CP4

CELLULAR ENABLED VEHICLE RECORDER

USER GUIDE

v1.0.2

WARNING: SmartWitness installations should be performed by a qualified indivi dual or installation professional only. Working with a vehicle's power system can be dangerous to both you and your vehicle. This installation is intended only to be a guide since vehicle designs and power/input sources can vary significantly from vehicle to vehicle.
If you need to schedule a professional installation service in the USA for your SmartWitness device(s), please visit http://smartwitness.com/scheduleinstall and submit the online form.

INDEX

SAFETY ADVICE

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER.
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

Please make sure you follow the safety advice/instructions given in the user guide.

⚠ Caution
RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
Battery for RTC(Real Time Clock) inside

⚠ Caution
Install the product where it does not block driver's visibility and where there is no airbag installed. This could cause an accident or might injure passengers in case of accident

⚠ Caution
Damages due to production malfunction, loss of data, or other damages occurring while using this product shall not be the responsibility of the manufacturer. Although the product is a device used for recording videos, the product may not save all videos in the case of a malfunction. In the case of an accident, the sensor may not recognize the shock when the impact is light and as a result it may not begin recording automatically.

WARNING:
TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

GPS RECEPTION

1. Activate the product in an area without large buildings to improve GPS reception.

The commercial purpose GPS has the average range error of more than 15 meters and the range error could be more than 100 meters due to environmental conditions like buildings, roadside trees etc.

2. The temperature range for optimum operation of the GPS receiver in your car is -10 ~ 50°C.

3. When using the product for the first time or after a long period (more than three days), it may take a little longer to recognize your current location.

It may take between five and thirty minutes to get GPS reception.

GPS reception may be impaired under the following circumstances

1) If there is an object at the end of the GPS antenna

2) If your vehicle has metallic elements on the windshields

3) If equipment generating electromagnetic waves that interfere with the GPS signal is installed in the vehicle e.g.: Other GPS devices such as a certain type of wireless activated alarms, MP3 and CD players and camera alarms using GPS.

4) If you are using a receiver connected by cable, electric interference can be avoided by simply changing the location of the receiver (antenna).

5) On heavily overcast or cloudy days, if the vehicle is in a covered location such as under a bridge or raised roadway, in a tunnel, an underground roadway or parking area, inside a building or surrounded by high-rise buildings.

6) If GPS signal reception is poor, it may take longer to locate your current position when the vehicle is moving than when it is stationary.

CONTENTS

CP4-NA-LTE
Vehicle Recorder

Power Cable

Audio/Video out cable

Remote Controller
(with double sided tape)

Camera input cable

GPS Antenna module

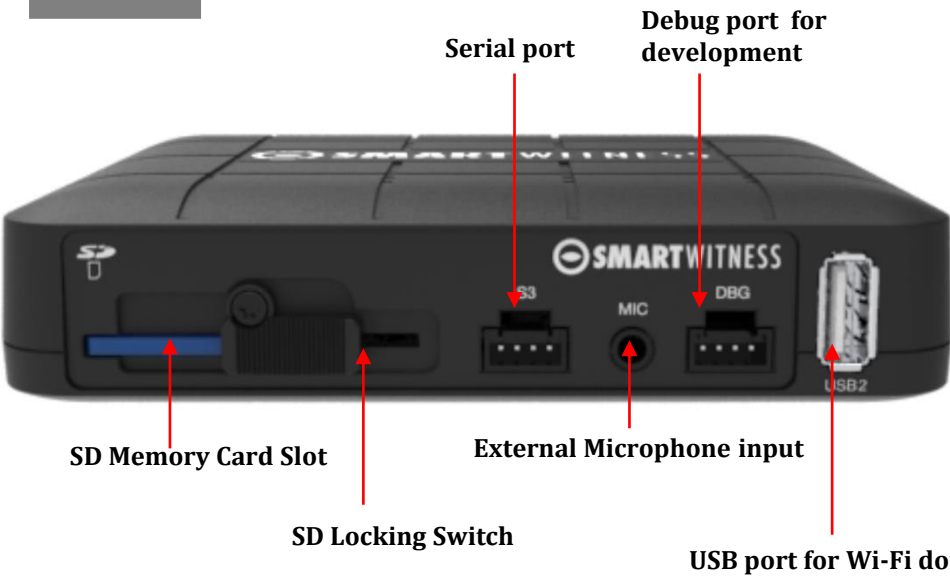
LTE Antenna

Wire Splice clip, Velcro Sticker,
Torx Screw (x2), and Torx screwdriver

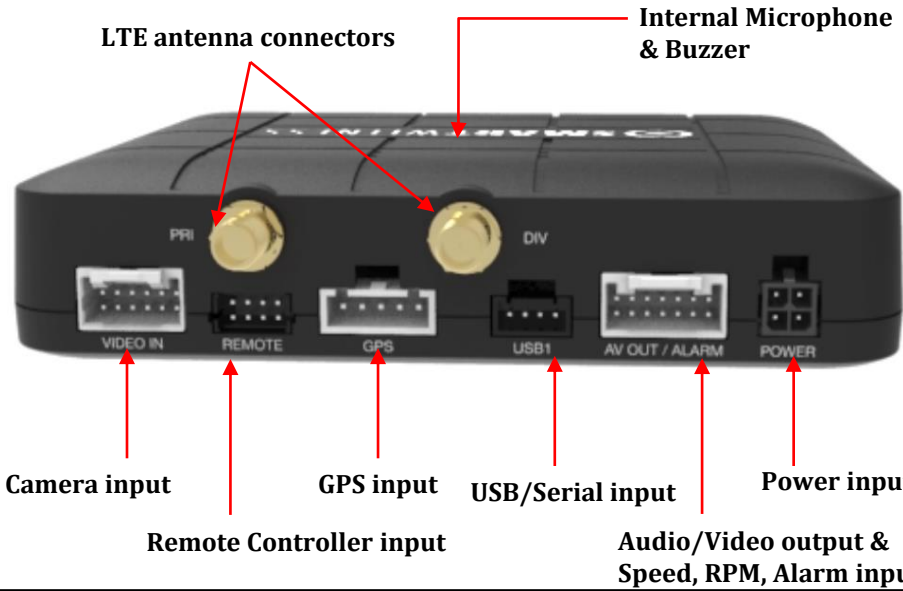
Audio Microphone

INTRODUCTION

FRONT

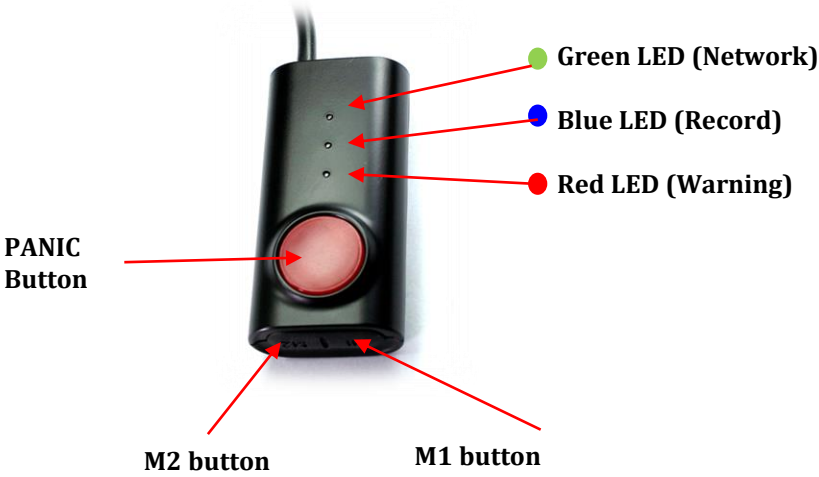


REAR



INTRODUCTION

Remote Controller



POWER CABLE

- Black (Ground/BAT -)
- Red (Power/BAT +)
- White (Power/IGN +)

Alarm in/out Cable

- White : Alarm In1, Voltage on/off (3~70V)
- Purple : Alarm In2, Voltage on/off (3~70V)
- Green : Alarm In3, Voltage on/off (3~70V)
- Orange : Alarm In4, NC/NO (open/close)
- Blue : Speed (TACHO)
- Gray : RPM (TACHO)
- Brown : Alarm Out, Low(0V) to High (5V)
- Black : Ground for Alarm In4 (NC/NO circuit)

FUNCTIONS

Automatic Booting

Make sure the main unit and all component are properly connected.
Once the CP4 has been wired to your car power source the CP4 will be boot up, this will take around 30 seconds for the unit to be ready to record.

NOTE: The unit will not start recording immediately after power on. It takes around 30 seconds for the built-in power backup system to charge. Thereafter, the SD card will be ready to record.

Continuous Record (When Record mode set as "Continuous")

This is the default mode for recording. In this setting the unit will begin recording after boot up and record the entire time the unit is powered.
The resolution and frame rates can be set as per your requirements. You can change the configuration of the recording using the CP4 configuration Tool. To do this, please see the 'Settings' section on page 21.

Event Record (When Record mode set as "Event")

The unit will record when triggered by an impact(G-Sensor) or a push of the 'PANIC' button or Over speed or Alarm In1~3. Each event file contains up to 20 seconds prior & up to 20 seconds post event.
And the event file can be extended by 2nd trigger during event record.
When events are triggered continuously, for every event, 20 seconds post-recording from the time of the event will be added to the event data file with a maximum recording time of 3 minutes. When this 3 minutes is reached, the file will be split and a new file will be created but the data will be continuous.

Dual Record (Continuous & Event Record)

The continuous record fps is 1fps and the file will be stored on the "Normal" folder. Event record will work according to the Fps setting for example 30frames per second recording and the file will be stored on the "Event" folder

Do not Record

The DRV (Drive Data) file will be recorded during driving at "Do Not Record" mode. And the unit can send limited API like live track to Server.

NOTE: The DRV file consists of GPS and G-sensor data and it helps to find specific data or driving behaviors. The DRV file overwrites the oldest data. The DVR files will be made every 10 minutes.

FUNCTIONS

G-Sensor Calibration

G-Sensor Calibration is needed after installing the CP4.

1. Set G-Sensor Axis using the configuration tool.
2. “selfadj.ini” should be in the config folder of the SD card.
3. Install the unit and park the vehicle on a flat surface .
4. Turn on the unit and wait until it start record.
5. Press and hold the “M1” button more than 2 seconds.
6. You will hear “beep” when you press “M1” button and then you will hear another “beep” after 2seconds. Then release “M1” button.
7. Then calibration will be done within 2 seconds.

Built-in power backup (Super Capacitor)

When power to the unit is interrupted, CP4 creates the last file using the internal Super Capacitor.

Time and Date

Set your time zone using the configuration tool then CP4 get’s time from the GPS satellite's.

SD Memory Card Format

Please format [initialize] the SD card using the “Configuration Tool CP4” software.

Safely Removal SD Card

Power off vehicle and take out SD memory card

Turn off the power and then check the BLUE LED light. Once the LED light is not on, you can now safely remove the SD memory card.

FUNCTIONS

Parking Mode Recording

With parking mode activated and on normal recording mode, the CP4 will change to parking mode when the vehicle is not moving for more than 5 minutes, recording at 1 FPS.

Live Screening

With an external monitor attached, the CP4 offers the option to screen video live.

Delayed Power Shutdown

Control the duration of time using the configuration tool. CP4 stays powered and recording/networking after shutdown.

Precautions for SD cards

To optimize use and prolong life of your SD cards please follow the below instructions.

1. Use only compatibly tested SD cards.
2. Only use dry and clean SD cards.
3. Format SD cards at least once every month or when the SD card seems corrupted. This will wipe all data, images, and file names on the card reducing recording errors.
4. Insert or remove SD cards only when the device is completely powered off. Wait until the blue LED is completed off before removing SD card.
5. SD cards used for continuously recording equipment such as a drive record er, typically last only 6~12 months. Exchange SD cards periodically

LEDS & BUZZER SPECIFICATION

Status/Step			LED			Buzzer	Voice
			Warning (Red)	Record (Blue)	Network (Green)		[Remark] To hear the Voice, please audio output cable to speaker.
Start-up Power off	Booting step1 (0~20)		On	Off	Off		
	Booting step2 (20~30)		On	On and Off	Off		
	Booting Finished (30, 1second)		On	On	On	[Beep] (1000Hz, 200msec)	「Beep」(1time)
	During Power off		Off	Simultaneous Flashing(Blink rate: fast)			
	Power off finished		Off	Off	Off	[Beep] [Beep] (500Hz, 150msec)	
Record	Continuous Record	Recording		On			
	Event record	Stand by		On			
		Recording		Flashing(Blink rate: fast)			
	Dual record	Continuous recording		On			
		Event recording		Flashing(Blink rate: fast)			
	No record	Not record		Off			
Network	3G Network Device Ready				On		
	Communication				On		
Function	SD Initialize (Format)		Off	On and Off	Off and On		(Beep, 1time) continuously
	G-Sensor Calibration						「Beep→(after 2 seconds) Beep、Beep」
	FW Upgrade			On and On and Off and Off	Off and Off and On and On		
	Button Press					[Beep] (2000Hz, 200msec)	「Beep」
Warning	System Warning	SD Card Full	Flashing(Blink rate: fast)	Off			「Beep x 4」(3times)
		Video loss Video STD error	On				
Error	Record Error	SD error, No SD, Write fail	Flashing(Blink rate: Slow)	Off			「Beep x4」(3times)
	Network Error	3G Network Device error SIM error			Off		
		Data Network connection error			Flashing(Blink rate: Slow)		
		DMS communication error			Flashing(Blink rate: Slow)		
Event Trigger	G-Sensor, Panic Button, Alarm-In						「dingdong x2」(1time)
	Over Speed						「beep, beep x2」(1time)

INSTALLATION

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Installation Guides can be viewed/downloaded at:
install.smartwitness.com

Operation – On Screen Display

The following displays can only be seen when a monitor is connected.

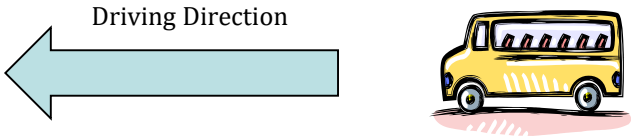
The default display is 2*2 with all cameras shown, to change, press [M2] button to select which camera to view. Each press will change the camera on display with the last option being all camera views.





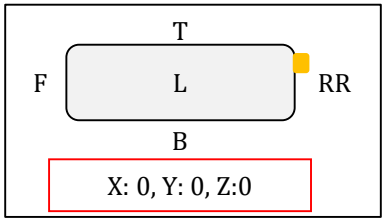
4Cameras(2x2) => Camera1 => Camera2 => Camera3 => Camera4

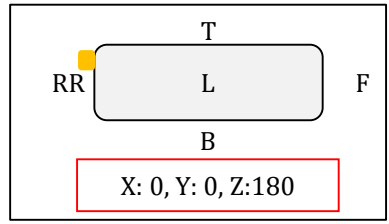
Axis Adjustments by Device Positions

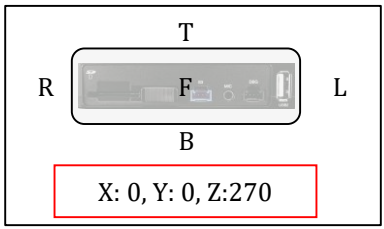


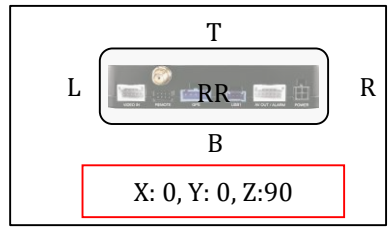
F: Front	RR: Rear	T: Top
B: Bottom	R: Right-side	L: Left side

1) When device is in an upright position

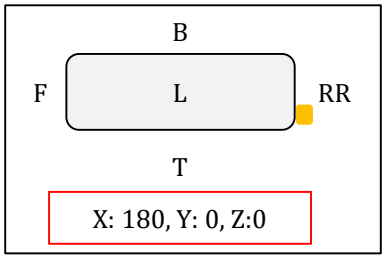


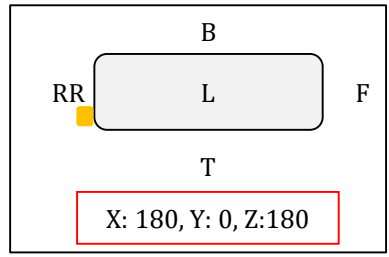


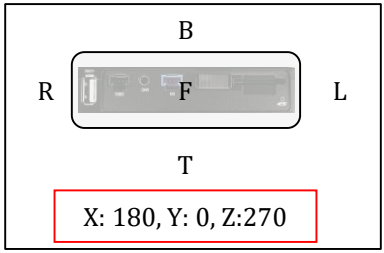


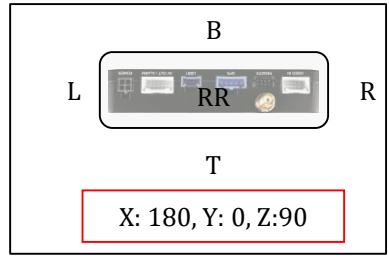


2) When device is in an upside down position



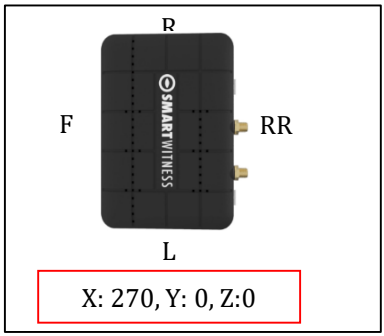


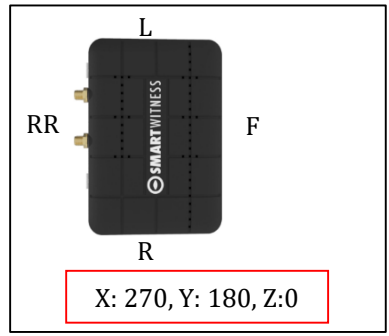


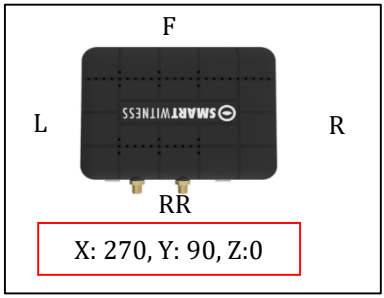


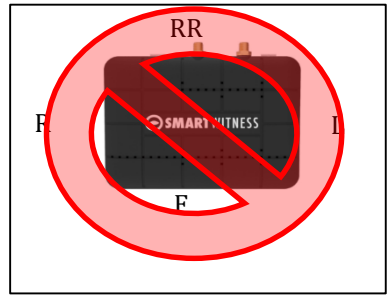
Axis Adjustments by Device Positions

3) When device is in a sideway position with the TOP to the left

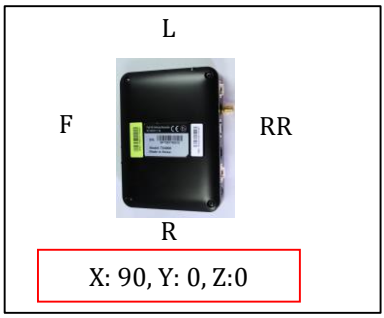


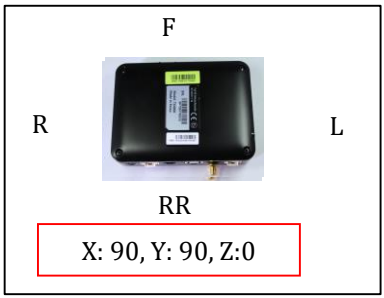


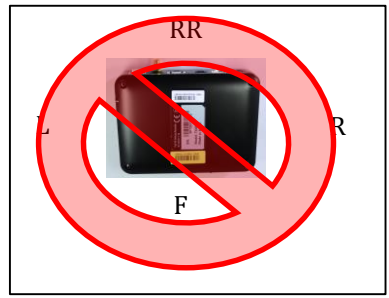




4) When device is in a sideway position with the TOP to the right

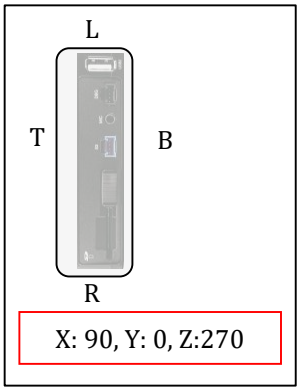


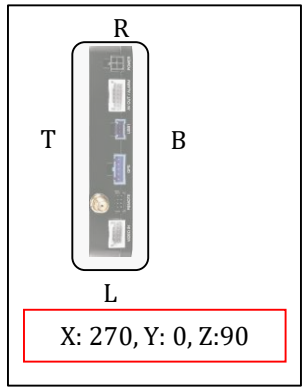


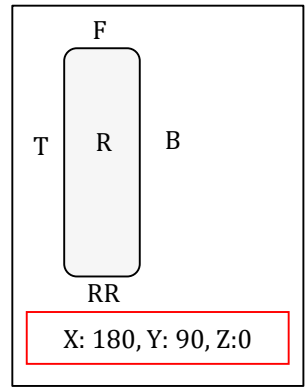


Axis Adjustments by Device Positions

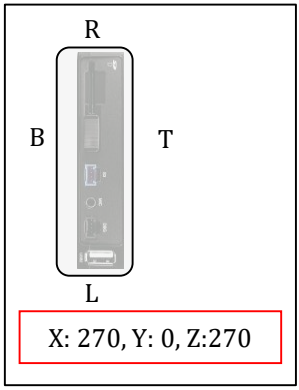
5) When device is in a sideway position with the TOP facing front

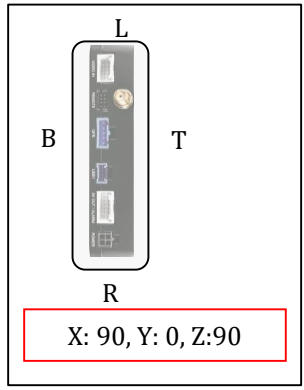


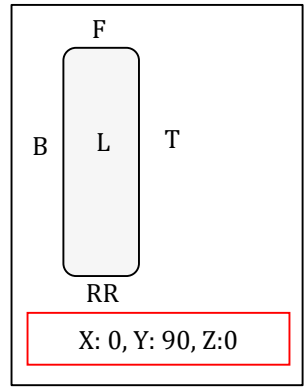




6) When device is in a sideway position with the TOP facing rear







REMARK: Do no install the device with the Front facing down position.

Configuration Tool CP4 Software

PC SYSTEM REQUIREMENT

Recommended PC specifications for Configuration Tool Software

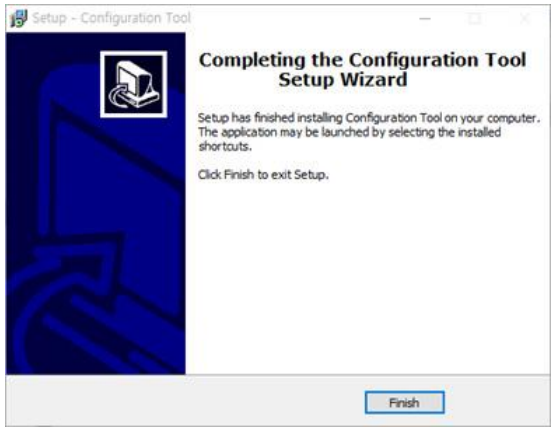
OS	Windows Vista. Windows 7, Windows 8/8.1
CPU	Core 2 Duo 2.5GHz or Higher
RAM	2GB or Higher
Interface	SD Memory Card Reader
HDD Free space	Install : 55MB or Higher Backup : 4GB or Higher
Display	1024 x 768 pixel/True Color or higher

If the PC does not meet the minimum system requirement, the Configuration Tool Software may not function properly.

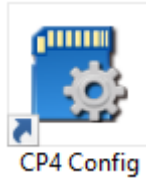
SOFTWARE INSTALLATION

Please ask the Configuration Tool CP4 Software to your distributor.

1. Double click [setup.exe]
2. Select the language
3. Select destination location
4. Select Start Menu Folder then follow the dialog box prompts.



5. The “Configuration Tool CP4” icon will be displayed on your desktop.



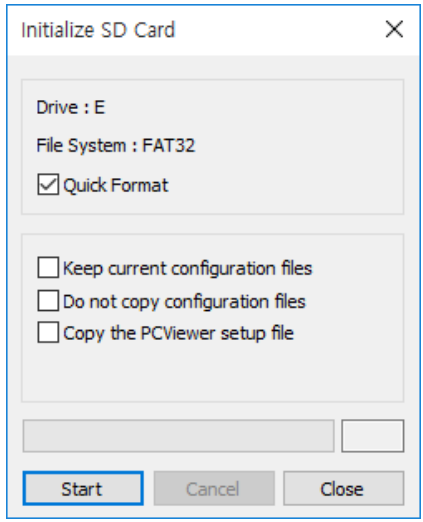
NOTE: To Un-install the Configuration Tool CP4 Software
Make sure the program is not running and open the ‘Control Panel’
Select ‘Remove Program’ and remove the Configuration Tool CP4 Software.

INITIALIZE SD CARD

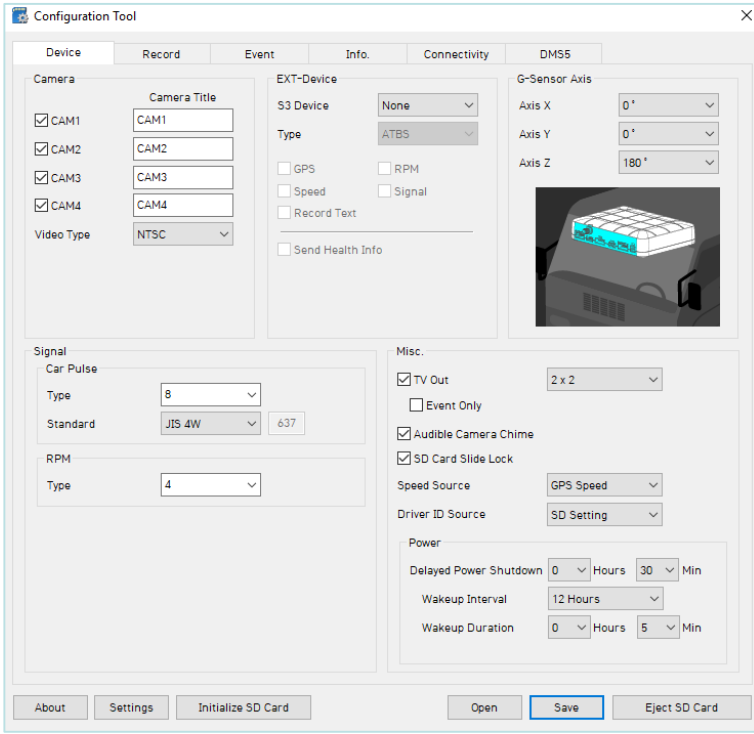
Click!

To initialize the SD card quickly, click on the above icon and you will be presented with the following screen to choose the SD card to initialize. Click 'OK' when selected.

On the following screen, check the 'Quick Format' button and uncheck the 'Keep current configuration files' and Click 'Start' to begin initialization.

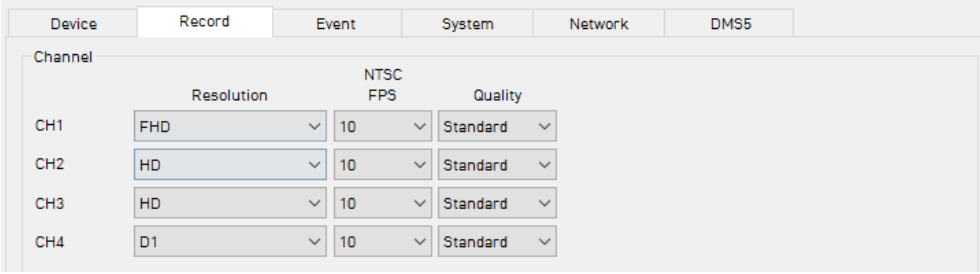


DEVICE SETTINGS



Camera check box
Check all the cameras you wish to use.
Camera Title
Use the alphabet and numbers to rename (max 10 digits) the cameras. The new names will be displayed on the all recordings.
Video Type: Set the video type ”NTSC or PAL”
Car Pulse Type: Select the vehicle’s car pulse type.
Car Pulse Standard: Select the vehicle’s car pulse standard.
RPM Type: Select the vehicle’s RPM type.
G-Sensor Axis: Refer to page 14 in this manual and set Axis.
TV out: Check it to see live screen.
Audible Camera Chime: Turn the Chime on or off
Buzzer On: Turn the Buzzer on or off
Speed Source: Choose the speed source “GPS or Pulse” to use it on the unit.
Delayed Power Shutdown: Set delayed power shutdown time.

RECORD SETTINGS



Resolution
NTSC: D1 (720x480), HD (1280x720), FHD (1920x1080).
PAL: D1 (720x576), HD (1280x720), FHD (1920x1080).

FTS (Frame Rate)
Adjust the frame rate from NTSC: 30fps, 15fps, 10fps, 5~1fps
PAL: 25fps, 12fps, 10fps, 5~1fps

Quality
Adjust the picture quality from Standard, High, Super

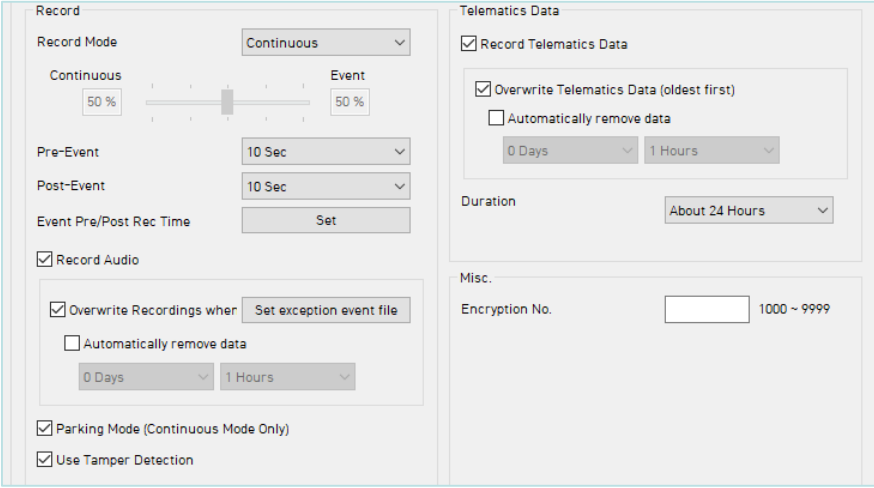
Record Frame Rate (FPS) Rules & Bitrates

1. FHD: 2Channels total max 30fps(NTSC) or max 25fps(PAL)
2. HD: 3Channels total max 60fps(NTSC) or max 50fps(PAL)
3. D1: 4Channels total max 120fps(NTSC) or max 100fps(PAL)
4. Channel 3 (Camera No.3): Support HD or D1 camera
5. Channel 4 (Camera No.4): only support D1 camera.
6. Total FPS calculation
   NTSC: (FHD total fps x 4) + (HD total fps x 2) + (D1 total fps) ≦ 120fps
   PAL: (FHD total fps x 4) + (HD total fps x 2) + (D1 total fps) ≦ 100fps

Maximum bitrates (Video Quality)

Resolution	FPS	Bitrates (bit/sec)		
		Super	High	Standard
Full HD	30	6Mbps	5Mbps	4Mbps
HD	30	3Mbps	2.5Mbps	2Mbps
D1	30	2Mbps	1.5Mbps	1Mbps

RECORD SETTINGS



Record Mode

- Continuous (Always recording when powered by DC 12/24V.)
- Event (Automatically starts recording by G-sensor or Panic button or Alarm In.)
- Dual (The continuous record fps is 1fps and Event record will work according to the Fps setting.)
- Do not record

Pre Rec Time / Post Rec Time

Adjust the Pre/Post Event time from 5 seconds to 20seconds

Audio: Check it for record audio

Overwrite Recordings

This function allows the unit to overwrite old files on the SD Card automatically. You can overwrite the continuous, panic or G-Sensor recorded files.

Parking Mode Recordings

If your vehicle is parked for more than 5 minutes, recording FPS will be at 1fps. When the vehicle starts moving again, the recording FPS will return to its original setting.

Drive Data

GPS data & G-Sensor data will be recorded with videos and at the same time, GPS data & G-Sensor data will be recorded separately, we call it as 'Drive data (drv file)'. Check Driving Data Recordings for this feature.

Adjust Drive Data duration from "about 1 day" to "about 30 days".

Encryption No. (Stream password)

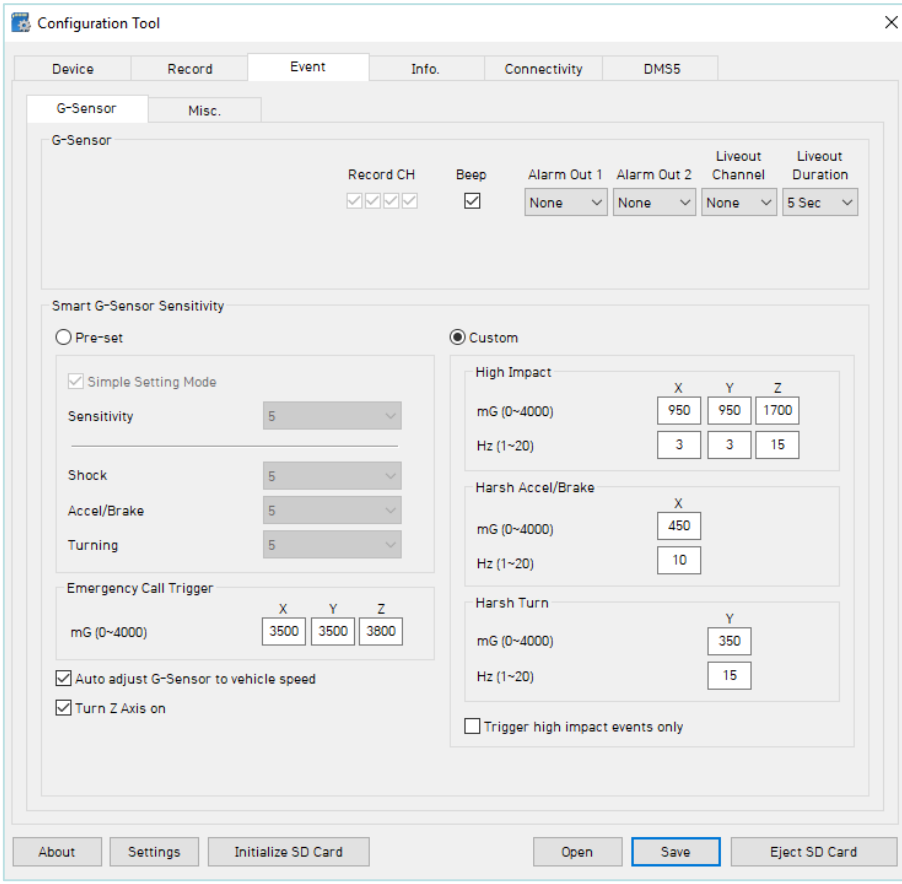
An Additional password can be set for the recorded data using a 4 digit password from 1000~9999. If a password is set, keep a record in a safe place, Without the password, you will not be able to view the recorded video.

EVENT SETTINGS

Event settings

You can set the unit to record when triggered by the G-Sensor, Panic Button and GPS Speed Limit and Alarm Inputs.

And you can set the Alarm out duration per each event.



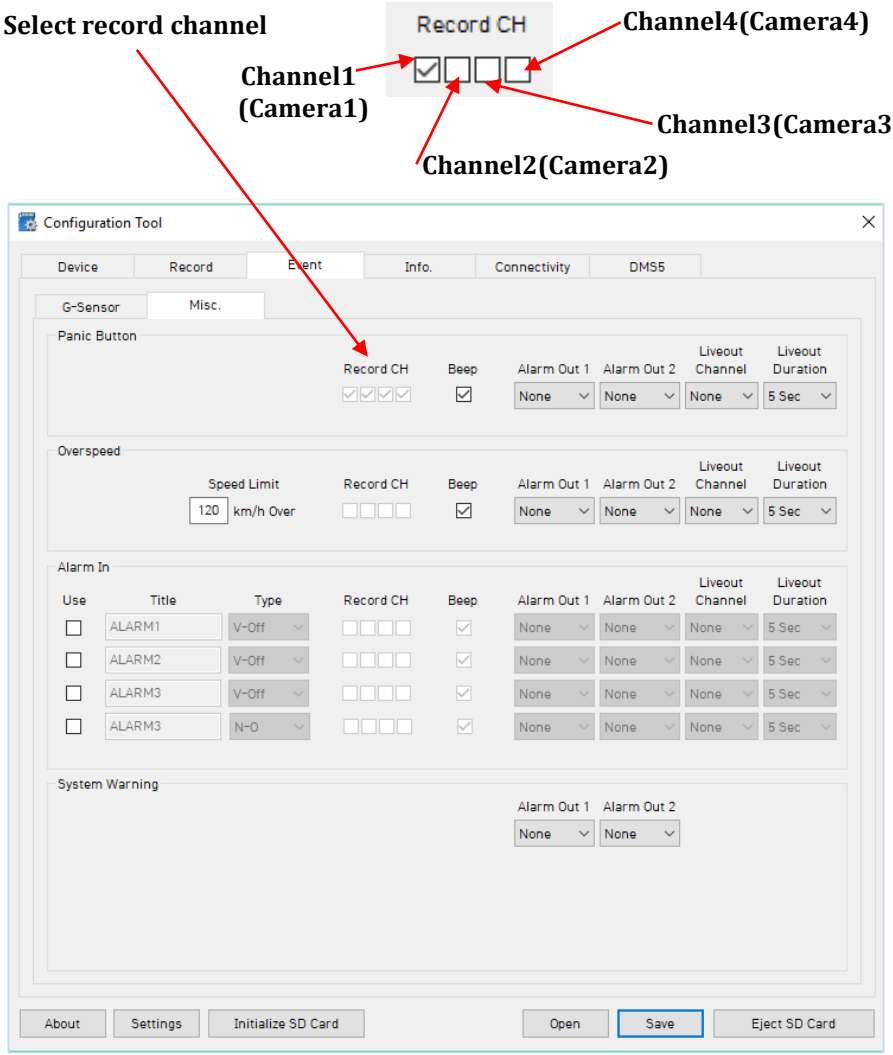
G-Sensor Sensitivity: The shock sensor sensitivity can be set to 'Simple setting Mode' or 'Custom'. Set to easy allows you to set the sensitivity to 9 (High), 5 (Medium) or 1 (Low).

In custom set, you can set 3 different shock sensor values individually.

Auto adjust G-Sensor to vehicle speed

Once it checked, CP4 will automatically decrease the G-Sensor sensitivity at higher vehicle speeds to compensate for the naturally added G-forces that are experienced due to velocity.

EVENT SETTINGS

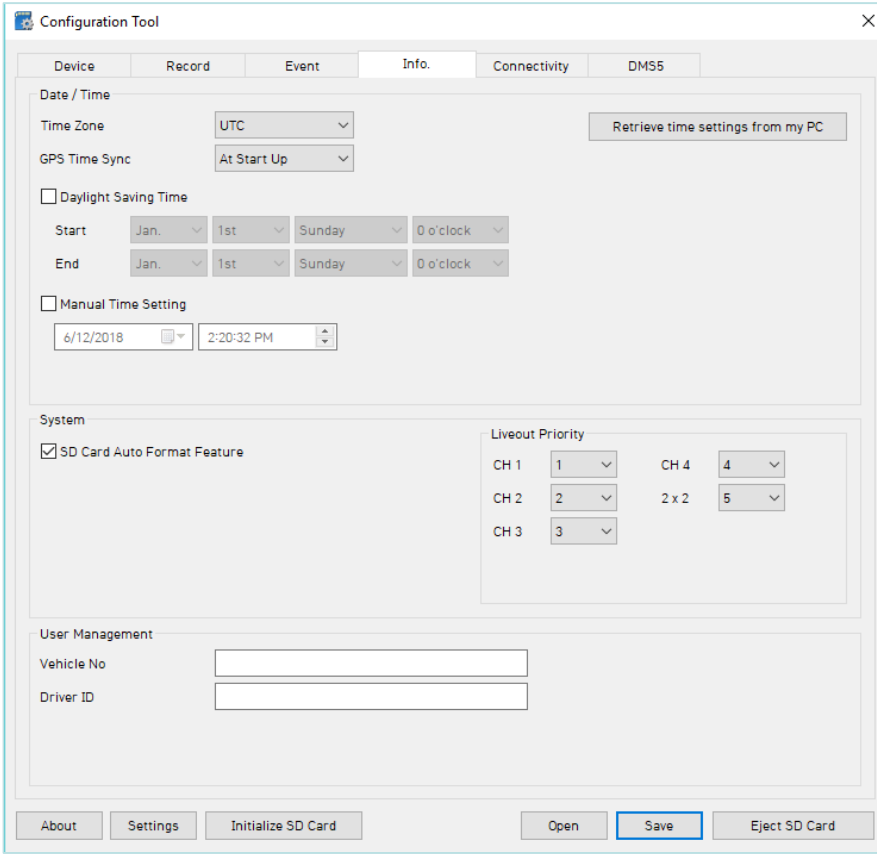


Over Speed: When the vehicle speed over the speed limit more than 5seconds.

System Warning: SD card error, Video loss, Video Standard error

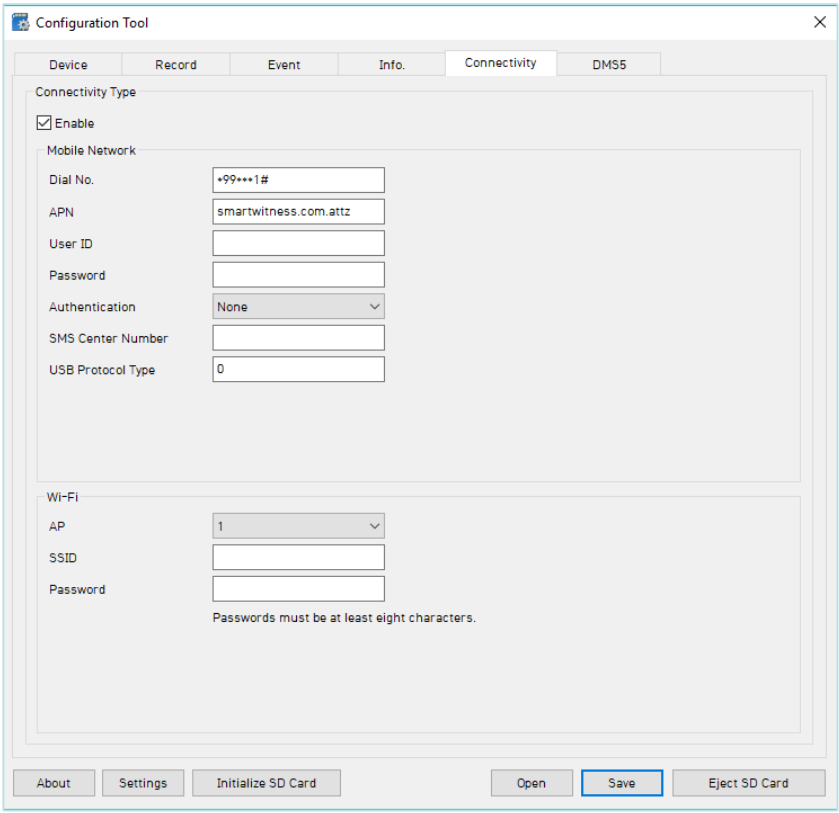
SYSTEM SETTINGS

This option allows you to adjust the Time Zone, GPS Time synchronization, set your Vehicle No and also the Driver ID.



SD Card Auto Format Feature: When the SD card has an error and cannot record, the card will be formatted and all data will be erased.

NETWORK SETTINGS



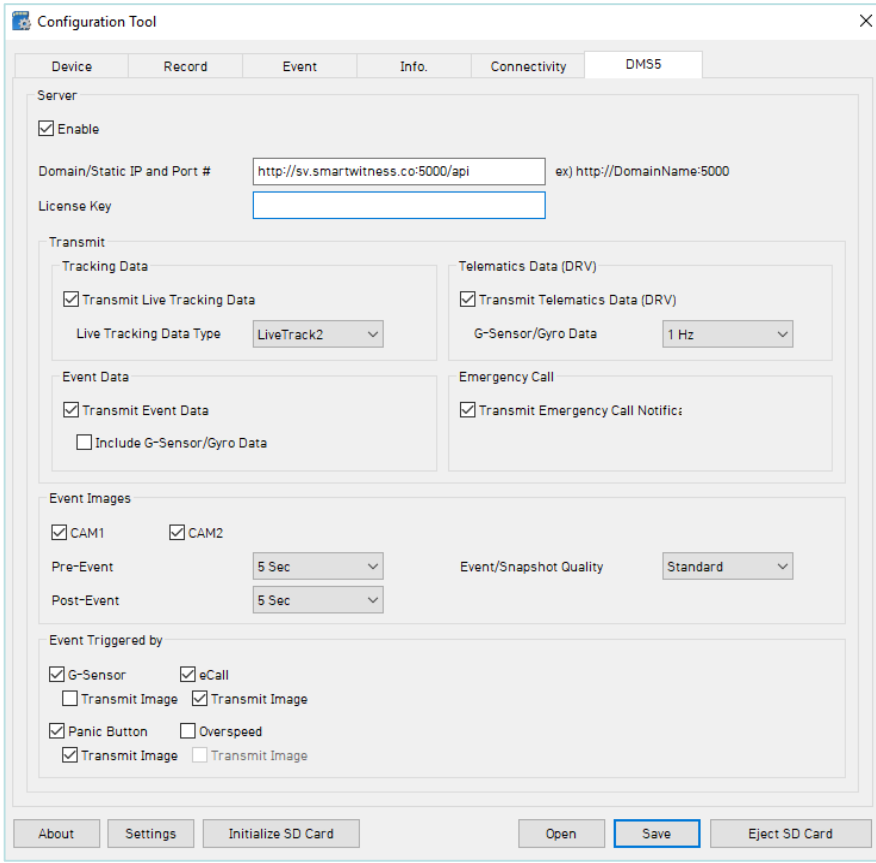
Check Enable to use cellular network connection.

Input the required settings like Dial No., APN, password, User ID, Authentication etc. Please refer to the Sim Card supplier website for these settings.

You can enable WiFi connectivity instead of celluar connectivity with the use of an approved WiFi USB dongle. The AP must be secure with WPA/WPA2 encryption and have a password of at least 8 characters (cannot be an open network).

You can set up to 10 WiFi SSIDs. CP2 will scan for as many networks as are added here in its settings

SERVER SETTINGS



Set Domain/Static IP and Port number

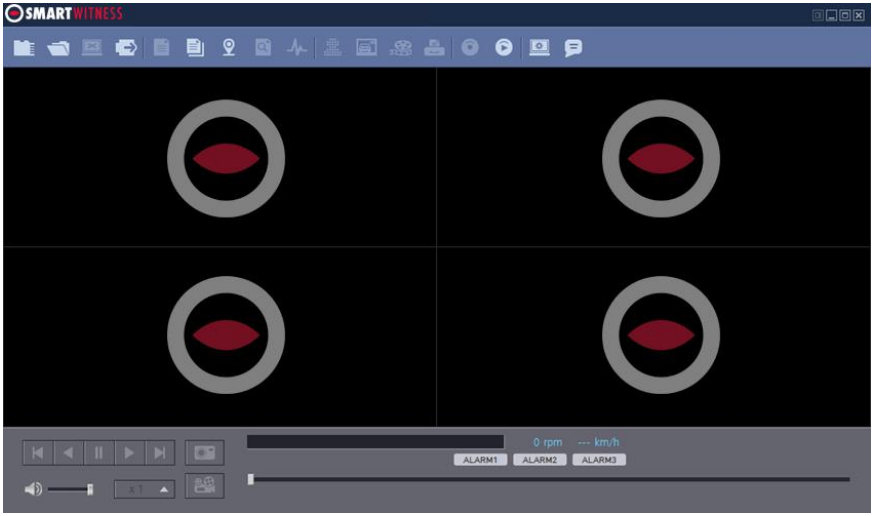
And check the options

- Transmit Live Tracking Data
- Transmit Telematics Data (DRV)
- Transmit Event Data.

And then select events

Please contact your distributor to get appropriate server settings

PC Viewer Software



PC SYSTEM REQUIREMENT

Recommended PC specifications for PC Viewer Software

OS	Windows Vista. Windows 7, Windows 8/8.1
CPU	Core 2 Duo 2.5GHz or Higher
RAM	2GB or Higher
Interface	SD Memory Card Reader
HDD Free space	Install : 55MB or Higher Backup : 4GB or Higher
Display	1024 x 768 pixel/True Color or higher

If the PC does not meet the minimum system requirement, the PC Viewer Software may not function properly.

SOFTWARE INSTALLATION

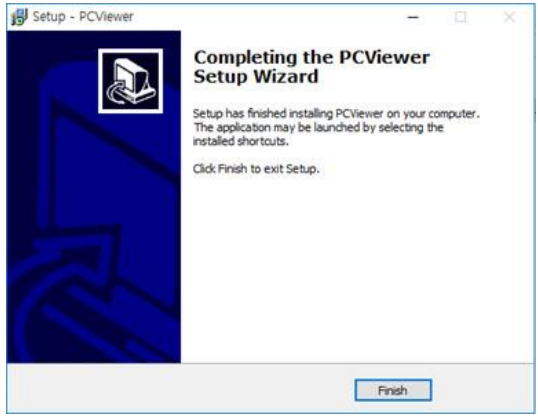
The PC Viewer Software is on the provided SD card. (Also available on our website.)

1. Connect the SD card into your PC (if your computer does not have and SD card slot use the USB SD card reader) and open the “My Computer”

2. Right-click the “FHDRM” drive and select [Open]

3. Double click [setup.exe] in the [pcsw] folder.

4. Select the language and then follow the dialog box prompts.



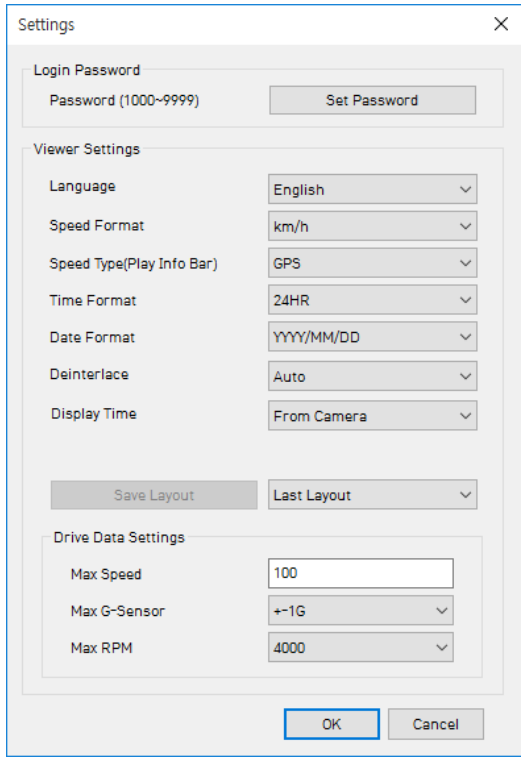
5. The “PC Viewer CP4” icon will be displayed on your desktop.

NOTE: To Un-install the PC Viewer Software
Make sure the program is not running and open the ‘Control Panel’
Select ‘Remove Program’ and remove the PC Viewer Software.

PC VIEWER SOFTWARE SETTINGS

Software viewer settings

This setting is for the PC Viewer Software itself. To set the Recorder, refer to page 17.



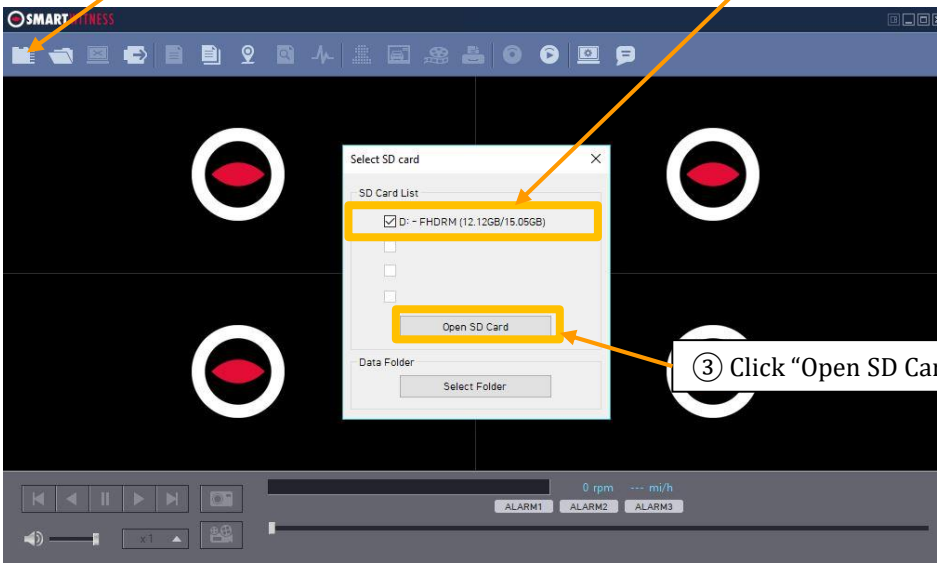
Click the 'Password' button. Password for the PC Viewer Software can be set with any number between 1000-9999.
The 'speed' & 'date' formats will be set automatically according to the PC Windows setting. However it can be changed with this software setting menu.
Display time: Select time to see. Recorded time by CP4 or your PC local time
Last Layout: The program will launch with the same layout as it was when it was closed.
Default Layout: The program will launch with the Default Layout
Drive Data Settings
The graph scales for the Drive Data Window will be modified according to the Settings.

OPEN THE SD CARD

Insert the SD card into your PC

① Click “Select SD Card” icon

② Select the SD card drive and click “OK”



③ Click “Open SD Card”

The playback file list and “Continuous” and “Event” tap is displayed on the right side of the screen.

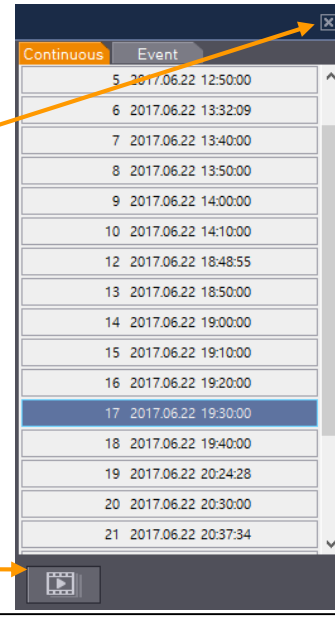
You can hide the playback list by clicking the close icon.

The playback list can be displayed on the screen again by clicking the “File List” icon.

“Select SD Card” icon

You can end the video playback by clicking the “Close files” icon.

“Close files” icon

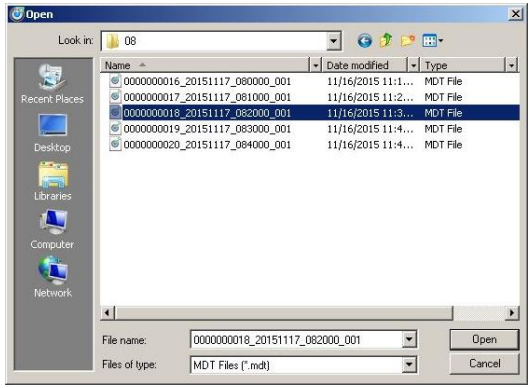


Continuous Play next file.

OPEN FILES

If you want to play a specific file that has been backed up on the PC or SD Card, Click the “Open files” icon

“Open files” icon



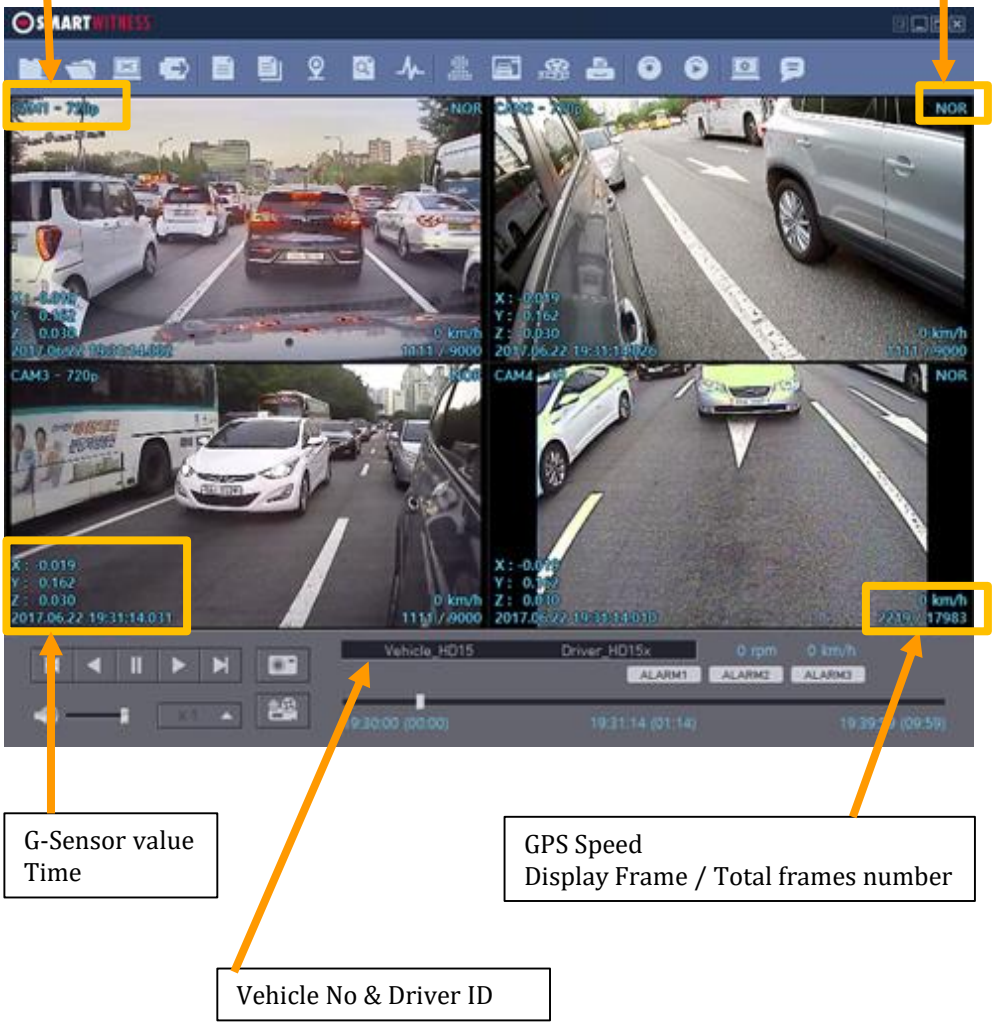
Select the MDT file you want to play and click “Open”.
The image of the selected file will then be displayed and you can click the “Play” button to play the file.

“Eject SD Card” icon

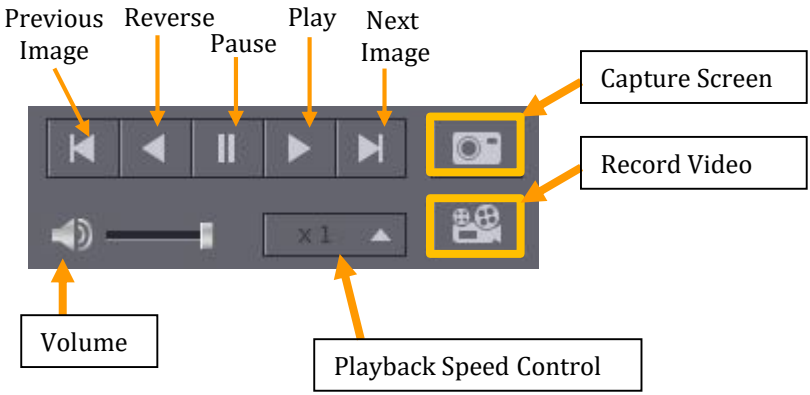
When finished, click “Eject SD Card” icon and remove the SD card from your PC.

Or please use “Safely Remove Hardware and Eject Media” button in your PC.

PLAYBACK

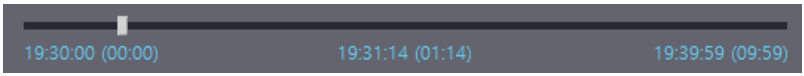

Camera title - Resolution
Record Mode
NOR
CAM3 - 720p
X : 0.019
Y : 0.162
Z : 0.030
2017.06.22 19:31:14.031
0 km/h
Vehicle_HD15
Driver_HD15x
0 rpm
0 km/h
ALARM1
ALARM2
ALARM3
G-Sensor value
Time
GPS Speed
Display Frame / Total frames number
Vehicle No & Driver ID

PLAYBACK



Alarm Indicator

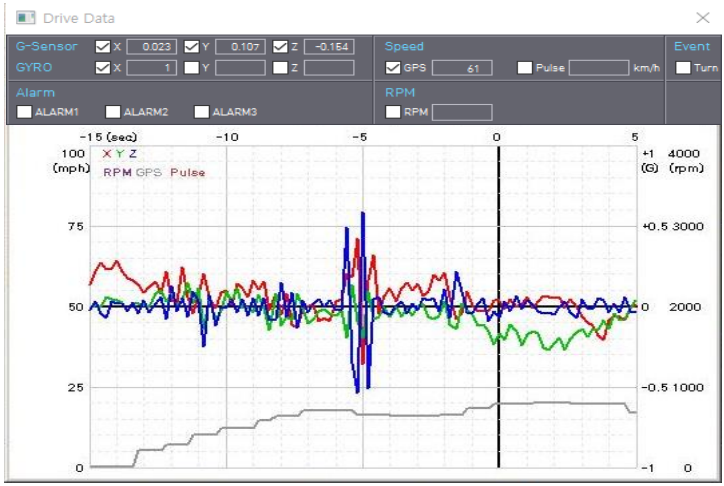
Playback control bar



DRIVE DATA

"Drive Data" icon

The default setting only displays the G-sensor graphs but other information may be added by checking the boxes in the upper part of the screen.



G-Sensor: (X axis: red, Y axis: green, Z axis: blue, based on the positioning of the main unit) is shown with the data reference point zero-point calibrated and positive shocks as (+) and negative shocks as (-).

G sensor X value: Front & Back (like Quick brake or Quick Start)
G sensor Y value: Left & Right (like Quick Turn)
G sensor Z value: Up & Down (like prominence and depression)

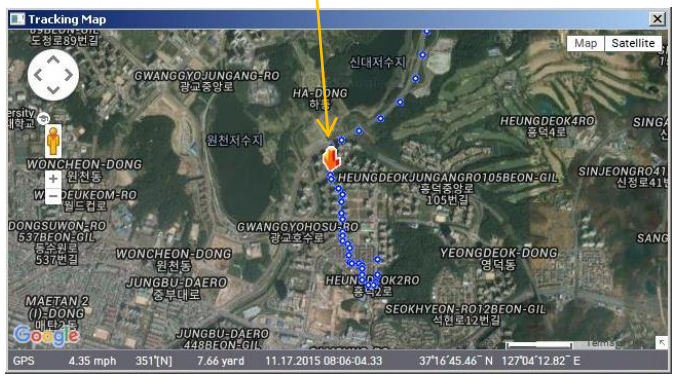
GYRO: display the gyro value
Speed: GPS measured speed is displayed in grey. .
RPM: The RPM is displayed in purple.
ALARM: The alarms are displayed on the bottom of the screen with the grey bar meaning the trigger is activated.

TRACKING MAP

"Tracking Map" icon

The route taken will be displayed on the Google map.

The playback position will be shown on the map with the orange arrow.



The blue markings show the route taken.

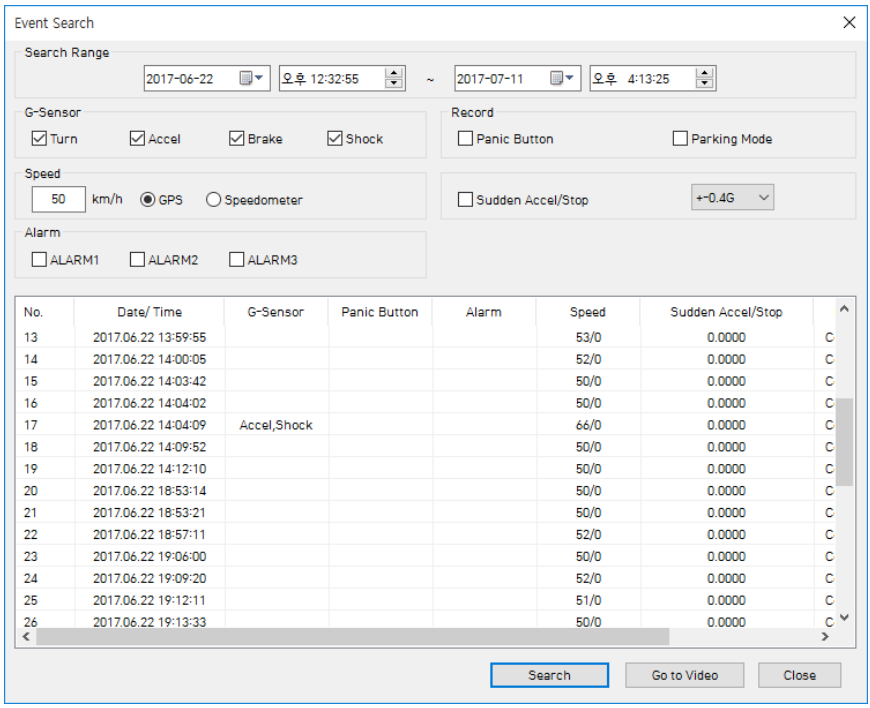
To see the route and position on the Google map, the GPS data should be recorded with video.

To see the map, the PC should be connected to the internet.

EVENT SEARCH

"Event Search" icon

The "Event Search" help to find a specific data quickly.



Select "Search Range" and select "Search Conditions"

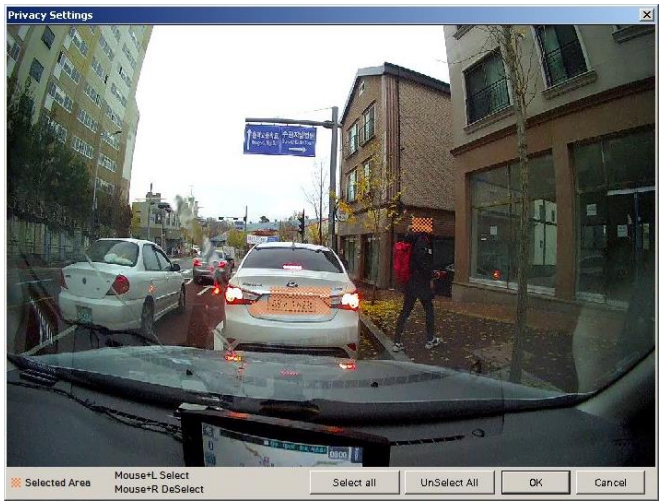
And then click Search button.

Choose an event from the searched list and click "Go to Video" to see the video.

PRIVACY SETTINGS

"Privacy Settings" icon

Set the mosaic area on the video for privacy protection.



When backing up the data as a JPG or AVI format and playing in the Viewer software, you are able to make a mosaic processing on the area you have set.

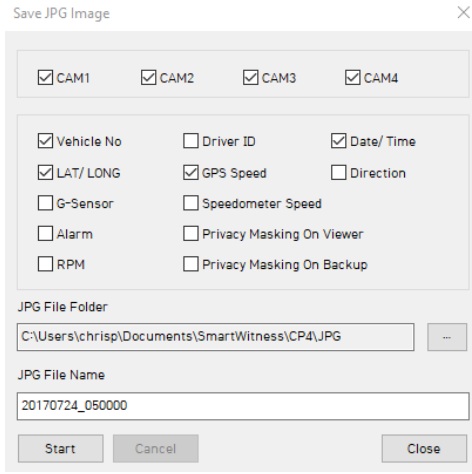
To do this, put the pause the video and click the 'Privacy settings' button. The privacy setting screen will pop up.

Blur out the area you wish to protect by left-clicking on the sections. You can select multiple areas.
You can also unselect, selected areas by right-clicking the blurred areas.
To select all or clear all, click on the 'Select all' or 'UnSelect All' buttons on the bottom, respectively.

SAVE JPEG AND MP4 FILE

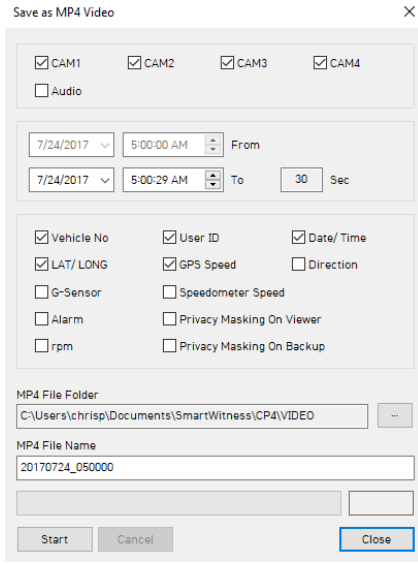
Pause the playback and click “Save JPG” icon to make JPG images.

“Save JPG” icon



Pause the playback and click “Save MP4 Video” icon to make a MP4 file.

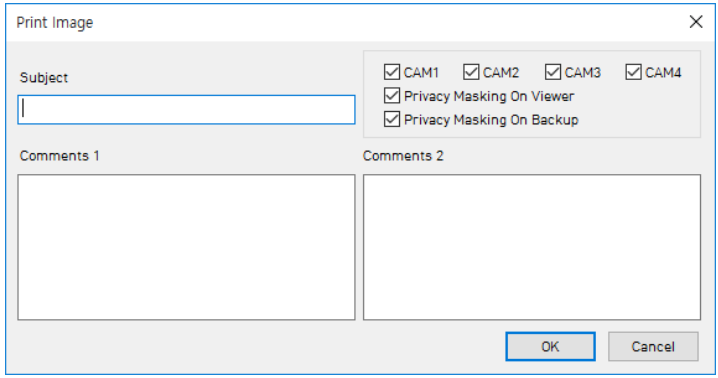
“Save MP4 Video” icon



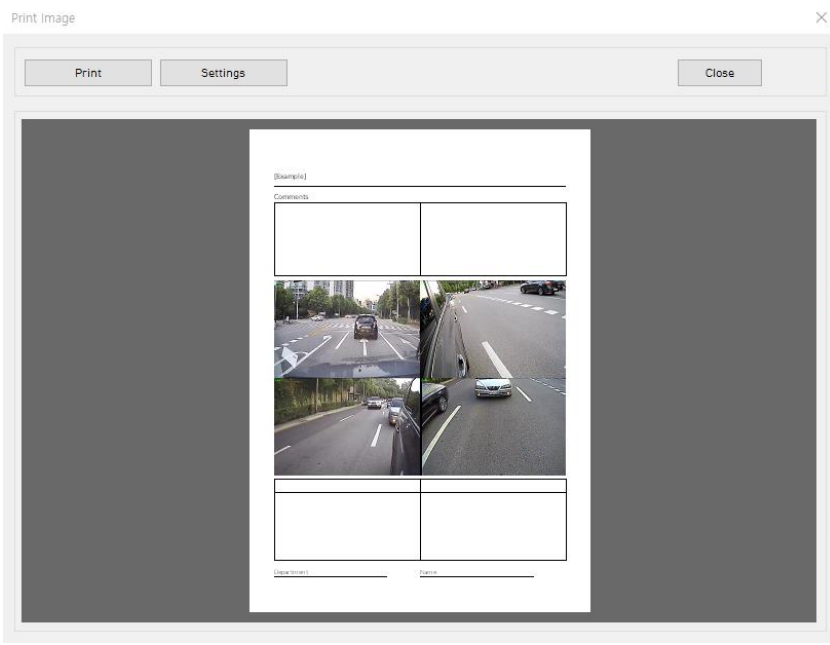
PRINT IMAGE

Pause the playback and click “Print Image” icon.

“Print Image” icon



Type Subject and Comments1 and Comments 2

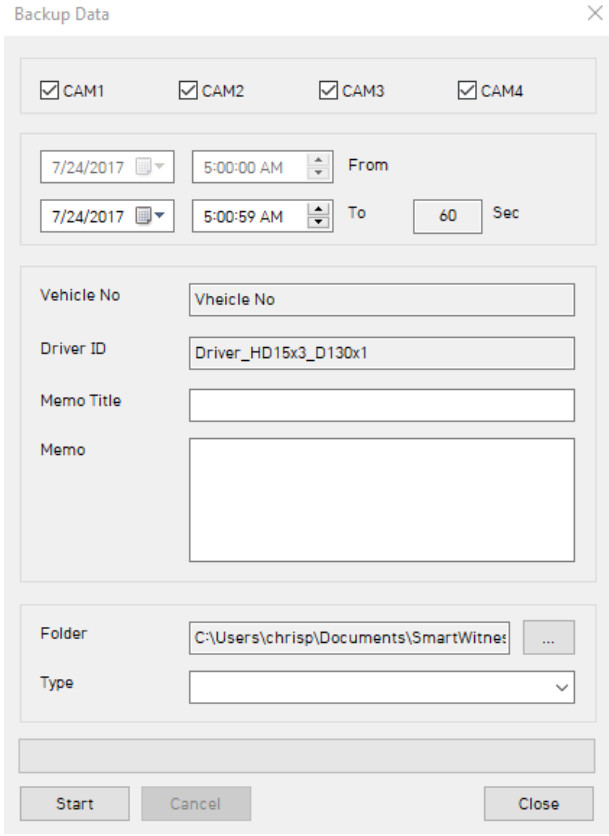


Alter the printer settings to change paper size/orientation etc.

BACKING UP FILES

Back up the recorded data on your PC.
There is an option to store data by type to easy management of data.

"Backup Data" icon

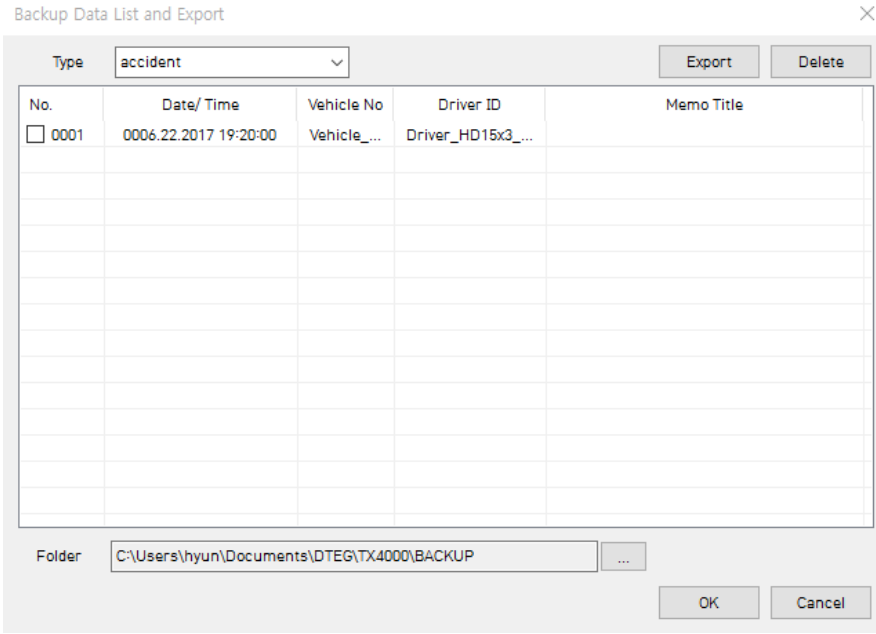


The start time is when the video was paused and cannot be changed once you start this process.
Set the time you wish to backup and input Title and Memo.
And input Type and then click [Start].
The maximum amount of time you can back up is one hour.

BACKUP DATA LIST AND EXPORT

You can use the data backup list to play data files easier that have been backed up.

“Backup Data List and Export” icon



Choose the folder where the backup files are at the bottom of the screen.
(It will automatically show the last folder that was accessed.)
Then, select the type by scrolling down the options.
The files are listed showing the “Date/Time, Vehicle No, Driver ID, Memo Title”.
Check the box next to the file you wish to play back and click ‘OK’.

SPECIFICATION

Video In	**CH1, CH2: 12V 1080P or 720p AHD camera in CH3: 12V 720P AHD camera in CH4: 12V D1 camera in**
Audio In	**1CH (Internal or External Microphone)**
AV Out	**1 Video out, 1 Audio out**
Band support	**LTE bands: 2, 4, 5, 12, 13; 3G bands 2, 5.**
Max Data Rate	**UL:5.76Mbps, DL : 7.2Mbps**
Video resolution	**1080p HD (1920x1080), 720P (1280x720), D1(NTSC:720x480, PAL 720x576)**
Recording Speed	**Full HD: 30fps(25fps), HD: 60fps(50fps) D1: Up to 120 fps (NTSC) or 100fps(PAL)**
Recording Mode	**Continuous , Event, Dual Mode**
Memory	**Support 32GB, 64GB(FAT32), 128GB(FAT32)**
GPS/GLONASS	**External GPS /GLONASS**
G-Sensor	**Internal 3-axis G-sensor**
Gyro	**3Axis(X,Y,Z), output rate:100 Hz,**
RTC	**Internal battery**
Alarm In/Out	**4 x Alarm In, 1 x Alarm Out**
Remote controller	**3x LED, Panic button, M1 & M2 button**
LED	**Green LED (Network), Blue LED (Record), Network (Red LED)**
Super Capacitor	**Enable recording of last file and shut down**
Power input	**DC 12V/24V 3A**
Delayed Power Shutdown	**Supports Delayed Power Shutdown**
Power consumption	**Max. 36W**
Size / Weight	**120mm X 28mm X 90mm / 166g**
Operation Temp.	**-10℃~55℃**

APPENDIX Recording time table

DRV file size		Reserved space for overwriting	Space for Video / Audio (MB)				
hours	Size		16GB	32GB	64GB	128GB	256GB
24	106.8MB	300 MB	15,593	31,593	63,593	127,593	255,593
168	748 MB		14,952	30,952	62,952	126,952	254,952
240	1068 MB		14,632	30,632	62,632	126,632	254,632
336	1200 MB		14,500	30,500	62,500	126,500	254,500

resolution	quality	fps	16GB	32GB	64GB	128GB
FHD(1080P) 1920x1080	Super	30	5hours	10hours	19hours	39hours
		1	21hours	44hours	90hours	167hours
	High	30	6hours	11hours	23hours	47hours
		1	25hours	52hours	106hours	167hours
	Standard	30	7hours	14hours	29hours	58hours
		1	31hours	63hours	129hours	167hours
HD(720P) 1280x720	Super	30	9hours	19hours	38hours	76hours
		1	39hours	80hours	163hours	167hours
	High	30	11hours	22hours	45hours	90hours
		1	45hours	93hours	167hours	167hours
	Standard	30	13hours	27hours	55hours	111hours
		1	53hours	110hours	167hours	167hours
D1 720x480	Super	30	13hours	27hours	55hours	111hours
		1	53hours	110hours	167hours	167hours
	High	30	17hours	35hours	71hours	144hours
		1	66hours	136hours	167hours	167hours
	Standard	30	24hours	50hours	101hours	167hours
		1	85hours	167hours	167hours	167hours

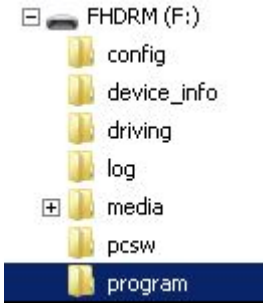
This table is a guideline only.
Actual results may vary depending on a variety of factors on the road.

CP4 Firmware Update Instructions via SD card

NOTE: If you're using CP4 with a SIM and connected service, please consult your telematics provider or SmartWitness before attempting to update you r device firmware. In this case, the firmware update can be much more easil y applied to your device using Smart API over-the-air update service.

1. Prepare Firmware

Create a folder called [program] on the SD root as shown below,



Save the "XXXXXX_x.x.x.img" file to the SD card inside the [program] folder.

2. Upgrading CP4

Insert the prepared SD card to CP4 unit and turn on the power.

The Blue & Red LED will blink while the unit is upgrading. It will also 'beep' continuously. Upgrading the unit usually takes about 30 seconds.

Warning: Do not turn off the power during upgrading. If the upgrade fails, the CP4 unit should be returned to your distributor.

Once the upgrading is finished, the unit will automatically reboot and power up as normal.

Technical Support & Warranty

TECHNICAL SUPPORT

For Technical Support, please contact your local distributor or visit support.smartwitness.com

LIMITED WARRANTY

This product is supplied with 2 year warranty. The Warranty excludes products That have been misused, (including accidental damage) and damage caused by normal wear and tear. In the unlikely event that you encounter a problem with this product, it should be returned to the place of purchase.

Optional Item

Model	Descriptions
CP4-LC 	Locking Steel Housing for CP4 Dimension : 155.00 x 130.00 x 24.00 mm, 330g
CP4-WIFI 	External WiFi modem, 802.11. b/g/n. Connects to rear USB1 port on CP4.
SVA045-A 	1.3Mega-Pixel 1/4" CMOS Sensor, Resolution: 720P, Angle of View: 120° Min. Illumination: 0.1 lux Operating Temperature: -10°C ~ 55°C Input Voltage: DC 12V 31mm(W) x 33.5mm(H) x 25mm(D)
SVA040-A 	1.3Mega-Pixel Sony Exmor CMOS Sensor Resolution: 720P, Angle of View: 120° Min. Illumination: 0.1 lux// IR LED On 0 lux Operating Temperature: -20°C ~ 60°C Input Voltage: DC 12V, 9pcs LEDs 80.5mm(W) x 50.5mm(D) x 61.0mm(H)
SVA035-A 	1.3Mega-Pixel Sony Exmor CMOS Sensor Resolution: 720P, Angle of View: 120˚ Min. Illumination: 0.1 lux// IR LED On 0 lux Weather-proof Housing (IP69K) Operating Temperature: -20°C ~ 60°C Input Voltage: DC 12V, 12pcs LEDs 59.2mm(W) x 56mm(D) x 62.1mm(H)
SVA033-C 	1/3” Sony Exmor CMOS Sensor Resolution: 600TV lines, Angle of View: 120˚ Min. Illumination: 0.1 lux// IR LED On 0 lux Weather-proof Housing (IP68) Operating Temperature: -10°C ~ 55°C Input Voltage: DC 12V, 12pcs LEDs 63.5mm(W) x 57.7mm(D) x 56.00mm(H)

www.SmartWitness.com