MV Series - MDVR for vehicles

AHD video recorders

Installation manual

How to install the system

How to configure the functions

How to connect via web with CMSV6

Contents of the manual

MV video recorders are vehicle DVRs suitable for CVBS and AHD analog cameras up to 2MP (1080P). They are ideal in combination with our vehicle cameras.

This manual explains how to install cameras and video recorders, how to perform the basic settings and how to connect from computer via WEB for models that include this possibility.

Box contents

The MDVR you purchased is a vehicle video recorder.

The package includes:

1 – MDVR VCR 

2 – 3G ANTENNA, WiFi ANTENNA, GPS  (only in models with these functions)

3 – 4 ADAPTER CABLES FOR CAMERAS (Minidin – BNC/DC)

4 – 1 CVBS MONITOR ADAPTER CABLE (Minidin – BNC/DC)

5 – 1 RJ45 NETWORK ADAPTER CABLE (only for models with this function)

6 – POWER CABLES AND ACCESSORIES

7 – REMOTE CONTROL 

SD card installation

All DVRs in this range are designed to be able to record to SD card. To access the slot SD card you must first unlock the protective cover with the included lock key.

MDVRs accept SD cards, or microSD cards with adapter, up to 256GB capacity.

Hard disk installation

The DVRs with hard disk allow you to install a 2.5 "hard disk inside






Once the hard disk has been inserted, it is important to close the lock on the removable tray with the appropriate key.

REC led for memory check

All On the front of the MDVR there is a Led called REC which indicates the status of the recording e it is also used to understand the memory status (SDcard or HDD). The LED can assume 3 states:

OFF – The disc or SD card is missing or not recognized

ON – Disc or SD card is present but the MDVR is not recording. This can happen if the settings do not allow for registration at that moment or if the memory is full and overwriting is disabled.

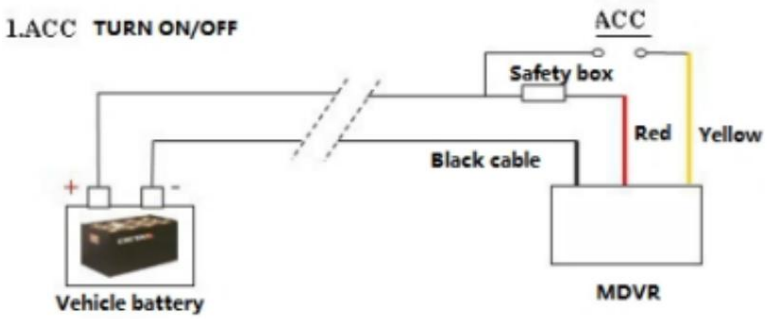
FLASHING - The disc or SD card is present and the MDVR is recording

Power connection

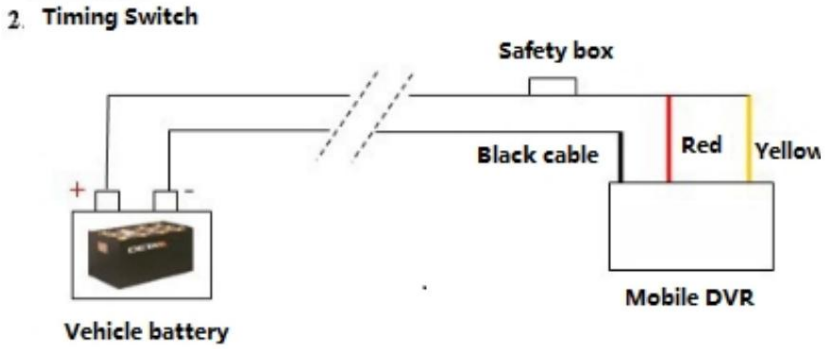
All DVRs in this range accept power **from 8 to 36VDC** to suit any half. The power cable to be connected to the vehicle's electrical panel is included to receive battery power.

For the DVR to start up, it is necessary to apply the positive simultaneously to the red (IN+) and yellow (ACC) and the negative to the black wire (GND).

As a rule, you connect the DVR so that it switches on and off automatically when switched on connecting the red cable to the battery positive and the yellow cable to the ACC output of the control unit half, according to the following scheme



If, on the other hand, you want the DVR to always be active or to turn on based on its time programming you can use the following scheme



The power cable is equipped with a protection fuse.

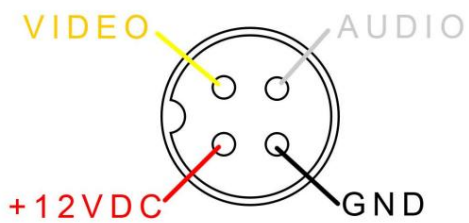
Power up MDVR

The MDVRs do not have a power button, but will automatically turn on based on
to the power applied to the power cables as described in the previous chapter. Self
the MDVR does not turn on check that the power supply is between 8 and 36V and that the power supply
is capable of delivering at least 50W. Also check that you have locked the hard door key
Disk and that the fuse located in the power cable is intact.
If nothing appears on the monitor check that you have connected it correctly to the VOUT output.

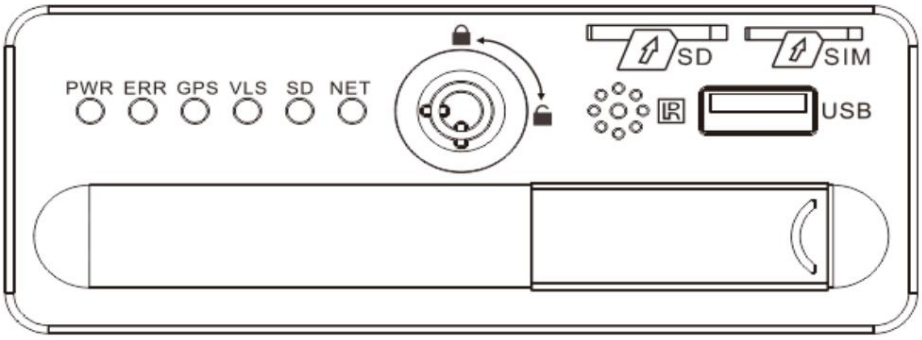
Adapter cables

The MDVRs use aviation type MiniDIN connectors because they are compact and have a locking ring fixing which makes them protected against vibrations. To connect cameras, monitors, etc. to MDVRs are supplied with a set of adapter connection cables with DC terminals (12VDC power supply), BNC (Video) and RCA (Audio). You will use these cables to connect the cameras and monitor. Adapter cables are also included for network connection (where provided) and inputs and relay outputs.

If you want to reduce the overall dimensions, it is to maximize the resistance to vibrations, instead of using cables adapters, you can buy 4-pin female mini-din connectors and solder the cables directly to the connector following the following pin-out



LEDs and connections - MV-41



PWR – Power LED

ERR – System error led

GPS – GPS status LED

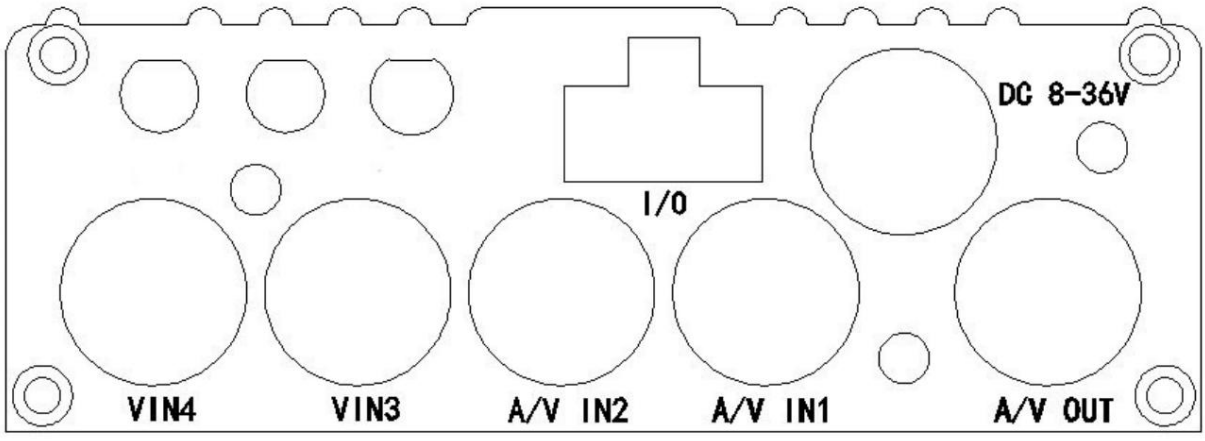
VLS – Lost video

SD – SD card status

NET - Not used

IR – Remote control receiver

USB – Backup port



DC 8-36V – Connect red to battery positive, black to battery negative, and yellow to ACC line of the electrical panel

A/V IN1 A/V IN2 – Inputs for video/audio cameras. Connect the cameras here with the cable included which provides a DC connector to power the camera at 12VDC, a video BNC and a RCA for any audio. The MDVRs support analog CVBS, AHD720P cameras. This model does not support AHD1080P.

V IN3 V IN4 – Inputs for video only video cameras. Connect the cameras here with the cable included which provides a DC connector to power the camera at 12VDC, a video BNC and a RCA you will leave unused.

A/V OUT – Audio video output for CVBS monitors. Connect your monitor here with one of the adapter cables which provides a DC connector to power the monitor at 12VDC, a video BNC and an RCA for any sound.

I/O - Here you can connect the supplied cable which allows you various auxiliary connections

BIANCO SENSOR 1,2,3 you can connect 3 alarm inputs. These are voltage inputs that yes they activate by sending a 5 or 12VDC voltage. In configuration you can establish if the alarm is determined by the presence of voltage (HIGH) or the absence of voltage (LOW).

GRAY SENSOR OUT You can connect an alarm output between the gray wire and GND

PURPLE BROWN – RS232 to connect special devices

LEDs and connections - MV-42

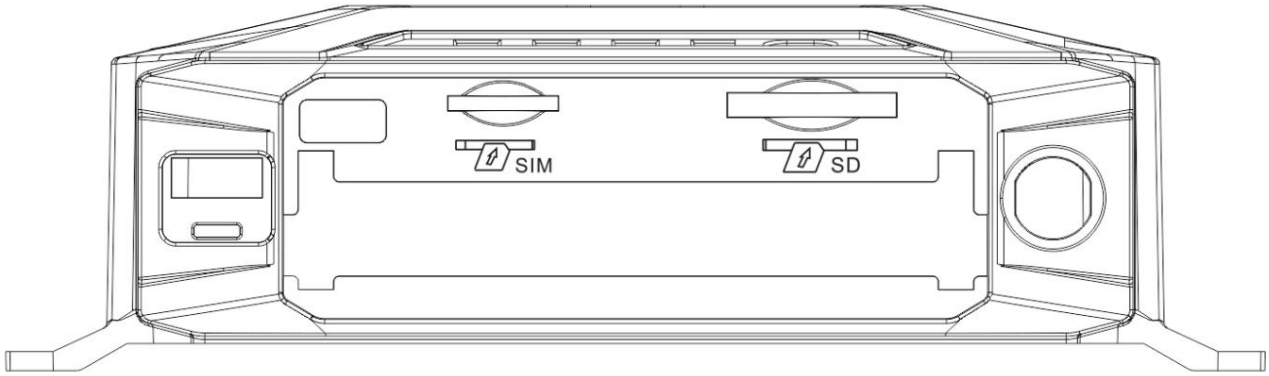
PWR – Power LED

GPS – GPS status LED

REC – Registration

NET – Network connection

IR – Remote control receiver

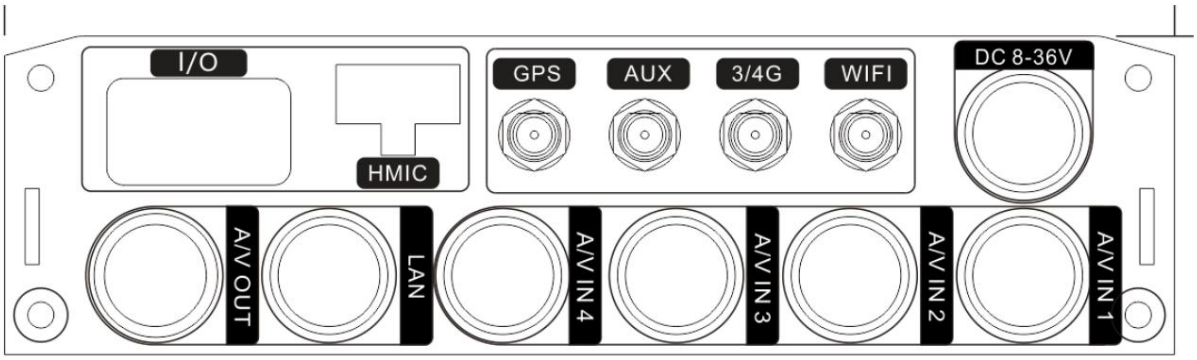


SIM – Insert the data SIM for 3G/4G connection. If you use a new sim it is necessary

Plug it into a phone and disable the pin prompt on startup before plugging it into the MDVR.

SD – Insert the SD card or miniSD card with adapter

USB – USB socket for backup



DC 8-36V – Connect red to battery positive, black to battery negative, and yellow to ACC line of the electrical panel

A/V IN1 2 3 4 – Inputs for video/audio cameras. Connect your cameras here with the included cable which provides a DC connector to power the camera at 12VDC, a video BNC and an RCA for any sound. The MDVRs support analog CVBS, AHD720P and AHD1080P cameras.

A/V OUT – Audio video output for CVBS monitors. Connect your monitor here with one of the adapter cables which provides a DC connector to power the monitor at 12VDC, a video BNC and an RCA for any sound.

LAN – Network port for connecting to a LAN network with the included RJ45 adapter cable

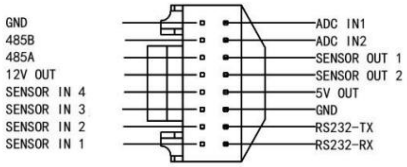
GPS – Connector for GPS antenna

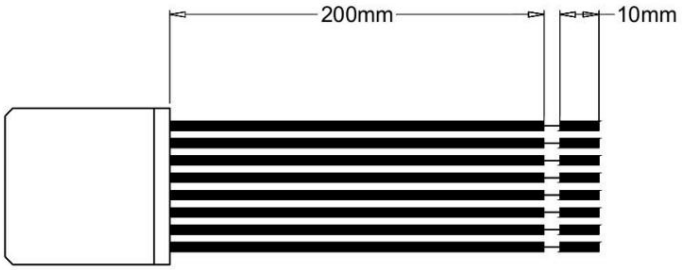
3/4G – Connector for antenna for data connection on 3/4G mobile network

WIFI – Connector for WiFi antenna

HMIC – Not used

I/O – Connect the supplied cable for connecting inputs and outputs





BIANCO SENSOR 1,2,3,4 you can connect 4 alarm inputs. These are voltage inputs which they are activated by sending a 5 or 12VDC voltage. In configuration you can establish if the alarm is determined by the presence of voltage (HIGH) or the absence of voltage (LOW).

GRAY SENSOR OUT 1,2 you can connect 2 alarm outputs between the gray cable and GND

PURPLE BROWN – RS232 to connect special devices

YELLOW ORANGE – RS485 for controlling motorized cameras

RED – 12VDC power supply output

RED – 5VDC power supply output

WHITE – ADC analog input 1

WHITE – analog input 2 ADC

The availability or otherwise of the various connections depends on the equipment of the model purchased.

Avoid Hot Swap connections

When installing this MDVR it is necessary to avoid Hot Swaps, ie the modification of the connections after accessing the MDVR. This is because the MDVR needs to find everything on the system present during the start-up phase.

For this reason when you install these MDVRs, please connect all cameras and monitor first.

Also insert the SD card, the Hard Disk and possibly the SIM. Only after connecting all the elements you can power up and turn on the MDVR with the certainty that it works well.

Conversely, if you turn on the MDVR and only then connect cameras or accessories, the MDVR may not properly handle the items you linked.

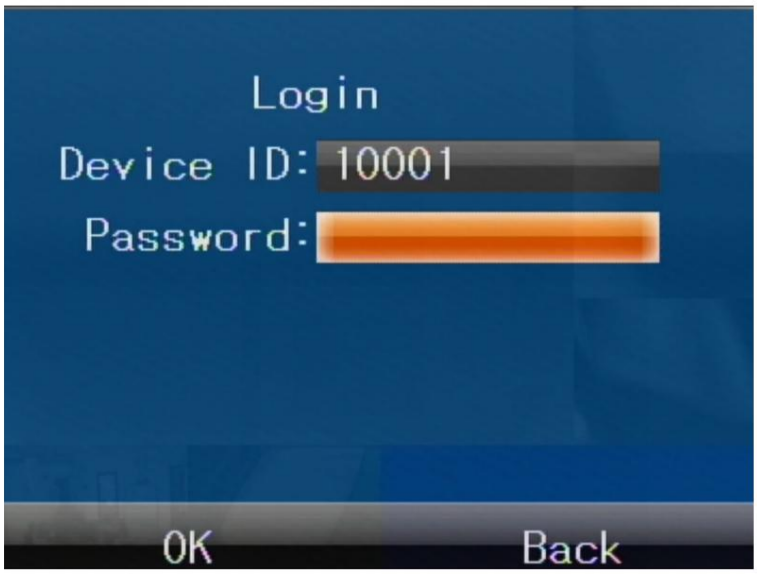
Remote controller

The MDVRs do not have a mouse like the desktop DVRs and are controlled with the remote control endowment. The remote control receptor is on the front of the MDVR, next to the signaling LEDs.

Key	Function	image
[0-9]	[0-9] : During settings you can use these keys to enter numbers. In playback you can use the 1-4 keys to bring the full screen corresponding channel and the 0 key to return to 4-channel multivision.	
[OF THE]	Key to delete while typing	
[RETURN]	Key to exit the menu	
[ENTER]	Confirms the entered data and also serves as a PLAY key.	
ÿ, , ▼ ◀, ▶	The arrows are used to move in the MDVR menu. The left and right arrows are also used to adjust the speed during playback. ▶ Fast forward, 2x/4x/8x/16x press [Play] to return to normal speed ◀ Fast reverse 2x/4x/8x/16x press [Play] to return to normal speed	
	Key for entering the dot of the IP addresses	
	This key performs 4 o'clock photo capture screen cameras	
	PTZ control	
	Enters TEST mode which is useful for debug information	
Other	Buttons without function	

Access to the menu

To access the configuration, press the MENU button on the remote control.



The factory passwords are:

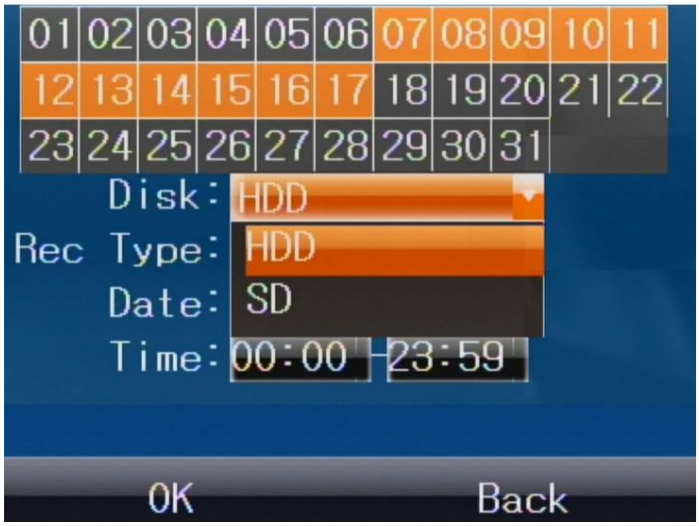
USER ACCESS: 888888 (use only, no settings)

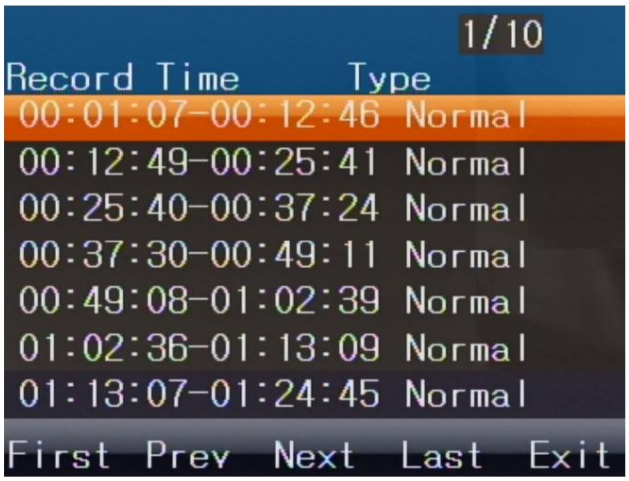
ADMINISTRATOR ACCESS: 999999 (full access)

The aesthetics of the menu may vary according to the models, keeping the functions unchanged.

Playbacks

The playback key allows you to review the recordings





You can search the disk (HDD) or SD card (SD) by indicating the date and time

You can also select the type of recording (ALARM or ALL)

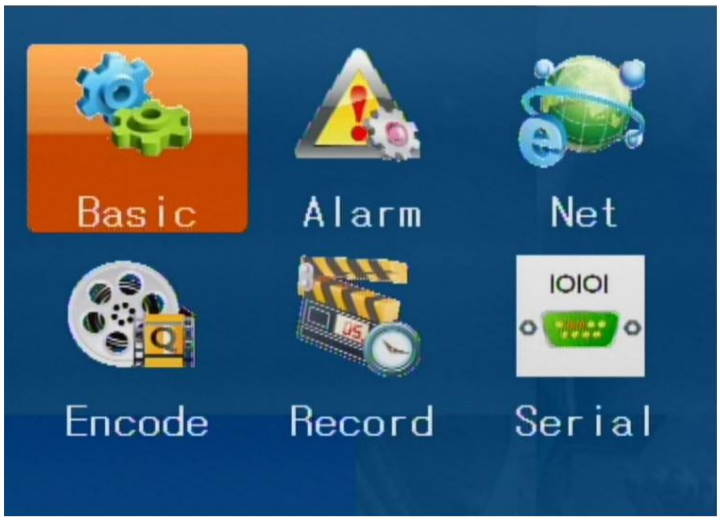
Press ENTER to play the video.

preview

The preview button allows you to review the photos taken by the MDVR

Settings

The settings key accesses the settings section which is divided into 6 sections



Settings/Basic

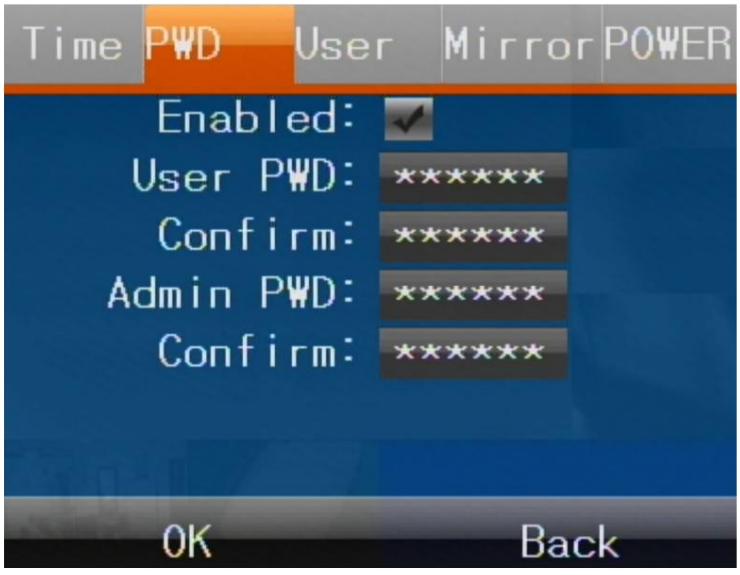
In the Settings/Basic section there are the general settings of the MDVR

BASIC/TIME

Here you set the time of the MDVR by setting it manually or by selecting the automatic synchronization with GPS (if included in the model)

BASIC/PWD

Here you set the login password



The MDVR manages 2 passwords: USER (USER, factory setting 888888) and Administrator (ADMIN factory 999999)

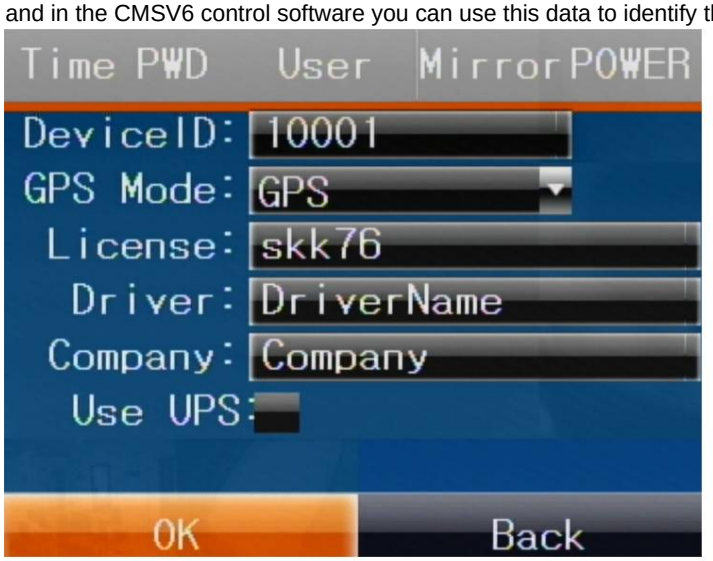
USER – Can view recordings, but not change settings

ADMIN – Has access to all functions

BASIC/USER

Here you set the data of the MDVR to identify it easily. In other parts of the programming

and in the CMSV6 control software you can use this data to identify the device.



ID – MDVR identification number. This parameter is important in models equipped with 4G because it identifies the MDVR

in accessing the CMSV6 supervision platform. Find this

number also shown on a label applied to the product. Never change this number

ID, unless specifically indicated by our technical office.

GPS – The GPS operating mode to keep on GPS

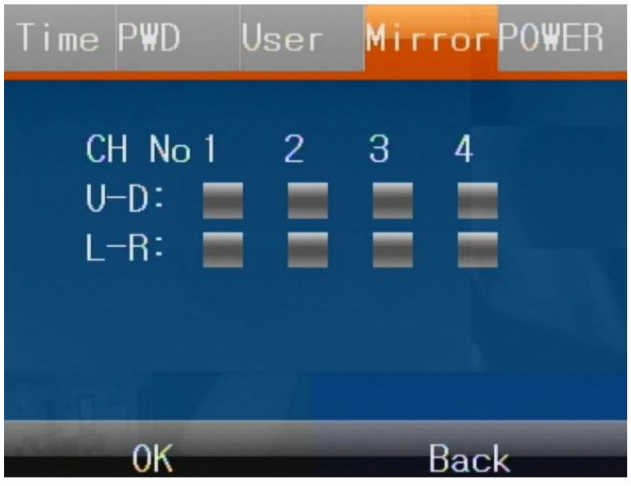
LICENSE - Enter the license plate of the vehicle

DRIVER – Enter the name of the driver

COMPANY – Enter the company name, if any

BASIC/MIRROR

Here you can reverse the image of the cameras connected to inputs 1,2,3,4

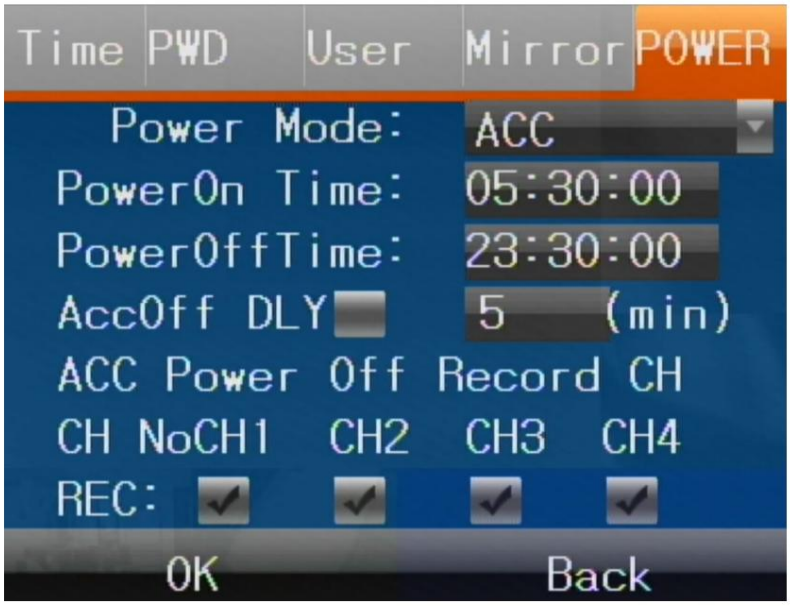


VD – Vertical Image Flip. To be used if the camera is mounted upside down

LR – Horizontal Image Flip. To be used if the camera shoots in the direction of reverse gear.

BASIC/POWER

Here you can set how to turn on the MDVR



POWER MODE – In ACC mode the MDVR turns on when power is applied to the ACC input. In TIMER mode the MDVR turns on and off automatically at the time indicated below in the PowerOn/Off fields

ACCOFF DLY – You can set a delay to turn off after it fails the ACC input for switching off the ignition.

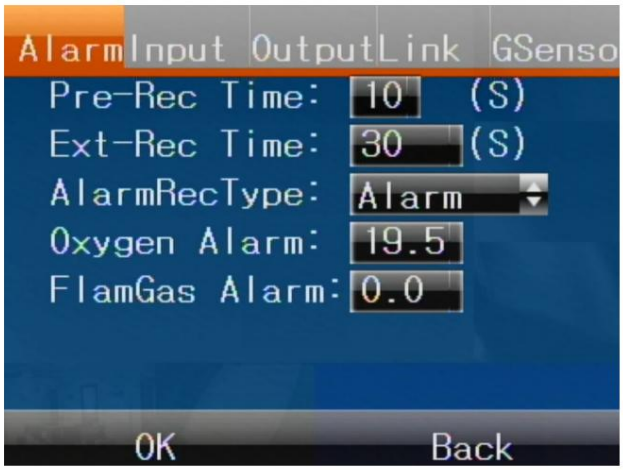
REC – You can set the channels to record in the absence of voltage on the ACC input. It's a useful function if you want to record when the vehicle is stationary

Settings/Alarm

In the Settings/Alarm section there are the settings on the operation of the inputs and outputs MDVR alarm

ALARM/ALARM

Here you can set the general settings of the alarm inputs



PRE-REC TIME – The pre-record time allows you to record a few seconds before you trigger the alarm input

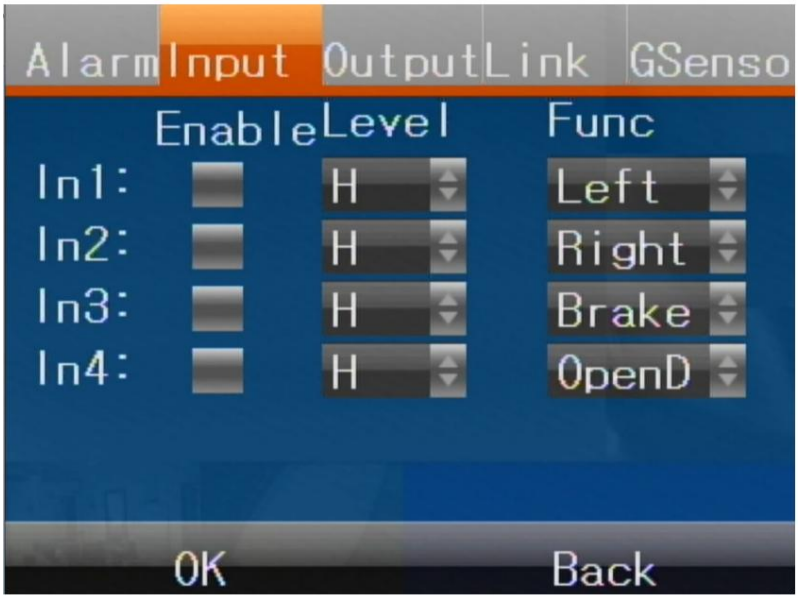
EXT-REC TIME – The recording time after triggering the alarm input

ALARM REC TYPE – You can choose whether the alarm input triggers a normal recording or a alarm. In the Playback section you can search differently for normal and in type movies alarm.

OTHER ITEMS - Not used

ALARM/INPUT

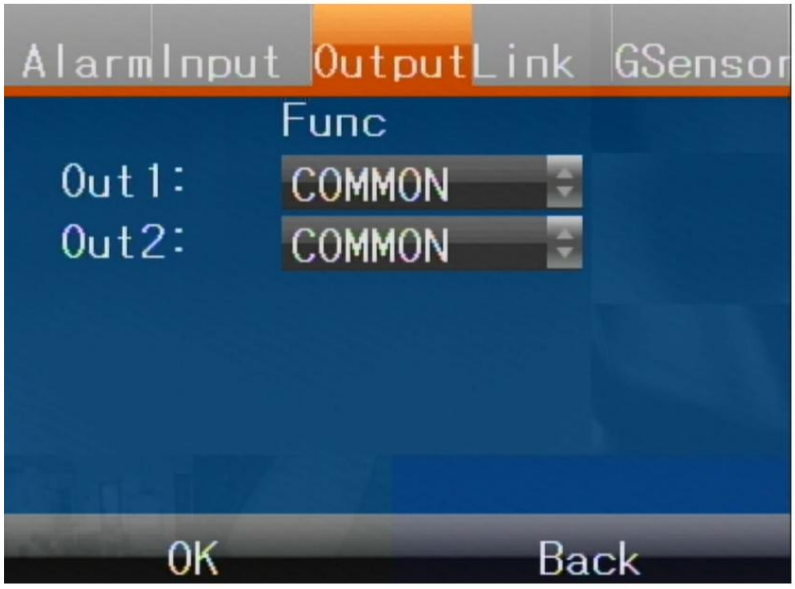
Here you can set the physical operation of the inputs. For each input you can set the High or Low operation (voltage applied or absent) and also associate a function between the various available. In the subsequent configuration pages you can set the actions to be associated to the various functions.



ALARM/OUTPUT

Here you can set the operation of the alarm outputs. You can use the default COMMON for which the alarm output will activate automatically if an alarm input or event is triggered.

Or you can combine specific functions that can be activated by CMSV6 supervision software.



ALARM/LINK

Here you can set the actions to be combined with the various alarm functions you have associated with the alarm inputs on the previous pages.

FUNC – Select the name of the function

SNAP – Take a photo if you trigger the input

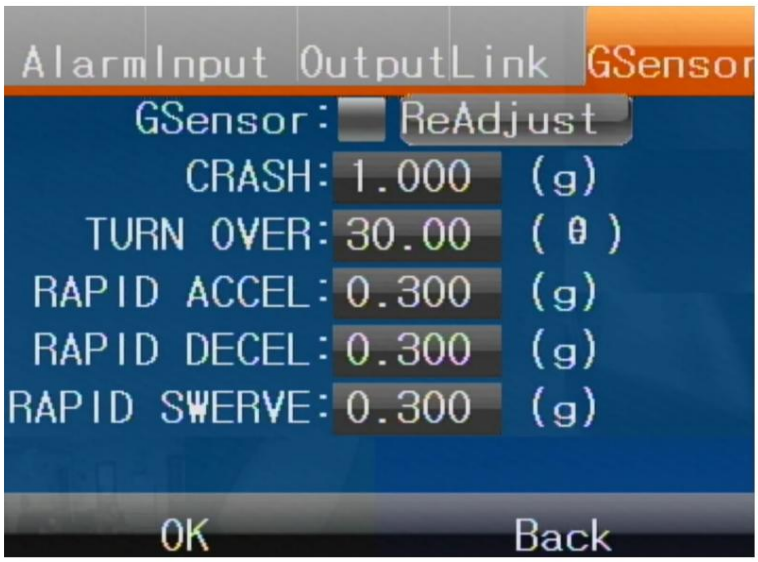
SEND – Send email if the input is activated

REC – Defines which channels to record if you operate the input

SHOW – Defines which channels to go full screen if you operate the input

ALARM/GSENSOR

Here you can set the parameters of the collision sensor which is integrated in all models



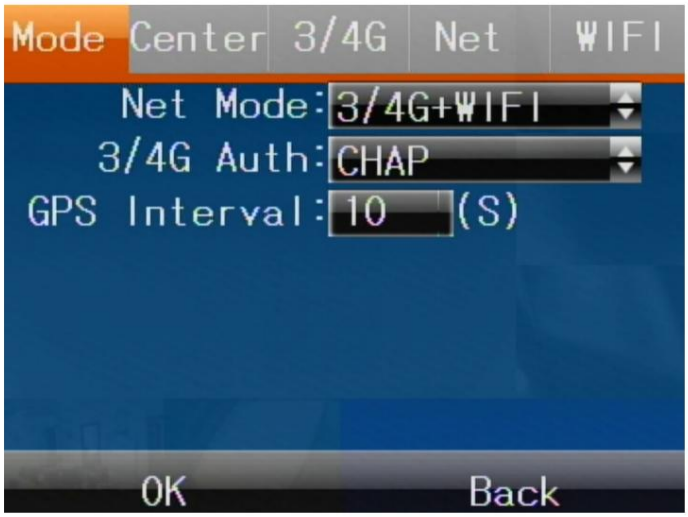
The actions related to the intervention of the G-Sensor are set in the previous LINK section

Settings/Net

In the Settings/Net section there are the network settings of the MDVR

NET/MODE

Here you can choose the type of network connection of the MDVR for Internet access



NET MODE – Here you choose the type of web connection to use with the MDVR. You can choose between

WIRED – Wired network, rarely used on board vehicles

3/4G – Mobile network that you can use if your model has a SIM slot

data for connection via mobile network

WIFI – Connection to wifi network that you can use if you want to connect to a wifi network or a

wifi hotspot that you can create for example with a 4G router on board the vehicle.

3/4G+WIFI – It is the factory setting that allows the MDVR to connect to a wifi network

or in 3/4G depending on signal availability.

NET/CENTER

If the MDVR you purchased includes a license to use the vehicular control software

CMSV6 you will find the server connection data here already entered. Do not modify them because otherwise the

software could not communicate with your device. If instead you have purchased a license

CMSV6 after the MDVR, you will have to enter here the connection data that we will provide you.

The internet address of the CMSV6 server is **SERVER IP: 139.9.251.220 – PORT: 6608**

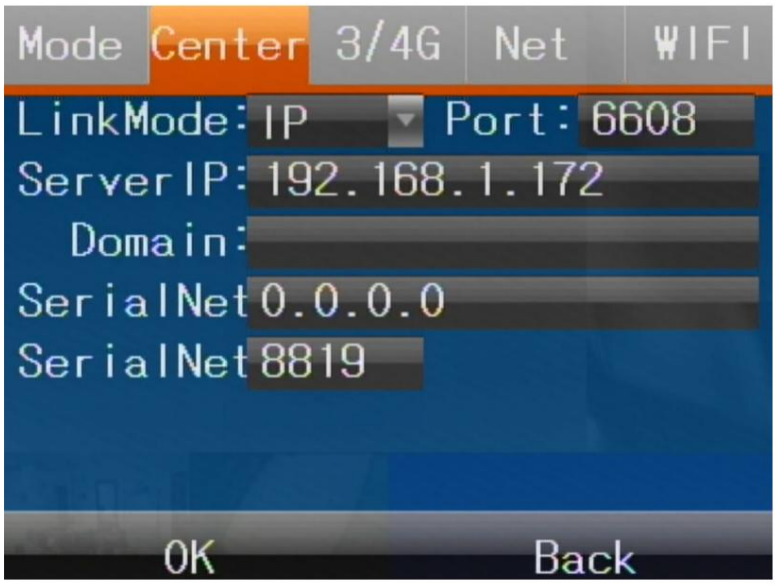
The important parameters in this window are

Link MODE: IP

Port: 6608

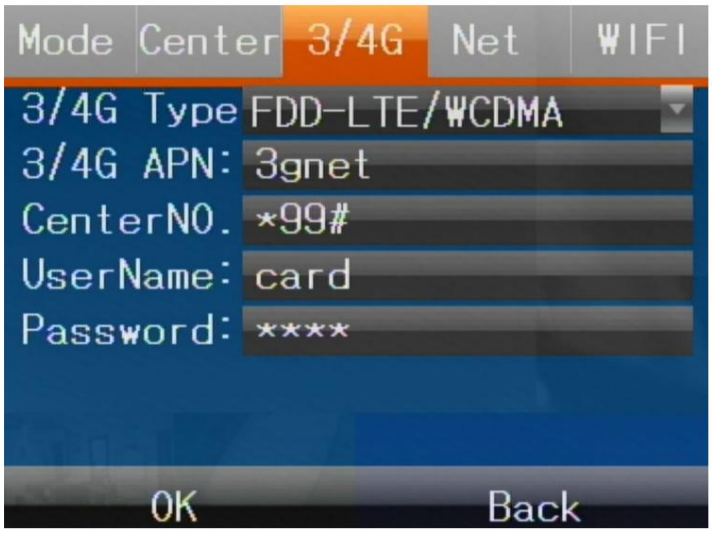
Server IP: 139.9.251.220

The other parameters can be ignored.



NET/3/4G

If the MDVR has a SIM for cellular connection here you can enter the connection data that you can get from the internet service provider where you bought the card

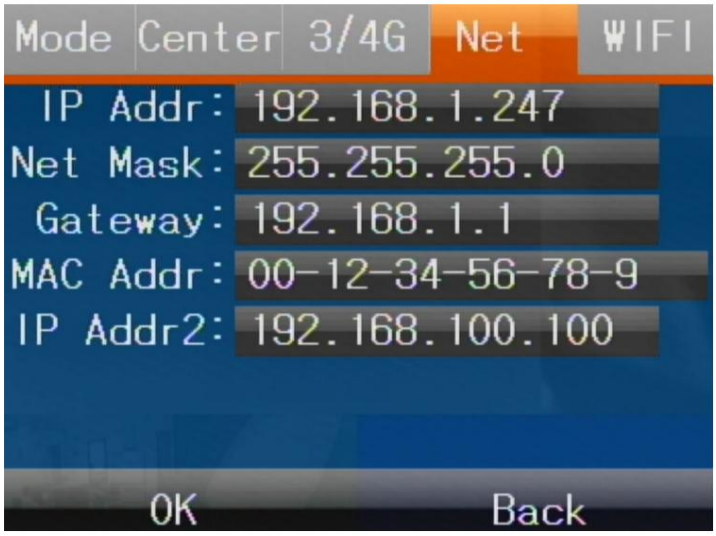


The essential parameter to configure for the 3/4G connection is the APN (second box from the top) which depends on your mobile operator and identifies the mobile network to connect to. You can know easily find your operator's APN by searching for it on the Internet or by calling customer assistance of the operator. The other parameters can be left as factory.

ATTENTION: If you use a new sim you need to insert it in a phone and disable it pin prompt on boot, before entering into the MDVR. Otherwise the MDVR will not be able to use it correctly.

NET/NET

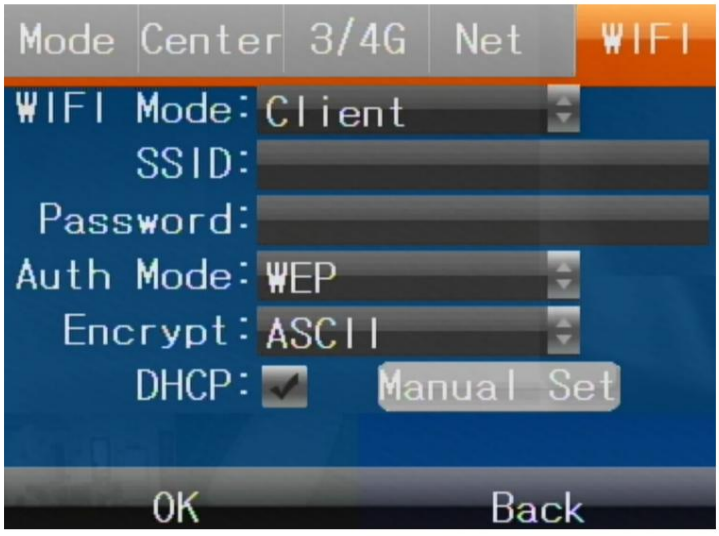
If you are using the MDVR connected to a wired network using the device's LAN port
you will have selected WIRED in network mode (see above). Here you can set the parameters of
wire network.



In the wired network configuration the essential parameters are: the IP addess, which must have the first
3 digits the same as other devices on the network and the last number not used by anyone else
device, the subnetmask, which must be the same as all other network devices and the Gateway,
which is the address of the router to access the Internet, normally the IP xxx.xxx.xxx.1 of the network.

NET/WI-FI

If your MDVR supports wifi you can connect the MDVR to a wifi network by entering the data here
link. If you want to use wifi, remember to choose WiFi or 3/4G+WiFI in the mode
network mode NET MODE (see above)



WIFI MODE - The video recorder supports two different ways to use wifi: CLIENT and AP. Use the client mode if you want the MDVR to connect to an external wifi network, for example if you have set up a 4G router in the middle and want the MDVR to use it to access the internet. Use the AP mode if you want the MDVR to generate its own local wifi network to which you can connect mobile phone to control the recorder locally using the CMSV6 app.

The following parameters are only accessible in client mode

SSID – It is the name of the wifi network you wish to connect the device to.

PASSWORD – It is the access password to the wifi network

AUTH MODE – This is the authentication mode used by the wifi network to connect to

ENCRYPT – It is the encryption mode used by the wifi network

DHCP – If you choose this mode, the MDVR will acquire an IP address in the wifi network automatically assigned by the Access Point

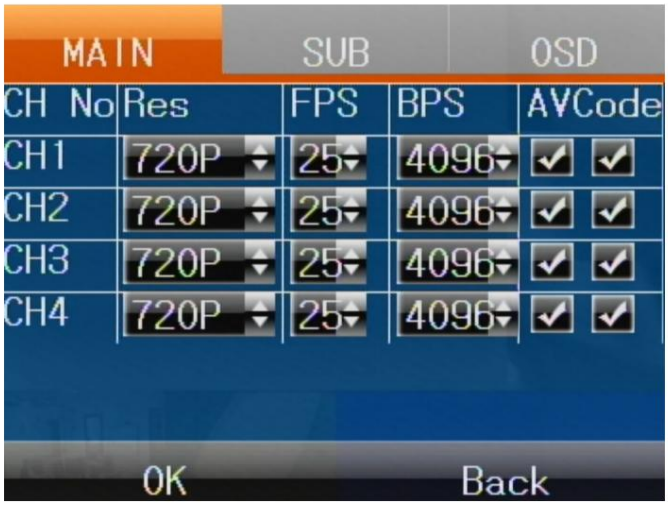
MANUAL – If you disable the DHCP option you can manually assign the network parameters from use in the wifi network.

Settings/Encode

In the Encode section you set the video stream management of the cameras connected to the MDVR inputs

ENCODE/MAIN

Here are the main stream video data, i.e. the main video stream that the MDVR should receive from the cameras on the various channels



RES – Set the resolution of the camera here: D1, 720P or 1080P. MDVRs support CVBS analog cameras, AHD720P and AHD1080P. It is important to set this parameter consistently with the camera being connected to each channel.

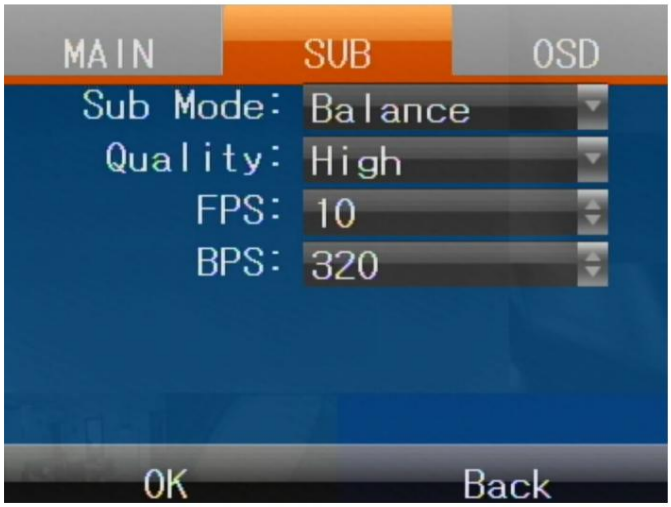
FPS – Sets the number of frames per second, max. 25

BPS – Sets the maximum data bandwidth: 4MB by default.

AV Code – Choose whether to record Audio or Video or both.

ENCODE/SUB

Here is the video data of the sub stream, i.e. the secondary video stream that the MDVR uses for the connection with devices via the Internet



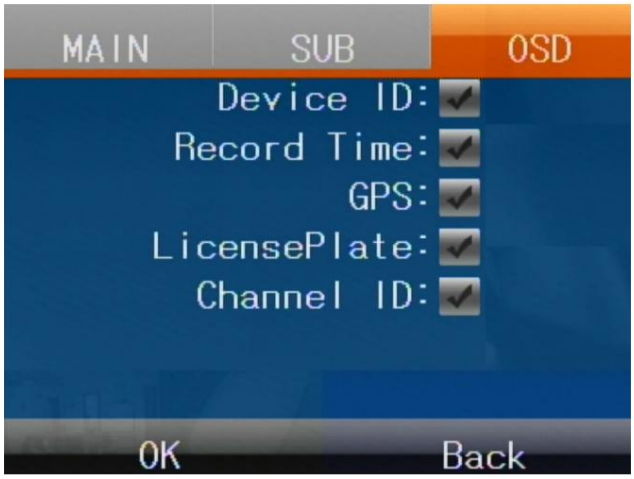
SUB MODE – You can choose from 4 predefined settings that automatically change the flow parameters

CLARITY – High quality of the substream if you have a high performance web connection BALANCE – Medium quality and support of all connections FLOW – Priority to image fluency, to be used with modest bandwidth availability.

DEFINE – Set Quality, Frame Rate and Baud/sec freely

ENCODE/OSD

Here you can choose the information superimposed in the video.



DEVICE ID – Superimposes the device ID as you entered it in the BASIC/USER section (green above)

RECORD TIME – Stamp recording time

GPS – Overprints GPS data if your MDVR has one

LICENSE PLATE – Superimposes the license plate of the vehicle as you entered it in the BASIC/USER section (green above)

CHANNEL ID – Superimposes the MDVR's channel number

Settings/Records

In the Record section you set the recording options of the MDVR

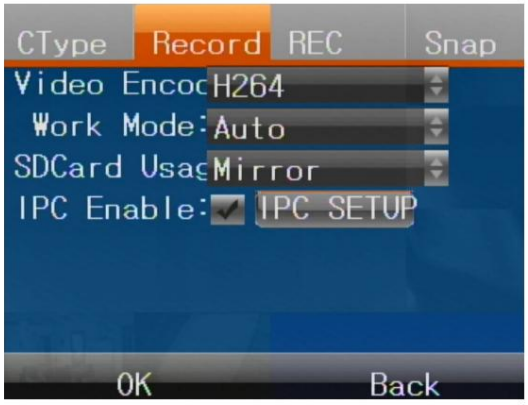
RECORD/CTYPE

Here you set the video format of the recording on the various channels

You can set the PAL (Europe) or NTSC (US) video format and the video resolution of the different channels

RECORD/RECORD

Here you can choose how to register and also connect any IP cameras.



VIDEO ENCODE – Choose whether to record in the consolidated H264 format or use the more efficient one H265 compression.

WORK MODE – You have 4 recording modes available

AUTO – the MDVR records automatically when the vehicle is turned on (ACC)

TIMER – the MDVR records based on the weekly time slots you set in the REC tab

ALARM – the MDVR records when an alarm input is activated

MANUAL – the MDVR records only when the REC command is given

SD CARD – You can choose how to use the SD card with these options

MIRROR - Mirror recording of the disc recording

CYCLIC - Continuous recording with overwriting when full space

LOST REC – Emergency recording in case of HDD failure

IPC – Here you can connect up to 4 IP cameras to the MDVR if you use the MDVR on a local network where there are onvif IP cameras

RECORD/SNAP

Here you can have the MDVR take a picture periodically and save it to archive

INTERVAL – Set the interval between two consecutive shots (from 1 to 9999 sec)

STORAGE – Set the maximum number of days to keep before deleting the images older (1 to 30 days)

Settings/Serial

In the Serial section you can configure the RS232 and RS485 serial lines that you can connect to the MDVR between the auxiliary inputs to control any motorized analog cameras. You can set the protocol speed and protocol type; Pelco-D or Pelco-P.
Each channel can be associated with a serial address of the cameras.

tools

The last button of the configuration menu is the tools button which contains many useful tools

tools

LOG – You can search the MDVR events memory

DISK – Contains information about memory units, Hard Disks and SD cards and allows you to format them

OPERATION – Sets the automatic exit time from the menu in the absence of user operations

CONFIGURE – Allows you to export and import the entire configuration of the device

that you can easily move the configuration from one MDVR to another.

EXPORT – Allows you to export recorded movies, saving them on a memory, such as a

key, connected to the USB port of the MDVR. The exported files can be played with the player

MDVRplayer which you can download from our site and which reproduces all the data as well as the video

relating to the location of the vehicle.

INFO – Contains product version information

4G connection (MV-42HD-4G)

The 4G MDVRs in this range allow you to insert a 4G data SIM for remote control.

These MDVRs support the CMSV6 vehicle supervision platform.

You can download from our site the

CMSV6 SOFTWARE for Windows

and **the CMSV6 app** available for Android and iOS

With this tool you can see the cameras in real time and consult the recordings by downloading

the files. You can also geolocate your vehicles on the map.

The connection is made through cellular Internet thanks to the CMSV6 P2P cloud server which works with any mobile provider.

All 4G MDVRs are identified by an ID that distinguishes them and which you find on a label adhesive placed on the side of the MDVR

Login CMSV6 software and apps

Both the PC software and the CMSV6 app work by connecting to a P2P cloud server through Internet. When you start the software or app, you will first be prompted to log in to server.

SERVER – Enter the IP address of the cloud server as shown in the figure above:
139.9.251.220

USER/PASSWORD – Ask our helpdesk for the login credentials associated with your MDVR
by sending an email with your MDVR ID to servizio.clienti@dseitalia.it

The login credentials that we will provide you for the CMSV6 software are the same ones that you will be able to use in the CMSV6 smartphone app, which you can download from Google Play or the Apple Store.

Check the connection

To use the software or app over the Internet, you must have it entered in the network settings of the MDVR the connection data to the server as shown in the network settings chapter.
SERVER IP: 139.9.251.220 – PORT: 6608
Also the MDVR needs to have a correct ID which is written on the product and you can check in the BASIC/USER configuration

These parameters are normally already configured in the factory so the MDVR is capable of connect to the cloud server by himself, as soon as he has internet access, through a mobile sim or by connecting to an external network.

To verify that your device is well connected to the server press the right arrow button in the remote control and check what appears on the screen. This is an example of a failed connection and it means that you need to check your data connection and the server parameters that you have configured in the MDVR

If, on the other hand, you see the IP of the server on the screen, this means that the connection has taken place and your MDVR is ready to be controlled via the web using the CMSV6 app or software.

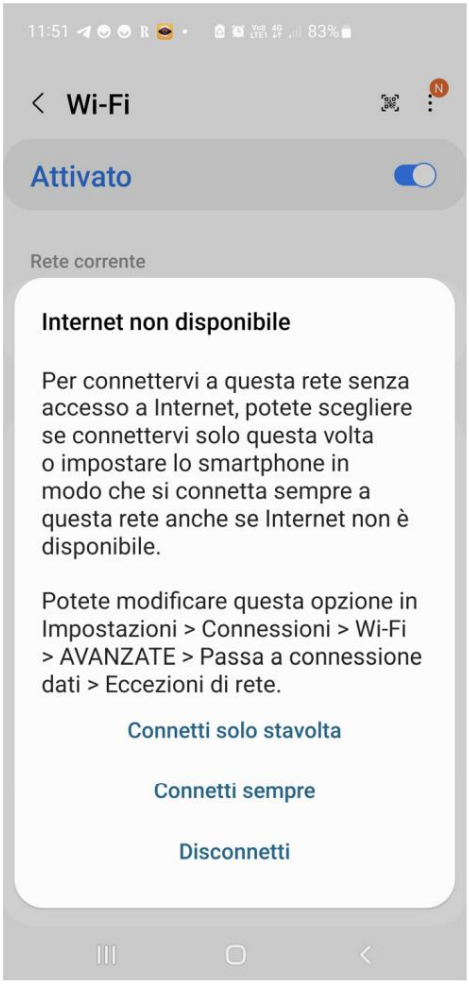
Local WiFi connection

MDVRs that have built-in wifi and that are set to wifi AP mode generate
own local WiFi network to which you can connect with your mobile phone and the CSMV6 app. Proceed as follows.

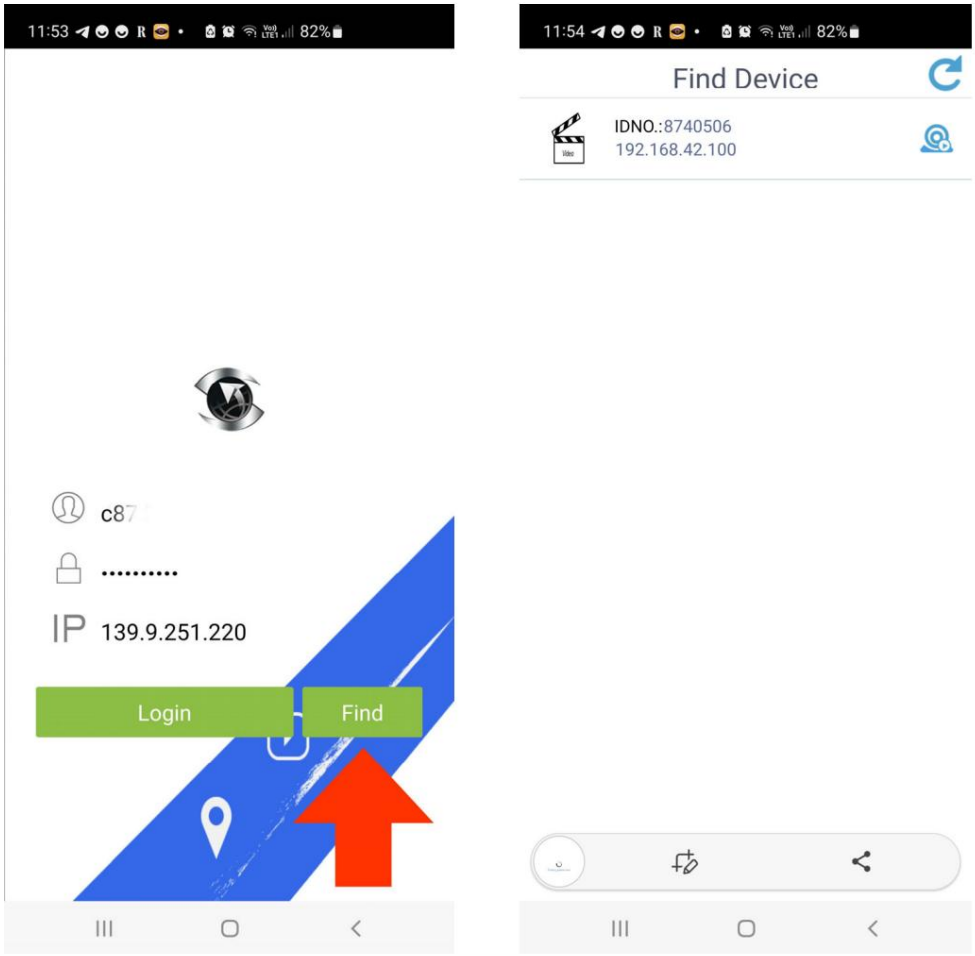
1 – Check that the WiFi antenna is connected and that the wifi is set to AP mode

2 - Connect your mobile device to the MDVR wifi network. You will find it among the available wifi networks with name MDVRxxxx where xxxx is the ID number of the MDVR. The password to access the wifi NVR is: 99999999

If your phone shows a no internet message, which is normal if, for example, the MDVR
it doesn't have a sim card inside, choose to keep the connection.



3 – Now that the phone is connected to the MDVR wifi network, open the CMSV6 app. Do not connect to the cloud with the login button but instead press the FIND key. The app will show you the MDVR you connected to



4 – Now touch the device to access the Live view which also allows playback of archived files

5 – The app used locally also allows you to configure numerous functions of the device by touching the SETTING icon at the bottom and logging in with the factory password admin **Adm_123**