Reconnect: When the vehicle arrives at the bus terminal, if it cannot connect to the service, it will reconnect and start to download after the dormant state. If it exceeds the download task or up to the limit of AP, the platform will keep the device in the dormant state and ask the device to restart later.

TELEPHONE

If a SIM card is installed in the MDVR, authorized personnel can call the SIM card number and the driver can answer it.

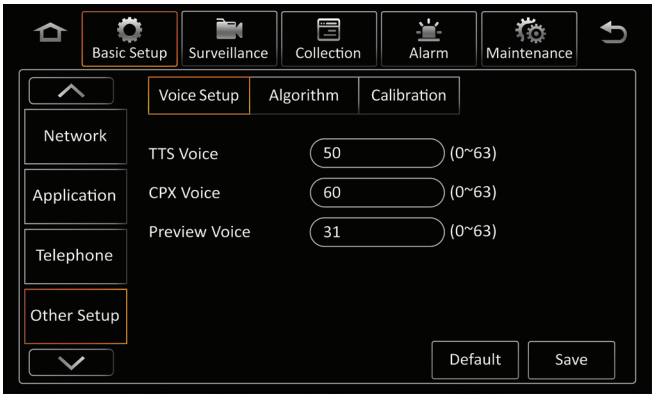
Every Longest Time: Set time limit for a single call.

Month Longest Time: Set limit for number of phone calls made in a single month.

Answering: Set to Manual answer or Auto answer.

Auto Answer Time: Set MDVR to automatically answer after a set period of time.

OTHER SETUP



Voice Setup

TTS Voice: Adjust volume of MDVR.

CPX Voice: Adjust volume of monitor (ex. CP4).

Preview Voice: Adjust volume of live video.

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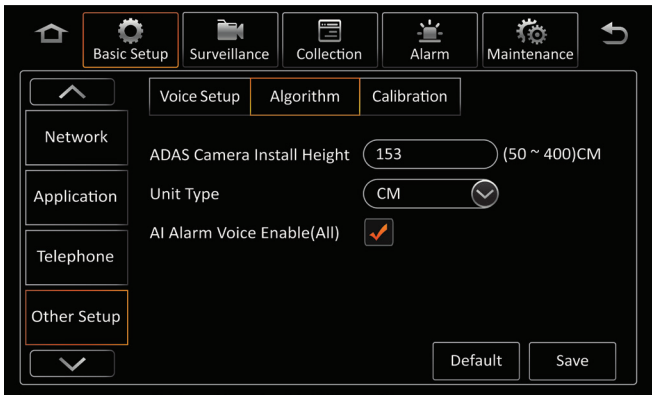
Algorithm

ADAS Camera Install Height: Adjust the height of the windshield ADAS camera from the ground.

Unit Type: Set to CM (centimeters) or IN (inches).

AI Alarm Voice Enable (All): Enable an audible voice to alert the driver when an AI feature is triggered (ex."Driver Distraction").

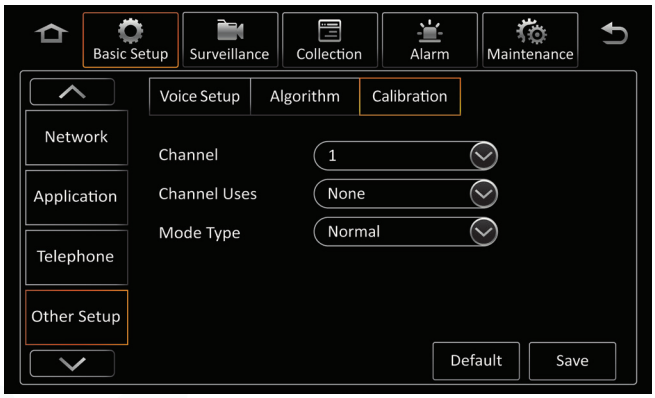


Calibration

Channel: Select which channel you want to configure.

Channel Uses: Select which AI feature you want to link to that specific channel.

Mode Type: Select a mode.



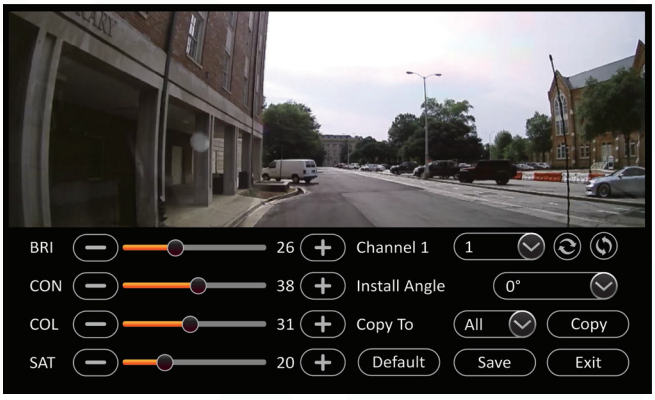
Surveillance

LIVE VIEW

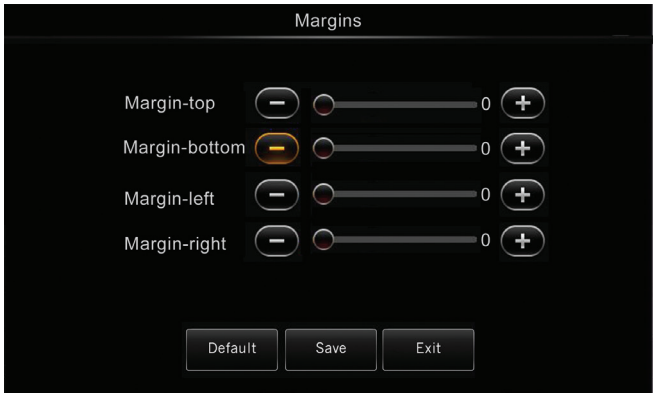
Preview: Live Preview allows the audio captured by the cameras to be heard on the CP4 monitor. This option needs to be OFF if the CP4 is permanently mounted in the vehicle as it can result in feedback if left on.

Startup Screen: Set the CP4's screen display to your desired view (single screen, four-screen or nine-screen display) or select certain channels to display simultaneously. The default is set to four-screen display.

Image Setup: Select one of the two buttons in the upper right corner to allow the camera view to be flipped vertically or horizontally (Supports IPC and high-definition cameras.)



Margins: Use "**–**" and "**+**" buttons to adjust the top, bottom, left, and right side margin of the preview screen.



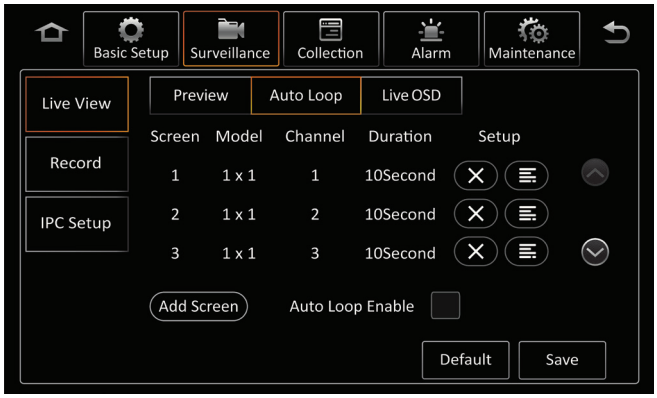
Auto Loop: Set auto channel change while previewing. User can set any channel with any mode to display. This allows the CP4 to display selected channels full screen for a defined duration of time.

Select from the following in the Mode dropdown: 1 x 1 (single channel), 2 x 2 (four channels) or 3 x 3 (nine channels).

Note: The V1284HC records and displays a maximum of twelve (12) channels.

Select the camera channel number for each channel to be displayed.

Select the display duration in seconds.



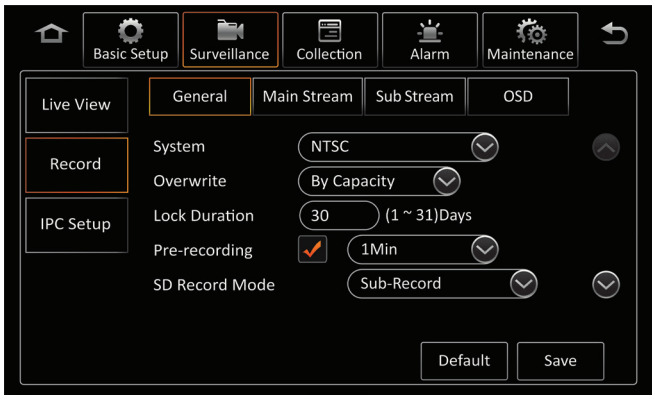
Live OSD: Select data to be displayed live on the CP4.

RECORD - GENERAL

Overwrite

1) **By Capacity:** The HDD will begin overwriting the oldest data once the cards have less than 2GB of free space. Each overwrite will delete a 256MB file.

2) **By Day:** The MDVR will save data for the number of days selected, if the data does not exceed the amount of storage space available on the HDD. Once that day is reached, the MDVR will delete a full day of video. (Not applicable for mirror recording and sub-stream recording.)



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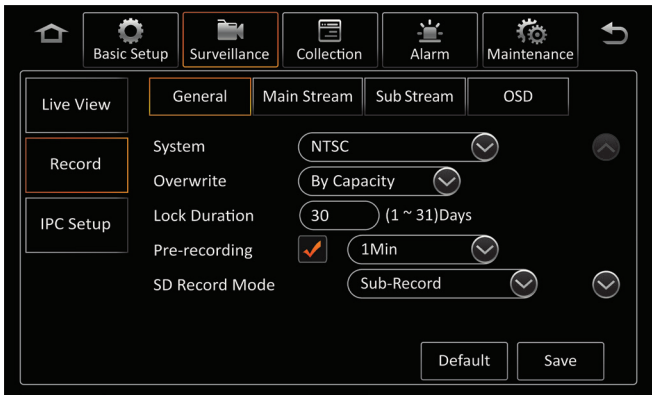
NOTE: Overwrite by Day and **By Capacity** only apply to mainstream video.

3) **Never:** Once the SD card reaches full capacity, the unit will stop recording.

WARNING: Selecting the 'Never' Overwrite option will cause the MDVR to stop recording once the SD card reaches full capacity. This could lead to missed recordings or triggered events.

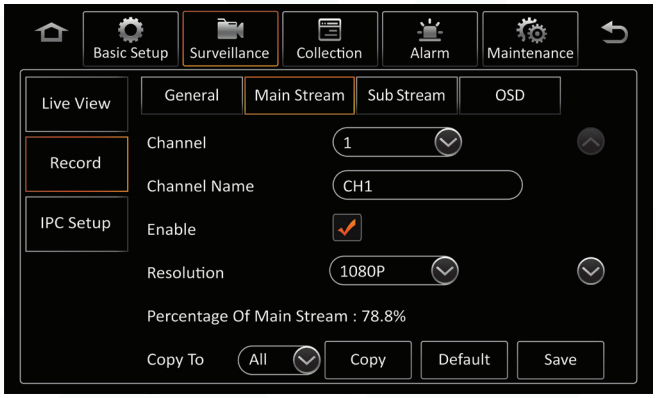


Pre-Recording

If the MDVR is in Power Up recording mode and an alarm occurs, the alarm video will be marked according to the selected Pre-recording time. For example, if the Pre-recording time is five minutes, the alarm video will be saved with a starting point that is five minutes prior to the time the alarm was triggered. The pre-recording option also allows the user to select a time frame for the event file to be locked and not overwritten. After this time frame expires, the event file will no longer be locked and can be overwritten.

If the MDVR is in Alarm recording mode with Pre-recording on, and an alarm occurs, the alarm video will be marked according to the selected Pre-recording time. If Alarm Record is set to lock, recordings triggered by an alarm will not be overwritten.

Main Stream



Channel: Select the channel number to be configured.

Channel Name: Enter the desired name for each channel.

Enable: Enable the mainstream record function.

Resolution: The analog channel supports D1/HD1/CIF/ WD1/WHD1/WCIF while the digital channel supports 720P up to 1080P.

Frame Rate: Select the frame rate of the recording.

Resolution: Select the picture quality of the recording.

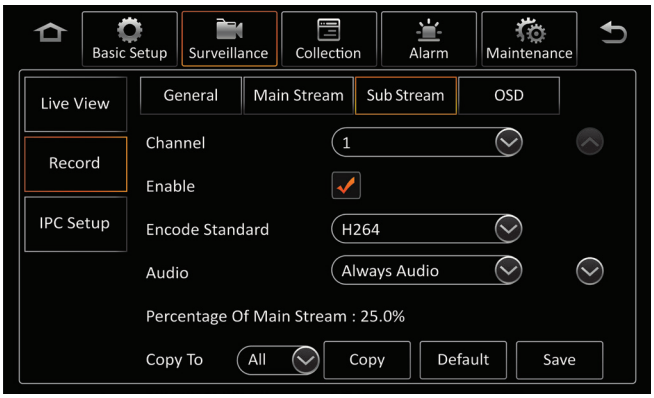
Record Mode: Select **Power Up**, **Time** or **Event**. Each channel can be set separately. Setup for sub-stream is the same. Mirror recording is not available.

Audio: Enable the audio.

Note: Audio cannot be recorded separately.

I Frame: Select to allow the frame rate to be invalid. Files recorded without alarms are set at I frame only.

Encode Mode: Select **VBR** or **CBR** mode.



Sub Stream

Channel: Select the channel number to be configured.

Enable: Enable the substream record function.

Record Mode:

- Sub-record (sub-stream recording) will record the same data the MDVR is recording to the SD card. The channel, frame rate and quality can be adjusted by the user to maximize time on the SD card. (Mirror recording is not available.)
- Alarm backup recording will only back up alarm events to the SD card.

Audio: Enable the audio.

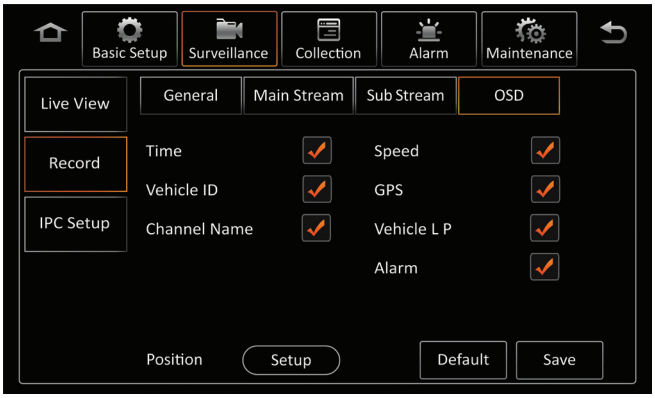
Note: Audio cannot be recorded separately.

OSD (Onscreen Display)

Click box to select the following data to be included in onscreen display during recording.

- Time
- Vehicle ID
- Channel name
- Speed
- GPS
- Vehicle L P
- Alarm

The image shows the placements of selected OSD data that will be displayed in record playback view.



SURVEILLANCE – IPC SETUP

Channel: Indicates channel number, includes IP and non-IP channels. A non-IP channel will not be shown if it connects to a network camera.

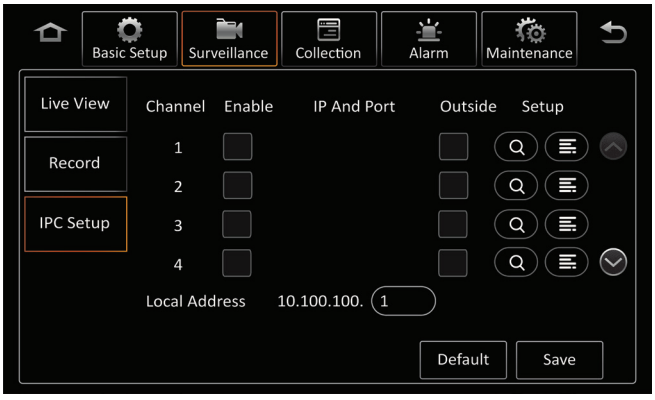
Enable: Click to enable the channel to operate an IP camera.

IP and Port: Displays channel details after searching.

Outside: N/A. This feature is not applicable, and these settings should *not* be adjusted.

Setup: Search all IP cameras in LAN network and auto assign IP address to IP camera.

Local Address: Search network cameras in local area network at Intranet. Default is 10.100.100.1.



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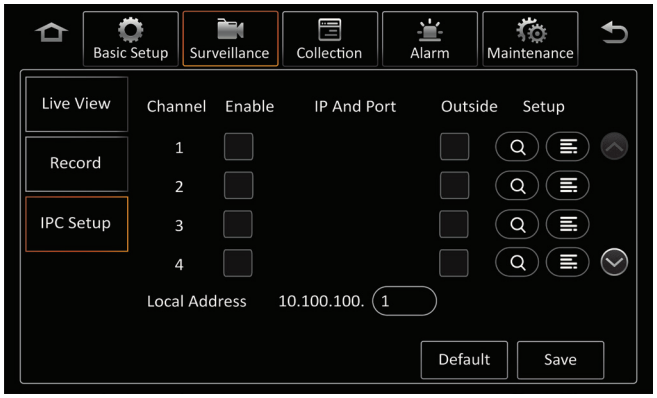
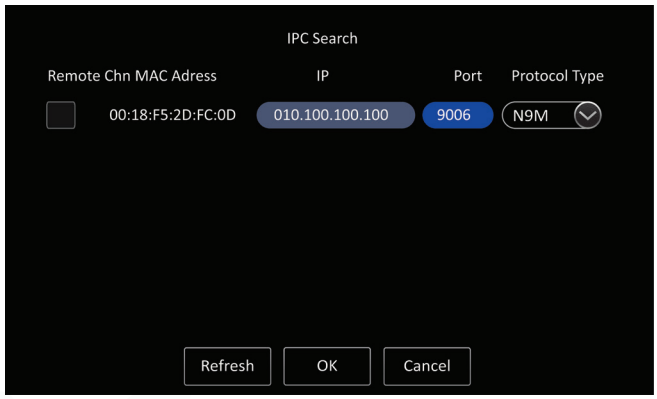
IP Camera Setup

IPC Port: With the IP camera cable plugged into the MDVR's IP camera port, the user then uses SETUP to add the IP camera. When using SETUP, the MDVR will automatically search for the IP camera and assign it an IP address. Then the user assigns the IP camera to a channel on the MDVR that is not being used by an analog camera and selects Save. After a camera has been assigned to a channel, that channel is no longer available to be used by an analog camera. Once these settings have been saved, the IP cameras will automatically reconnect every time the MDVR restarts.



IPC (IP Camera) Search

- All IP addresses can be edited in this interface.



Network Setup

- To change the channel's IPC link, enter the desired IP address in the IP address field.

Collection

Select settings for collecting data with sensors and snapshots.

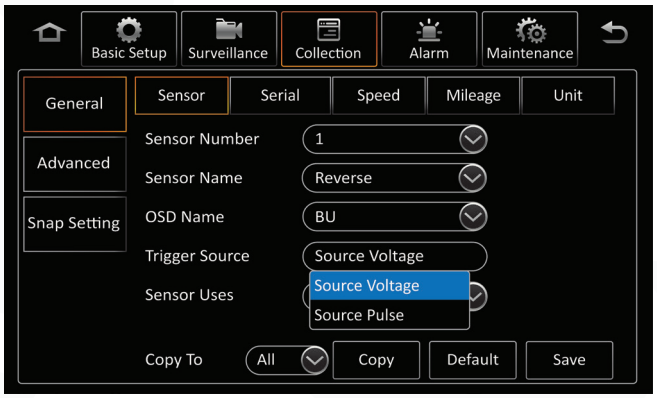
GENERAL

Sensor

Sensor Number: Select sensor number to edit.

Sensor Name: Sensor names are pre-defined. (See below.) Rename if needed.

- Reverse
- Left Turn
- Right Turn
- Stop Arm
- Amber Lights
- Brake
- D1
- D2



OSD Name: Enter the sensor name to be embedded and displayed onscreen in video image.

Trigger Source: Select Source Voltage or Source Pulse.

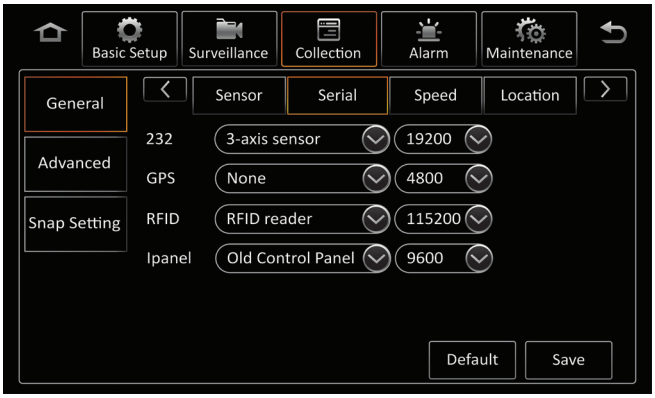
Sensor Uses: Select sensor uses (Urgency Alarm, OneTouch Calling, Neutral Taxiing, Air condition, etc.)

Serial

RS232-1 and RS232-2: Select three axis sensor, expansion, 485 bus or GPS data.

RS485-1 and RS485-2: Select control panel, 485 bus or GPS data.

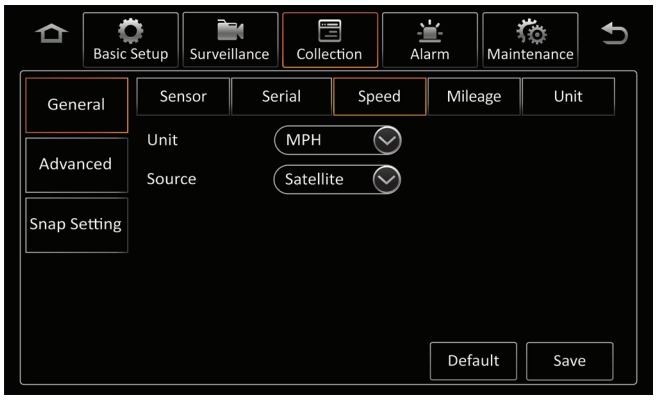
Select Baud Rate for each: 2400-115200 (9 classes available for selection).



Speed

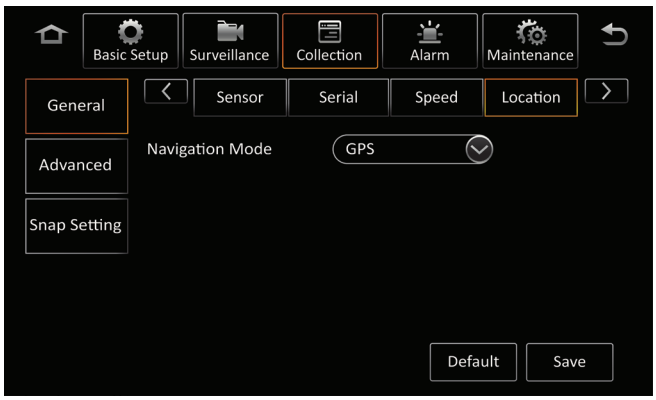
Unit: Select KM/H or MPH.

Source: Select Satellite, Pulse or both.



Location

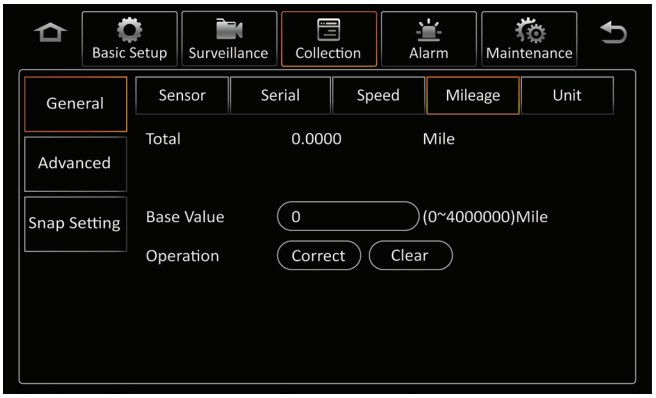
Navigation Mode: GPS is the only available function.



Mileage

The default function is to set a defined total mileage.

Base value is used to set the vehicle's current mileage.



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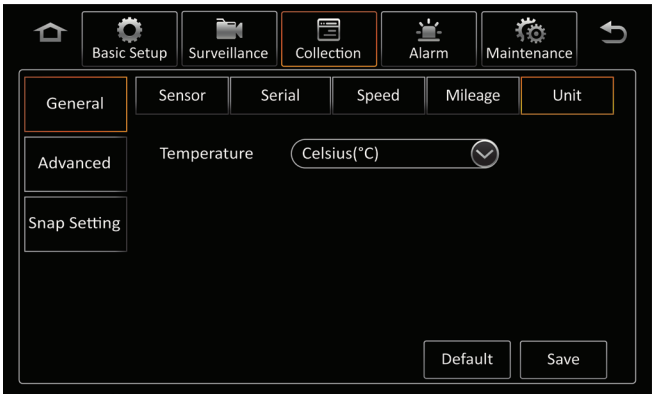
Unit

Temperature: Select Celsius or Farenheit.



ADVANCED

Network

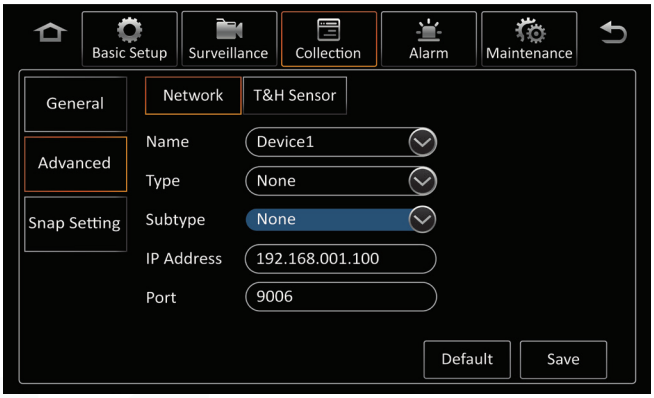
Name: Select device name.

Type: Select type.

Subtype: Select subtype.

IP Address: Find IP address.

Port: Find port.

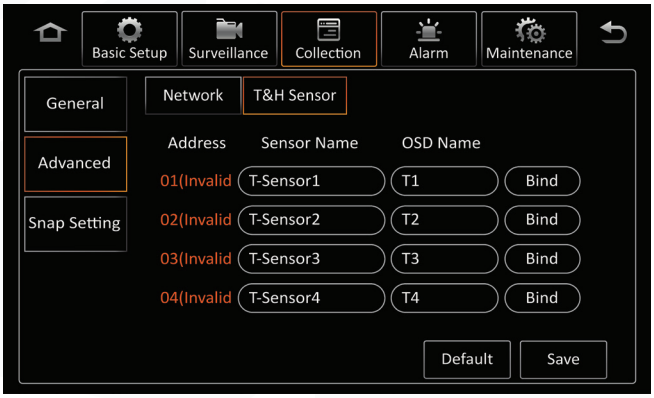


T&H Sensor

Address: Not applicable

Sensor Name: Choose which sensor.

OSD Name: Select corresponding OSD name.



SNAP SETTING

Time Snap

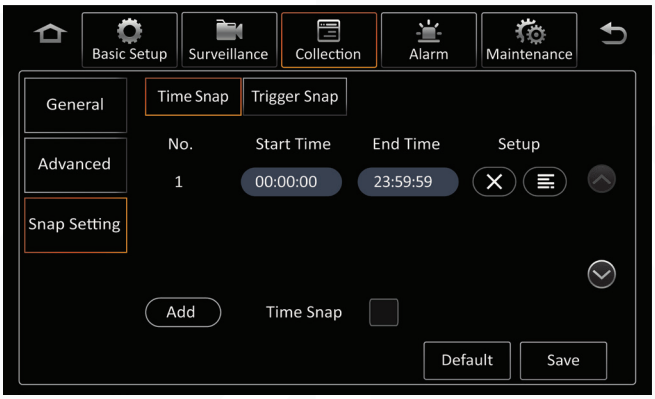
Start Time: Enter time to begin snapping.

End Time: Enter time to end snapping.

Setup: Click to delete and set.

Time Snap: Click to enable to snap at the set time.

Add: Click to enter additional snap period(s).



Trigger Snap

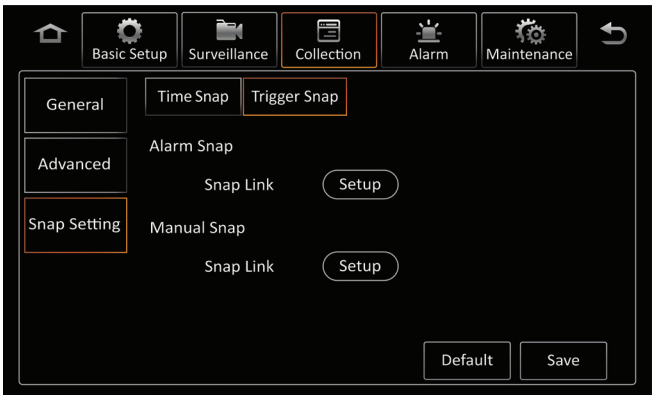
Alarm Snap: Click Setup to configure.

Manual Snap: Click Setup to configure.

Upload Type: Select FTP or Server.

1) Select FTP to login directly and check files as with a Windows® system.

2) Select Server to connect to the playback station and view video.



Alarm

ALARM - BASE

IO Alarm Interface

Name: Sensor names are auto-populated from the Sensor fields in the Collection tab.

Enable: Click to enable the sensor alarm.

Alarm Type: Select Event or Alarm.

Trigger: Click Setup to set your specifications for a trigger.

Linkage: Configure settings to link to other operation(s) when alarm is triggered.

Speed Alarm

Name: The default name is Speed.

Enable: Click to enable or leave empty to disable.

Alarm type: Select Event or Alarm.

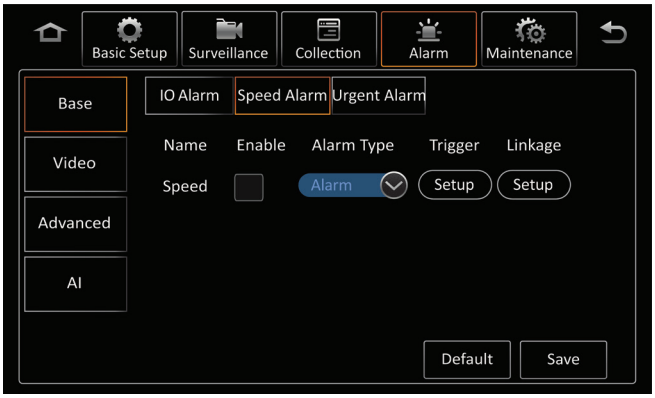
Trigger: Click Setup to set your specifications for a trigger.

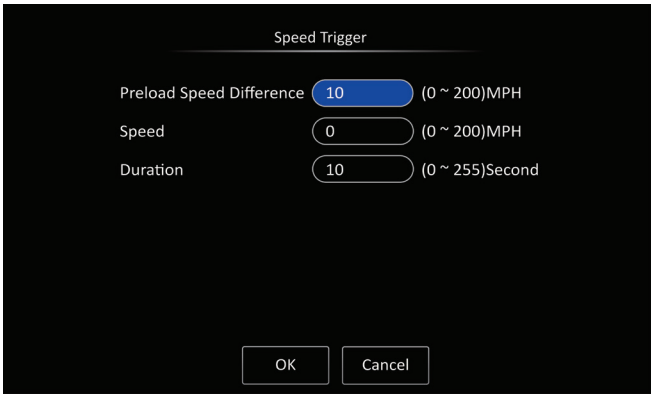
Linkage: Configure settings to link to other operation(s) when alarm is triggered.

Preload Speed Difference: Enter the difference in speed to be reached when video begins recording pre-alarm data. For example, if selected overspeed is 60 MPH, and the Overspeed early setting is 10 MPH, the system will begin recording when the vehicle reaches 50 MPH (10 MPH less than the alarm overspeed setting).

Speed: Set alarm speed.

Duration Time: Set alarm duration.





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Urgent Alarm

Name: The default name is Panic.

Enable: Click to enable panic button.

Alarm Type: Select Event or Alarm.

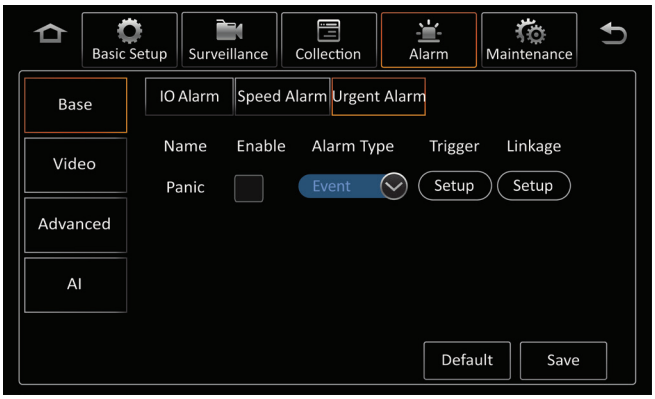
Trigger: Click Setup to set your specifications for a trigger.

Linkage: Configure settings to link to other operation(s) when alarm is triggered.

Output Delay Time: Set the alarm output duration after alarm is removed.

Alarm Upload: Click to upload to platform.

PB Alarm Duration: Defines the duration of the panic button alarm.



VIDEO

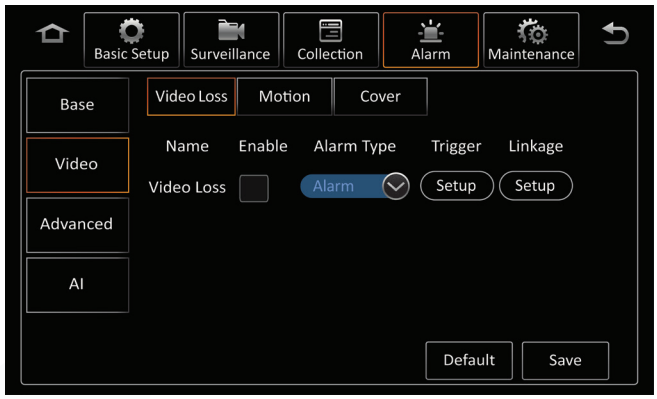
Name: The default name is Video Loss.

Enable: Click to enable.

Alarm Type: Select Event or Alarm.

Trigger: Click Setup to configure.

Linkage: Configure settings to link to other operation(s) when alarm is triggered.



Motion

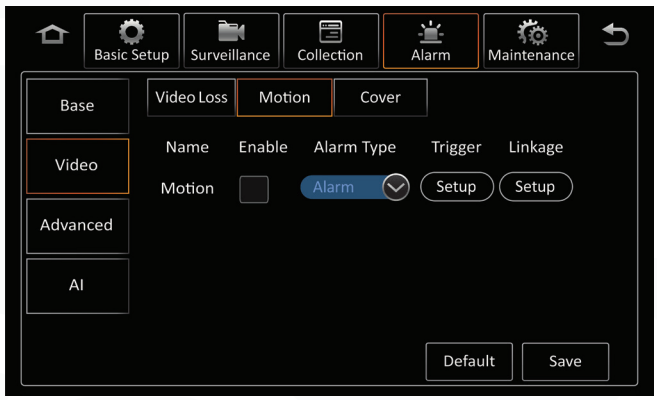
Name: The default name is Motion.

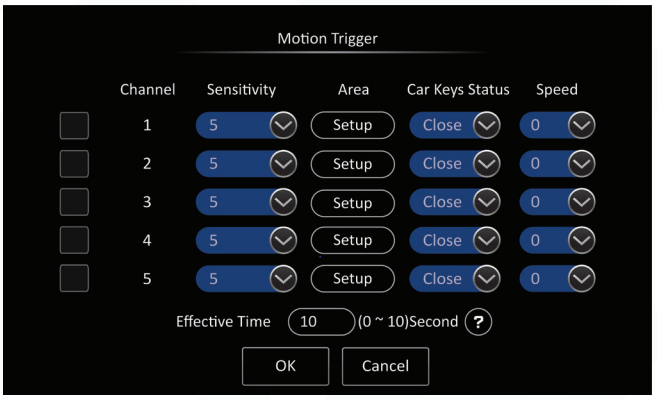
Enable: Click to enable.

Alarm Type: Select Event or Alarm.

Trigger: Click Setup to configure.

Linkage: Configure settings to link to other operation(s) when alarm is triggered.





Cover

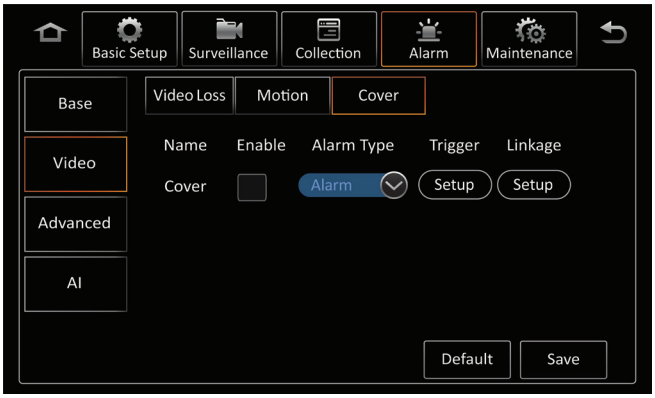
Name: The default name is Cover.

Enable: Click to enable.

Alarm Type: Select Event or Alarm.

Trigger: Click Setup to configure.

Linkage: Configure settings to link to other operation(s) when alarm is triggered.



ADVANCED

ACC Alarm (Accelerometer)

Name: Choose ACCG1 or ACCG4.

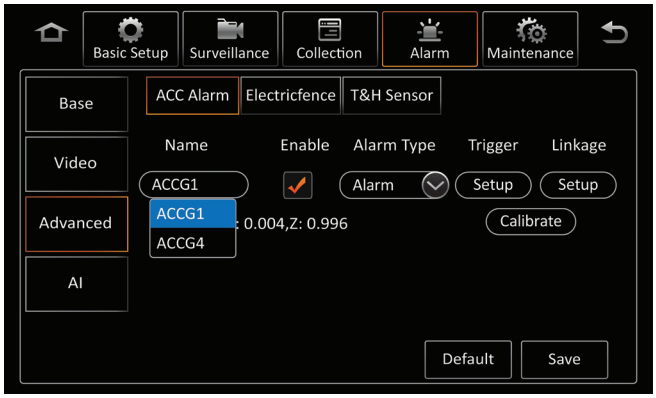
Enable: Click to enable the ACC alarm.

Alarm Type: Select Event or Alarm.

Trigger: Click Setup to configure.

Linkage: Configure settings to link to other operation(s) when alarm is triggered.

Calibrate: Automatically calibrate G sensor when setting up ACC alarm.

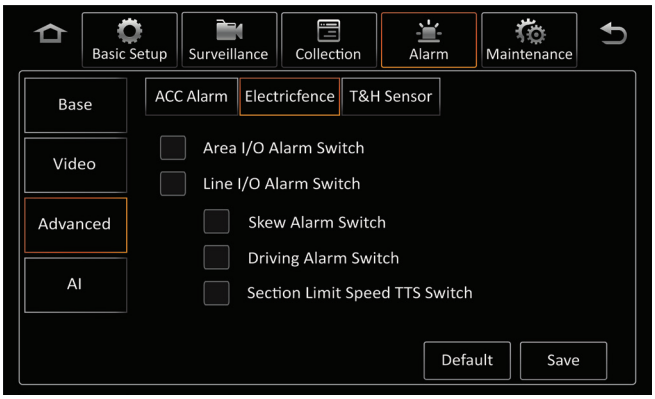


Electricfence (GEO Fence)

NOTE: This function requires PRO8CMS.

> *For more information about PRO8CMS, please contact your AngelTrax Sales Executive by phone at **1.800.673.1788** or through the **Contact Us** form on the AngelTrax website: **www.angeltrax.com/contact**.*

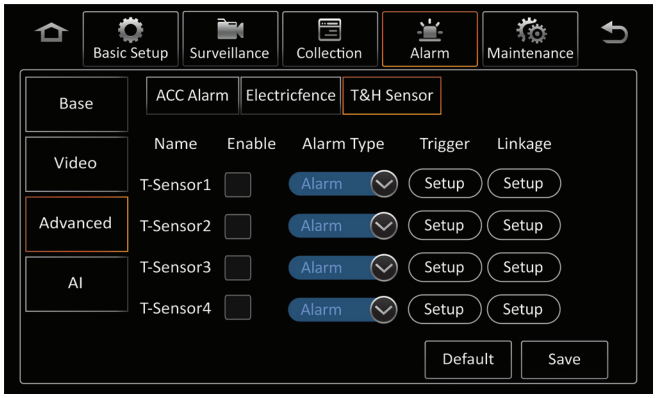
This feature allows the user to create a GEO fence on a map. If the vehicle enters or exits the alotted area, an alarm will sound.



T&H Sensor (Temperature/Humidity Sensor)

This feature was designed for a vehicle that must maintain a certain temperature requirement (ex. freezer truck). The sensors will monitor the temperature in the vehicle and will trigger an alarm if the temperature goes above or falls below the set temperature.

NOTE: Only one alarm type will be recognized as valid during an activated alarm. If more than one alarm type is triggered simultaneously, only one alarm will be recorded.



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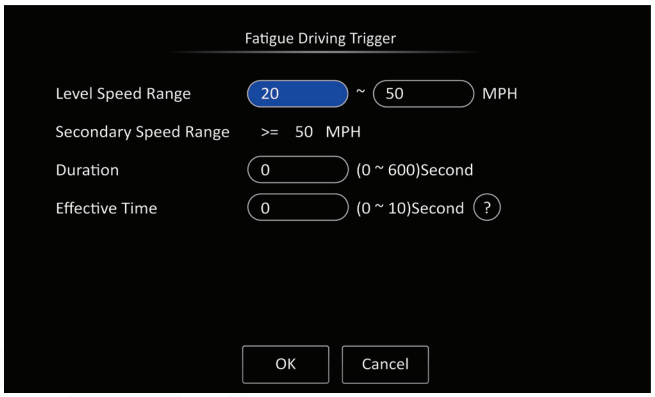
AI

(AI features are optional and subject to availability.)

Enable AI features to detect the following:

- Fatigue Driving
- No Driver
- Phone Call
- Smoking
- L-BSD
- R-BSD
- Virtual Bumper
- Infrared Block Alarm
- HMW
- LDW
- FCW
- PCW
- Intersection Speed
- Pedestrian Detection
- Pedestrian Priority
- Seatbelt
- Solid Lane Violation
- Driver Distraction
- Yawn
- Aisle Occupation
- Play Phone
- One Hand Steering
- Hands Off The Wheel



Maintenance

After login, click Setup and click Maintenance.

CONFIGURATION

In the configuration page, user can export and import the configuration file.

Insert flash drive to export the configuration file (file name ConfigFile) to the root folder.

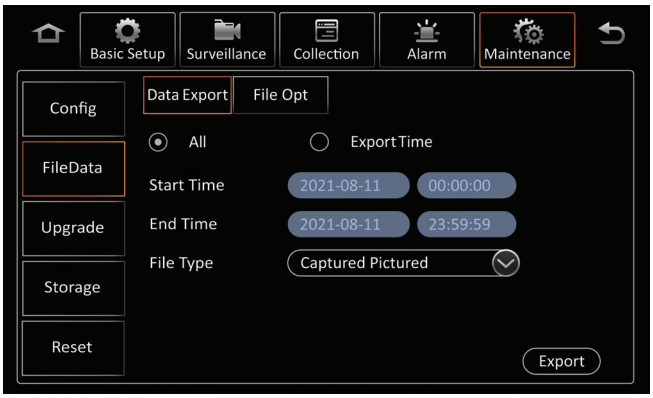
Insert flash drive to import configuration file into the MDVR. A notification will be displayed when the file is imported successfully.

Note: Registration and speed adaption information will not be imported.

FILE DATA

Data Export: User can export any file.

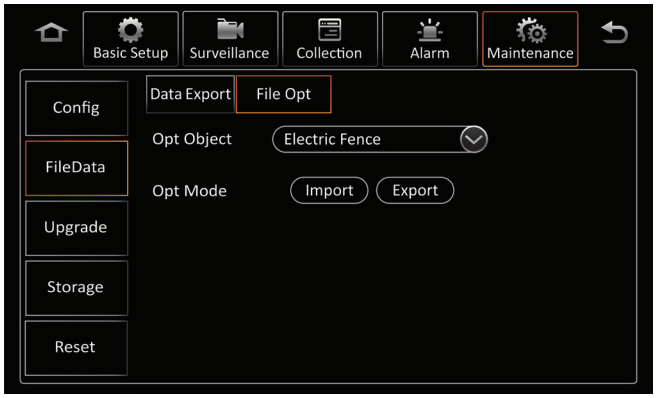
File Type: Select from the dropdown (Captured Pictured, Alarm log, Operation log, BlackBox Data, Debug Log and Log Information.)



File Opt: User can export any file.

Opt Object: Electric Fence is automatically set.

Opt Mode: Choose Import or Export.



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UPGRADE

To upgrade software, save the upgrade file onto a flash drive.

Current File Types: Device firmware, microcontrollers firmware, CP4 firmware and IP camera firmware.

Insert flash drive and enter the upgrade interface. Click software upgrade, and a notification will appear to indicate that the upgrade file is importing.

Reboot the MDVR and enter the upgrade interface after importing successfully.

Note:

1) Do not shut down the MDVR during upgrade.

2) Save the upgrade file into the Upgrade folder at the root directory of the USB drive.

Available Upgrade Firmware: LOGO, MCU, and MCU for CP4

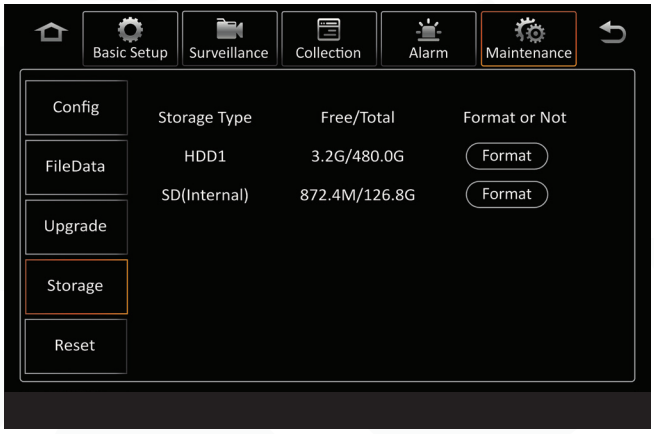
3) Firmware and MCU will package in one file. MCU will upgrade first, followed by the firmware.

4) To avoid uploading unnecessary files, save only the current upgrade files to the folder.

STORAGE

Storage Type: HDD, SD card (Internal), SD card (External), USB drive

- **Free/Total:** If capacity info is displayed correctly, the storage medium is functioning properly.
- **Format or Not**
  WARNING: If you format drive, all video will be erased and can not be recovered.



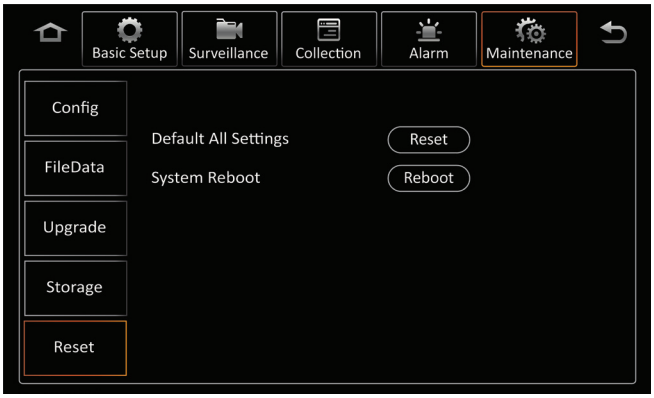
WARNING: *Do not format the HDD or SD card on your computer as this will cause the SD card to not work correctly in the MDVR. If a drive must be formatted, it has to be done in the MDVR. If you need assistance, please contact the AngelTrax* ***Technical Support Department*** *by phone at* ***1.800.673.1788*** *or through the* ***Contact Us*** *form on the AngelTrax website:* ***www.angeltrax.com/contact****.*

RESET

Default All Settings: Click Reset to reset the parameters to factory settings and restore original data.

System Reboot: Click Reboot to reboot the MDVR.

Note: Language, MAC address, registration info, CMS server info and speed parameters will not change during default settings.



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FAQ/Troubleshooting

1) The system will not start.

This problem may be caused by an incorrect power connection.

- Check the input power, whether the power wire is connected correctly to a 12V or 24V constant source, whether the ground wire is connected back to the battery, and whether the fuse on the power wire is in good condition.
- Check whether there is voltage (more than 8V) on power input ACC signal wire.
- Make sure the MDVR's front cover is buckled closed.

2) The MDVR restarts continually.

- Check the MDVR for sufficient voltage. If the voltage is lower than the MDVR's required start-up voltage, the device will continue to restart.
- A malfunction of the SD card may cause the failure to start. Remove the SD card and check for damage. Boot up the MDVR to verify whether the problem is caused by the storage device.

3) The device cannot record.

- Make sure the MDVR's front cover is buckled closed.
- Verify at least one SD card is installed and making contact in the MDVR.
- Check the storage disk to make sure it is installed, is in good contact and can be read normally in the computer.
- Check whether the SD card is formatted. If not, format the SD card in the MDVR.

> **WARNING:** *Vulcan Series HDDs and SD cards must not be formatted with your computer. To ensure compatibility with the unit and FlexPlay Pro 8 playback software, SD cards must be formatted through your Vulcan Series MDVR.*

- Check for video signal input into the MDVR from the camera and whether there is video/image onscreen.

4) Audio is not included in the video files.

- Check whether the camera features audio collection.
- In the MDVR menu, access Video Channel Settings and make sure Audio is set to ON.
- There must be video input into the channel for recording and it must record normally.

5) The GPS is functioning abnormally.

- Check whether the GPS antenna is installed correctly, into the GPS port on the back of the MDVR.
- Make sure the antenna has a clear view of the sky.
- Environmental influences or obstructions such as trees, tunnels, nearby tall buildings or elevated roads, thunderstorms or other obstructions can cause signal loss or the reception of wrong signals.

6) The device cannot be shut down when in ignition ON/OFF mode.

- Make sure the ACC signal wiring is correct and check the voltage for ACC signal line after the key is turned off.
- If the device has been set with schedule recording, it cannot shut down during the pre-set recording time.

7) How do you install the optional Wi-Fi Cellular GPS Tri-Mode Antenna?

- The antenna must be installed in an unobstructed location on the roof and be fixed with the included adhesive strip.

8) What are the defaults for the login user name and password for a new MDVR?

- The default user name and password are both "admin." The device password can be set as empty or "null."

9) How do I update the firmware?

- Change the previous file folder name "dvrupgrade" to "upgrade." Change the file name FWX15-0401-05-01-V01V01V01V491087 to RMMDVR_X5_III_T2014111005_convert.