Sensata IN

KP2

Please read this entire guide and refer to our installation materials before using your KP2.

User Guide

Version 4 | Last updated 7/7/2023

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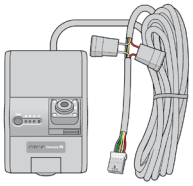
Please read this entire guide before installation and use.

KP2

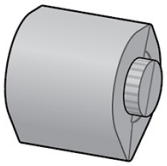
User Guide

Package contents

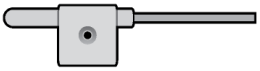
KP2 vehicle recorder



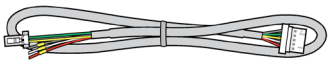
Mounting bracket & attached power cable
(Connects to adapter cables)



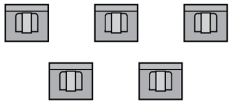
Removable wedge block
(Driver-facing camera ordered separately)



Torx® wrench



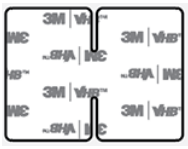
8" 3-wire adapter cable
(Connects to bracket cable)



Square adhesive cable clips (x5)

• 64GB microSD card (pre-installed)
• 128GB microSD available upon request

Nano SIM card
(Pre-installed)



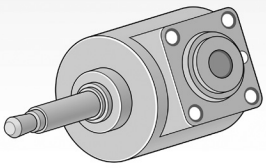
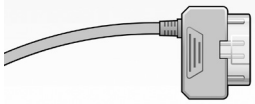
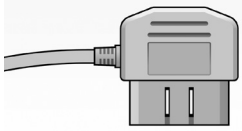
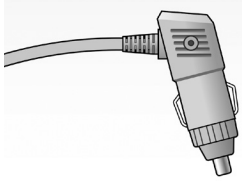
Double-sided 3M™ tape
(One adhered to bracket, one extra piece)

Alcohol prep pad (x2)

Optional accessories

At Sensata INSIGHTS, we give our Partners multiple options when selecting their preferred power application and camera configuration. The items mentioned below are compatible with the KP2 and offer different benefits or trade-offs when employed with your device.

For more details on prices and ordering options, please contact your Sensata INSIGHTS Account Manager or email us at **smartwitness-sales@sensata.com**.

ACCESSORY	NAME & DESCRIPTION	USE CASE	PROS	CONS
 **Product SKU: KP2-DFC-S**	**Driver-facing camera** **Description:** A modular insert to monitor in-cabin behavior. Plug-and-play functionality. Enhanced visibility is that easy.	• Increased awareness of in-cabin incidents. • Partners prefer full access to current and future DSM features.	• Access to DSM and AI Tech Package capabilities. • DFC auto-calibrates your driver's head position. • Gain actionable insight into driver negligence for precise driver coaching.	• Driver privacy concerns.
 **Product SKU: KP2-OBDII-DATA**	**OBDII (data) power adapter cable** **Description:** This is a 15-minute self-install that provides access to your vehicle's onboard computer. A true DIY that gives you future access to CAN-related data streams.	• Vehicles with OBDII port access. • Partners prefer vehicle-based speed to inform ADAS calculations. • Self-installation required.	• Future access to your vehicle's CAN data. • Gives greater insight into your vehicle's true speed and other valuable data streams. • No professional install required.	• Current CAN data transmitted is limited (ex: no DTCs).
 **Product SKU: KP2-OBD-PWR**	**OBDII (without speed & RPM) power adapter cable** **Description:** Like the OBDII (CAN) adapter, this 15-minute self-install uses your vehicle's OBD port to apply power to your KP2. Save money with quicker self-installation and a cheaper power supply method.	• Vehicles with OBDII port access. • Self-installation required. • Cheap power application and self-install are of greater need than CAN-enabled features.	• You still receive DSM features with a DFC. • Lower price than the OBDII (DATA) cable. • No professional install required. • Maintain access to ADAS functions through GPS-based speed.	• Doesn't receive CAN diagnostics and data streams.
 **Product SKU: KP2-CIG-PWR**	**Cigar power adapter cable** **Description:** Move your KP2 around from vehicle to vehicle without professional installation. Common female cig port required. An easily transferable and deployable installation solution.	• Temporary vehicles. • Rental vehicles. • Vehicles with hard install prohibited. • Vehicle Testing. Test many vehicles in a short period. • Self-installation required.	• Applicable to different types of vehicles. • No professional install required. • Maintain access to ADAS functions through GPS-based speed.	• Not a standard installation, so ignition on/off behavior for trip data may be unpredictable. • No access to CAN data.

Get to know the KP2

Front

Side

Get to know the KP2

Side cover open

Back

Key functions

Automatic booting

Once you've wired your KP2 to the vehicle's power source, the KP2 will turn on and begin recording after about 30 seconds.

1. Video recording

Continuous record

This is the default mode for recording. Your KP2 begins recording after booting up and continues to record the entire time the device is on. In this mode, the SD card storage may fill up quicker and overwrite your oldest recordings when it's full. You may configure your resolution settings using the **KP2 Configuration Tool**. Avoid losing data by backing up driver data on separate storage or PC after incidents.

Dual record, continuous + event

Continuous record files will be stored in the "Normal" folder, and event record files will be stored in the "Event" folder on the SD card.

Events

Set audible alerts on the KP2 when specific events trigger (like tailgating). You can choose either a natural language voice or a beep sound. Instant notifications of events can be uploaded to the server simultaneously. Events can also activate a masking mode, where the audio and/or video recording is disabled when the event occurs. For example, geofence events can automatically turn off video/audio recording when the vehicle enters a secure or private area (such as a government facility or home).

Drive data

DRV data (drive data) will record driving information regardless of events. DRV files consist of GPS, G-sensor, ADAS/DSM and OBD data. DRV files overwrite your device's oldest data. DRV files upload to the server every 10 minutes by default but can increase to every minute.

2. G-sensor calibration

1. Install your device, and park the vehicle on a flat surface.
2. Turn on the device.
3. Press the small, **black** button for 3 seconds.
4. Calibration confirmed with an audible alert.

Key functions

3. Bluetooth® panic button

Please get in touch with Sensata INSIGHTS or your supplier to buy a Bluetooth panic button for your KP2.

Enable pairing

To enable Bluetooth pairing for your panic button, change the following KP2 Configuration Tool settings in Info > Service:

- Select “Flic” in the Bluetooth Panic field
- Select “Panic Button” in the Bluetooth Button Function field

Your Bluetooth panic button won’t work if you don’t turn these settings on.

How to pair with the KP2

Red LED = Warning, **Blue** LED = Record, **Green** LED = Network

1. Make sure the KP2 is on and the **blue** LED is solid.
2. Press and hold the small, **black** button on the device. Warning and Record LEDs will blink. This means the device enters pairing mode.
3. Press and hold the **external BT button** for **7 seconds**.

Afterward, your Warning and Record LEDs will revert to the previous mode. You have completed pairing your KP2 Bluetooth panic button.

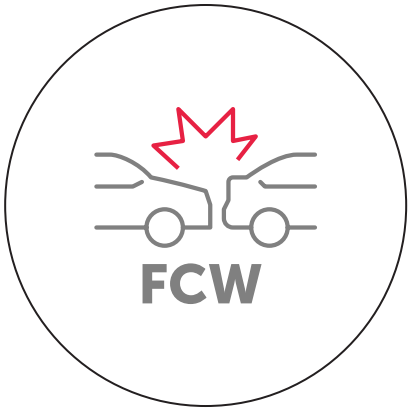
4. Supercapacitor (emergency power)

When device power is interrupted, your KP2 creates the last recording using a built-in supercapacitor.

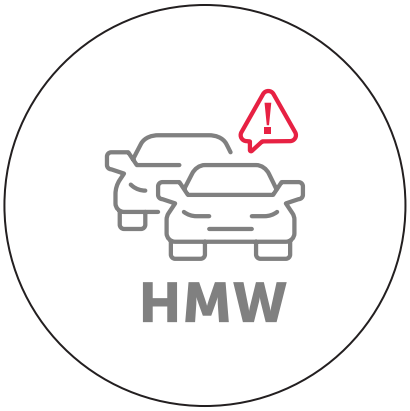
ADAS functions

Your KP2's Advanced Driver Assistance Systems (ADAS) features allow drivers to receive in-cabin preventive audio alerts in cases of potential incidents.

Lane Departure Warning
Your vehicle crosses a solid lane line on either side of the road.



Forward Collision Warning
Your vehicle is likely to collide with something in front of the vehicle.



Headway Monitoring Warning
Your vehicle is not maintaining a safe distance with the vehicle in front of you (tailgating).

Caution

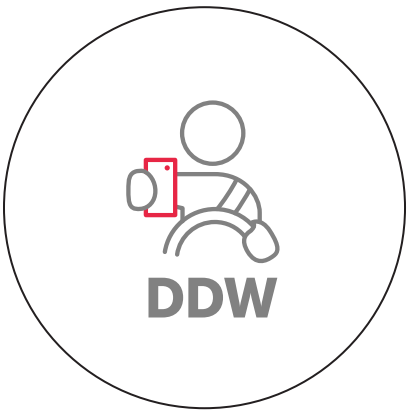
During your KP2 settings calibration, remember that Camera Height is integral to proper ADAS functionality. Therefore, when you input your measurements, please abide by the guidance in the KP2 Installer App.

ADAS functionality is not a substitute for an alert, trained and engaged driver. ADAS functionality will be impaired by many things, including but not limited to device malfunction, obstruction of the device's image sensor, intense weather conditions that reduce the visibility afforded to the device's image sensor, and poor and/or faded road and lane striping/markings.

DSM functions

Your KP2's Driver State Monitoring (DSM) functions allow drivers to receive audible alerts for driver distraction and fatigue.

The following DSM events are configurable in your KP2:



Driver Distraction Warning (DDW)
Driver's head faces away from the road for a prolonged period of time.

Driver Fatigue Warning (DFW)
Driver is yawning and/or has prolonged eyelid closure.

Driver safety warnings

Disclaimer

The KP2 is not a substitute for a safe, conscientious driver. The KP2 cannot compensate for a driver who is distracted, inattentive or impaired by fatigue, drugs or alcohol. Whether or not the KP2 is in use, it is always the driver's responsibility to take appropriate corrective action. It does not eliminate or decrease the need for a driver to stay alert and obey all traffic laws while operating a vehicle. Never wait for the device to provide a warning before taking measures to avoid an accident. Failure to do so can result in serious personal injury, death or severe property damage.

Always, it is the driver's responsibility to:

- Use safe driving techniques
- Exercise proper judgment
- Maintain a safe speed and distance between vehicles
- Take measures to avoid an accident
- Comply with all applicable laws and regulations

The driver and front passenger must always be correctly seated with seat belts fastened when operating the vehicle to reduce the potential danger of injuries.

Operational concerns

In certain conditions, including inclement weather, low visibility and precarious road conditions (including poor lane markings, construction zones, dirt roads, heavy or complicated traffic, and curvy and winding roads), your KP2 may have limited to no functionality.

The KP2 may not detect objects such as motorcyclists, bicyclists or pedestrians even in ideal conditions. Always keep the lens and view of your KP2 unobstructed and adequately calibrated to not inhibit camera functions.

Driving in certain conditions or any interference with your KP2 can result in false, few or no warnings. Drivers must continuously monitor traffic and surroundings and take measures to avoid an accident; failure to do so can result in serious personal injury, death or severe property damage.

If your KP2 is not functioning correctly, please contact your distributor or our support and have the device inspected immediately.

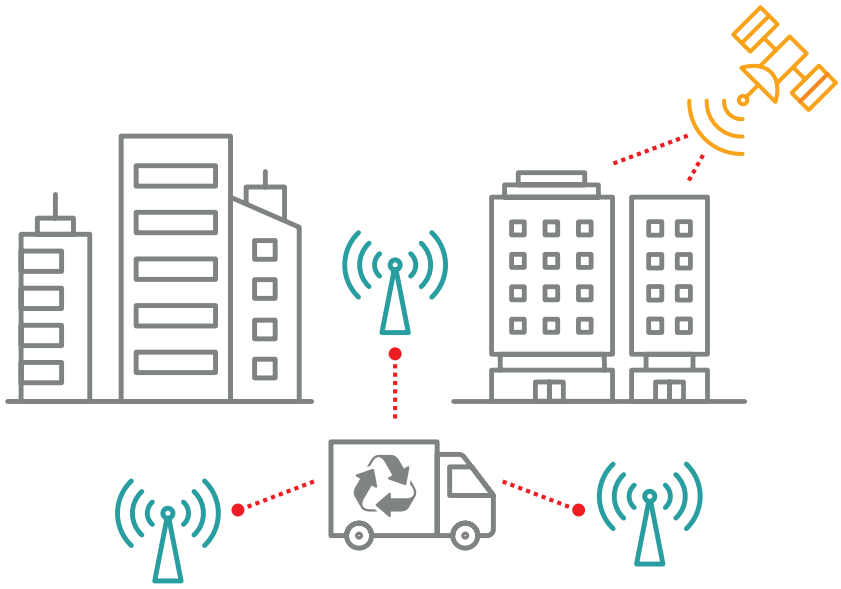
Whether or not the KP2 is operational, it is the driver's responsibility to maintain vehicle control; failure to do so can result in serious personal injury, death or severe property damage.

Cleaning advisory

Do not apply compressed air or cleaning solutions (e.g., Windex®) to your KP2 while cleaning the device or vehicle cab. Usage of these products may damage the device.

GPS reception

When satellites don't have line of sight, cellular towers help triangulate a vehicle's location.



Improve your signal

1. Activate your KP2 in an area without large buildings.
2. The optimum operating temperature for your vehicle's GPS is -10°C~50°C
3. When first using your KP2 or turning it on after a period (>3 days), allow more time to recognize your current location.

Reception may be impaired:

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 you install equipment generating electromagnetic waves that interfere with the GPS signal in the vehicle (Ex: Other GPS devices like certain wireless activated alarms, MP3 and CD players and camera alarms use GPS.)
4. If you use a receiver connected by cable. You can avoid electric interference by changing the receiver's location (antenna).
5. On heavily overcast or cloudy days if the vehicle is:
   - In a covered place such as under a bridge or raised roadway
   - In a tunnel
   - In an underground roadway or a parking area
   - Inside a building or garage
   - 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's stationary.

LED & buzzer specifications

Status/Step			LED			Sound
			Warning	Record	Communication	
			Red	Blue	Green	
Startup & power off	Booting step 1		On	Off	Off	-
	Booting step 2		On	On and off	Off	-
	Booting step 3		On	On	On and off	-
	Booting finished		On	On	On	-
	Power off		Off	Fast simultaneous on and off		Beep no. 2
	Power off/finished		Off	Off	Off	-
Record	Continuous record	Recording	-	On	-	-
	Event record	Standby	-	On	-	-
		Recording	-	Fast on and off	-	-
	Dual record	Continuous recording	-	On	-	-
		Event recording	-	Fast on and off	-	-
	No record	No recording	-	Off	-	-
Communication	4G LTE network device ready		-	-	On	-
	Communication		-	-	On	-
Function	SD format		Off	Sequence on and off		Continuously beep no. 2
	G-sensor calibration		-	-	-	Beep no. 2
	FW upgrade		-	Double sequence on and off		-
Warning	System warning	SD card full	Fast on and off	Off	-	Beep no. 3
		Video loss	On	-	-	-
Error	Record error	SD error, no SD, write fail	Slow on and off	Off	-	Beep no. 3
	Communication error	4G LTE network device error, SIM error	-	-	Off	-
		Data network connection error			Slow on and off	
		Dms communication error			Slow on and off	
Event trigger	G-sensor, panic button, alarm-in		-	-	-	Beep no. 1
	Over speed		-	-	-	Beep no. 4 (2 times)
ADAS	Lane Departure Warning (LDW), Forward Collision Warning (FCW), Headway Monitoring Warning/Tailgating (HMW)		-	-	-	Warning beep or voice
DSM	Driver Fatigue Warning (DFW), Driver Distraction Warning (DDW)		-	-	-	Warning beep or voice

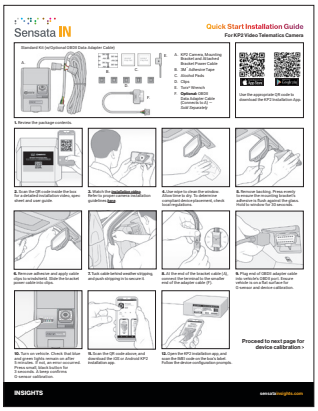
Technical specifications

Mechanical	
Size	82 mm W x 126 mm H x 64 mm D / 3.2" W x 5.0" H x 2.5" D
Weight	232.4 g (Including 2nd Camera, Excluding Power Cable)
Image Sensor	2 Megapixel CMOS Sensor
Angle of View	Main, Road-Facing Camera (Forward-Facing): 140° (115°(H), 60°(V)) Optional Driver-Facing Camera: 130° (104°(H) x 56°(V))
Electrical	
Power Input	DC 12V/24V, 1.5A
Power Consumption	4W (6W with ADAS and DSM Enabled)
Delayed Power Shutdown	Supports Delayed Power Shutdown and Automated Wake-Up Feature (Selectable Intervals)
Supercapacitor	Enables Recording of Last File and Safe Shutdown (Selectable Intervals)
PC Software	MSM8953, Octa-Core ARM Cortex-A53
Video Resolution	Main Camera: 1080p (1920x1080), 720p (1280x720) 2nd Camera: 1080p (1920x1080), 720p (1280x720)
Recording Speed	60 FPS (30 FPS per Channel)
Recording Mode	Continuous, Event, Dual Mode
Memory	16GB eMMC+2GB LPDDR3, 64GB MicroSD Card Included. Supports up to 256GB (FAT32)
LED	3 (Red, Blue, Green LED)
Environmental	
Operational Temperature	-10°C~+55°C
Storage Temperature	-20°C~+70°C
Communications	
Connectivity	4G/LTE (CAT 6)
Wireless	**LTE CAT6 (NA):** B2/B4/B5/B7/B12/B13/B14/B17/B25/B26/B41/B66/B71 **3G Bands:** B2, B4, B5
	LTE CAT6 (GB): B1/B2/B3/B4/B5/B7/B8/B20/B28/B38/B40/B41 **3G Bands:** B1, B2, B4, B5, B8
	Wi-Fi: 2.4/5GHz, 802.11a/b/g/n/ac **Bluetooth:** 4.2 BLE
Speaker	Audible Alerts for Events and Audio for ADAS and DSM. Natural Language or Beep Sounds (Selectable)
Audio	Internal Microphone
ADAS Event Types	Headway Monitoring Warning/Tailgating Forward Collision Warning Lane Departure Warning
DSM Event Types	Fatigue Distraction
Positioning	
GNSS	GPS/GLONASS
G-sensor	Internal 3-Axis G-sensor
Gyro	3 Axis (X,Y,Z), Output Rate: 100 Hz
Time	GPS Time Sync + Built-In Real-Time Clock (RTC)
Compliance	
Certification/Regulatory	FCC, AT&T, Verizon, CE, E-Mark, UKCA, IC, PTCRB, RCM, FirstNet, RoHS
Warranty	2-Years Standard

Installation resources

Please follow the links below for access to KP2 installation materials. The Installation Video and Quick Start Guide feature self-installations that require additional power adapter accessories. The Installation Guide is designed for professional 3-wire installation.

Download
KP2 Pro Installation Guide



Download
Quick Start Guide

Watch
KP2 Installation Video

Download on the App Store

ANDROID APP ON Google play

Access KP2 Installation App

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.

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

Configuration tool

KP2 configuration tool

The KP2 Configuration Tool allows you to further customize your KP2 device settings. If you wish to make specific calibration changes, please follow this link to download the software and gain access to supplemental documentation.

PC requirements

Recommended settings for optimal configuration tool compatibility:

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 your PC doesn't meet these requirements, the KP2 configuration software may not function properly.

SD viewer software

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.

PC requirements

Recommended settings for optimal SD Viewer Software compatibility:

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 your PC doesn't meet these requirements, the SD Viewer Software may not function properly.

Technical support & warranty

Technical support
For technical support, please contact your local distributor or visit our Support Portal and submit a support ticket.

You can also email us at support@smartwitness.com or call our support team:

North America, South America, APAC
+1 (312) 981-8774

EMEA
+44 (0) 1483 397005

HaaS and limited warranty
If you are under our Hardware-as-a-Service (HaaS) Warranty, please contact support to understand the coverage of your subscription.

This product is supplied separately with a 2-year limited hardware 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.

Safety advice & FCC regulations

FCC Part 15.19

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Part 15.21

Any changes or modifications (including the antennas) to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment.

FCC RF Radiation Exposure Statement

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body.

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 air bag installed. This could cause an accident or might injure passengers in case of accident.

WARNING:

To prevent fire or electric shock hazard, do not expose this appliance to rain or moisture.

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.

Caution

Please make sure you follow the safety advice/instructions given in KP2 instruction materials.

KP2 ADAS disclaimer

To properly activate and utilize KP2's ADAS features, Sensata INSIGHTS **recommends** installation using OBDII data or, in the future, JBUS connection. Vehicle-sourced speed data retrieval through these means is integral to accessing vehicle speed for precise ADAS notifications.

For installations (ex: 3-wire or cigarette adapter) without vehicle data retrieval or in instances where speed is unobtainable from the vehicle, KP2 defaults to GPS speed measurement in the operation of ADAS features. In this case, vehicles must surpass a speed threshold to trigger ADAS functions. This threshold is distinct from other speed thresholds used to configure ADAS events. Please contact your Sensata INSIGHTS integration team to learn about specific values for different event types. Below these thresholds, and in cases where vehicles without vehicle-sourced speed data encounter GPS signal "dead zones" like parking garages and highway tunnels, loss of ADAS function is expected.

If you enable ADAS features on a KP2, you assume full responsibility and indemnify Sensata INSIGHTS for any incidents directly correlated with ADAS efficacy, malfunction or delays.

Sensata IN