THE Dashcam™ STORE

CP4S

4-channel HD
vehicle recorder

User guide

Version 1.1.1 | Last updated 2/22/2023

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Please read this entire guide before installation and use.

CP4S

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WARNING:
Sensata INSIGHTS installations should be performed by a qualified individual 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.

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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 vehicle 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 5 and 30 minutes to get GPS reception.

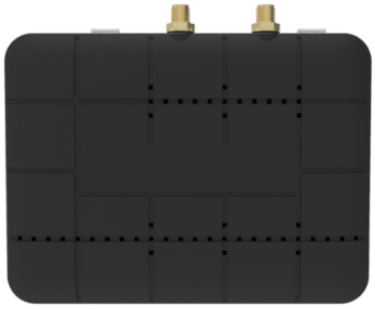
GPS reception may be impaired under the following circumstances

1. If there is an object at the end of the GPS antenna
2. If the 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 certain types of wireless activated alarms, MP3/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 or if the vehicle is in a covered location such as under a bridge or raised roadway, in a tunnel, 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

Package contents

CP4S vehicle recorder

SD and SIM cards pre-inserted (if applicable)



Power cable
BAT(+), IGN+, BAT(-)

Remote controller
(Panic button) with 3M adhesive

Video output cable and I/O triggers

Camera input cable
(4x input)

GPS antenna module

Audio microphone

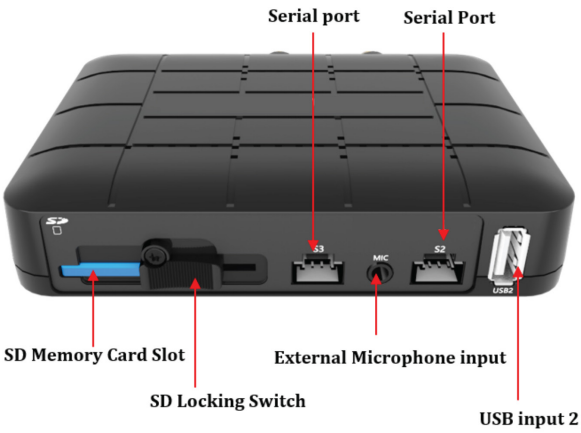
Wire splice clip, hook-and-loop adhesive, Torx® screw (x2) and Torx screwdriver

Mounting bracket and 4x self-tapping screws

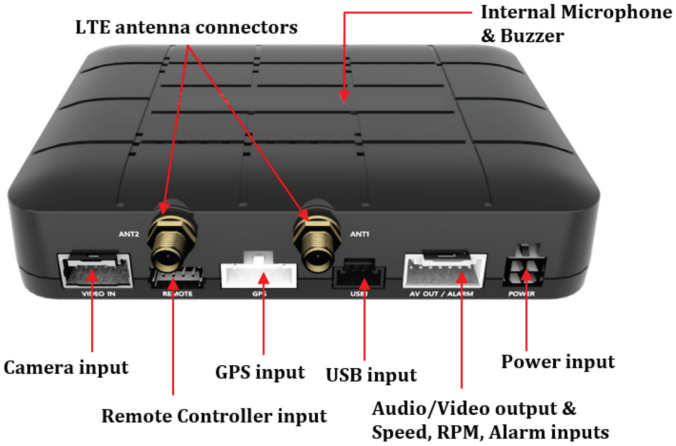
2x stubby antennas

Introduction

Front view

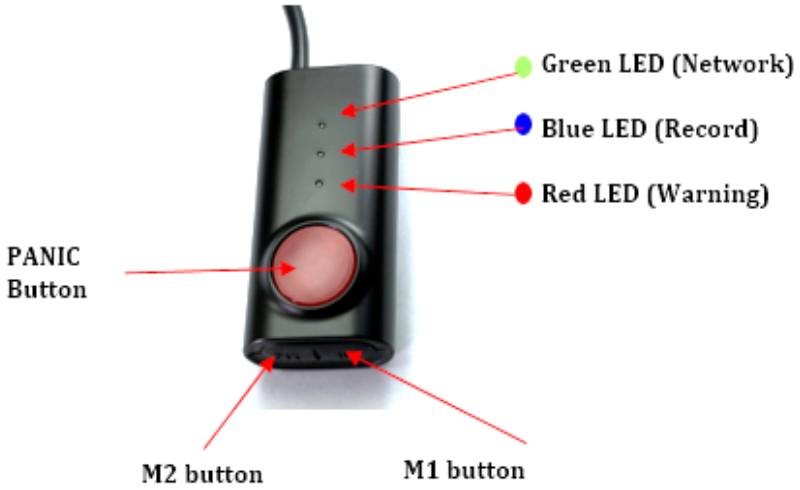


Rear view

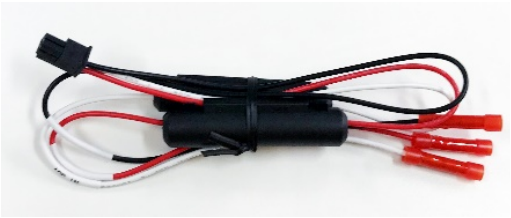


Introduction

Remote controller



Power cable



- **Black:** Ground: BAT(-)
- **Red:** Power: BAT(+)
- **White:** Ignition (IGN+)

} **Required**

Power Specifications
Input: DC 10~32V, 2000 mA
Output: DC 5V, 2500 mA

IMPORTANT NOTE
True ignition source should be used to connect the white wire.

Video output cable and I/O triggers

Video output for connecting LCD monitor (BNC female)

- **White:** Alarm In 1, voltage on/off (3~70V)
- **Purple:** Alarm In 2, voltage on/off (3~70V)
- **Green:** Alarm In 3, voltage on/off (3~70V)
- **Orange:** Alarm In 4, NC/NO (open/close)
- **Blue:** Speed (TACHO)
- **Gray:** RPM (TACHO)
- **Brown:** Alarm out, low (0V) to high (5V)
- **Black:** Ground for Alarm In 4 (NC/NO circuit)

Functions

Automatic Booting

Make sure the main unit and all components are properly connected. Once the CP4S has been wired to your vehicle power source, the CP4S will boot up. It 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 per your requirements. You can change the configuration of the recording using the CP4S Configuration Tool.

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

The unit will record when triggered by an impact (G-sensor), a push of the panic button, over speed or Alarm In 1~3. Each event file contains up to 20 seconds prior to and up to 30 seconds post the event. And the event file can be extended by a second trigger during event recording. 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, e.g., 30 frames 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 the 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 file will be made every 10 minutes.

Functions

G-Sensor Calibration

G-sensor calibration is needed after installing the CP4S.

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 starts to record.
5. Press and hold the “M1” button more than 2 seconds.
6. You will hear “beep” when you press the “M1” button, and then you will hear another “beep” after 2 seconds. Then release the “M1” button.
7. Then calibration will be done within 2 seconds.

Built-in Power Backup (supercapacitor)

When power to the unit is interrupted, the CP4S creates the last file using the internal supercapacitor.

Time and Date

Set your time zone using the configuration tool, then the CP4S gets its time from GPS satellites.

Parking Mode Recording

With parking mode activated and on normal recording mode, the CP4S will change to parking mode when the vehicle is not moving for more than 5 minutes, recording at 1FPS.

Live Screening

With an external monitor attached, the CP4S offers the option to screen video live.

Delayed Power Shutdown

Control the duration of time using the configuration tool. The CP4S stays powered and recording/networking after shutdown.

Functions

SD memory card format

Please format (initialize) the SD card using the CP4S Configuration Tool software. A blank SD card will also automatically format but will take a few minutes to complete.

Safe removal of SD card

Remove the Torx screw, and then slide the SD door open. The blue LED on the remote will turn off, then you can safely eject the SD card by pressing it in. After reinserting the SD card, close the door and attach the Torx screw.

Precautions for SD cards

To optimize use and prolong the 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 completely off before removing the SD card.
5. SD cards used for continuously recording equipment, such as a drive recorder, typically last only 6~12 months. Exchange SD cards periodically.

Installation

WARNING:
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Installation Guide can be viewed/downloaded at SmartOPS, or reach out to your INSIGHTS account manager.

Operation — on-screen display

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

The default display is quad view (2x2) with all cameras shown. To change the video display channel, press the **M2** button to select which camera to view. Each press will change the camera on display with the last option being all camera views.

4 cameras (2x2) → **Camera 1** → **Camera 2** → **Camera 3** → **Camera 4**

Configuration tool user guide

CP4S Configuration Tool software

The CP4/CP4S Configuration Tool allows you to further customize your device settings. If you wish to make specific calibration changes, please follow this link to download the most up-to-date software and gain access to supplemental documentation.

PC system requirement

Recommended PC specifications for CP4S Configuration Tool software

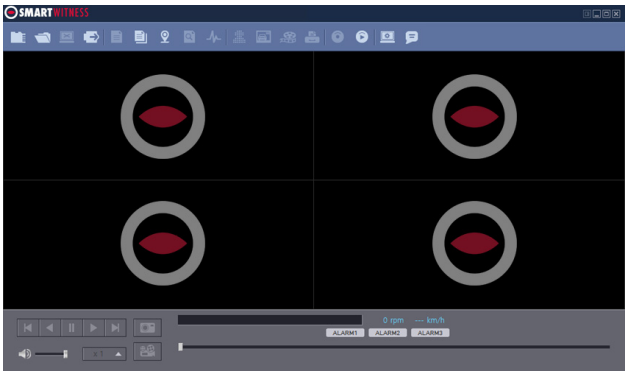
OS	Windows 7/8/8.1/10 or higher
CPU	Core 2 Duo 2.5GHz or higher
RAM	2GB or higher
Interface	SD memory card reader
HDD Free space	Install: 55MB or higher Backup: 4GB or higher
Display	1024 x 768 pixel/true color or higher

If the PC does not meet the minimum system requirement, the configuration tool software may not function properly.

Software user guide

SD Viewer Software

Sensata INSIGHTS' SD Viewer Software gives you access to enhanced video playback, editing and review. Please follow this link to download the software and gain access to supplemental documentation.



SD system requirement

Recommended PC specifications for SD Viewer Software

OS	Windows Vista, Windows 7, Windows 8/8.1 or higher
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 SD does not meet the minimum system requirement, the SD Viewer Software may not function properly.

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	300MB	15,593	31,593	63,593	127,593	255,593
168	748MB		14,952	30,952	62,952	126,952	254,952
240	1068MB		14,632	30,632	62,632	126,632	254,632
336	1200MB		14,500	30,500	62,500	126,500	254,500

Resolution	Quality	FPS	16GB	32GB	64GB	128GB
FHD (1080p) 1920 x 1080	Super	30	5 hours	10 hours	19 hours	39 hours
		1	21 hours	44 hours	99 hours	167 hours
	High	30	6 hours	11 hours	23 hours	47 hours
		1	25 hours	52 hours	106 hours	167 hours
	Standard	30	7 hours	14 hours	29 hours	58 hours
		1	31 hours	63 hours	129 hours	167 hours
HD (720p) 1280 x 720	Super	30	9 hours	19 hours	38 hours	76 hours
		1	39 hours	80 hours	163 hours	167 hours
	High	30	11 hours	22 hours	45 hours	90 hours
		1	45 hours	93 hours	167 hours	167 hours
	Standard	30	13 hours	27 hours	55 hours	111 hours
		1	53 hours	110 hours	167 hours	167 hours
D1 720 x 480	Super	30	13 hours	27 hours	55 hours	111 hours
		1	53 hours	110 hours	167 hours	167 hours
	High	30	17 hours	35 hours	71 hours	144 hours
		1	66 hours	136 hours	167 hours	167 hours
	Standard	30	24 hours	50 hours	101 hours	167 hours
		1	85 hours	167 hours	167 hours	167 hours

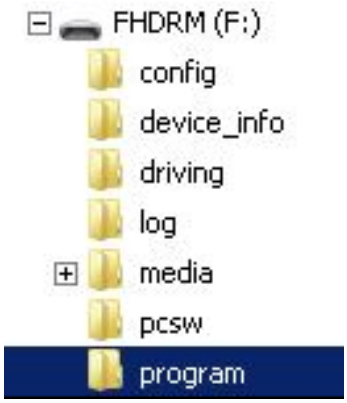
This table is a guideline only.
Actual results may vary depending on a variety of factors on the road.

CP4S firmware update instructions via SD card

NOTE:
If you're using the CP4S with a SIM and connected service, please consult your telematics provider or Sensata INSIGHTS before attempting to update your device firmware. In this case, the firmware update can be much more easily applied to your device using SmartAPI 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 the CP4S

Insert the prepared SD card into the CP4S unit, and turn on the power.

The **blue** and **red** LED lights 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 CP4S unit should be returned to your distributor.

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

Technical support and warranty

Technical support

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

Limited warranty

This product is supplied with a 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.

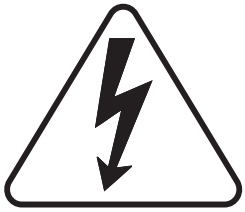
CP4S accessory add-ons

Model	Image	Description
CP4S-LC		Locking steel housing for the CP4S Dimension: 155.00 x 130.00 x 24.00 mm, 330g
SVA055-AM		Road + driver-facing dual camera (Road 1080p + driver 720p)
SVA027-A		Weatherproof side-mount camera, 720p
SVA037-A		Weatherproof rear-view camera, 720p
SVA050-A		Driver-facing camera, 720p
SVA041-AM		Road-facing camera, 1080p

Remote controller indicators and LED specifications

Status/step			LED			Buzzer	Voice To hear the Voice, please audio output cable to speaker
			Warning	Record	Network		
			Red	Blue	Green		
Startup and power off	Booting step 1 (0~20)		On	Off	Off		
	Booting step 2 (20~30)		On	On and off	Off		
	Booting finished (30, 1 second)		On	On	On	Beep (1000HZ, 200msec)	Beep (1 time)
	During power off		Off	Simultaneous flashing (blink rate: fast)			
	Power off finished		Off	Off	Off	Beep (2 times) (500HZ, 150msec)	
Record	Continuous record	Recording		On			
	Event record	Standby		On			
		Recording		Flashing (Blink rate: fast)			
	Dual record	Continuous recording		On			
		Event recording		Flashing (Blink rate: fast)			
	No record	Not recording		Off			
Network	Network device ready				On		
	Communication				On		
Function	SD initialize (format)		Off	On and off	Off and on		Beep (1 time) continuously
	G-sensor calibration						Beep, after 2 seconds beep x 2
	FW upgrade			On/on and off/off	Off/off and on/on		
	Button press					Beep (2000Hz, 200msec)	Beep
Warning	System warning	SD card full	Flashing (Blink rate: fast)	Off			Beep x 4 (3 times)
		Video loss, video STD error	On				
Error	Record error	SD error, no SD, write fail	Flashing (Blink rate: slow)	Off			Beep x 4 (3 times)
	Network error	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 x 2 (1 time)
	Over speed						Beep, beep x 2 (1 time)

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 real-time clock (RTC) 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.

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