XVD-302

CONFIGURATION GUIDE

AI Dashcam

DOC. 1017A | 2026-10





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INTRODUCTION

Xirgo's XVD-302 is a 3-in-1 (video, tracking, and telematics) dashcam, offering high-accuracy AI features, modularity, and extensive configurability for tailor-made safety. All with a single API integration and single SIM. This comprehensive solution is a critical driver witness, reducing insurance costs and refuting liability with video evidence.

XVD-302 is highly modular, maximizing the scalability of your investment. Available options include a snap-in driver-facing camera with Driver Monitoring System (DMS), and a 12V/24V compatible plug & play OBDPRO CAN cable for critical telematics context, such as seatbelt status amidst a forward collision warning. Automatic event-based cloud transfer ensures instant access to essential footage.

XVD-302 brings robust edge AI safety features, from ADAS detection for unsafe driver behavior and road threats, to DMS detection of unsafe driver behavior, such as fatigue, distraction, and phone use. All AI and non-AI events can trigger in-cab audio alerts for real-time coaching. Use live stream to pulse on vehicles in-motion or in Guard Mode; a low power mode for security monitoring with accelerometer-based event detection.

REQUIREMENTS

The following are required to configure a XVD-302.

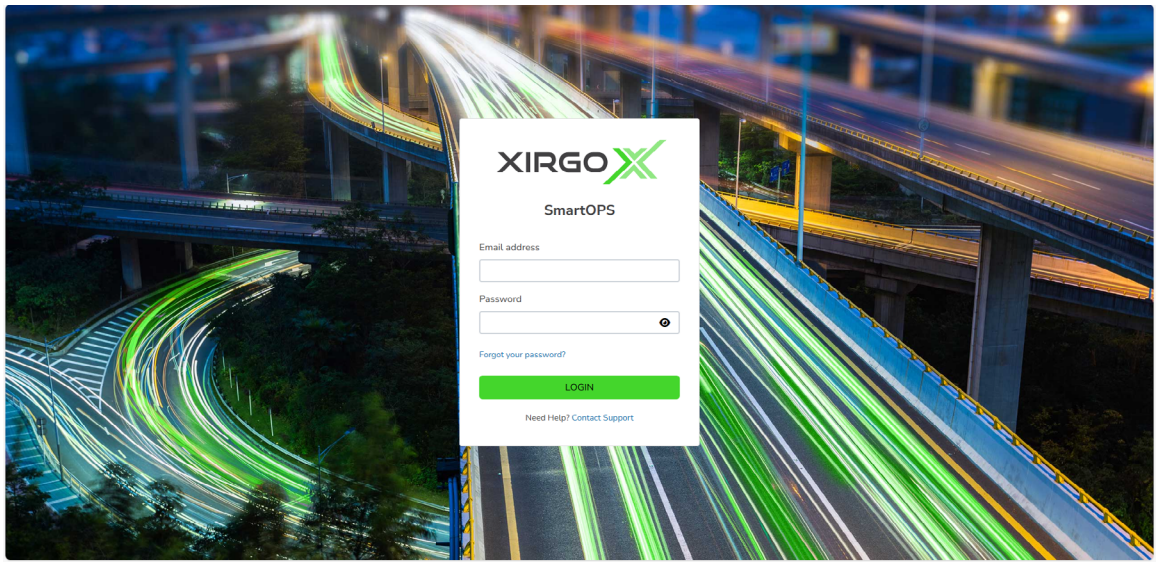
- An installed, powered, and connected XVD-302
- Web browser software
- Login credentials for Xirgo's SmartOPS website, provided as part of your device subscription

LOG IN TO SMARTOPS

Use a web browser to log in to SmartOPS.

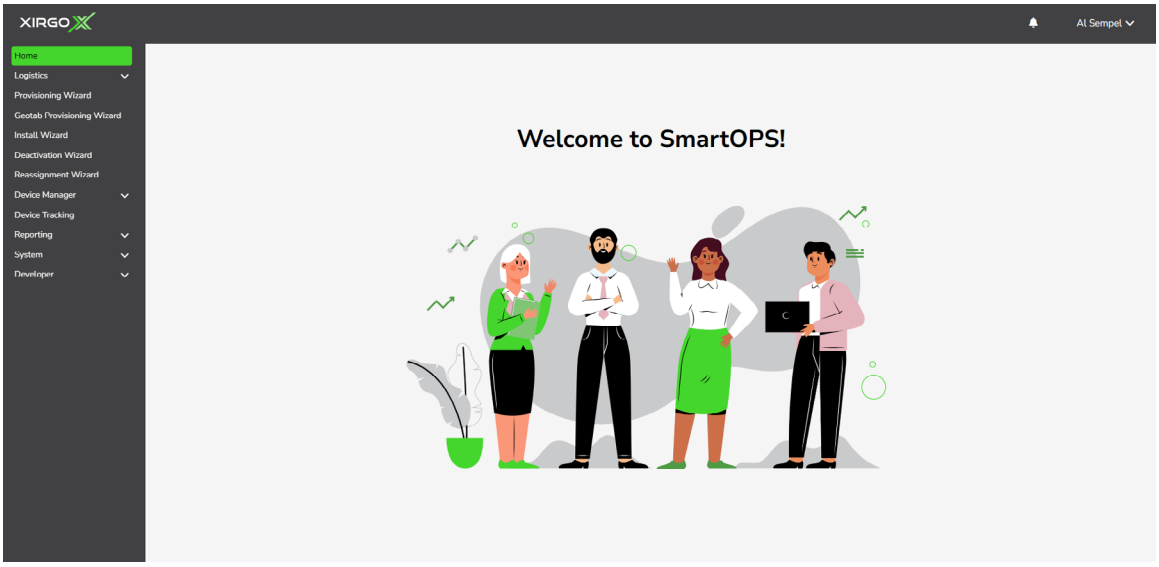
1. Open a web browser to the SmartOPS website. The login screen displays.

SmartOPS login screen



2. Enter the login credentials and click **LOGIN**. The Welcome to SmartOPS screen displays.

Welcome to SmartOPS screen

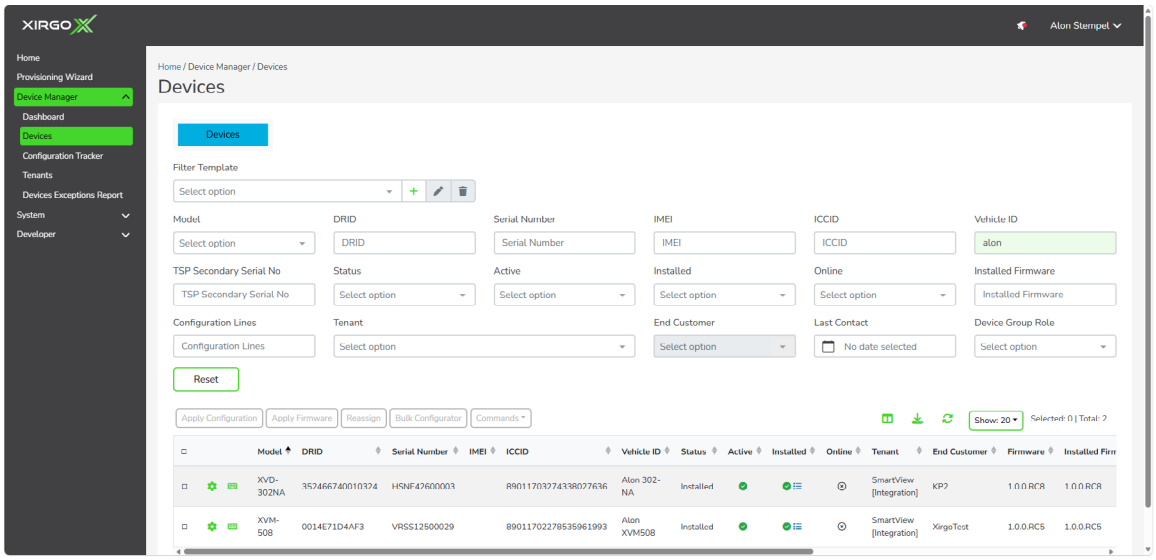


FIND THE DEVICE IN DEVICE MANAGER

Find the device to configure in Device Manager.

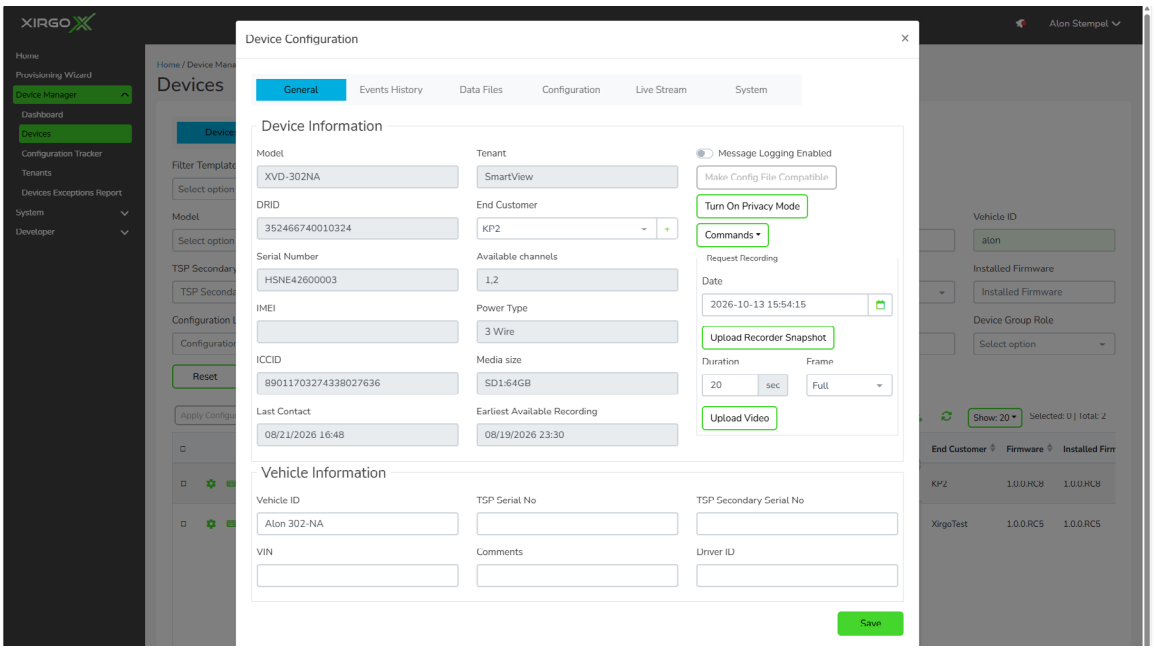
1. Click **Device Manager**, and then click **Devices** to view devices within your organization.

Device Manager, Devices



2. Use SmartOPS' search tools to find the device to configure or find the device on the list of devices and click its  icon.

Device Configuration screen, General tab



CONFIGURE POWER MODES

Introduction

The XVD-302 has three power modes.

- **On:** The device is on when the vehicle is running and sending power to the device.
- **Guard Mode:** When enabled, the device enters Guard mode when the vehicle is turned off. When operating in Guard mode, the device detects shock and movement and records them as events.
- **Low Power/Battery Protection:** The device enters this mode when Guard mode times out or when the battery voltage drops below a specified threshold value.

The following table compares the functionality of the different power modes.

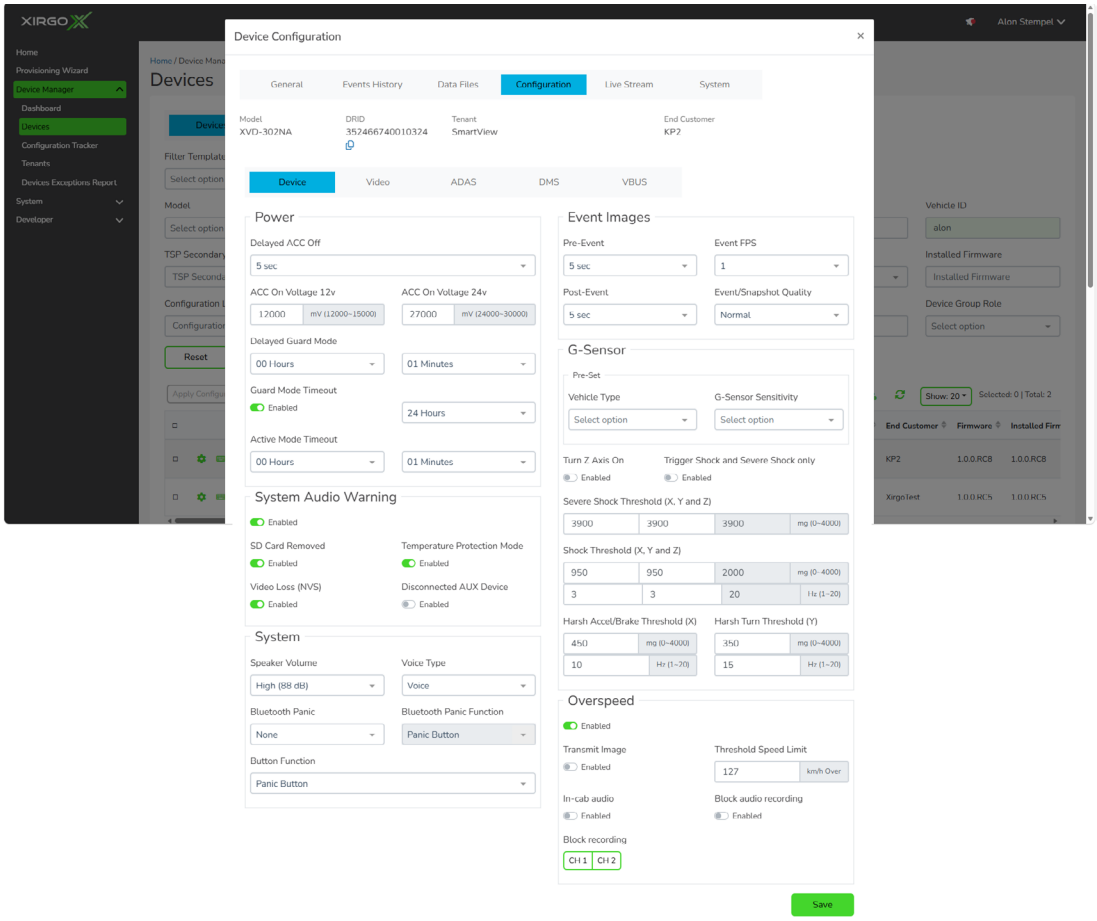
Mode	On	Guard Mode	Low Power/Battery Protection
Average power draw	36 watts	0.84 watts over 1 hour	0.24 watts
Video recording	Yes, continuous	On trigger, for programmable period	No
Cellular communication	Yes	Yes, lower frequency	No
GNSS positioning and reporting	Yes	Yes	No
Video streaming on request	Yes	Yes	No
Configuration changes	Yes	Yes	No, but can be queued
Firmware download	Yes	Yes	No, but can be queued
G-sensor triggered recording	N/A	Yes	No

Configuration

Perform the following procedure to configure the XVD-302's power modes.

1. Click the **Configuration** tab. The Device tab displays.

Device Configuration, Configuration tab, Device tab



2. In the **Power** section, specify settings for the following parameters:
   - **Delayed ACC Off:** In the **Delayed ACC Off** dropdown menu, select the earliest amount of time an Ignition Off event can be triggered after the ignition is turned on.
   - **ACC On Voltage 12v:** In the **ACC On Voltage 12v** field, enter the voltage level on a 12 volt system's ACC signal required to turn the device on.
   - **ACC On Voltage 24v:** In the **ACC On Voltage 24v** field, enter the voltage level on a 24 volt system's ACC signal required to turn the device on.
   - **Delayed Guard Mode:** In the **Delayed Guard Mode** dropdown menus, enter the amount of time from when the ACC signal goes low (hours and minutes) before the device switches to Guard mode.
   - **Guard Mode Timeout:** Enable the **Guard Mode Timeout**.
   - From the **Guard Mode Timeout** dropdown menu, enter the amount of time the device will remain in Guard mode if the vehicle is not turned on.
   - **Active Mode Timeout:** From the **Active Mode Timeout** dropdown menus, enter the amount of time the device will remain active when the G-sensor is triggered during Guard mode.
3. Click **Save** to save the settings.

CONFIGURE THE G-SENSOR

Introduction

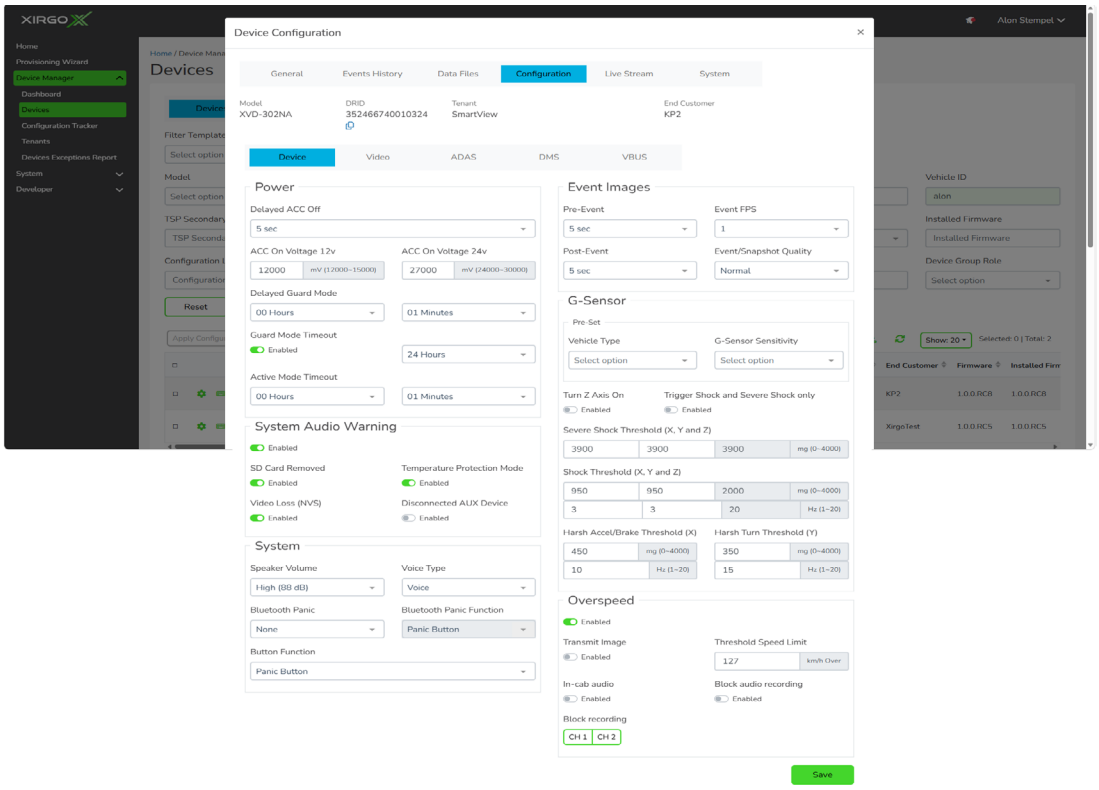
Configure the G-sensor to accurately report events due to shock, harsh acceleration, and other extreme vehicle movements.

Configuration

Perform the following procedure to configure the XVD-302's G-sensor.

1. Click the **Configuration** tab. The Device tab displays.

Device Configuration, Configuration tab, Device tab



2. In the **G-Sensor** section, specify settings for the parameters described below.

Note: Xirgo recommends using the default **G-Sensor** settings shown in SmartOPS.

- **Vehicle Type and G-Sensor Sensitivity:** In the **Pre-Set** section, select the vehicle type and G-sensor sensitivity from the **Vehicle Type** and **G-Sensor Sensitivity** dropdown menus.
  - ◊ **Vehicle Type:** Select the type of vehicle where the XVD-302 is installed.

    Note: This setting is separate from the Vehicle Type setting used during the XVD-302's installation procedures.
  - ◊ **G-Sensor Sensitivity:** Select the appropriate sensitivity level.
    - » **Insensitive (fewer events)**: Select this option for the lowest G-sensor sensitivity level. This will result in fewer events due to shock, harsh acceleration, or other extreme vehicle movements.
    - » **Standard/Normal**: Select this option for an average level of G-sensor sensitivity to shock, harsh acceleration, or other extreme vehicle movements.

» **Sensitive (more events):** Choose this option to set the G-sensor to the highest level of sensitivity to shock, harsh acceleration, or other extreme vehicle movements. This will result in a higher number of reported events.

Caution: Xirgo recommends making changes to the **Vehicle Type** and **G-Sensor Sensitivity** parameters only. Any changes to the following parameters should only be made in consultation with Xirgo.

- **Turn Z Axis On:** In addition to monitoring vehicle movement for shock, harsh acceleration/braking, and harsh turns, along the X-axis and Y-axis, the G-sensor in the XVD-302 can be used to monitor vehicle movement along the Z-axis. To allow Z-axis monitoring, set the **Turn Z Axis On** switch to **Enabled**.

  Note: When enabled, custom Z-axis settings for **Severe Shock Threshold (X, Y and Z)** and **Shock Threshold (X, Y and Z)** can be set.
- **Trigger Shock and Severe Shock only:** The G-sensor in the XVD-302 can be set to monitor for shock and severe shock only (ignoring harsh acceleration, braking, and turning). To limit the G-sensor to only detect shock and severe shock, set the **Trigger Shock and Severe Shock only** switch to **Enabled**.
- **Severe Shock Threshold (X, Y, and Z):** Enter the threshold values (G-force) for the X-axis, Y-axis, and Z-axis.

  Note: The G-sensor's Z-axis must be enabled to configure the **Severe Shock Threshold**'s Z-axis sensitivity.
- **Shock Threshold (X, Y, and Z):** Enter the threshold values (g-force and frequency) for the X-axis, Y-axis, and Z-axis.

  Note: The G-sensor's Z-axis must be enabled to configure the **Shock Threshold**'s Z-axis sensitivity.
- **Harsh Accel/Brake Threshold (X):** Enter the threshold values (g-force and frequency) for the X-axis to determine harsh acceleration and harsh braking events.
- **Harsh Turn Threshold (Y):** Enter the threshold values (g-force and frequency) for the Y-axis to determine harsh turn events.

3. Click **Save** to save the settings.

CONFIGURE OVERSPEED SETTINGS

Introduction

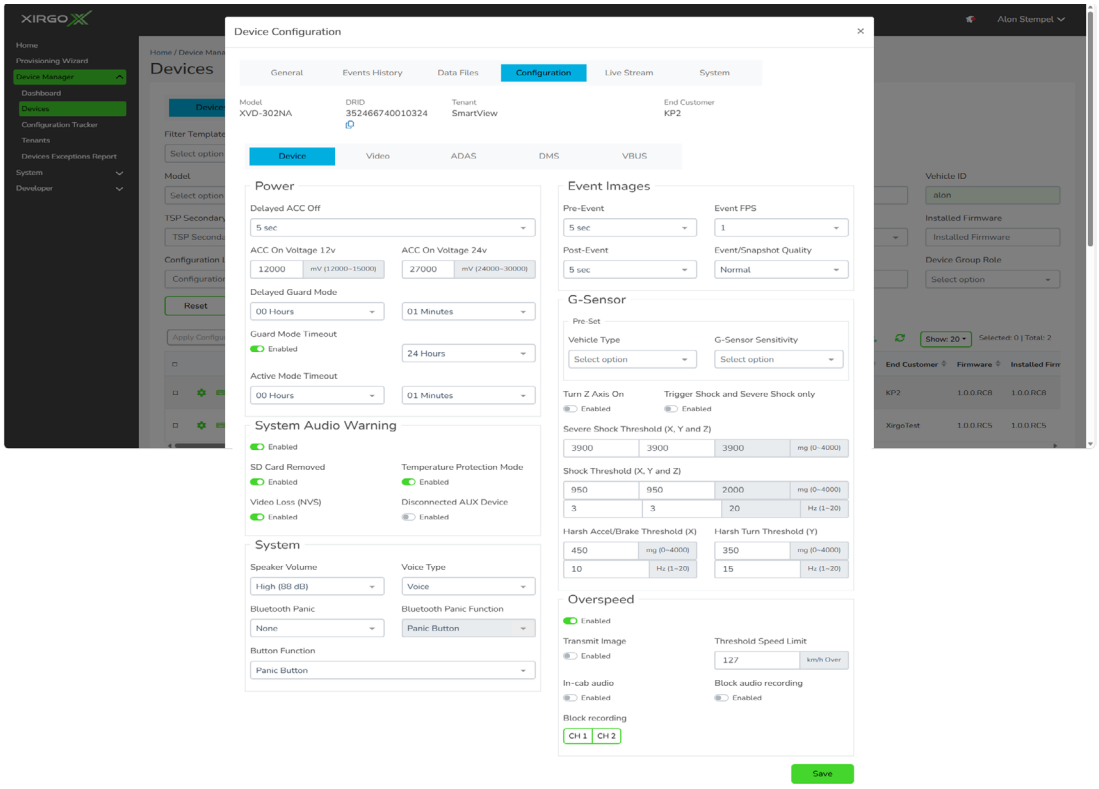
The XVD-302 can be configured to alert the driver and record an event when the vehicle exceeds a specified speed, regardless of the posted speed limit.

Configuration

Perform the following procedure to configure the XVD-302's overspeed function.

1. Click the **Configuration** tab. The Device tab displays.

Device Configuration, Configuration tab, Device tab



2. In the **Overspeed** section, set the switch to **Enabled**.
3. Set the **Transmit Image** switch to **Enabled** to have camera images transmitted along with the overspeed event.
4. Set the threshold speed limit in the **Threshold Speed Limit** field.
5. Set the **In-cab audio** switch to **Enabled** to allow audio notification of an overspeed event. When enabled, the device will use the setting from the **Voice Type** dropdown menu in the **System** section of the Device tab.
6. Set the **Block audio recording** switch to **Enabled** to block in-cab audio recording during an overspeed event.
7. Click on the video channels that should be blocked during an overspeed event. A blocked channel is highlighted in green.
    - **CH 1** is the road-facing camera.
    - **CH 2** is the driver-facing camera (if installed).
8. Click **Save** to save the settings.

CONFIGURE SYSTEM SETTINGS

Introduction

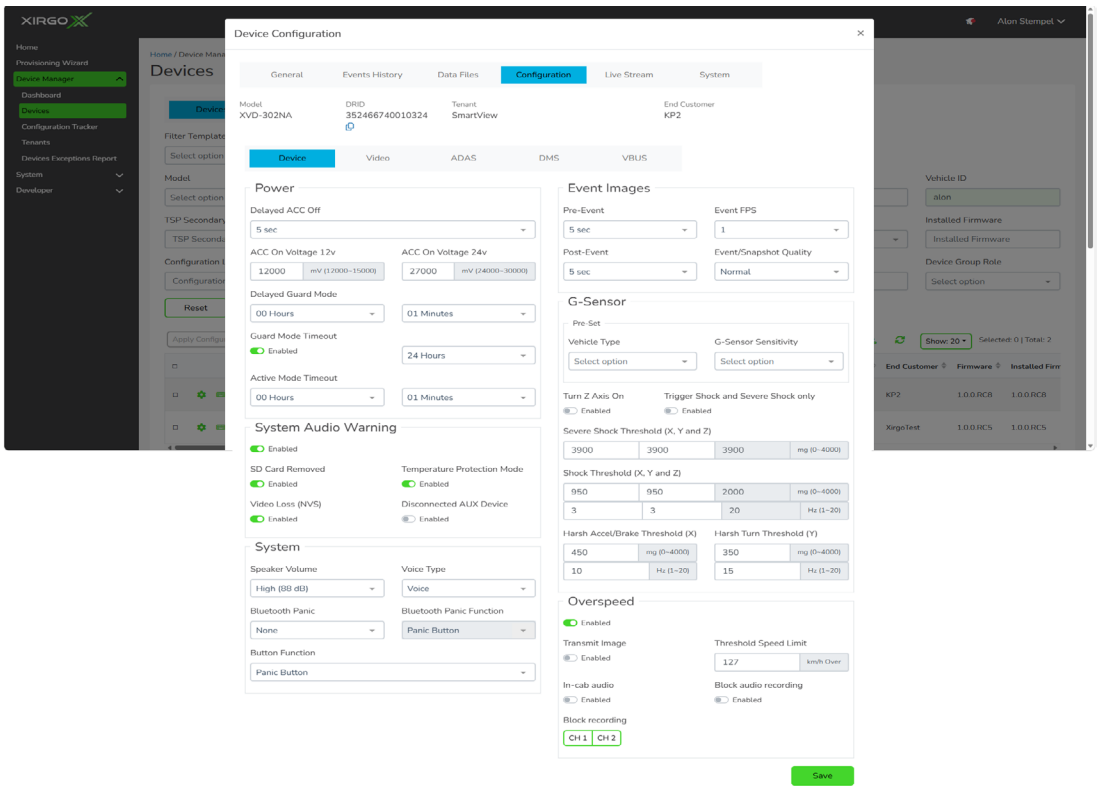
Adjust settings in the **System** section to configure speaker settings, button functions, and (optional) Bluetooth® button functionality.

Configuration

Perform the following procedure to configure the XVD-302's system settings.

1. Click the **Configuration** tab. The Device tab displays.

Device Configuration, Configuration tab, Device tab



2. In the **System** section, specify settings for the parameters described below.
   - **Speaker Volume:** From the **Speaker Volume** dropdown menu, select the volume level for the built-in speaker.
     - ◊ **Off**
     - ◊ **Low (80 dB)**
     - ◊ **Middle (85 dB)**
     - ◊ **High (88 dB)**
   - **Voice Type:** From the **Voice Type** dropdown menu, select whether alerts use a voice message or a beep.
     - ◊ **Voice:** The device will play voice messages for each alert.
     - ◊ **Beep:** The device will beep at each alert.

- **Bluetooth Panic:** From the **Bluetooth Panic** dropdown menu, select whether the device will connect with a Flic Bluetooth panic button (part number SW-PB-BT).
  - ◊ **None:** Bluetooth button functionality is not used.
  - ◊ **Flic:** Bluetooth button functionality is enabled with the Flic Bluetooth panic button.
- **Bluetooth Panic Function:** From the **Bluetooth Panic Function** dropdown menu, select the function of the Bluetooth panic button
  - ◊ **Emergency Call:** The device will make an emergency phone call when the Bluetooth panic button is pressed.

    Note: This function is not supported in most markets. Xirgo recommends using the Panic Button setting.
  - ◊ **Panic Button:** The device will record an event when the Bluetooth panic button is pressed.
- **Button Function:** The button on the XVD-302 can be configured to record an event when pressed or turn off the driver-facing camera (when equipped). Select the function of the button from the **Button Function** dropdown menu.
  - ◊ **Panic Button:** When selected, the device will record an event when the button is pressed.
  - ◊ **Panic/Privacy:** When selected, the device will record an event when the button is briefly pressed. Holding the button will place the device in Privacy mode where the driver-facing camera (if equipped) is disabled.

3. Click **Save** to save the settings.

EVENT IMAGES SETTINGS

The settings in the **Event Images** section specify how event images are packaged. Xirgo recommends not changing these settings.

CONFIGURE VIDEO SETTINGS

Introduction

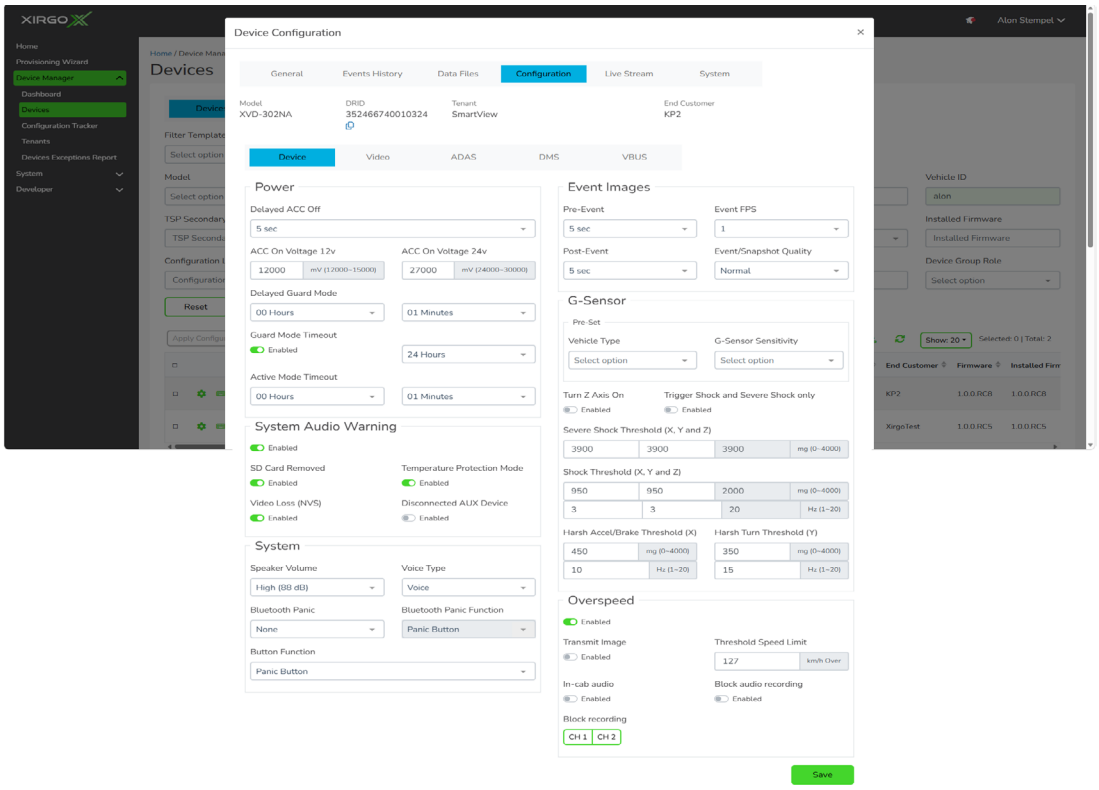
The Video section configures the device's recording mode and the image quality for each of the camera inputs.

Configuration

Perform the following procedure to configure the XVD-302's video settings.

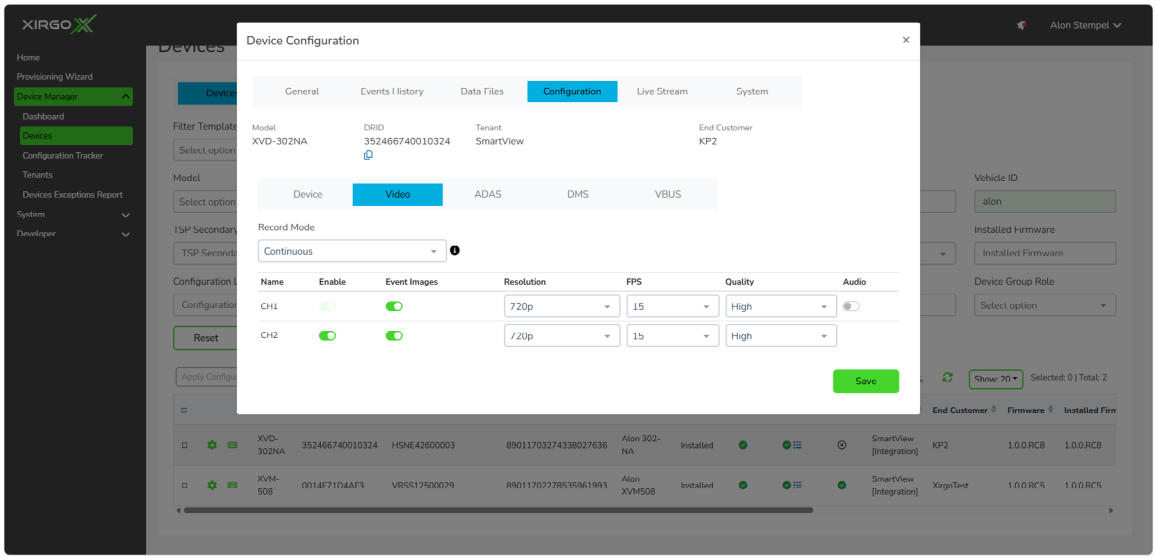
1. Click the **Configuration** tab. The Device tab displays.

Device Configuration, Configuration tab, Device tab



2. Click the **Video** tab to display controls for configuring the video inputs.

Device Configuration, Configuration tab, Video tab



3. Select the recording mode from the **Record Mode** dropdown menu.

Note: Xirgo recommends using the **Continuous** setting.

- **Off**: The device will not record content.
- **Continuous:** The device will continuously record content. Events can still be sent to SmartAPI server if configured on the Server tab within the XVD-302 Configuration Tool.

  Caution: Changes to the **Server** tab in the XVD-302 Configuration Tool should only be done by Xirgo Technical Support.

- **Event**: Only events are recorded. The duration of video clips are determined by the **Pre-Event** and **Post-event** settings on the **Device** tab.
- **Continuous+Event**: The device continuously records at 1 frame per second (FPS). When an event is triggered, the event is recorded at the frame rate specified in each camera's **FPS** setting.

4. The XVD-302 is always equipped with a road-facing camera (referred to as "CH1") and can also be equipped with a driver-facing camera (referred to as "CH2").

   Configure the road-facing camera and driver-facing camera (if equipped).

   a. Enable or disable the input.

   b. Specify the resolution from the **Resolution** dropdown menu. Higher resolution settings will provide better image quality while reducing the overall length of video history stored on the device's SD™ card.

   c. Select the frame rate from the **FPS** dropdown menu. Higher FPS settings will provide smoother motion reproduction but require more storage and transmission bandwidth.

   d. Specify the image quality from the **Quality** dropdown menu. The **High** and **Super** settings will provide better image quality than the **Normal** setting while requiring higher amounts of memory for storage and transmission of video.

   e. Select whether audio is included in the road-facing camera's recordings.

Note: Xirgo recommends **720p** resolution, **10** FPS, and **Normal** quality.

5. Click **Save** to save the settings.

CONFIGURE ADAS

Introduction

Advanced Driver Assistance Systems (ADAS) are a set of features that utilize sensors, image processing, and artificial intelligence (AI) to analyze driving data and provide warnings intended to support safer driving behavior. The XVD-302 processes the following ADAS events:

- Forward Collision Warning (FCW): Monitors and notifies drivers when a collision with the vehicle or obstacle ahead is imminent.
- Headway Monitoring Warning (HMW) or “Tailgating”: Notifies drivers when they infringe upon a configurable unsafe distance to the vehicle ahead over a set period of time.
- Lane Departure Warning (LDW): Detects a vehicle drifting across a lane line.
- Pedestrian Detection Warning (PCW): Detects pedestrians crossing the vehicle’s path of travel.
- Stop Sign Violation: The device monitors the road for presence of stop signs and whether the driver obeys the stop sign.
- Speed Limit Violation: The device monitors the road for presence of speed limit signs and whether the driver exceeds the posted speed limit. This feature is only for use in the United States, Canada, and Australia.

Configuration

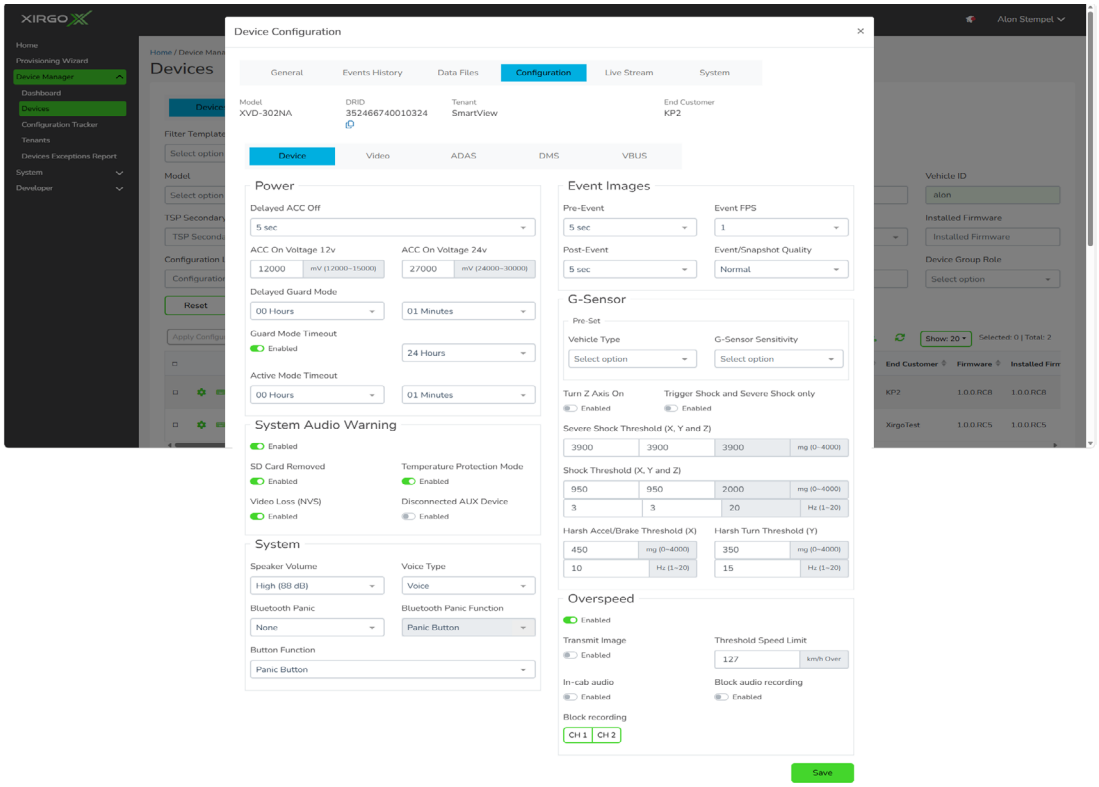
Enable ADAS Features

Warning: ADAS should not be tested with vehicles in live traffic. Please contact Xirgo Technical Support with any ADAS questions.

Perform the following procedure to enable the XVD-302's ADAS feature.

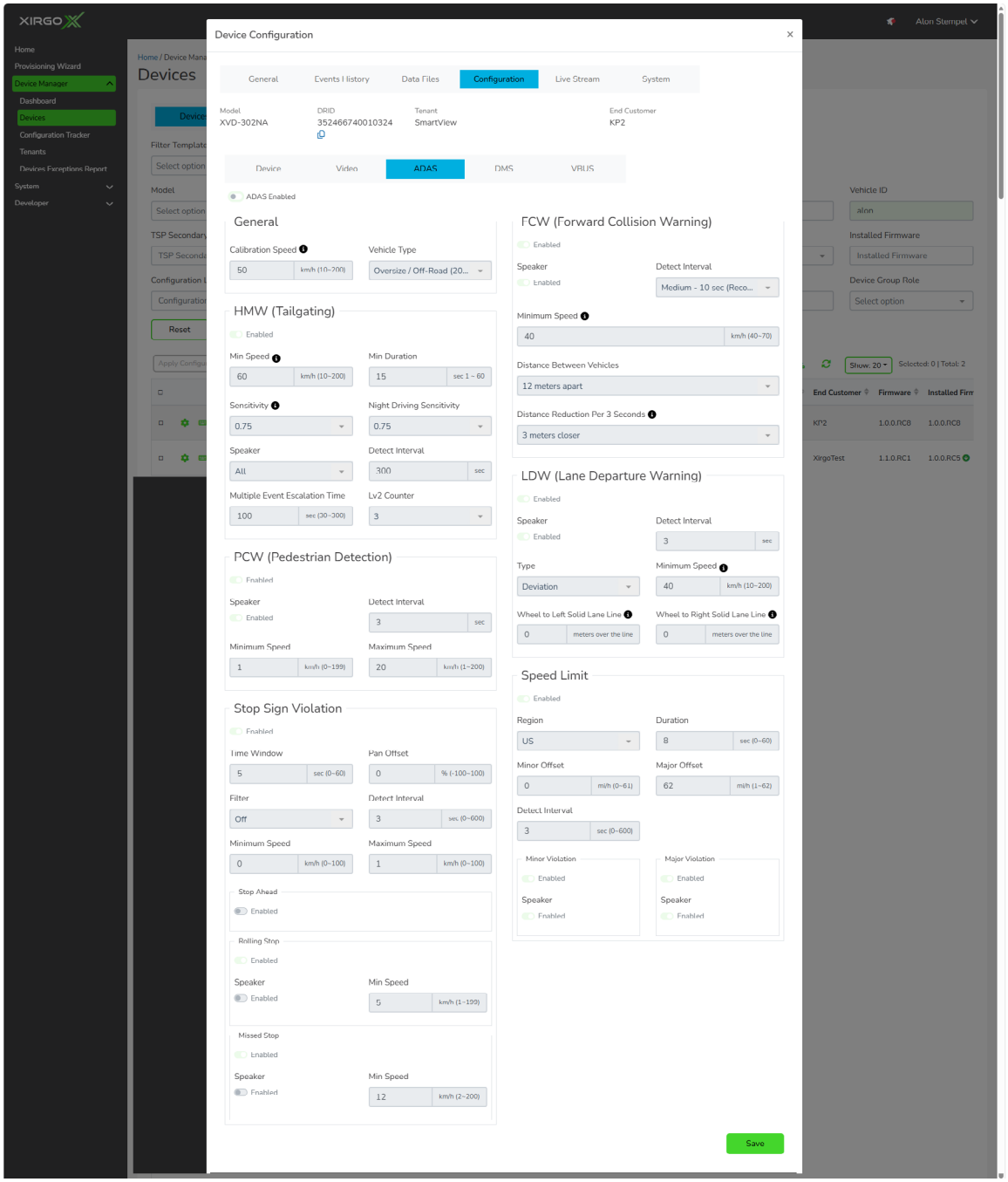
1. Click the **Configuration** tab. The Device tab displays.

Device Configuration, Configuration tab, Device tab



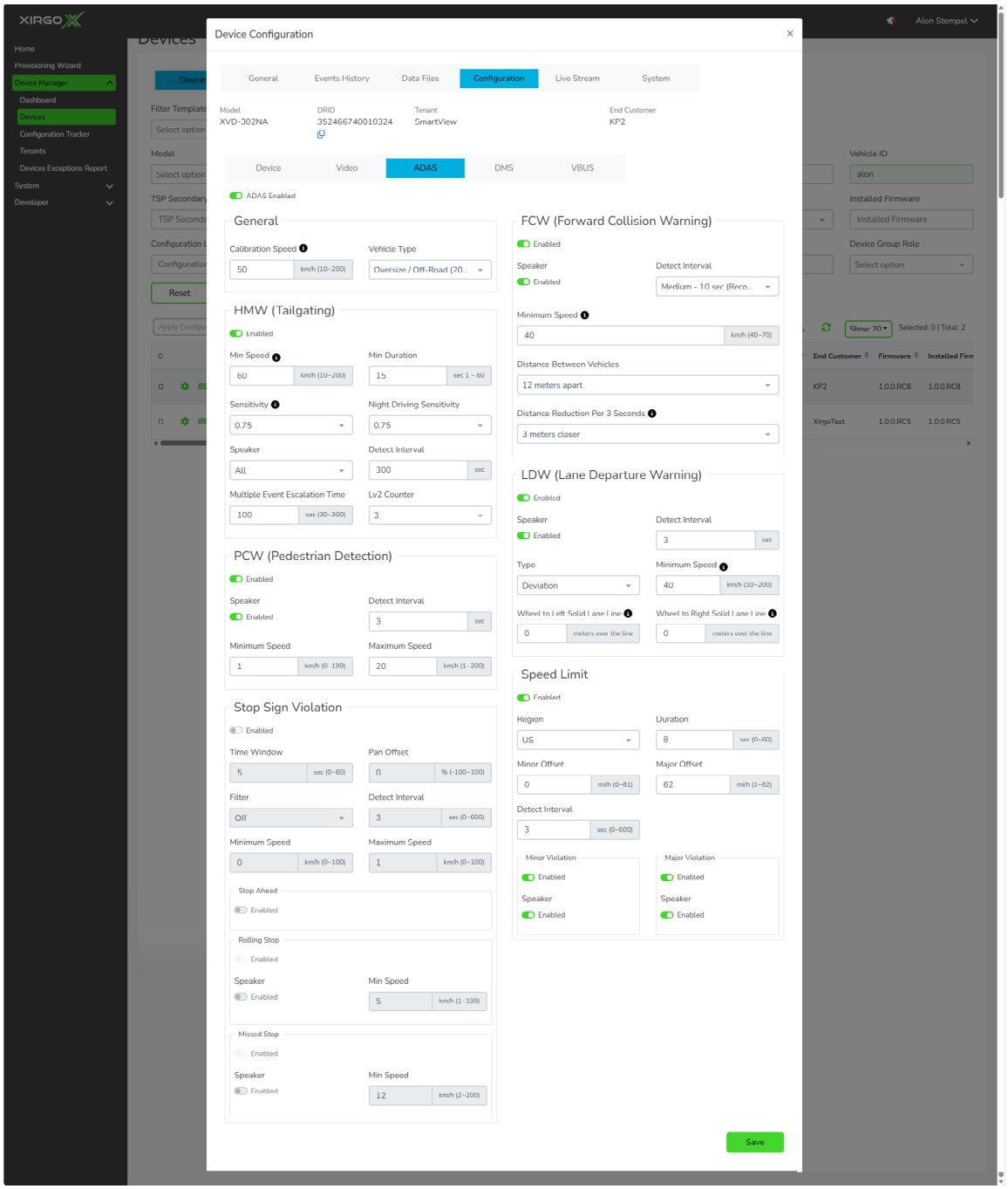
2. Click the **ADAS** tab to display controls for configuring ADAS.

Device Configuration, Configuration tab, ADAS tab



3. Set the **ADAS Enabled** switch to **Enabled** to activate ADAS and configure ADAS features.

Device Configuration, Configuration tab, ADAS tab, ADAS enabled



4. Configure all parameters as described in the following sections, and then click **Save** to save the settings.

General

The **General** section configures the minimum vehicle speed required to calibrate the device and the vehicle type which specifies the height of the road-facing camera.

- In the **Calibration Speed** field, enter the minimum vehicle speed required to calibrate the device.

  Notes:
  - A higher **Calibration Speed** setting provides a more stable view of the horizon. However, for vehicles that spend more time city driving, a lower speed should be used to ensure that the device is able to calibrate.
  - The recommended minimum calibration speed setting is 31 mph (50 km/h).

- Use the **Vehicle Type** dropdown menu to select the type of vehicle where the device is installed. This setting is used to specify the camera's height above the ground.
  - **Passenger Car (120 cm)**
  - **SUV (140 cm)**
  - **Van/Medium Truck (160 cm)**
  - **Heavy Duty (180 cm)**
  - **Oversize / Off Road (200 cm)**
  - **Custom:** Set a custom camera height between 50 and 400 cm in the **Camera Height** field.

  Note: The **Vehicle Type** may also be set during the installation process with the Xirgo Video Installer app.

Headway Monitoring Warning (HMW) (Tailgating)

The **HMW (Tailgating)** section configures the device's ability to detect tailgating activity.

The HMW feature utilizes a sensitivity setting that uses the vehicle's speed to determine an acceptable distance from the vehicle in front of it. The following table illustrates the relationship between the **Sensitivity** setting and the vehicle's speed that determines the acceptable distance between the device and the vehicle in front of it. A higher Sensitivity value increases the headway distance at which the device identifies a potential tailgating condition.

Sensitivity Setting versus Vehicle Speed

	Vehicle Speed															
	Kilometers per hour	16	24	32	40	48	56	64	72	80	89	97	105	113	121	129	137
	Miles per hour	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
	Meters per second	4.5	6.7	8.9	11.2	13.4	15.6	17.9	20.1	22.4	24.6	26.8	29.1	31.3	33.5	35.8	38
		Distance (meters)															
Sensitivity Setting	0.5	2.2	3.4	4.5	5.6	6.7	7.8	8.9	10.1	11.2	12.3	13.4	14.5	15.6	16.8	17.9	19.0
	0.53	2.4	3.6	4.7	5.9	7.1	8.3	9.5	10.7	11.8	13.0	14.2	15.4	16.6	17.8	19.0	20.1
	0.56	2.5	3.8	5.0	6.3	7.5	8.8	10.0	11.3	12.5	13.8	15.0	16.3	17.5	18.8	20.0	21.3
	0.6	2.7	4.0	5.4	6.7	8.0	9.4	10.7	12.1	13.4	14.8	16.1	17.4	18.8	20.1	21.5	22.8
	0.63	2.8	4.2	5.6	7.0	8.4	9.9	11.3	12.7	14.1	15.5	16.9	18.3	19.7	21.1	22.5	23.9
	0.66	3.0	4.4	5.9	7.4	8.9	10.3	11.8	13.3	14.8	16.2	17.7	19.2	20.7	22.1	23.6	25.1
	0.69	3.1	4.6	6.2	7.7	9.3	10.8	12.3	13.9	15.4	17.0	18.5	20.0	21.6	23.1	24.7	26.2
	0.72	3.2	4.8	6.4	8.0	9.7	11.3	12.9	14.5	16.1	17.7	19.3	20.9	22.5	24.1	25.7	27.4
	0.75	3.4	5.0	6.7	8.4	10.1	11.7	13.4	15.1	16.8	18.4	20.1	21.8	23.5	25.1	26.8	28.5
	1.5	6.7	10.1	13.4	16.8	20.1	23.5	26.8	30.2	33.5	36.9	40.2	43.6	46.9	50.3	53.6	57.0
	2.25	10.1	15.1	20.1	25.1	30.2	35.2	40.2	45.3	50.3	55.3	60.3	65.4	70.4	75.4	80.5	85.5
	3	13.4	20.1	26.8	33.5	40.2	46.9	53.6	60.3	67.1	73.8	80.5	87.2	93.9	100.6	107.3	114.0

Set the switch to **Enabled** to activate and configure tailgating detection.

An HMW event will trigger when the following conditions are met:

- The event occurs outside of the specified **Detect Interval.**
- The vehicle is traveling at or above the speed set in the **Min Speed** field.
- The vehicle is determined to be within the distance specified by the vehicle speed and **Sensitivity** setting for the time specified in the **Min Duration** field.

Example:
For an XVD-302 set with the following parameters:

- **Min Speed** = 72 kilometers per hour
- **Min Duration** = 15 seconds
- **Sensitivity** = 0.75

A vehicle traveling at 72 kilometers per hour will trigger an HMW event if the vehicle is detected to be within 15.1 meters of the vehicle in front of it for 15 seconds.

A vehicle traveling at 89 kilometers per hour will trigger an HMW event if the vehicle is detected to be within 18.4 meters of the vehicle in front of it for 15 seconds.

Multiple instances of tailgating events can be escalated to "Level 2" and are reported as level 2 events if a specified number of tailgating events occur within a specified period.

When enabled, the device is capable of detecting and tracking vehicles in view regardless of whether they straddle the center vertical line of the camera's field of view. However, for event generation purposes, vehicle detections are only counted when all prior detection conditions are met and the detected vehicle straddles the center vertical line of the camera's field of view. Vehicle detections that do not straddle the center vertical line of the camera's field of view are excluded from HMW event calculations.

- In the **Min Speed** field, enter the minimum vehicle speed (km/h) when the device will start to monitor HMW. The minimum speed can be set from **10** to **200** km/h.
- In the **Min Duration** field, enter the minimum amount of time (seconds) potential tailgating must be detected for an HMW event to trigger. The time can be set from **1** to **60** seconds.
- From the **Sensitivity** dropdown menu, select a headway threshold to detect tailgating. The chosen setting will use the vehicle's current speed to determine the allowable distance between vehicles as speed changes. For details on this setting, refer to the table "Sensitivity Setting versus Vehicle Speed" on page 20.
- From the **Night Driving Sensitivity** dropdown menu, select a headway threshold to detect tailgating when the amount of available light drops below a factory-configured level. The chosen setting will use the vehicle's current speed to determine the appropriate distance between vehicles as speed changes. For details on this setting, refer to the table "Sensitivity Setting versus Vehicle Speed" on page 20.
- From the **Speaker** dropdown menu, select when the device's speaker will sound. The speaker can be set to **Off**, **All**, or **Lv2**.

Speaker Setting	Description
Off	The speaker is off.
All	The speaker will sound for all events.
Lv2	The speaker will only sound for Level 2 events.

- From the **Detect Interval** dropdown menu, select the time interval from one detection to the next possible detection. The interval can be set between **0** and **600** seconds.
- In the **Multiple Event Escalation Time** field, enter the span of time (**30** to **300** seconds) used to determine if multiple HMW events are promoted to "Level 2".
- From the **Lv2 Counter** dropdown menu, select the number of HMW events within the **Multiple Event Escalation Time** that are required to escalate to a Level 2 HMW event.

Notes:

- When set to **Off**, all HMW events are reported.
- When the dropdown menu is set to a numeric value, only HMW events that meet the criteria specified in **Lv2 Counter** and **Multiple Event Escalation Time** are reported.

Tip: If too many HMW events are being generated and the goal is to decrease those instances, try increasing the **Min Duration** value. This will require a longer incidence of tailgating to occur for an event to trigger. **The Sensitivity** and **Night Driving Sensitivity** settings can also be decreased to reduce the number of HMW events.

Forward Collision Warning (FCW)

The **FCW (Forward Collision Warning)** section configures the device's ability to detect impending collisions with vehicles.

Set the switch to **Enabled** to activate and configure FCW detection.

An FCW event will trigger when the following conditions are met:

- The event occurs outside of the specified **Detect Interval**.
- The vehicle is traveling at or above the speed set in the **Minimum Speed** field.
- The vehicle ahead is determined to be within the distance specified in the **Distance Between Vehicles** setting.
- The vehicle is covering the distance specified in the **Distance Reduction Per 3 Seconds** setting in 3 seconds or less.

Example:
For an XVD-302 set with the following parameters:
- **Minimum Speed** = 40 kilometers per hour
- **Distance Between Vehicles** = 12 meters apart
- **Distance Reduction Per 3 Seconds** = 3 meters closer

A vehicle traveling at 40 kilometers per hour or greater will trigger an FCW event if the vehicle is detected to be within 12 meters of the vehicle in front of it and the distance closes to 9 meters within 3 seconds or less.

When enabled, the device is capable of detecting and tracking vehicles in view regardless of whether they straddle the center vertical line of the camera's field of view. However, for event generation purposes, vehicle detections are only counted when all prior detection conditions are met and the detected vehicle straddles the center vertical line of the camera's field of view. Vehicle detections that do not straddle the center vertical line of the camera's field of view are excluded from FCW event calculations.

- Set the **Speaker** switch to **Enabled** to enable audible warnings for FCW events.
- Set the time interval from one detection to the next possible detection in the **Detect Interval** dropdown menu. The **Detect Interval** can be set to **Low**, **Medium**, or **High**.

Detect Interval Setting	Description
Low	The device must wait 5 seconds before reporting an FCW event.
Medium	The device must wait 10 seconds before reporting an FCW event.
High	The device must wait 20 seconds before reporting an FCW event.

Note: The **Medium - 10 sec** setting is recommended to avoid excessive warnings.

- In the **Minimum Speed** field, enter the minimum vehicle speed (km/h) when the device will start to monitor FCW. The minimum speed can be set from **10** to **200** km/h.

Note: 40 km/h is the recommended setting.

- From the **Distance Between Vehicles** dropdown menu, set the maximum distance where the device would consider an object to be a collision risk. The **Distance Between Vehicles** can be set to **6 meters**, **12 meters**, or **20 meters** apart.
- From the **Distance Reduction Per 3 Seconds** dropdown menu, set the amount of distance the vehicle should close within 3 seconds to trigger an FCW event. The **Distance Reduction Per 3 Seconds** can be set to **5 meters closer**, **3 meters closer**, or **2 meters closer**.

Tips:

- To set FCW triggers to occur only in close-quarters scenarios, decrease the **Distance Between Vehicles** setting.
- To fine-tune the configuration for fewer events, use a less common **Distance Reduction Per 3 Seconds** setting to trigger an event. A higher setting will yield fewer events while a lower setting will yield more events.
  - ◊ To get 5 meters closer to another vehicle within 3 seconds is uncommon. This setting will yield fewer events.
  - ◊ To get 3 meters closer within 3 seconds is the recommended setting. This setting will yield an average amount of events.
  - ◊ To get 2 meters closer within 3 seconds is common. This setting will create more events.

Pedestrian Crossing Warning (PCW)

The **PCW (Pedestrian Detection)** section configures the device's ability to detect pedestrians crossing the vehicle's path of travel.

Set the switch to **Enabled** to activate and configure PCW detection.

A PCW event will trigger when the following conditions are met:

- A pedestrian is detected crossing the vehicle's path of travel.
- The pedestrian is detected outside of the specified **Detect Interval**.
- The vehicle is traveling at or above the speed set in the **Minimum Speed** field.
- The vehicle is traveling at or below the speed set in the **Maximum Speed** field.

When enabled, the device is capable of detecting pedestrians crossing the vehicle's path of travel and alerting the driver.

- Set the **Speaker** switch to **Enabled** to enable audible warnings for PCW events.
- Set the time interval from one detection to the next possible detection in the **Detect Interval** setting. The **Detect Interval** can be set from **0** to **600** seconds.
- Set the minimum speed when pedestrian monitoring can trigger an event in the **Minimum Speed** field. The **Minimum Speed** can be set from **0** to **199** km/h.
- Set the maximum speed when pedestrian monitoring will stop triggering an event in the **Maximum Speed** field. The **Maximum Speed** can be set from **1** to **200** km/h.

Note: The **Maximum Speed** setting must be set higher than the **Minimum Speed** setting.

Lane Departure Warning (LDW)

The **LDW (Lane Departure Warning)** section configures the device's ability to detect lane departure or lane deviation along the vehicles path of travel. The device can be configured to detect immediate lane departure or detect lane deviation over a 3 second period.

Set the switch to **Enabled** to activate and configure LDW detection.

An LDW event will trigger when the following conditions are met:

- The departure or deviation occurs outside of the specified **Detect Interval**.
- The vehicle is traveling above the **Minimum Speed**.
- The vehicle crosses the specified **wheel-to-line threshold distances** (left or right) immediately (for lane departure) or for more than 3 seconds (for lane deviation).

When enabled, the device is capable of detecting lane departure or lane deviation along the vehicle's path of travel.

- Set the **Speaker** switch to **Enabled** to enable audible warnings for LDW events.
- Set the time interval from one detection to the next possible detection in the **Detect Interval** setting. The **Detect Interval** can be set from **0** to **600** seconds.

Note: The **Detect Interval** is automatically set to 3 seconds when **Departure** is selected as the type of departure to be monitored.

- Select the type of departure to monitor from the Type dropdown menu.
  - ◊ **Departure**: When set to **Departure**, complete lane departures will trigger an event. A departure is a one-time event that is triggered when a lane line is crossed.
  - ◊ **Deviation**: When set to **Deviation**, drifting outside of a lane will trigger an event. A deviation is a timed event that is triggered when the deviation condition is met for the set time window.

Note: The **Departure** or **Deviation** mode should be selected based on customer use cases.

- Set the minimum speed when lane departure will trigger an event in the **Minimum Speed** field. The **Minimum Speed** can be set from **10** to **200** km/h. The recommended setting is **40 km/h**.
- Set the **Wheel to Left Solid Lane Line** to specify the distance the left wheel must be over the lane line before an LDW event is triggered.
- Set the **Wheel to Right Solid Lane Line** to specify the distance the right wheel must be over the lane line before an LDW event is triggered.

Notes:

- When LDW is operating in Deviation mode, positive values can be used to trigger an event when the driver approaches a lane line. For example, setting a value of 0.30 will trigger an LDW event when the vehicle is within 30 centimeters of the lane line for 3 seconds.
- When LDW is operating in Deviation mode, negative values can be used to trigger an event when the driver temporarily crosses a lane line. For example, setting a value of -0.30 will trigger an LDW event when the vehicle is 30 centimeters over the lane line for 3 seconds.
- When LDW is operating in Departure mode, negative values should be used to specify the distance past the lane line that will trigger an event. For example, setting a value of -0.30 will trigger an LDW event when the vehicle is 30 centimeters over a lane line.
- Glare effects, particularly at night and during rain, may reduce general efficacy.

Stop Sign Violation (United States, Canada, and Australia only)

The **Stop Sign Violation** section configures the device's ability to monitor and report minor stop sign violations (rolling stops) and major stop sign violations (missed stops).

A Stop Sign Violation is detected when the following conditions are met:

- The vehicle is traveling at or above the **Minimum Speed** setting and below the **Maximum Speed** setting.
- A stop sign enters the Stop Sign Region of Interest (ROI).
- The vehicle speed stays at or above the Minor Stop Sign Violation threshold while the Stop Sign remains in the ROI, or within a time window (Time Window setting) after the sign was last seen in the ROI.

A Stop Sign Violation is classified as a Minor Stop Sign Violation (rolling stop) when the following conditions are met:

- A Stop Sign violation is detected.
- **Rolling Stop** detection is enabled.
- The vehicle is traveling at or above the Rolling Stop's **Min Speed** setting.
- The conditions for Major Stop Violation (missed stop) are not met.

A Stop Sign Violation is classified as a Major Stop Sign Violation (missed stop) when the following conditions are met:

- A Stop Sign violation is detected.
- **Missed Stop** detection is enabled.
- The vehicle is traveling at or above the Missed Stop's **Min Speed** setting.

Note: If Missed Stop is enabled, any Stop Sign Violation above the Missed Stop's **Min Speed** setting will be classified as a Missed Stop Sign Violation.

Set the switch to **Enabled** to activate and configure the device to monitor stop sign violations.

- Set the **Speaker** switch to **Enabled** to enable audible warnings for Stop Sign events.
- Set the **Time Window** to specify the amount of time after the stop sign disappears from the ROI to wait for the vehicle to stop before triggering an event. The Time Window can be set from **0** to **60** seconds.
- Adjust the **Pan Offset** setting to establish a filter line where the device will not look for stop signs. The filter line (expressed in percent) is the offset from the center of the camera's field of view that is established during calibration. This offset moves the stop sign filter line to the left if negative and the right if positive. The **Pan Offset** can be set between -100 and 100 percent.
- **(Optional)** Set the device to ignore stop signs on the right or left side of the road from the **Filter** dropdown menu.
  - ◊ Select **Off** to disable the filter.
  - ◊ Select **Left** to ignore stop signs on the right side of the road.
  - ◊ Select **Right** to ignore stop signs on the left side of the road.

  The following image shows a stop sign on the left side of travel that should be ignored. For this case, the **Filter** parameter should be set to **Right**.

Stop sign filter example



- Set the time interval from one detection to the next possible detection in the **Detect Interval** setting. The **Detect Interval** can be set from **0** to **600** seconds.
- Set the speed range where stop sign violations will be detected in the **Minimum Speed** and **Maximum Speed** fields.
  - ◊ The **Minimum Speed** can be set from **0** to **100** km/h.
  - ◊ The **Maximum Speed** can be set from 0 to **100** km/h.
- Set the **Stop Ahead** switch to **Enabled** to enable audio alerts when a stop sign is detected.
- Set the **Rolling Stop** switch to **Enabled** to enable Rolling Stop detection.
  - ◊ To use audio alerts to notify the driver of a detected rolling stop, set the **Speaker** switch to **Enabled**.
  - ◊ Set the minimum speed to trigger a Rolling Stop violation in the **Min Speed** field. The device can be set to detect rolling stops from **1** to **199** km/h.

Note: If Rolling Stop and Missed Stop are enabled, the **Min Speed** setting for Rolling Stop must be set lower than the **Min Speed** setting for Missed Stop.

- Set the **Missed Stop** switch to **Enabled** to enable Missed Stop detection.
  - To use audio alerts to notify the driver of a detected missed stop, set the **Speaker** switch to **Enabled**.
  - Set the minimum speed to trigger a Missed Stop violation in the **Min Speed** field. The device can be set to detect missed stops from **2** to **200** km/h.

Note: If Rolling Stop and Missed Stop are enabled, the **Min Speed** setting for Missed Stop must be set higher than the **Min Speed** setting for Rolling Stop.

Speed Limit Violation (United States, Canada, and Australia only)

The **Speed Limit** section configures the device's ability to monitor and report minor and major speed limit violations based on a detected speed limit sign and the vehicle's speed.

When a speed sign is detected, the device monitors vehicle speed for a duration of time following the detection. A violation can be further classified into a Major Violation or a Minor Violation depending on the vehicle's speed and the posted speed limit.

A Speed Limit Sign Violation is classified as a Major Violation when the following conditions are met:

- A Speed Limit sign is detected.
- **Major Violation** detection is enabled.
- The vehicle speed exceeds the posted limit plus the **Major Offset** within the specified **Duration**.

A Speed Limit Sign Violation is classified as a Minor Violation when the following conditions are met:

- A Speed Limit sign is detected.
- **Minor Violation** detection is enabled.
- The vehicle speed exceeds the posted limit plus the **Minor Offset** within the specified **Duration**.
- The conditions for a Major Speed Limit Violation are not met.

Set the switch to **Enabled** to activate and configure the device to monitor speed limit sign violations.

- Select the region the device is located from the **Region** dropdown menu.
- Specify the duration of time (seconds) the device will continue checking the speed after the sign goes out of view in the **Duration** field.
- Specify the offset speed after which a minor violation is triggered (as long as it's below the major offset) in the **Minor Offset** field.
- Specify the offset speed after which a major violation is triggered in the **Major Offset** field.
- Set the time interval from one detection to the next possible detection in the **Detect Interval** setting. The **Detect Interval** can be set from **0** to **600** seconds.
- Enable and configure detection of minor speed limit violations:
  - In the **Minor Violation** section, set the switch to **Enabled**.
  - In the **Minor Violation** section, set the Speaker switch to **Enabled** to provide audible alerts.
- Enable and configure detection of major speed limit violations:
  - In the **Major Violation** section, set the switch to **Enabled**.
  - In the **Major Violation** section, set the Speaker switch to **Enabled** to provide audible alerts.

CONFIGURE DMS

Introduction

Xirgo's Driver Monitoring System (DMS) monitors drivers for fatigue, distractions, and phone usage with sensors, image processing, and artificial intelligence (AI) to analyze driving data and support safer driving habits. The XVD-302 processes the following DMS events:

- Fatigue: Monitors the driver's face for signs of fatigue including eye closure and yawning duration.
- Distraction: Checks the position of the driver's head for deviation from the neutral (forward-facing) axis.
- Phone at ear: Monitors the driver's head/face area for the presence of a phone-like object.

Configuration

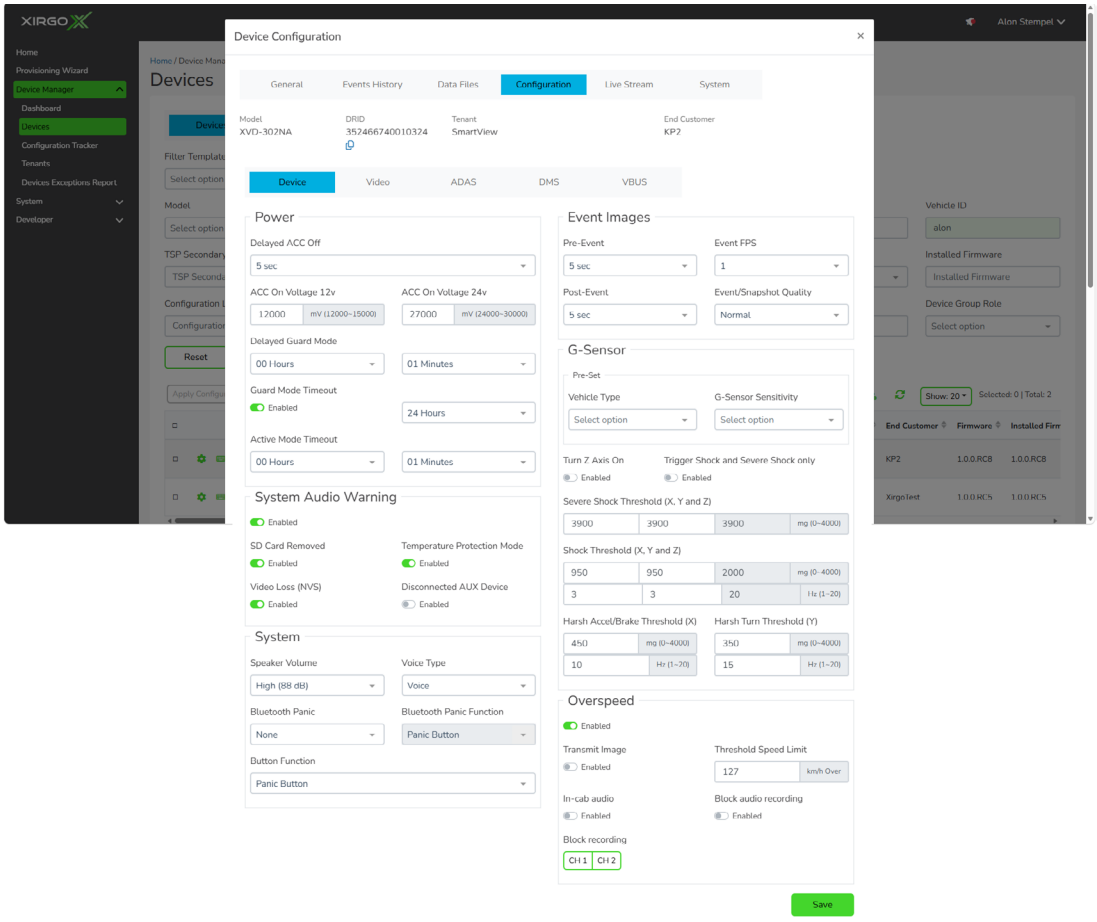
Enable DMS Features

Warning: DMS should not be tested with vehicles in live traffic. Please contact Xirgo Technical Support with any DMS questions.

Perform the following procedure to enable the XVD-302's DMS feature.

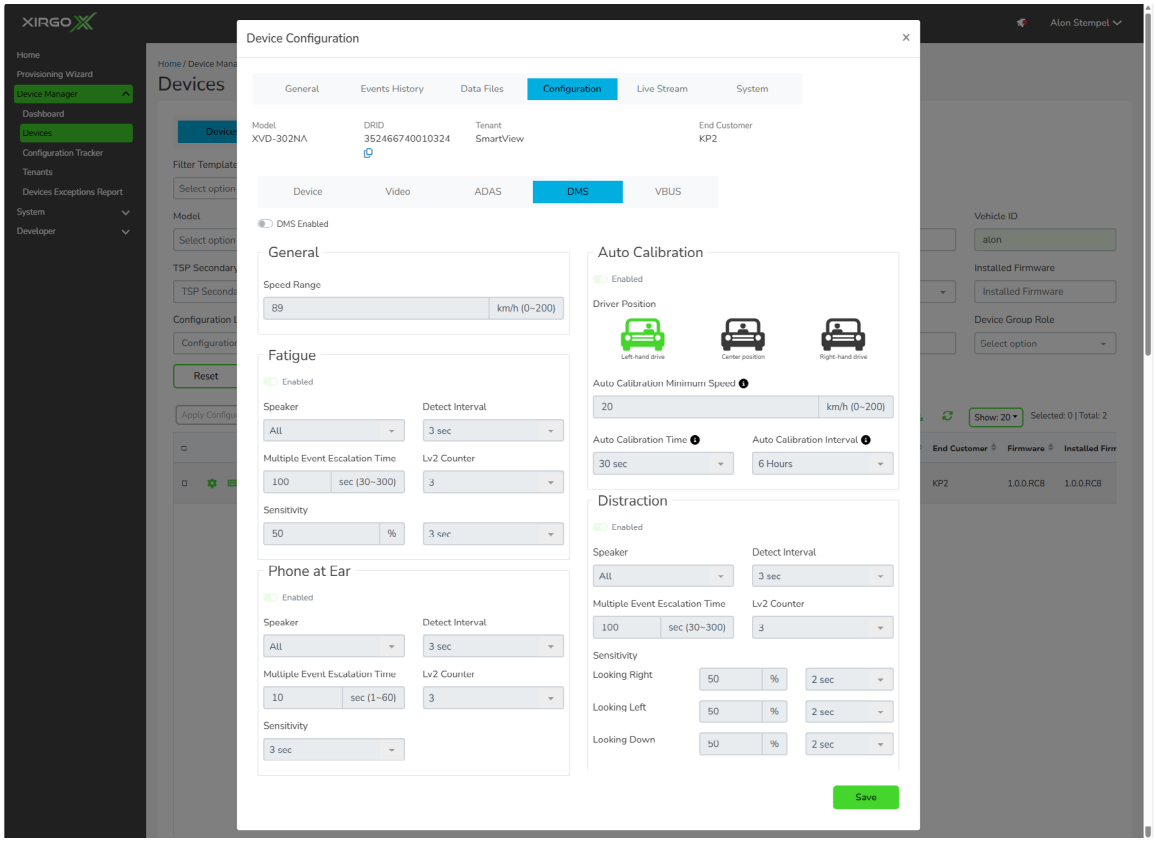
1. Click the **Configuration** tab. The Device tab displays.

Device Configuration, Configuration tab, Device tab



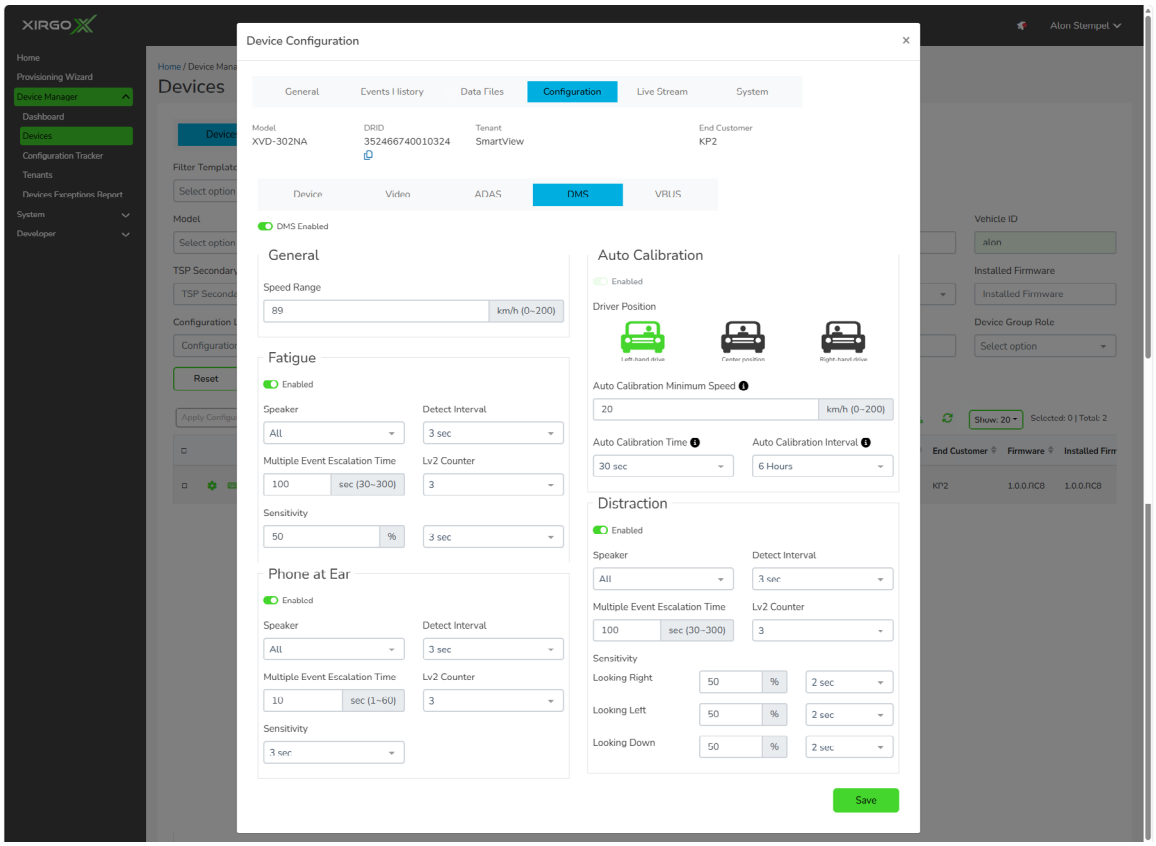
2. Click the **DMS** tab to display controls for configuring DMS.

Device Configuration, Configuration tab, DMS tab



3. Set the **DMS Enabled** switch to **Enabled** to activate DMS and configure DMS features.

Device Configuration, Configuration tab, DMS tab, DMS enabled



4. Configure all parameters as described in the following sections, and then click **Save** to save the settings.

General

The **General** section configures the speed where DMS will activate.

In the **Speed Range** field, enter the minimum speed where DMS will activate. The minimum speed can be set from **0** to **200** km/h.

Auto Calibration

The **Auto Calibration** section configures the device to automatically calibrate itself to the driver's position in the vehicle, the minimum speed at which the device will calibrate itself, the amount of time the device will take to calibrate, and the amount of time between calibrations.

- In the **Driver Position** section, select the position where the driver is seated.

  Note: This setting is established when the installer installs the device in the vehicle using the Xirgo Video Installer app.

- From the **Auto Calibration Time** dropdown menu, select the amount of time the device will use to calibrate.
- In the **Auto Calibration Minimum Speed** field, enter the minimum vehicle speed (km/h) when the device will automatically calibrate. The minimum speed can be set from **0** to **200** km/h.
- From the **Auto Calibration Interval** dropdown menu, select the amount of time between calibrations.

Fatigue

The **Fatigue** section configures the device to detect amounts of yawning or eye closure that can be interpreted as driver fatigue.

Set the switch to **Enabled** to activate and configure fatigue detection.

A fatigue event will trigger when yawning or eye closure is detected for a specified period.

- In the **Sensitivity** fields, enter the minimum percentage of an open mouth (0 to 100 percent) to classify as a potential yawn and the amount of time the mouth must be open or eyes closed (**1** to **10** seconds).

Example: If **Sensitivity** is set to 50% and 3 seconds, a fatigue event will trigger when the driver visibly yawns (at 50% mouth opening) for a 3 second period or the driver's eyes are closed for 3 seconds.

Multiple instances of fatigue events can be escalated to "Level 2" and are reported as level 2 events if a specified number of fatigue events occur within a specified period.

- In the **Multiple Event Escalation Time** field, enter the span of time (**30** to **300** seconds) used to determine if multiple fatigue events are promoted to "Level 2".
- From the **Lv2 Counter** dropdown menu, select the number of fatigue events within the **Multiple Event Escalation Time** that are required to escalate to a Level 2 fatigue event.

Notes:
- When set to **Off**, all fatigue events are reported.
- When the dropdown menu is set to a numeric value, only fatigue events that meet the criteria specified in **Lv2 Counter** and **Multiple Event Escalation Time** are reported.

- From the **Speaker** dropdown menu, select when the device's speaker will sound. The speaker can be set to **Off**, **All**, or **Lv2**.

Speaker Setting	Description
Off	The speaker is off.
All	The speaker will sound for all events.
Lv2	The speaker will only sound for Level 2 events.

- From the **Detect Interval** dropdown menu, select the time interval from one detection to the next possible detection. The interval can be set between **1** and **60** seconds.

Phone At Ear

The **Phone At Ear** section configures the device to detect the presence of a phone by the driver's ear.

Set the switch to **Enabled** to activate and configure phone detection.

A phone-at-ear event will trigger when the driver is detected to be holding a phone near their ear for a specified period of time.

- From the **Sensitivity** dropdown menu, select the amount of time the phone must be detected near the driver's ear (**1** to **10** seconds) for an event to trigger.

Multiple instances of phone-at-ear events can be escalated to "Level 2" and are reported as level 2 events if a specified number of phone-at-ear events occur within a specified period.

- In the **Multiple Event Escalation Time** field, enter the span of time (**1** to **60** seconds) used to determine if multiple phone-at-ear events are promoted to "Level 2".
- From the **Lv2 Counter** dropdown menu, select the number of phone-at-ear events within the **Multiple Event Escalation Time** that are required to escalate to a Level 2 phone-at-ear event.

Notes:
- When set to **Off**, all phone-at-ear events are reported.
- When the dropdown menu is set to a numeric value, only phone-at-ear events that meet the criteria specified in **Lv2 Counter** and **Multiple Event Escalation Time** are reported.

- From the **Speaker** dropdown menu, select when the device's speaker will sound. The speaker can be set to **Off**, **All**, or **Lv2**.

Speaker Setting	Description
Off	The speaker is off.
All	The speaker will sound for all events.
Lv2	The speaker will only sound for Level 2 events.

- From the **Detect Interval** dropdown menu, select the time interval from one detection to the next possible detection. The interval can be set between **1** and **60** seconds.

Distraction

The **Distraction** section configures the device to detect a driver distraction.

Set the switch to **Enabled** to activate and configure driver distraction detection.

A distraction event will trigger when the driver is detected to be looking left, right, or down for a specified period of time.

- From the **Sensitivity** dropdown menus (**Looking Right, Looking Left, and Looking Down**), select the amount of deviation (**0** to **100** percent) and the amount of time the driver's head is in the deviated position (**1** to **10** seconds) for an event to trigger.

Caution: Sideways head tilts are expected while driving, particularly on turns and when checking blind spots. Distraction monitoring does not account for the vehicle's direction of travel when assessing the position of the driver's head.

Example:
Sensitivity is set to **50%** and **3 seconds** for the **Look Down** setting: If **DMS** and **Distraction** are enabled and calibrated appropriately, a distraction event will trigger when the driver tilts their head downward (50%) for 3 seconds to look at an object in their lap.

Multiple instances of distraction events can be escalated to "Level 2" and are reported as level 2 events if a specified number of distraction events occur within a specified period.

- In the **Multiple Event Escalation Time** field, enter the span of time (**30** to **300** seconds) used to determine if multiple distraction events are promoted to "Level 2".
- From the **Lv2 Counter** dropdown menu, select the number of distraction events within the **Multiple Event Escalation Time** that are required to escalate to a Level 2 distraction event.

Notes:
- When set to **Off**, all distraction events are reported.
- When the dropdown menu is set to a numeric value, only distraction events that meet the criteria specified in **Lv2 Counter** and **Multiple Event Escalation Time** are reported.

- From the **Speaker** dropdown menu, select when the device's speaker will sound. The speaker can be set to **Off**, **All**, or **Lv2**.

Speaker Setting	Description
Off	The speaker is off.
All	The speaker will sound for all events.
Lv2	The speaker will only sound for Level 2 events.

- From the **Detect Interval** dropdown menu, select the time interval from one detection to the next possible detection. The interval can be set between **1** and **60** seconds.

SUPPORT

This device is designed and built for ease of installation and reliability. However, if you encounter difficulties while configuring this product, technical support is available at https://xirgo.com/contact/support/.

XVD-302 CONFIGURATION GUIDE

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