



CP4S

4 Channel HD Recorder



Installation Guide

Model #: CP4S-NA, CP4S-EU

v1.0.1

WARNING: SmartWitness 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.

If you need to schedule a professional installation service in the USA for your SmartWitness device(s), please visit <https://smartwitness.com/scheduleinstall> and submit the online form.

All cellular-enabled CP4S devices must use the installation wizard for proper onboarding and activation, please visit <https://install.smartwitness.com> to register, login, and use the SmartInstall wizard.



1. Overview

The SmartWitness CP4S is the world's smallest 4 channel LTE-enabled vehicle recorder. CP4S, an in-vehicle drive recorder, offers commercial vehicle owners an effective risk reducing means to aid in the investigation process, decrease collateral damages associated with car accidents, encourage safe driving, monitor driving behaviors, and enhance the overall safety on the road. CP4S features 4 camera inputs for connecting 1, 2, 3, or 4 cameras. A 6-Axis G-Sensor, Microphone, SD card (up to 256GB capacity), panic button, cellular modem, & GPS receiver are included. CP4S is powered up on vehicle ignition and automatically begins recording. Various camera options are available, making the amount of possible CP4S system combinations nearly endless.

CP4S is small, lightweight, easy to use, and simple to install compared to other complex and expensive mobile DVRs. CP4S can be easily installed inside a glove box or purchased with a locking case to prevent unauthorized access to the recorded data. An LCD monitor is not required for use, but can be added to provide added visibility in and around the vehicle for added security and safer operation.

➤ Features

Recording Features	
1080p recording on channel 1. 720p recording on channels 2~4.	256GB SD storage capacity, record up to 270 hours of footage on 4 camera setup.
Various camera options: wide angle, weatherproof, infrared, dome, side view, rugged, reverse cameras, etc.	Dual Record mode (Continuous + Event). Optional Audio Recording.
Connects directly to vehicle ignition power, automated operation.	Tamper-Resistant locking case available; Key required to access SD card Data.
GPS data records full time to provide location data, vehicle speed, and accurate time/date.	Three 12V alarm input triggers for advanced event recording.
Delay power shutdown feature enables recording for up to 24 hours after ignition off.	Built-in temperature logic for improved performance in high-temp environments.
Adjustable Resolution & Frame Rate. Built-in G-Shock Sensor and Gyro (adjustable sensitivity).	Auto SD card format feature. CP4S automatically detects SD error/corruption and auto-formats itself and begins recording again.

Playback & Analysis Features	
PC Analysis Software Included, which can be downloaded at: support.smartwitness.com	Compatible with SmartWitness Smart API for AVL/Telematics Integration.
Filter Data Search by Time/Date, Event, Vehicle Speed, G-Force level.	MP4 Conversion Tool. Data Remains Watermarked.
Google Maps Integration for Route Tracking.	Google Earth Export Tool for Advanced Route Tracking and Archiving.
Privacy masking feature for blurring out faces or license plate numbers.	31-day Vehicle Tracking History, showing vehicle location, speed and driving style regardless if event video was recorded or not.
Optional LCD monitor connected, view all four cameras at once or playback recorded videos in the vehicle	OTA Software & Firmware Updates. Save/Print Event Reports.

➤ **Package Contents**

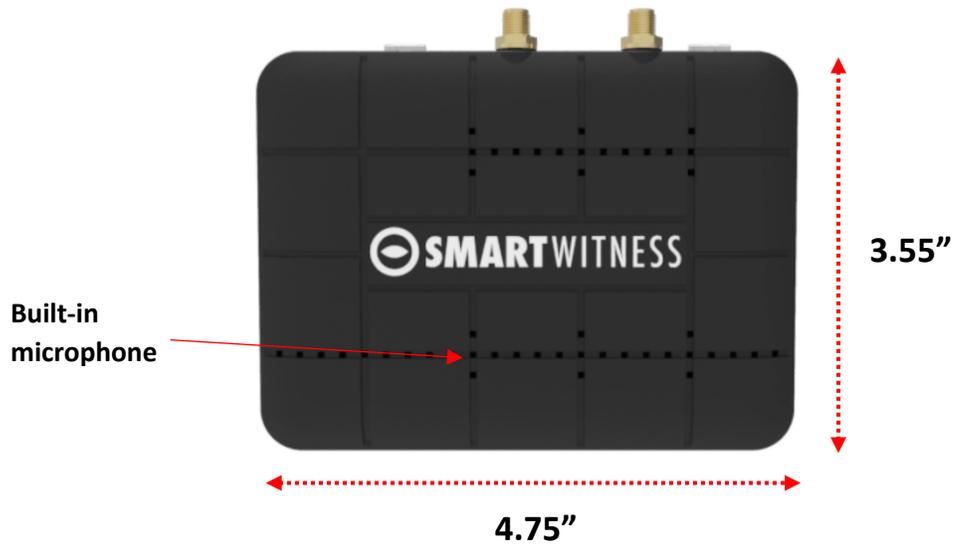
Product Name	Image
<p>CP4S Vehicle Recorder SD and SIM cards pre-inserted (if applicable)</p>	
<p>Power Cable BAT(+), IGN+, BAT(-)</p>	
<p>Remote Controller (Panic Button) with 3M adhesive</p>	
<p>Video Output Cable and I/O triggers</p>	
<p>Camera Input Cable (4x input)</p>	
<p>GPS Antenna Module</p>	
<p>Audio Microphone</p>	

Torx Screw (x2) and Torx screwdriver	
Mounting Bracket and 4x self-tapping screws	
2x 3G/LTE Stubby Antennas	

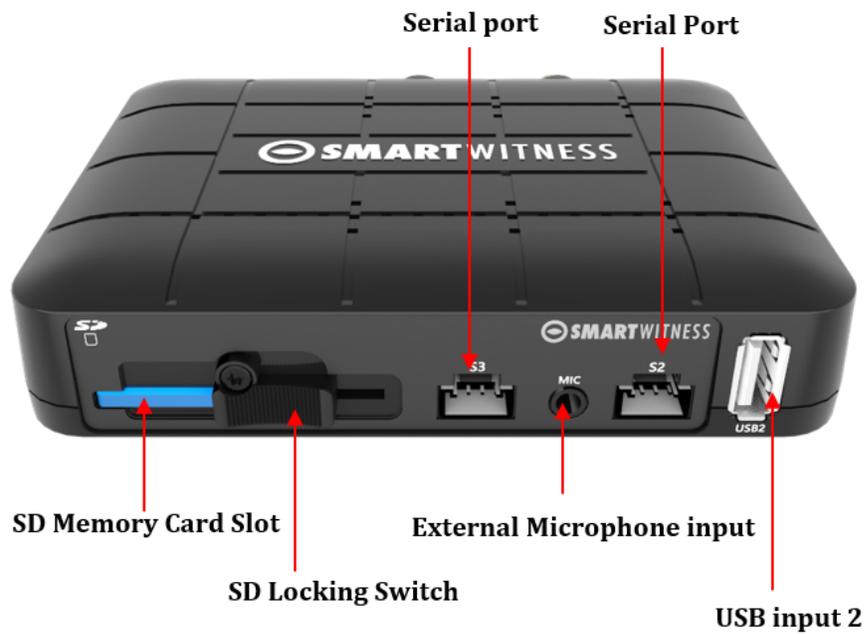
2. CP4S Hardware Overview

Watch 360° Hardware Overview Video here: <https://youtu.be/cLmUPGLnqSM>

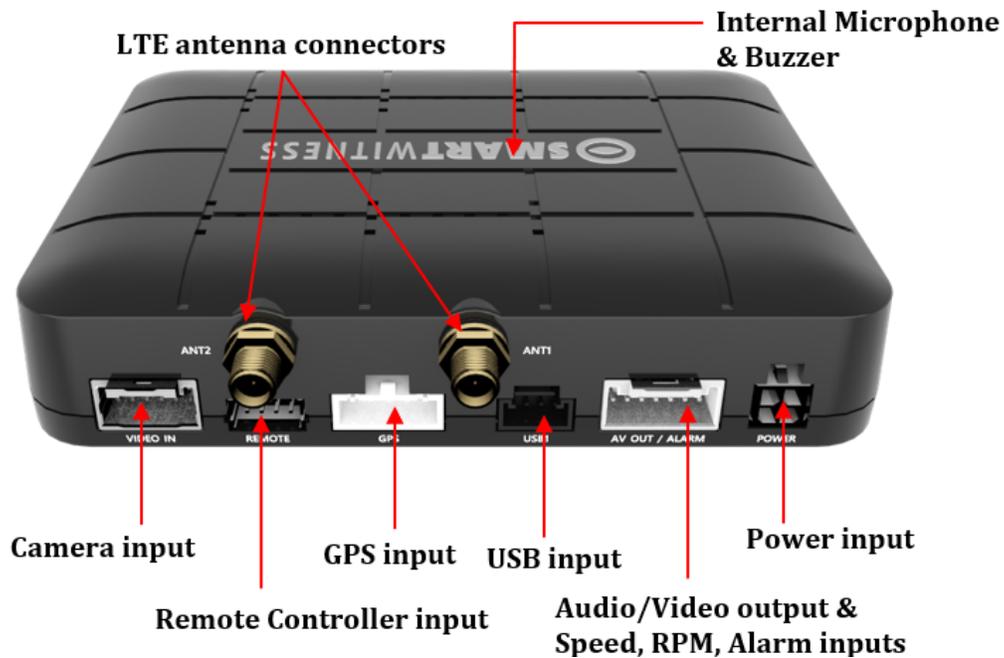
➤ Dimensions



➤ **Front View**



➤ **Rear View**



3. Installation:

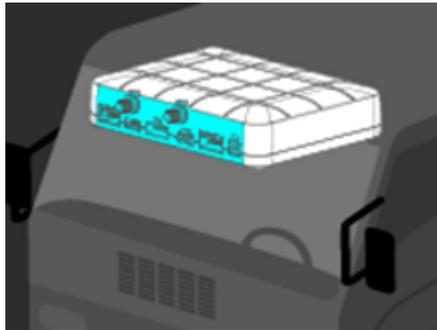
Park the vehicle on a flat service. Turn of the engine before installing the CP4S.

- The SD card and SIM is usually pre-inserted, but if it's not, you should be notified by the service provider and have been provided SIMs/SDs separately.



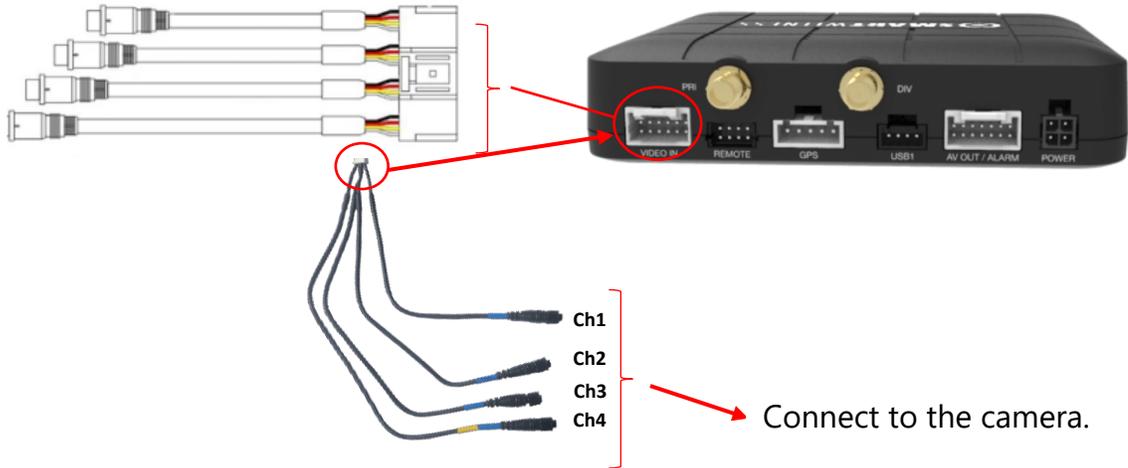
Find installation location for recorder and locking case (if applicable).

- The default axis adjustments by device position is set as shown below.



- Install all the interior and exterior cameras with 3M dual sided adhesive or hard mounting screws (confirm with customer as to the desired installation method).
 - All the four cameras will be connected to the CP4S recorder via the **Camera Input Cable**.

Ch1: 1080p
Ch2: 720p
Ch3: 720p
Ch4: 720p



- Install remote control onto dash next to the steering wheel and within reach of the driver.





- Run camera cable(s) and secure in headliner and or other area so no cables are exposed. Use provided wire clips if necessary.
- Connect all cables to CP4S Recorder. Secure the windshield mounted camera cables into the headliner and down the A-Pillar.
- **Route the GPS cable and LTE Antenna cable (if applicable) up the side panel and on the dashboard**, in view of the windshield (so it can have a view of the sky to acquire GPS signal).
 - Activate the product in an area without large buildings to improve GPS reception.
 - The temperature ranges for optimum operation of the GPS receiver in your car is -10 ~ 50°C.

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.



CP4S GPS antenna properly installed on the Vehicle Dash

➤ **Camera Types**

- CP4S has various camera models offered which should be installed in the appropriate location. Here is a reference guide for the common models.

Model #	Picture	Installation Location	Notes
SVA055-AM		Road + Driver Facing Dual Camera	Road facing camera is 1080p. Driver Facing camera is 720p. Driver camera has IR LEDs.
SVA027-A		Weatherproof Side Mount Camera	720p weatherproof camera, IR LEDs
SVA037-A		Rear View Camera	720p weatherproof camera, IR LEDs
SVA050-A		Driver facing camera	720p, IR LEDs
SVA041-AM		Road facing camera	1080p

*NOTE: Older model accessory cameras are compatible with CP4S. To connect an older model accessory camera, please utilize adapter **SVA-CNVRT-B**.

➤ Camera Channel inputs

- CP4S has some rules on which cameras can be connected to each input (1~4).

Connecting one 1080p camera and 3x 720p cameras

Resolution	FPS
CH1 1080p	15
CH2 720p	10
CH3 720p	10
CH4 720p	10

Connecting 4x 720p cameras

Resolution	FPS
CH1 720p	15
CH2 720p	15
CH3 720p	15
CH4 720p	15

If using D1 (720x480 or VGA) camera, it must be connected to Ch4

Resolution	FPS
CH1 720p	15
CH2 720p	15
CH3 720p	15
CH4 D1	30

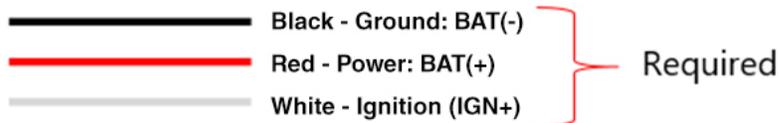


LCD Camera Channel Display
order (Quad View)

4. CP4S Power Cable and Wiring

Make sure the vehicle is off, then connect the required wires to the vehicle, as shown below in the wiring diagram.

➤ Power Connection

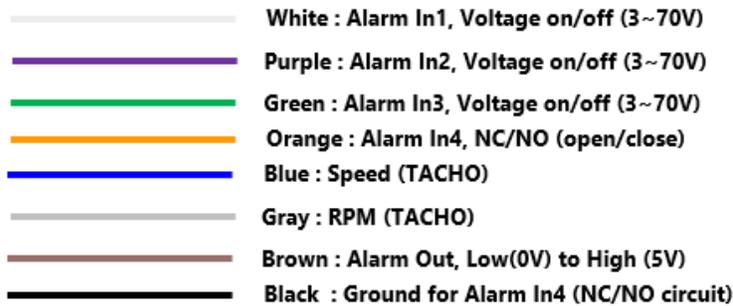


Power Specifications
 Input: DC 10-32V, 2000 mA
 Output: DC5V, 2500 mA



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

➤ Video Output Cable & I/O Harness (optional)



Video output for connecting LCD monitor (BNC female)

5. Mounting Bracket Installation

- a. Place the CP4S inside the mounting bracket and secure to vehicle using the 4 provided self-tapping screws.



6. Locking Enclosure (Optional)

a. Front View (open)



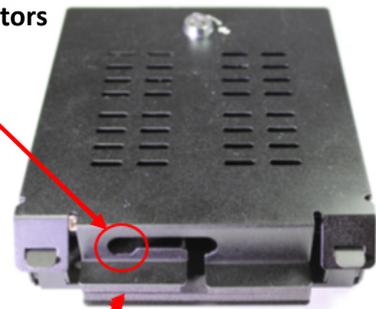
Screw holes for mounting

b. Rear View (Closed)



Security Lock

Holes for LTE Antenna Connectors



Foam padding for securing cables and tension relief

7. Connecting LCD monitor with Video Output cable (optional)

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

1. Connect BNC/RCA cable (included with SmartWitness LCD monitor) to CP4S Video output (BNC female) and LCD V1 input (RCA female)
2. LCD monitor should be installed in the cab. (download LCD monitor guide from install.smartwitness.com, a printed copy is also included in the LCD package)
3. Connect LCD power cable to a true ignition (IGN+) source and Ground to BAT(-).



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.

8. Final steps

After installation of the CP4S and accessories into the vehicle you can turn on the ignition and CP4S recorder will power on. There will be a sequence of red, blue & green LED lights on the Remote/Panic Button during the boot-up process.

- Once boot-up is complete, the red light will turn off and there will be only a solid blue & green (only for connected device) light on. This indicates proper operation and recording. If the red light is blinking, then there is an error, then contact your supplier or visit support.smartwitness.com to create a support ticket. **Please see section 10 for more details on LED status indicators.**
- Login to install.smartwitness.com and complete the installation wizard to validate the installation and generate the installation report.

NOTE: To access install.smartwitness.com, you must first go through mandatory training with SmartWitness. Once you complete the training (about a 30-minute webinar), you will be provided login credentials. To schedule training, please complete the online form here: <https://www.smartwitness.com/become-installer>

➤ G-Sensor Calibration

G-sensor calibration is needed after installing the CP4S.

- a) Turn on the unit and wait until it starts recording.
- b) Press and hold **M1** button (located at the remote controller) for more than 2 seconds.
- c) You will hear a **beep** when you press **M1**, and then you will hear another **beep** after 2 seconds. Upon the second beep, you can release **M1** button.
- d) Then the calibration will be done within 2 seconds.

M1 Button for G-Sensor Calibration



9. Troubleshooting

- **The CP4S has a solid red light on as well as solid green and blue.**
 - Solid red LED indicates that one of the connected cameras is not receiving view signal. Please check the camera's connection.
- **The CP4S red LED is blinking**
 - There is an SD card error/corruption. Please replace the SD card or contact SmartWitness.
 - The new SD card must be initialized with the CP4S Configuration Tool for the device to function properly, and the right settings must be applied.
 - IF SD card is blank (not initialized), the CP4S will automatically initialize the SD card, apply the latest NAND settings, during the rebooting process.
 - There is a power issue. Please verify proper voltage and amperage is being supplied to the Red (BAT+) & White (IGN+) cables on the power harness and that the black cable is properly connected to BAT(-)
- **The CP4S green LED is blinking or off.**
 - The SIM card is not registered with the cellular network. Please verify the SIM is inserted correctly.
 - If it looks to be inserted correctly, please remove and re-insert the SIM card and try again
 - Power cycle the camera.

10. Remote Controller Indicators & LEDs Specifications



Status/Step		LED			Buzzer	Voice [Remark] To hear the Voice, please audio output cable to speaker.	
		Warning	Record	Network			
		(Red)	(Blue)	(Green)			
							
Start-up	Bootting step1 (0~20)		On	Off	Off		
	Bootting step2 (20~30)		On	On and Off	Off		
	Bootting Finished (30, 1second)		On	On	On	[Beep] (1000Hz, 200msec)	「Beep」(1time)
	Power off	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)