

SmartWitness CP2 / CP2-LTE

Device Configuration Guide

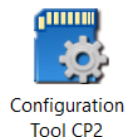


CP2 3G model



CP2 4G/LTE model

CP2 Setup and Configuration



1. Download the CP2 configuration tool 3.3.0 [here](#)
2. Install and open the configuration tool:
 1. Insert SD Card into your PC (Max 256GB SD card supported)
 2. Click 'Initialize SD Card'
 3. Select the SD card from File Explorer
 4. Click "Start" to initialize
3. Apply your desired settings (or click "Open" to load existing settings)
4. Click "Save to apply to SD card"
5. Eject Card safely from your PC

[CLICK HERE FOR VIDEO DEMONSTRATION](#)

NOTE: CP2 should be running version 3.3.0 firmware to ensure proper device function and support for all device settings in this guide. Firmware version can be updated over-the-air via Smart API workstation.

Device Tab

Camera

Enable main and secondary camera.

Power Connection

Specify the power source type.

- INT1-T is the standard power type for CP2.

Delayed Power Shutdown: Amount of time CP2 stays powered on after ignition is turned off.

Wakeup Interval: Time interval in which the CP2 will automatically power up again after shutdown

Register Interval: How long the CP2 stays powered on during the wakeup interval.

EXT-Device: Optional accessory add-ons which connect to the serial input can be enabled here. Once "S1" port is selected, you can select the serial accessory from the dropdown list and any correlating checkbox options.

RF-Reader: Optional accessory add-on which connects to the serial input. RF reader type (touch or insertion) and warning time can be set.

Bluetooth Panic: Optional button can be added to CP2. [See operation spec here](#)

Configuration Tool

Device | Record | Event | Info. | Connectivity | Server

Camera

Camera Title

☒ CAM1 CAM1

☒ CAM2 CAM2

Video Type NTSC

Power Connection

Type INT1-T

Power ON/OFF

Delayed Power Shutdown 00 : 15

Wake-up Interval Off

Register Interval 00 : 00

EXT-Device

Port None

Type DNMEA

☐ GPS ☐ RPM

☐ Speed ☐ Signal

☐ Record Text

☐ Send Health Info

DSM Event

☒ Sleeping

☒ Distraction

☒ Facial Departure

☒ Smoking

☒ Calling

Other Device

RF-Reader

Port None

Type Insertion

Warning Time ∞

Bluetooth Panic Flic

About Settings Initialize SD Card Open Save Eject SD Card

Record Tab

Resolution: choose from VGA, HD (720p) or FHD (1080p)

*CH2 is limited to D1 only

Frame Rate: Choose from 30, 15, 10, 5, 4, 3, 2, or 1

Quality: Standard, High, or Super bitrate. (The lower the quality, the more lossy the video output).

Record Modes

Event: Only events are recorded, event video duration determined by the pre & post event setting.

Continuous: Records video continuously, no events (events can still be sent to Smart API server if configured on the Server tab).

Dual Mode: Records continuous at 1FPS + events at the specified FPS.

*If Dual Mode is set, you can adjust the SD card partition for event and continuous video by adjusting the slider setting left or right.

Telematics Data (DRV file) is recorded and stored separately from video and events. Set the local storage duration here.

Audio recording can be turned on or off

Parking Mode reduces the FPS to 1 when the vehicle is idle for 5 minutes (Continuous Mode option only).

Automatically Remove Data

You can set the device to automatically delete the SD card Telematics Data and/or the Video Data. Check the box to enable the auto delete function and the data retention time.

Encryption No. 4 digit passcode to protect the SD card data from being easily viewed with the Analysis software.

Configuration Tool

Device | **Record** | Event | Info | Connectivity | Server

Channel

| | Resolution | NTSC FPS | Quality |
|-----|------------|----------|---------|
| CH1 | 720p | 5 | High |
| CH2 | D1 | 5 | High |

Data Usage Calculation

Disk Size: 16GB

Calculate

Video Data

Record Mode: Continuous

Continuous: 50% | Event: 50%

Pre-Event: 10 Sec

Post-Event: 10 Sec

☒ Parking Mode (Continuous Mode Only)

☐ Record Audio

Encryption No. 1000 ~ 9999

Overwrite

☒ Enable

☐ Automatically remove data 0 Days 2 Hours

Telematics Data

☒ Enable

Duration: About 40 Hours

Overwrite

☒ Enable

☐ Automatically remove data 0 Days 2 Hours

About | Settings | Initialize SD Card | Open | **Save** | Eject SD Card

Event Tab – G Sensor

Events can be turned on/off per each camera channel (event mode and dual mode only).

“Beep” controls the audible chime in the vehicle

Check this box to increase G-Sensor threshold at higher vehicle speeds.

G-Sensor Sensitivity Settings.

X=Front/Rear

Y=Left/Right

Z= Up/Down

Hz= the amount of times in a row the G-Sensor level must be exceeded before trigger

Ecall is a severe impact G-Sensor which can be configured to send emergency notifications separately from lower level shock events.

Turn Z-Axis on: when enabled, the Z axis on the G-Sensor (up/down) will be activated.

When checked, only Ecall and Shock events will trigger (accel, brake, and turn events will be ignored)

The screenshot shows the 'Configuration Tool' window with the 'Event' tab selected. The 'G-Sensor' sub-tab is active. Red arrows point from the text blocks to the following UI elements:

- Arrow 1 points to the 'Record CH' checkbox, which is checked and has '1,2' entered next to it.
- Arrow 2 points to the 'Auto adjust G-Sensor to vehicle speed' checkbox, which is checked.
- Arrow 3 points to the 'Custom' radio button under 'Smart G-Sensor Sensitivity'.
- Arrow 4 points to the 'Emergency Call Trigger' section, specifically the 'mG (0~4000)' field.
- Arrow 5 points to the 'Trigger high impact events only' checkbox.

The 'Smart G-Sensor Sensitivity' section is expanded, showing the following settings:

- Pre-set:** ☐ (selected)
- Simple Setting Mode:** ☐
- Sensitivity:** 5
- Shock:** 5
- Accel/Brake:** 5
- Turning:** 5
- Emergency Call Trigger:** mG (0~4000) X: 3900, Y: 3900, Z: 3900
- Custom:** ☒
 - High Impact:**

| | X | Y | Z |
|-------------|-----|-----|------|
| mG (0~4000) | 950 | 950 | 2000 |
| Hz (1~20) | 3 | 3 | 20 |
 - Harsh Accel/Brake:**

| X | |
|-------------|-----|
| mG (0~4000) | 450 |
| Hz (1~20) | 10 |
 - Harsh Turn:**

| Y | |
|-------------|-----|
| mG (0~4000) | 350 |
| Hz (1~20) | 15 |
- Turn Z Axis on:** ☐
- Trigger high impact events only:** ☐

Buttons at the bottom: About, Settings, Initialize SD Card, Open, Save, Eject SD Card.

Event Tab – MISC

The Event tab will allow you to specify which events will trigger a recording (Event record mode or Dual record mode only).

Check the boxes next to each event you want triggered.

You can also set speed thresholds here if you'd like to record over speed events. (This is raw vehicle speed and does not account for road/posted speed limits)

Check "Beep" if you'd like an audible chime to alert the driver when the event occurs

Alarm In: If using the optional alarm input triggers (Alarm1: orange wire, Alarm2: green wire) then you need to check the box(s) here and label them according to the input type (i.e. horn, lights, door open, etc.)

Also the input type should be selected (NC/NO, or 12V ON/OFF).

Alarm Out: if selected, will send a 5V output from the Yellow wire to a 3rd party device for the duration selected in the dropdown.

Wake Up: when enabled, the CP2 will power up when the Alarm Input is triggered. (CP2 will stay online for the same amount of time set in the Register Interval setting).

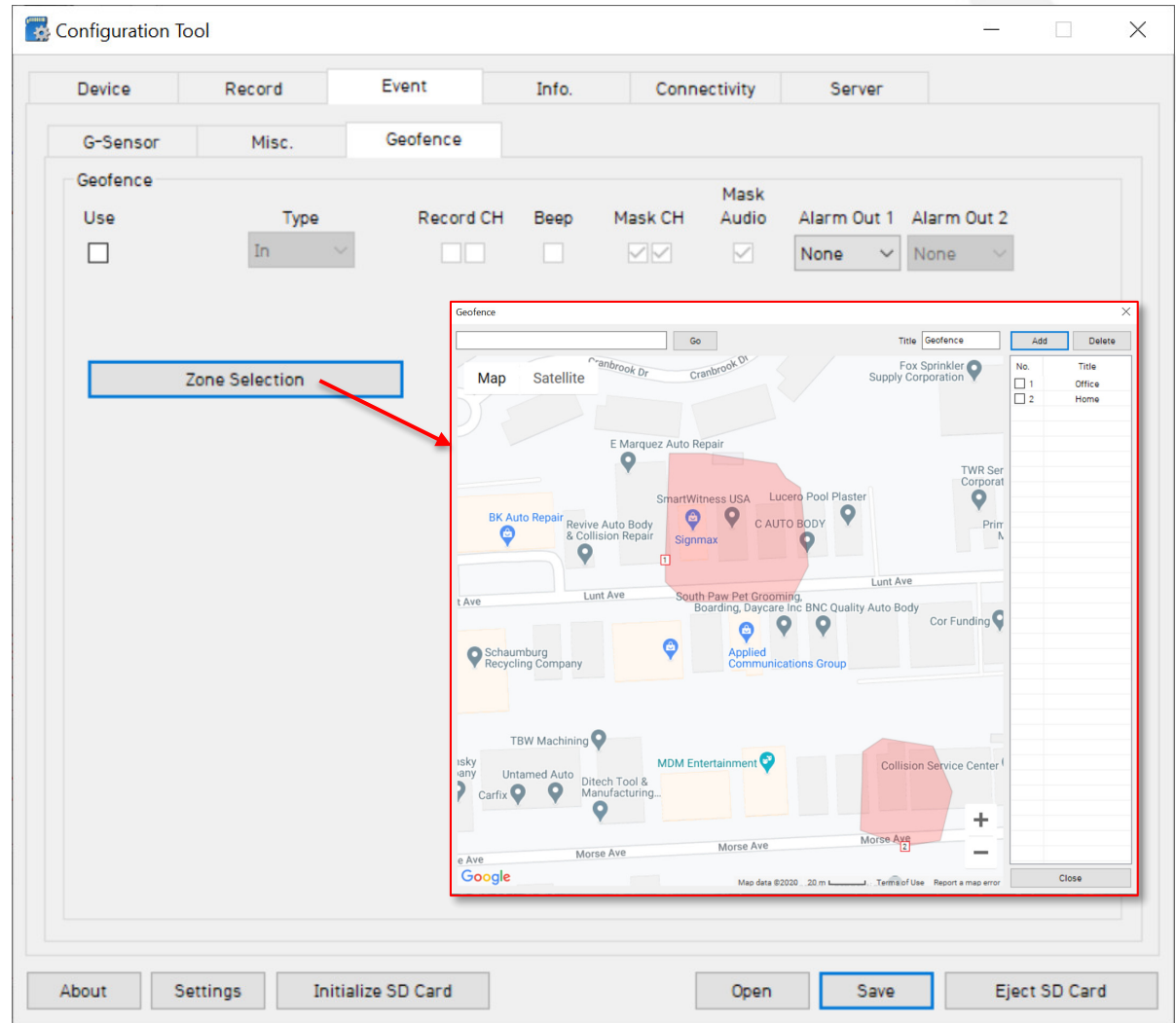
The screenshot shows the 'Configuration Tool' window with the 'Event' tab selected. The 'Misc.' sub-tab is active. Red boxes highlight the following sections:

- Panic Button:** Includes checkboxes for Record CH, Beep, Mask CH, Mask Audio, and a dropdown for Alarm Out 1 (set to None).
- Overspeed:** Includes a Speed Limit input (125 km/h Over), checkboxes for Record CH, Beep, Mask CH, Mask Audio, and a dropdown for Alarm Out 1 (set to None).
- Alarm In:** A table with columns: Use, Title, Type, Record CH, Beep, Mask CH, Mask Audio, Alarm Out 1. Two rows are shown: ALARM1 (V-Off) and ALARM2 (N-O). Both have 'Use' checked and 'Record CH' checked.
- Wake-up:** A checkbox labeled 'Wake-up'.

At the bottom, there are buttons for 'About', 'Settings', 'Initialize SD Card', 'Open', 'Save', and 'Eject SD Card'.

Event Tab – Geofence

- **Geofence Type:** In or out (vehicle enters or exits geozone(s))
- **Beep:** audible alert from the camera when geofence event occurs
- **Mask Ch:** Select camera channel(s) to disable video recording during geofence events
- **Mask Audio:** disable audio recording during geofence events
- **Zone Selection:** set up to 20 geofence zones



Info Tab – Date/Time

Time setting is not necessary as the PC Viewer software and Smart API both adjust the standard UTC time to local time automatically.

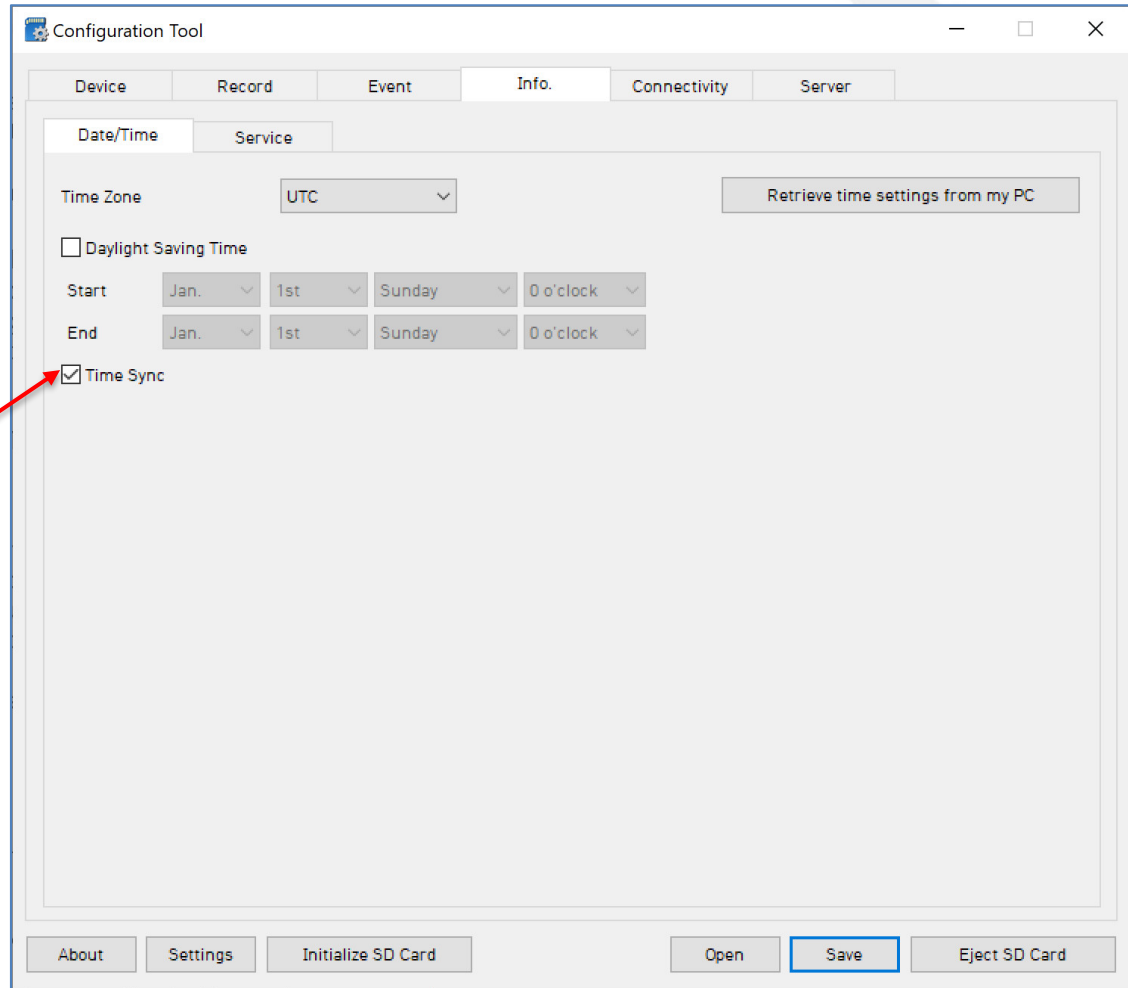
DST (Optional)

Check the box to enable the daylight saving time.
Input the start & end date.

***DO NOT USE IF CP2 IS CONNECTED TO SMART API**

Time Sync

Keep this enabled to ensure the GPS time is continuously synched with the CP2 operating system time.



The screenshot shows the 'Configuration Tool' window with the 'Info' tab selected. Under the 'Date/Time' sub-tab, the 'Time Zone' is set to 'UTC'. The 'Daylight Saving Time' checkbox is unchecked. The 'Start' and 'End' dates are both set to 'Jan. 1st Sunday 0 o'clock'. The 'Time Sync' checkbox is checked, and a red arrow points to it from the text on the left. At the bottom of the window, there are buttons for 'About', 'Settings', 'Initialize SD Card', 'Open', 'Save', and 'Eject SD Card'.

| Device | Record | Event | Info. | Connectivity | Server |
|---|--------|-------|-------|--------------|--------|
| Date/Time | | | | | |
| Time Zone: UTC | | | | | |
| <input type="checkbox"/> Daylight Saving Time | | | | | |
| Start: Jan. 1st Sunday 0 o'clock | | | | | |
| End: Jan. 1st Sunday 0 o'clock | | | | | |
| <input checked="" type="checkbox"/> Time Sync | | | | | |

Info Tab – Service

Auto Format Feature: Allows CP2 to automatically format a blank SD card for use.

Ignition Off Filter

- **Filter Duration** specifies how long the device will maintain the ignition status as true when the **G-sensor Threshold** value exceeds the set mG. In the pictured settings, if the power drops from the vehicle ignition source (due to Smart Alternator or other reason) and the g-sensor values are 50 or above, then the device will maintain Ignition ON status for 5 seconds.

Vehicle No & Driver ID can be added here. These values will be able to be watermarked on the MP4 converted video using the desktop analysis software (PC or MAC).

System Warning

Provides an alert in case system issue is detected.

- **Source:**
 - *SD Card:* is not recognized or writing is failed.
 - *Temperature:* Alerts when device temp is over 80°C
 - *Video Loss:* Video signal loss from camera(s).
 - *AUX:* Any error detected from an external serial accessory which is connected.
- **Event:**
 - *Beep:* CP2 will make an audible alert when the selected warning events occur
 - *Popup:* A message will appear on the LCD monitor
 - *Alarm LED:* RED LED on CP2 will turn on
 - *Alarm Out:* 5V signal will send out from the CP2 alarm out wire.

NOTE: if system warning event is enabled at the source section, any corresponding event message will send to Smart API server

The screenshot shows the 'Configuration Tool' window with the 'Info' tab selected. The 'Service' section is active, displaying various settings. The 'System' section includes 'Speed Source' (GPS), 'Speed Unit' (km/h), 'Auto Format Feature' (checked), and 'Beep' (checked). The 'Ignition Off Filter' section has 'Use' checked, 'Filter Duration' set to 5 seconds, and 'G-Sensor Threshold' set to 50 mG. The 'User Management' section has 'Vehicle No' and 'Driver ID' fields. The 'System Warning' section has 'Use' checked, with 'Source' options 'SD Card' (checked), 'Temperature' (checked), 'Video Loss' (checked), and 'AUX' (unchecked). The 'Event' section has 'Alarm out1' (unchecked), 'Beep' (checked), and 'Alarm LED' (checked). The bottom of the window has buttons for 'About', 'Settings', 'Initialize SD Card', 'Open', 'Save', and 'Eject SD Card'.

Connectivity Tab

When using CP2 as a connected device, "Enable" the connectivity here

Mobile Network:

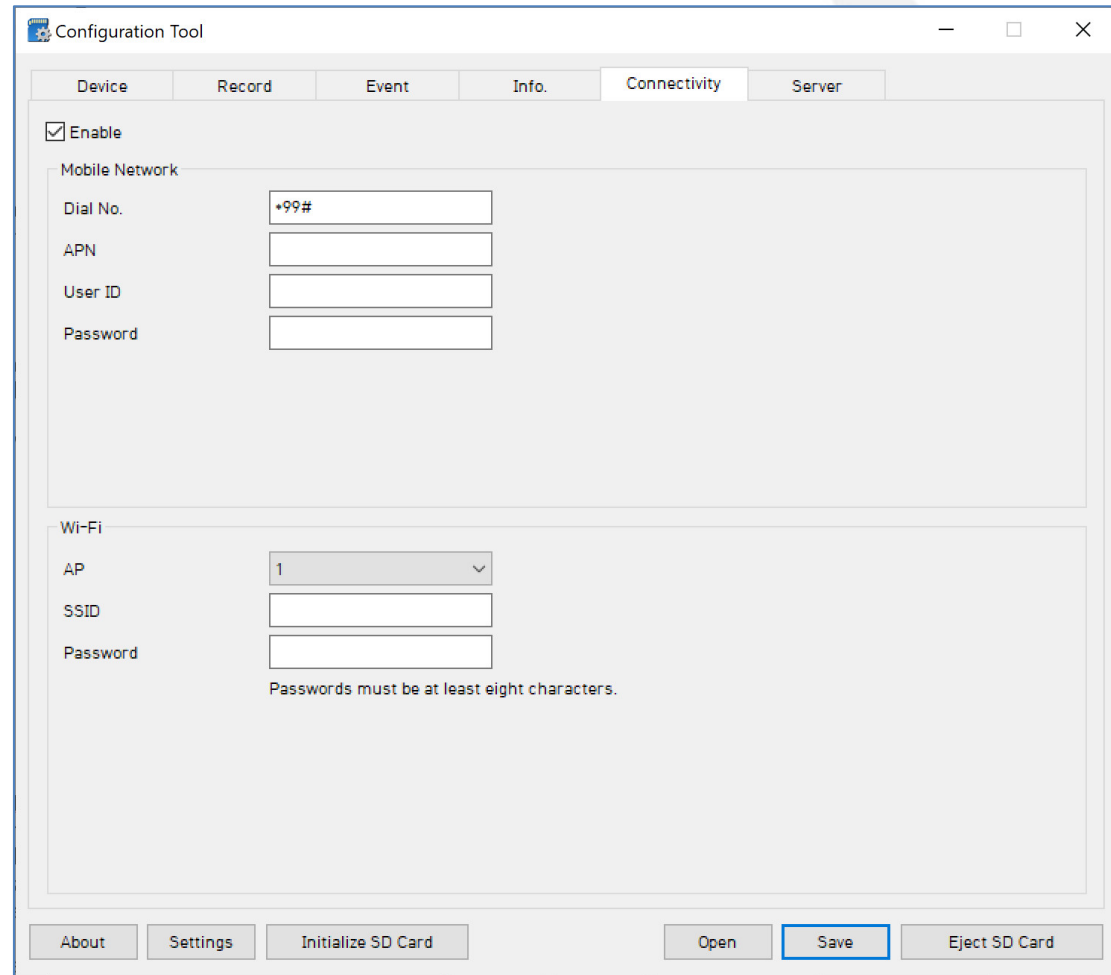
*99# can be used for all networks except for Verizon and Sprint.

APN is not required. CP2 will automatically receive the APN information via the cellular module.

If Sim requires a username and password, the APN, User ID, and Password must be entered (CHAP/PAP authentication is automatically assigned)

WiFi: CP2 has built-in WiFi. You can enable WiFi connectivity instead of cellular connectivity. 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



The screenshot shows the 'Configuration Tool' window with the 'Connectivity' tab selected. The window has a title bar with standard Windows controls and a menu bar with 'Device', 'Record', 'Event', 'Info.', 'Connectivity', and 'Server'. The 'Connectivity' tab contains two main sections: 'Mobile Network' and 'Wi-Fi'. In the 'Mobile Network' section, there is a checked 'Enable' checkbox, followed by input fields for 'Dial No.' (containing '*99#'), 'APN', 'User ID', and 'Password'. The 'Wi-Fi' section has a dropdown for 'AP' (set to '1'), and input fields for 'SSID' and 'Password'. A note below the password field states 'Passwords must be at least eight characters.' At the bottom of the window, there are buttons for 'About', 'Settings', 'Initialize SD Card', 'Open', 'Save' (highlighted with a blue border), and 'Eject SD Card'.

Server Tab

SmartWitness or your service provider will provide you the URL and (if necessary) the License Key to enter here.

Transmit Live Tracking Data: Check to enable http posts from the CP2 to server. Livetrack2 contains GPS coordinates. LiveTrack3 does not.

Transmit Event Data: Check to enable CP2 posting event notification and images to the server.

Transmit Telematics Data: Check to enable CP2 to send DRV data (static/compressed file containing drive data from every second the vehicle is in operation).

Note: The frequency interval of LiveTrack and DRV uploads are controlled by the server.

Select the events here which the CP2 will transmit to the server in real-time. These events will transmit instantly even if CP2 is set as "Continuous" record mode. The events with contain the amount of images set in the pre/post event dropdowns.

Click 'Save' and select the "FHDRM" SD drive when prompted. This will save your configuration to the card. Wait for the software to confirm the settings have been applied to the SD Card.

You can now eject the SD from your PC and insert into CP2 and power on.

The screenshot shows the 'Configuration Tool' window with the 'Server' tab selected. Red arrows and boxes highlight specific configuration areas:

- A red arrow points to the 'Domain/Static IP and Port #' field, which contains 'http://sw.modularis.com:5000/api'.
- A red box encloses the 'Transmit' section, which includes:
 - Tracking Data:** ☒ Transmit Live Tracking Data, Live Tracking Data Type: LiveTrack2.
 - Event Data:** ☒ Transmit Event Data, ☐ Include G-Sensor/Gyro Data.
 - Telematics Data (DRV):** ☒ Transmit Telematics Data (DRV), G-Sensor/Gyro Data: None, Data Type: Default.
 - Emergency Call:** ☒ Transmit Emergency Call Notification.
- A red box encloses the 'Event Triggered by' section, which includes:
 - ☒ G-Sensor, ☒ Emergency Call, ☒ Panic Button, ☐ Overspeed, ☒ Ignition.
 - ☒ Transmit Image, ☒ Transmit Image, ☒ Transmit Image, ☐ Transmit Image, ☐ Transmit Image.
 - ☒ Alarm1, ☒ Alarm2.
 - ☒ Transmit Image, ☒ Transmit Image.
 - ☐ Signal1, ☐ Signal2, ☐ Signal3, ☐ Signal4.
 - ☒ Transmit Image, ☒ Transmit Image, ☒ Transmit Image, ☒ Transmit Image.
- A red arrow points to the 'Save' button at the bottom right.

CP2 G-Sensor Threshold Table (pre-set options)

Low Speed Table

| Level | axis | ACCSENX | | ACCSENY | | | | ACCSENZ | |
|-----------------------|------|---------|----|-------------------------------|----|-------------------------------|-----|------------|----|
| | | Impact | | Sudden start/ sudden stop1 | | Sudden start/ sudden stop2 | | Quick Turn | |
| | | G(mg) | Hz | G(mg) | Hz | G(mg) | Hz | G(mg) | Hz |
| 1 (less sensitive) | X | 950 | 1 | 450 | 8 | 500 | 5~7 | - | - |
| | Y | 950 | 1 | - | - | - | - | 350 | 15 |
| | Z | 1050 | 1 | - | - | - | - | - | - |
| 2 | X | 900 | 1 | 420 | 8 | 470 | 5~7 | - | - |
| | Y | 900 | 1 | - | - | - | - | 340 | 15 |
| | Z | 1000 | 1 | - | - | - | - | - | - |
| 3 | X | 850 | 1 | 390 | 8 | 440 | 5~7 | - | - |
| | Y | 850 | 1 | - | - | - | - | 320 | 15 |
| | Z | 950 | 1 | - | - | - | - | - | - |
| 4 | X | 800 | 1 | 360 | 8 | 410 | 5~7 | - | - |
| | Y | 800 | 1 | - | - | - | - | 310 | 15 |
| | Z | 900 | 1 | - | - | - | - | - | - |
| 5 | X | 750 | 1 | 330 | 8 | 380 | 5~7 | - | - |
| | Y | 750 | 1 | - | - | - | - | 300 | 20 |
| | Z | 850 | 1 | - | - | - | - | - | - |
| 6 | X | 700 | 1 | 310 | 8 | 360 | 5-7 | - | - |
| | Y | 700 | 1 | - | - | - | - | 280 | 20 |
| | Z | 800 | 1 | - | - | - | - | - | - |
| 7 | X | 650 | 1 | 240 | 10 | - | - | - | - |
| | Y | 650 | 1 | - | - | - | - | 230 | 20 |
| | Z | 750 | 1 | - | - | - | - | - | - |
| 8 | X | 600 | 1 | 190 | 10 | - | - | - | - |
| | Y | 600 | 1 | - | - | - | - | 190 | 15 |
| | Z | 700 | 1 | - | - | - | - | - | - |
| 9 | X | 550 | 1 | 170 | 10 | - | - | - | - |
| | Y | 550 | 1 | - | - | - | - | 170 | 15 |
| | Z | 650 | 1 | - | - | - | - | - | - |

High Speed Table

| Level | axis | ACCSENX | | ACCSENY | | | | ACCSENZ | |
|-----------------------|------|---------|----|-------------------------------|----|-------------------------------|----|------------|----|
| | | impact | | Sudden start/ sudden stop1 | | Sudden start/ sudden stop2 | | Quick Turn | |
| | | G(mg) | Hz | G(mg) | Hz | G(mg) | Hz | G(mg) | Hz |
| 1 (less sensitive) | X | 1350 | 1 | 480 | 10 | - | - | - | - |
| | Y | 1350 | 1 | - | - | - | - | 420 | 15 |
| | Z | 1450 | 1 | - | - | - | - | - | - |
| 2 | X | 1300 | 1 | 450 | 10 | - | - | - | - |
| | Y | 1300 | 1 | - | - | - | - | 410 | 15 |
| | Z | 1400 | 1 | - | - | - | - | - | - |
| 3 | X | 1250 | 1 | 420 | 10 | - | - | - | - |
| | Y | 1250 | 1 | - | - | - | - | 380 | 15 |
| | Z | 1350 | 1 | - | - | - | - | - | - |
| 4 | X | 1200 | 1 | 390 | 10 | - | - | - | - |
| | Y | 1200 | 1 | - | - | - | - | 370 | 15 |
| | Z | 1300 | 1 | - | - | - | - | - | - |
| 5 | X | 1150 | 1 | 360 | 10 | - | - | - | - |
| | Y | 1150 | 1 | - | - | - | - | 340 | 20 |
| | Z | 1250 | 1 | - | - | - | - | - | - |
| 6 | X | 1100 | 1 | 340 | 10 | - | - | - | - |
| | Y | 1100 | 1 | - | - | - | - | 320 | 20 |
| | Z | 1200 | 1 | - | - | - | - | - | - |
| 7 | X | 1050 | 1 | 270 | 10 | - | - | - | - |
| | Y | 1050 | 1 | - | - | - | - | 270 | 20 |
| | Z | 1150 | 1 | - | - | - | - | - | - |
| 8 | X | 1000 | 1 | 190 | 10 | - | - | - | - |
| | Y | 1000 | 1 | - | - | - | - | 220 | 15 |
| | Z | 1100 | 1 | - | - | - | - | - | - |
| 9 | X | 950 | 1 | 170 | 10 | - | - | - | - |
| | Y | 950 | 1 | - | - | - | - | 200 | 15 |
| | Z | 1050 | 1 | - | - | - | - | - | - |

Speed Mode: When auto adjust G-Sensor to vehicle speed is checked, G-Sensor threshold will increase to levels specified in the right table when the vehicle reaches 20 Kmh. The threshold will go back to settings in the left table when vehicle goes below 10 Kmh.

☒ Auto adjust G-Sensor to vehicle speed

CP2 Hardware

Front View



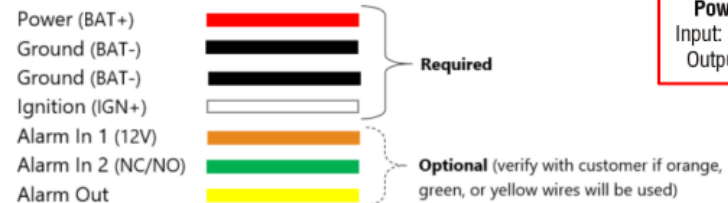
Side View



Rear View



Wiring Diagram & Power Specifications

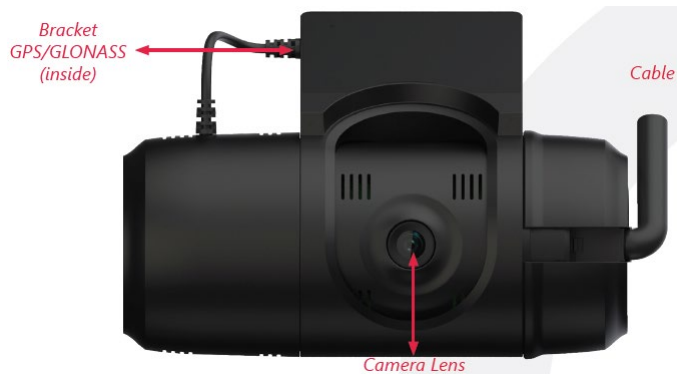


Power Specifications
Input: DC 10~32V, 2000mA
Output: DC5V, 2500mA

[CP2 Installation guide can be downloaded here](#)

CP2-LTE Hardware

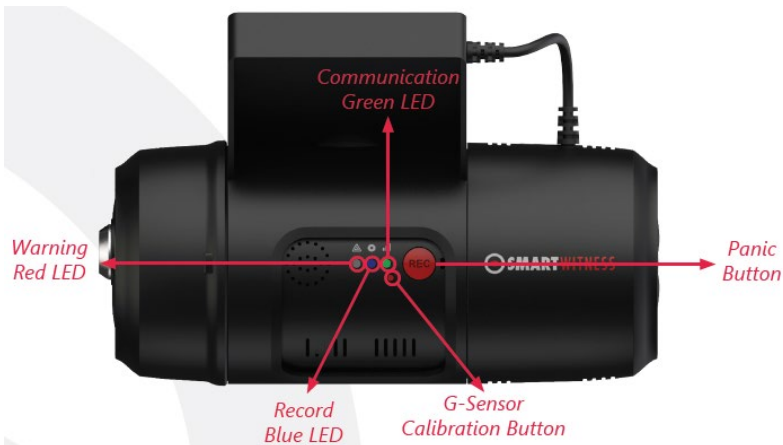
Front View



Side View



Rear View

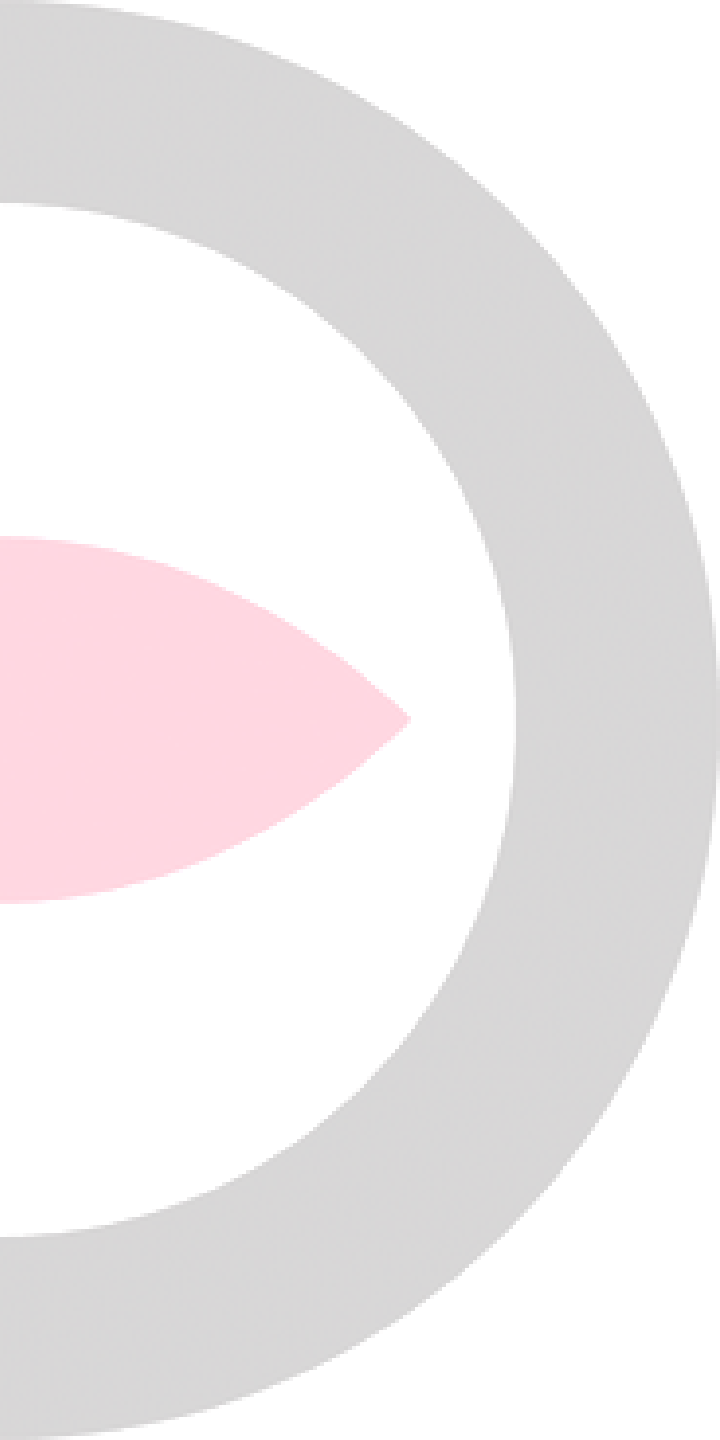


Wiring Diagram & Power Specifications



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

[CP2-LTE Installation guide can be downloaded here](#)



SmartWitness USA
1016 Lunt Avenue
Schaumburg, IL 60193 USA

SmartWitness UK
Quadrant House, 47 Croydon Road
Caterham CR3 6PB UK

smartwitness.com

