KP2 CONFIGURATION TOOL GUIDE v6.1

A jumpstart to video telematics configuration







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Introduction

1 Welcome to your KP2 Configuration Guide

This guide aims to inform users of the proper processes involved in setting up your Sensata | SmartWitness KP2 device.

This step-by-step walkthrough will act as your teacher as you learn our product's layout, functionality, and configuration settings. Each section shown in this guide features the KP2's default settings.

You can find an overview of the configuration tool's layout in section 3.0.

The fastest way to find information in this document is through the Table of Contents.

We hope that this training document will remove common end-user pain points involved with the setup process. If you experience any issues with this guide, please lend us your feedback and contact our <u>support</u> teams.

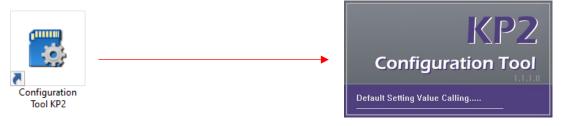
Note: Use this configuration guide with at least version 1.1.1.0 of the KP2 Configuration Tool. Content in this guide was released in coordination with KP2 firmware version 1.1.0.

KP2 Configuration Download & Installation

2 KP2 Configuration Tool Installation

Goal: Find your configuration wizard and learn about your device's capabilities

- 2.1 Downloading & Installing Your Configuration Tool
 - Download configuration software here.



- 1. After downloading, proceed to installation.
- 2. Open the configuration tool and insert your MicroSD Card*.
- 3. Click Initialize SD Card.
- 4. Select **SD Card** from the file browser.
- 5. Click **Start** to initialize.

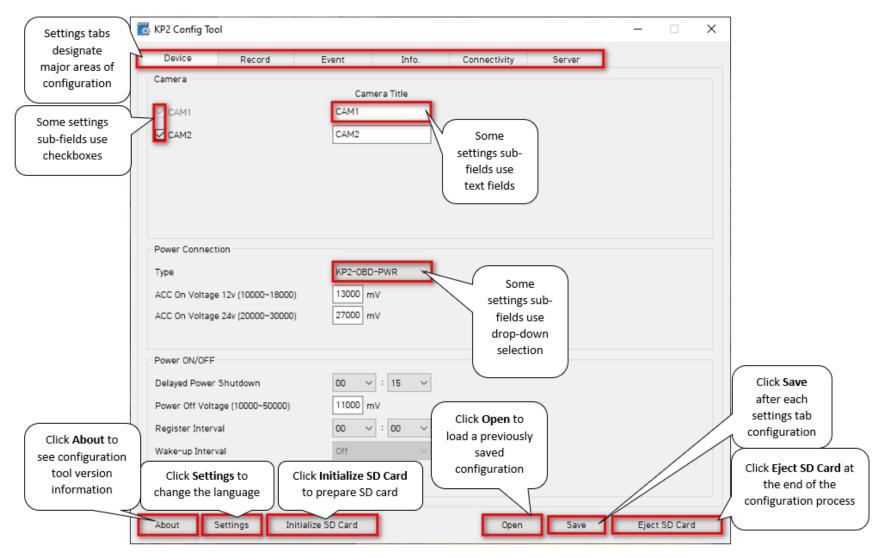
Note: MicroSD cards from Sensata | SmartWitness come pre-installed and initialized.

^{*}The maximum supported onboard storage is 256 GB.

KP2 Configuration Tool Layout

3 Configuration Tool Layout & Settings

Goal: Understand your tool's main features



ADAS Event Definitions

3.1 ADAS Event Definitions

To better understand the settings and functions of **ADAS** (Advanced Driver Assistance Systems) events in the **Event** tab, review the definitions and related conditions below.

Event	Event	Detection Conditions & Configuration Values
Type	Definition	
FCW Forward Collision		Detection Conditions:
	Warning - Detects an imminent collision with	Vehicles must surpass a minimum speed and be moving within the configured speed range.
	something ahead.	After a previous FCW event trigger, subsequent FCW triggers will only occur once the vehicle exceeds 5 meters/16 feet from the vehicle in front for more than 2 seconds.
		Configuration Values: Review various configuration settings in greater detail here.
LDW	Lane Departure	Detection Conditions:
	Warning – Your	Vehicles must surpass a minimum speed to enable LDW.
	vehicle crosses a	
	solid lane line on	Event type only recognizes solid lane lines.
	either side of the	
	road.	Configuration Values: Review various configuration settings in greater detail here.
HMW	Headway	Detection Conditions:
	Monitoring	HMW has three distinct speed ranges (low/middle/high) for detecting headway
	Warning - Monitors	distances, with corresponding distance thresholds.
	distance to the	
	vehicle ahead at	Vehicles must be moving within the configured speed range.
	configurable	
	speeds. Also	The furthest threshold distance is 20 meters or approximately 66 feet.
	referred to as	
	"Tailgating."	Configuration Values: Review various configuration settings in greater detail <u>here.</u>

DSM Event Definitions

3.2 DSM Event Definitions

To better understand the settings and functions of **DSM** (Driver State Monitoring) events in the **Event** tab, please see the definitions and sensitivity conditions below.

Event	Event Definition	Detection Conditions
Туре		
Fatigue	Driver Fatigue Warning (DFW) – Driver is yawning and has prolonged eyelid closure.	Detection Conditions: Driver head position requires manual calibration through the KP2 Installer App during the initial installation. Post-installation, auto calibration occurs during vehicle trips and is recommended. Auto calibration intervals are configurable.
		 Fatigue event trigger must meet the following condition: Driver eyelid closure or mouth opening (yawning) is greater than the sensitivity % for longer than the sensitivity time.
Distrostion	Driver Distriction Manager (DDM)	Follow this <u>link</u> to review an example.
Distraction	Driver Distraction Warning (DDW) – Driver's eyes are off the road for a prolonged period of time.	Detection Conditions: Driver head position requires manual calibration through the KP2 Installer App during the initial installation. Post-installation, auto calibration occurs during vehicle trips and is recommended. Auto calibration intervals are configurable.
		 Distraction event triggers must meet one of these conditions: The driver's face horizontally exceeds the yaw deviation by the sensitivity % value for longer than the sensitivity time. The driver's face vertically exceeds the pitch deviation by the sensitivity % value for longer than the sensitivity time.

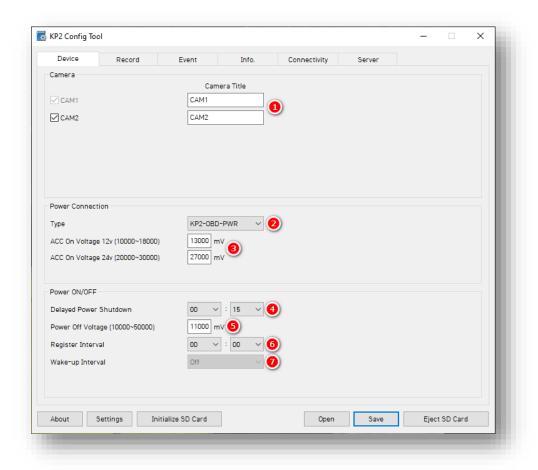
Device

4 Configuring Your Device

Goal: Personalize and optimize device settings

4.1 How to Configure Device Tab

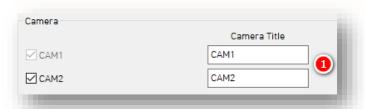
Device Tab Layout: At a Glance



Device

Camera

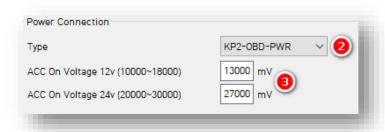
 Control Activation of your road-facing camera channel, CAM2. A KP2 driver facing camera is required. Deactivating CAM2 removes the ability to change video channel settings in the <u>Record</u> tab and DSM settings in the <u>DSM</u> tab.



Power Connection

- To automatically apply appropriate power settings, select the device power Type. Using KP2-Cig-PWR prevents access to Power On/Off settings.
- Manually adjust these values to your preferred ACC On Voltage 12v and ACC On Voltage 24v.

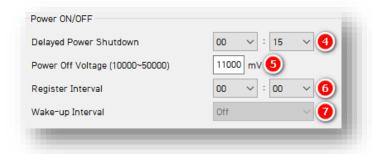
Note: This is only available for the **KP2-OBD-PWR** type.



Device

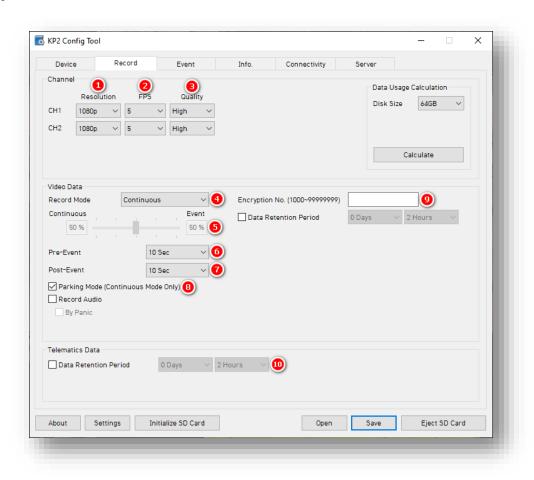
Power ON/OFF

- 4. Select the time your KP2 remains on after ignition off with **Delayed Power Shutdown**.
- 5. Enter a **Power Off Voltage.** This signals the device shutdown due to declining vehicle battery voltage to protect battery drainage.
- Set the time your KP2 stays awake during its Wake-up Interval by choosing a Register Interval.
- 7. Set a time that your KP2 powers on again after shutting down by selecting your Wake-up Interval.



4.2 How to Configure Record Tab

Record Tab Layout: At a Glance



Channel

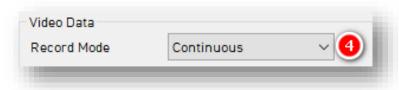
- 1. Select your **Resolution** for **CH1**, **CH2**:
 - HD (**720**p), FHD (**1080**p).
- 2. Select from the following Frame Rate (FPS) options:
 - 30, 15, 10, 5, 4, 3, 2, 1 and 0.
- 3. Choose your default video **Quality** from the following:
 - Normal, High or Super Bitrate. Higherquality video contains more detail but consumes more storage space on the SD card.

Note: Selecting different video recording options may affect your on-device storage capacity.

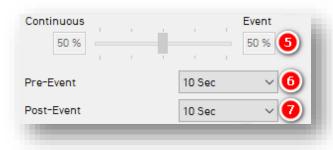


Video Data

- 4. Select your preferred **Record Mode**:
 - **Event:** Events only. Pre and post-event settings determine recording settings.
 - Continuous (Default &
 Recommended): Video continuously
 records, with no events recorded
 separately on the SD card (Events are
 still sent to SmartAPI if configured on
 the <u>Server</u> tab). This setting renders
 pre and post event capture settings
 void.
 - Continuous+Event: Video continuously records at 1 FPS. Events will record at your chosen FPS.



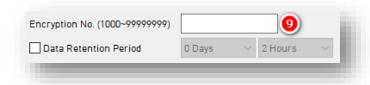
- 5. Set the **Continuous+Event** ratio of video data recording (applicable only when you set Continuous+Event record mode).
- Select your **Pre-Event** setting to determine the amount of time video records before an event
- 7. To set the amount of time video records after an event, select a **Post-Event** setting.



- 8. **Parking Mode** reduces your camera's FPS to 1 when your vehicle is idle for 5 min.
 - Click Record Audio to turn on the device's internal microphone for audio recording.
 - Click By Panic to trigger audio recordings only when you press the panic button. In this case, audio records for 2 minutes.

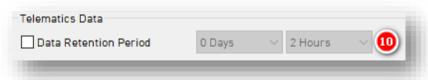


- 9. Protect SD card data from being easily viewable by entering a 4 to 8-digit **Encryption No.**
 - Set how long video data remains on the SD card before being rewritten via
 Data Retention Period.



Telematics Data

- 10. Select the **Data Retention Period**, or how long telematics data (DRV file) remains on the SD card before being rewritten.
 - Use the Data Usage Calculation to estimate your SD card's storage capacity based on your applied recording settings.

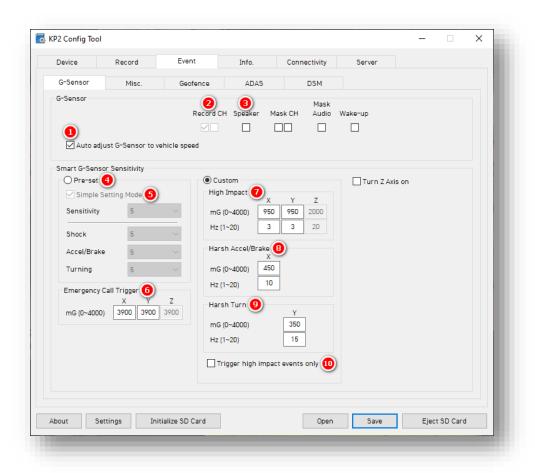


Event

4.3 How to Configure Event Tab

4.3.1 G-Sensor Fields

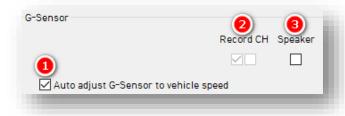
Event > G-Sensor Tab Layout: At a Glance



Event > G-Sensor

G-Sensor

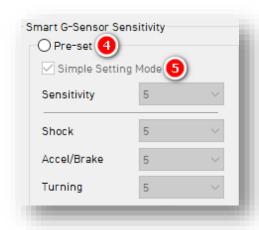
- Automatically scale G-Sensor speed thresholds by clicking Auto adjust G-Sensor to vehicle speed. This increases your G-Sensor event threshold on each axis by 300mcg when your vehicle speed exceeds 20 km/h.
- 2. To specify event recordings for camera channels 1 and 2, check **Record CH.**
 - Only available for Event and Continuous+Event modes.
- 3. Turn on in-vehicle notifications for G-Sensor event triggers by clicking **Speaker.**



Smart G-Sensor Sensitivity

Determine your G-Sensor sensitivity with **Pre-Set** or **Custom** options.

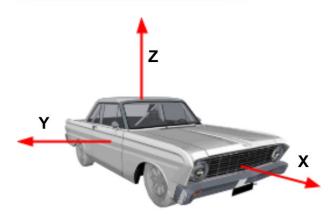
- 4. To set general sensitivity settings, check Pre-Set. Lower sensitivities result in fewer G-Sensor-related events. Higher sensitivities result in more events.
 - Disable Simple Setting Mode to set
 Shock, Accel/Brake and Turning settings.
- 5. To set an overall G-Sensor sensitivity, click **Simple Setting Mode,** then **Sensitivity**.



Event > G-Sensor

6. Events generate when the X, Y or Z axis acceleration exceeds the set G-Sensor threshold for **Emergency Call Trigger** (Severe Shock).

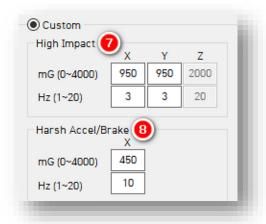




Click **Custom** to set personalized G-Sensor sensitivity settings.

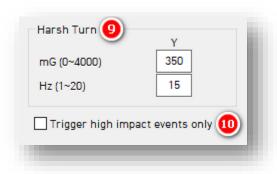
- 7. **High Impact** events occur if acceleration exceeds the X, Y or Z axis threshold (Activate the Z axis via **Turn Z Axis on**).
- 8. **Harsh Accel/Brake** events generate if acceleration exceeds X, Y or Z axis thresholds.

Note: Hz values set the number of times in a row the device's G-Sensor must exceed the X, Y or Z thresholds to trigger a harsh event.



Event > G-Sensor

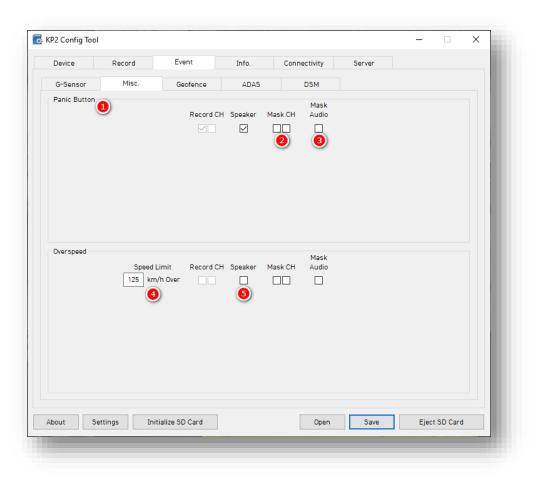
- 9. **Harsh Turn** events occur if acceleration exceeds the X, Y or Z axis threshold.
- Check High Impact Trigger to limit alerts to high-impact events. This disables Accel/Brake and Turn events.



Event > Misc.

4.3.2 Misc. Fields

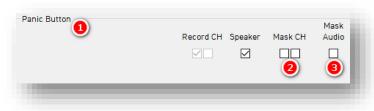
Event > Misc. Tab Layout: At a Glance



Event > Misc.

Panic Button

- 1. Determine your **Panic Button** response settings.
- 2. To obscure camera channels 1 and 2 during Panic events, check **Mask CH.**
- 3. To prevent the device's audio recording during Panic events, check **Mask Audio**.



Overspeed

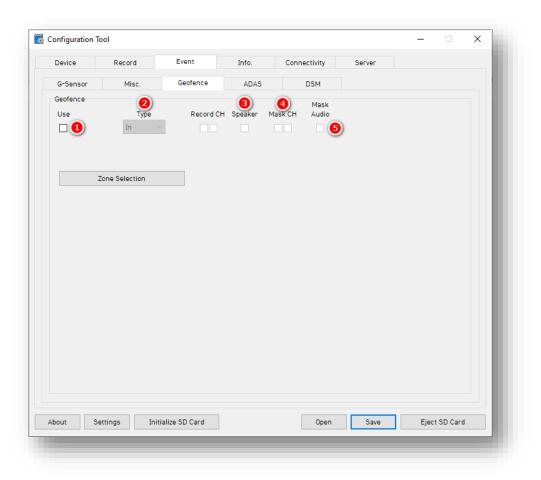
- Set your speed threshold for recording Overspeed events by entering a **Speed Limit**.
 - This accounts for vehicle speed only, not posted speed limits.
- 5. Turn on audible alerts for Overspeed events by clicking **Speaker.**



Event > Geofence

4.3.3 Geofence Fields

Event > Geofence Tab Layout: At a Glance



Event > Geofence

Geofence

Set virtual boundaries for your device to trigger Geofence events.

- 1. To trigger a Geofence, check **Use.**
- 2. Select the **Type** of Geofence.
 - **In** activates a Geofence when the vehicle *enters* a geographic boundary.
 - **Out** activates a Geofence when the vehicle *exits* a geographic boundary.



- 3. Audibly notify drivers that they've crossed a Geofence's boundary by clicking **Speaker.**
- 4. To obscure camera channels 1 and 2, check **Mask CH.**
- 5. To prevent audio recording within a Geofence, click **Mask Audio.**



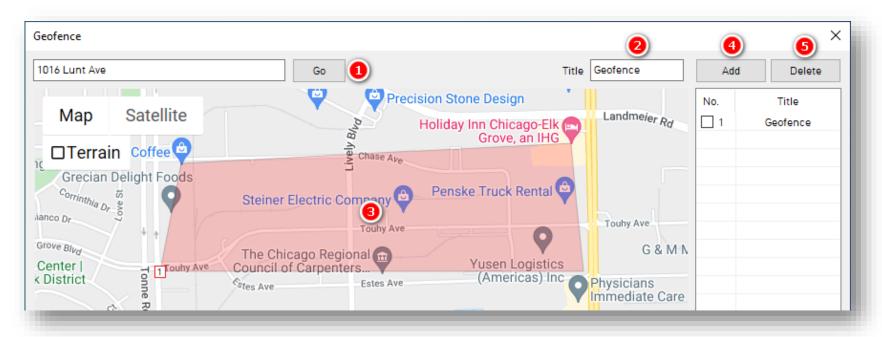
Event > Geofence

Zone Selection

To set Geofence boundaries on Google Maps, click **Zone Selection**. Set up to 20 Geofence zones.

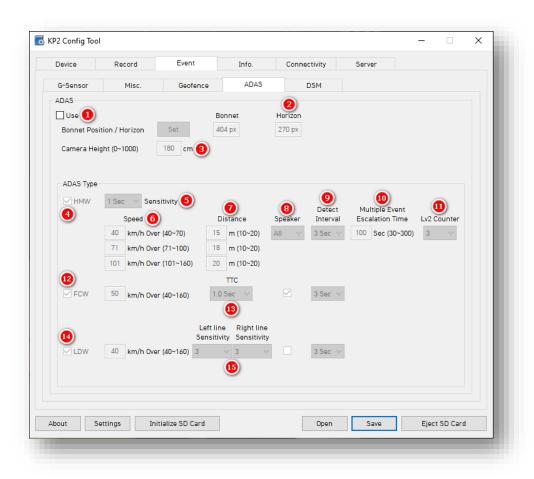
1. Search for a geographic region by entering an address and clicking **Go.**

- 2. Change the name of your Geofence in the **Title** text field.
- 3. Click on the map to set a perimeter. The area in **red** is your Geofence.
- 4. Set your Geofence by clicking Add.
- 5. To remove a Geofence, check **No.** and click **Delete**.

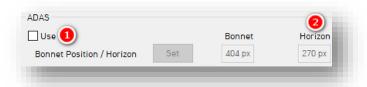


4.3.4 ADAS Fields

Event > ADAS Tab Layout: At a Glance



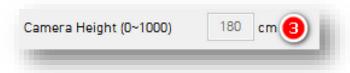
- Turn on ADAS feature capabilities by clicking Use. This gives you access to enable ADAS events and change individual settings independently.
- 2. To mark the **Bonnet Position** (vehicle hood's horizontal pixel line) and **Horizon** line, click **Set.**



• Use the pop-out window to set each line and click **OK** to save.



- 3. Mark the **Camera Height** on the windshield. This measurement is from the ground to the center of the camera lens. Set your camera height in 10cm increments.
 - Example: if the height is 173cm, set the **Camera Height** as 170cm.
 - This setting is integral to proper ADAS calibration, so ensure you have inputted measurements correctly.



ADAS Type

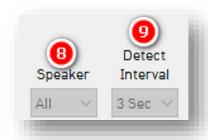
- 4. Click **HMW** to activate the event type.
- 5. To set the amount of time your vehicle must be within a speed/distance window to trigger an event, select a **Sensitivity.**
- 6. Establish the **Speed** range for event activation. The configurable threshold must be surpassed for HMW in each speed window. Within this window, events will trigger.
- 7. Set the **Distance** threshold. An event triggers if this distance, measured from the front end of the driver's vehicle to the rear of the vehicle ahead, is breached and the speed threshold is surpassed.



8. To determine the conditions for in-cabin alerts, select a **Speaker** setting. **All** plays Lv1 and Lv2 audio alerts.

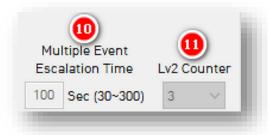
Note: You can determine the type of sound received by drivers here.

- 9. Define a time, or **Detect Interval**, during which KP2 disregards repeated event instances.
 - Example: If the interval is set to 10 sec, and an event triggers continuously for 10 sec, only one event is delivered.



- 10. Select a **Multiple Event Escalation Time.**If the vehicle exceeds the number of tailgating instances set in Lv2 Counter during the Escalation Time, event severity escalates to Lv2 or "Level 2."
 - Example: A time of 100 seconds with an Lv2 setting of "3" is set. If an event triggers more than three times, the event raises to Lv2.
- 11. Choose the **Lv2 Counter** or number of event instances required during the Escalation Time to raise severity.

Note: Multiple Event Escalation Time and Lv2 Counter manage event reporting. They are not correlated with event detection sensitivity.



- 12. Check **FCW** to enable the event type.
- 13. **TTC**, or Time to Collision, is a value that determines the amount of time until approximate collision.
 - TTC is based on the driver's vehicle speed and the apparent speed of the vehicle ahead.
 - We recommend that the higher your speed threshold, the greater the TTC setting.
 - TTC resolution time is as follows:
 - 0.1 sec if TTC < 1 sec
 - 0.5 sec if TTC > 1 sec



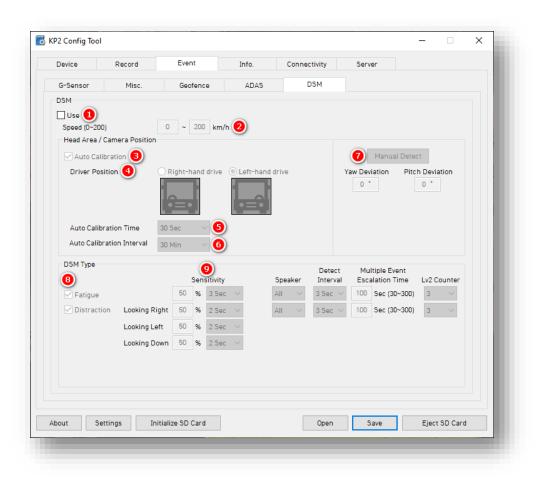
- 14. Select **LDW** to enable the event type.
- 15. Set the **Left line** and **Right line Sensitivity.** This determines the AI confidence level regarding solid lane line detection.
 - Lower line detection sensitivity results in *fewer* events triggered.
 - The *higher* the line detection sensitivity, the *greater* number of events triggered.
 - A setting of **3** is recommended.

Note: LDW lane detection does not incorporate color recognition.



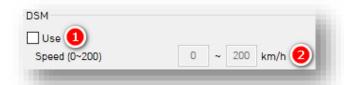
4.3.5 DSM Fields

Event > DSM Tab Layout: At a Glance



DSM

- 1. Activate DSM event capabilities by clicking **Use.** This gives you access to enable DSM events and change individual settings independently.
- 2. Limit DSM events to a specified range by setting **Speed** values.



Note: Changing minimum speed values within the speed range affects the device's auto-calibration capabilities. The minimum required speed for auto calibration is 20 km/h. A minimum speed of 50 km/h initializes auto-calibration at 50 km/h for the Auto Calibration Time duration.

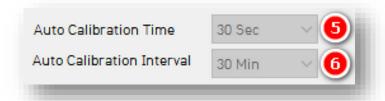
Head Area/Camera Position

You may automatically or manually set a driver's position. See steps 3-5 for automatic or step 6 for manual calibration.

- 3. To automatically recalibrate a driver's head and camera position for DSM event detection, click **Auto Calibration**.
- 4. Select the **Driver Position** in the vehicle.



- 5. Choose the **Auto Calibration Time** for your camera (30 sec recommended).
- To set a threshold for the device auto recalibration period, select an Auto
 Calibration Interval.

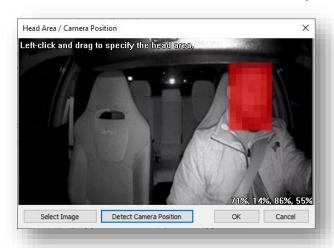


Note: During auto-calibration, KP2 will not capture DSM events. This is an important consideration in setting device configurations. A longer auto-calibration time and a short interval result in a greater likelihood for KP2 to miss DSM events.

7. To manually mark the driver head position, click **Manual Detect.** Only use this feature if the driver's head position is fixed.



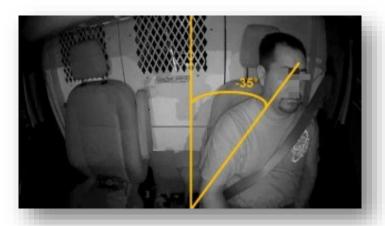
 Use the pop-up window to specify the area and click **OK**. If you use autocalibration, this is not necessary.



Yaw Deviation calculates automatically once the driver's head area is set.



Pitch Deviation calculates automatically once the driver's head area is set.



DSM Type

- 8. To assign DSM triggers, check behaviors like **Fatigue** and **Distraction**.
- 9. Set a **Sensitivity** % and the time necessary to trigger an alert.
 - Example: A fatigue event is triggered when eyelid closure or yawning is greater than 50% for 3 or more seconds.



Note: Review details about other settings, such as Multiple Event Escalation Time, here. Despite these

values being ADAS settings, the logic is the same.



Review the image and corresponding values below to see how edge analysis identifies a DSM event.

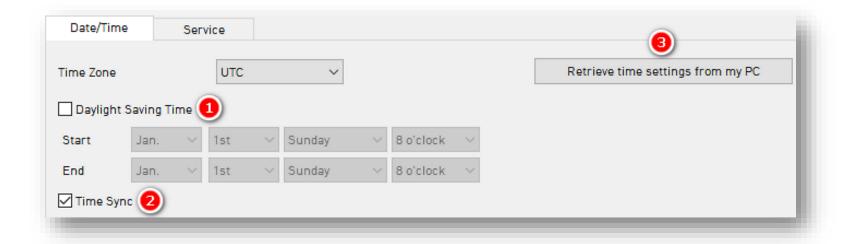
Note: "Drowsiness" in the settings.ini file equates to "Fatigue" in the configuration tool.

4.4 How to Configure Info Tab

4.4.1 Date/Time Fields

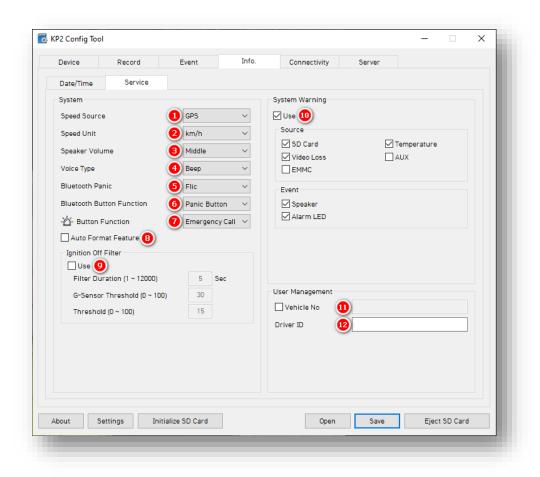
Setting time preferences on your KP2 is **not recommended**. PC Viewer software and SmartAPI automatically adjust UTC to your local time zone. **If you've connected your KP2 to SmartAPI, do not set time preferences.**

- 1. Set a customized date and time range for **Daylight Savings Time.**
- 2. Ensure GPS time syncs with device OS time by clicking **Time Sync.**
- 3. Use PC Viewer software to set your device's time zone by clicking **Retrieve time settings from** my PC.



4.4.2 Service Fields

Info > Service Tab Layout: At a Glance



System

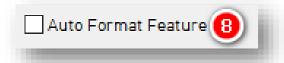
- 1. Your KP2 uses true vehicle speed data from the vehicle bus as a **Speed Source** whenever possible. Without vehicle speed data, the device will use GPS-sourced speed to inform related calculations (e.g., ADAS).
- 2. Set a preferred **Speed Unit**.
- 3. Set your device's audio levels by choosing a **Speaker Volume**.
- Select the type of in-cabin alerts for ADAS/DSM events. Either Beep or Voice
 1.



- 5. Pair your KP2 with a wireless Bluetooth Panic button. Find setup specifications on page 8 of the <u>KP2 User Guide</u>. To find more detailed instructions, follow this <u>link</u>. These instructions still apply, despite being for CP2.
- Use your Bluetooth Button Function as an external Panic Button or for Emergency Call triggers.
- 7. Set your device's red **Button Function**.



- 8. KP2 executes SD card necessary maintenance automatically when the **Auto Format Feature** is on.
 - This function formats blank SD cards automatically.
 - It will not format corrupted SD cards automatically. Instead, the device sends a "Media Error" event to the server. Optionally, an audible alarm and the red LED will turn on (see System Warning).



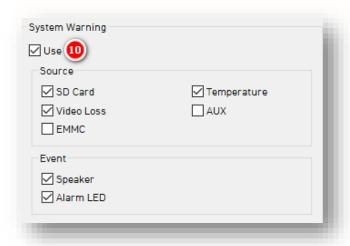
Ignition Off Filter

- 9. To activate the filter, click **Use**.
 - Set the time the device supports ignition on operations with Filter Duration.
 - To maintain ignition on functionality, set a value (in mG or milli-g) the G-Sensor Threshold must surpass.
 - To prevent faulty ignition off events, set a **Threshold** (in mG or milli-g).



System Warning

- 10. Provide system component corruption and failure notifications by clicking **Use.**
 - Check any/all boxes to allow for those alerts.
 - System Warning Event types allow for specific alarms.



User Management

- 11. To assign a number to your vehicle, check **Vehicle No**, and enter a value.
- 12. Write a unique **Driver ID** for different vehicles.

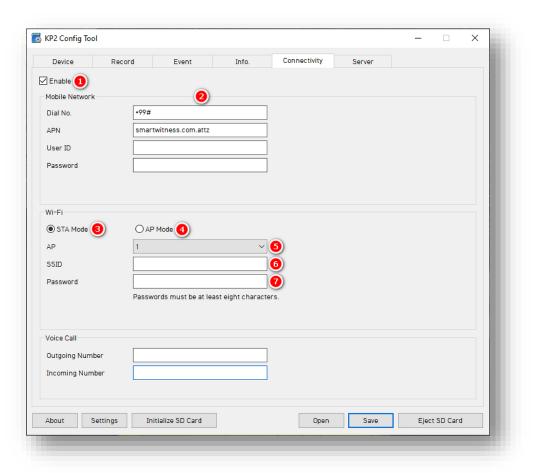
Note: You can watermark **Vehicle No** & **Driver ID** on your MP4 converted video feed with PC Viewer software.



Connectivity

4.5 How to Configure Connectivity Tab

Connectivity Tab Layout: At a Glance



Connectivity

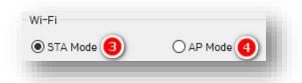
Mobile Network

- 1. Specify mobile and WIFI network settings by clicking **Enable.**
- 2. Add **Mobile Network** details to relevant fields.



Wi-Fi

- 3. If choosing a standard setup for your Wi-Fi connection, click **STA Mode**. Select this when connecting to an existing Wi-Fi network (in place of a cellular network connection).
- 4. When setting up your device as its own access point, click **AP Mode**. Select this if you are creating a network hotspot with your KP2.



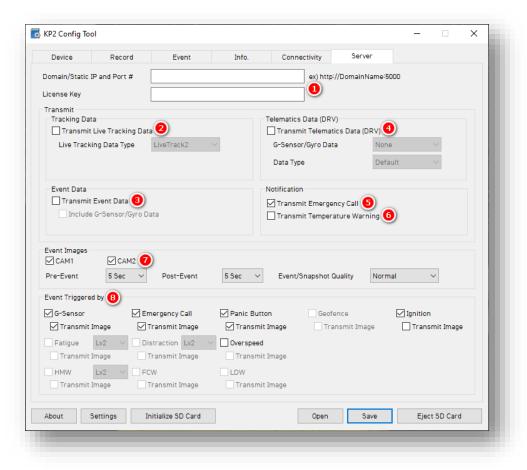
Connectivity

- 5. Set up to 10 Wi-Fi networks your KP2 can connect to for STA mode. Secure the access point with a password and WPA/WPA2 encryption.
- 6. The KP2 will scan for as many networks as are added in your settings.
- 7. Your **password** must be at least 8 characters.



4.6 How to Configure Server Tab

Server Tab Layout: At a Glance



Server

Sensata | SmartWitness, or your service provider, will give you the Domain/Static IP and Port # URL and License Key (if necessary) to enter here.

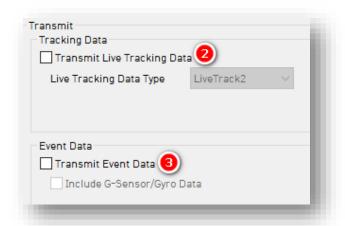


Transmit

 To send HTTP posts from your KP2 to the server, click Transmit Live Tracking Data.
 Select from Live Tracking Data Type options.

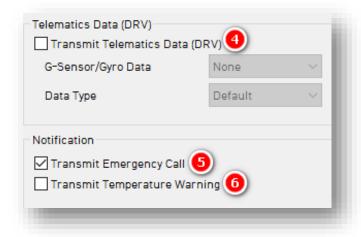
Note: Livetrack2 has GPS coordinates. LiveTrack3 does not.

3. To deliver event notifications and images to the server, select **Transmit Event Data.**



- 4. Send DRV data to the server by clicking **Transmit Telematics Data (DRV).** 4 Hz is the recommended setting. This is the preferred frequency for *AIDE*.
- 5. To send Ecalls (Severe Shock) to the server, click **Transmit Emergency Call Notification.**
- To relay device overheating issues to the server, select **Transmit Temperature Warning.**

Note: SmartAPI controls the frequency interval of LiveTrack and DRV uploads.



Event Images

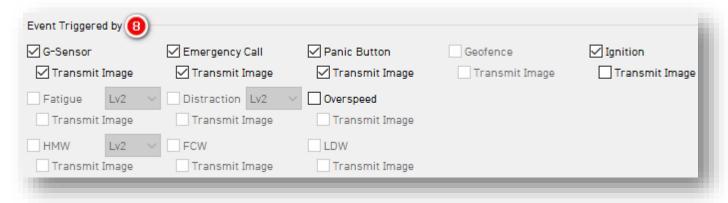
- 7. Choose which camera channels send event images to the server.
 - Determine snapshot timing before and after an event by selecting Pre-Event and Post-Event options.



Event Triggered By

- 8. Decide what events and notifications your device sends to the server by selecting options like **G-Sensor** and **Emergency Call** (Severe Shock).
 - Events will send instantly, even if your device is in "Continuous" record mode.
 - "Lv2" is a different event payload sent to the server. It is not a separate event type.

Note: SmartAPI Workstation event admin controls dictate what events and event notifications are sent from SmartAPI to our partner's servers.



5 Finishing Up/Support

Goal: Completing your Configuration

- 1. Click **Save** to set your finalized settings configuration.
- 2. Select **FHDRM** SD drive when prompted. Your configuration saves to your card.
- 3. Wait for confirmation that the software applied your settings configuration.
- 4. Click **Eject SD Card**, insert it into KP2, and power on your device.
- 5. You have completed your configuration.

Note: Apply device configurations over the air from the SmartAPI Workstation. See the instructions here. While KP2 is not mentioned, the same process applies.

5.1 Support Information

If you need additional support or an expert to walk you through this process, please <u>register</u> and submit a ticket, or email us at <u>support@smartwitness.com</u>. If you are enrolled in SWAT, reach out to the integration team via Teams with any device configuration questions.

Feel free to call our support team:

- North America, South America, APAC
 - +1 (312) 981 8774
- EMEA
 - +44 (0) 1483 397005