AN-028 Enabling Verkada LPR Camera with Radar Speed Reports

License Plate Recognition (LPR) cameras have become very useful for traffic monitoring. They become even more useful when they are combined with a radar sensor such as OPS9243-A to report speeding. The radar can trigger the camera on excessive speed, enabling capture of the make, color, and license plate of the vehicle. This allows authorities to follow up with individuals with warnings or possibly tickets. San Francisco has started using speed reporting cameras and in one month issued nearly 100,000 notices of speeding.

Verkada provides LPR cameras (CB52-E and CB62-E) which are very simple to install and link into their network, while providing an easy to navigate dashboard with capabilities to filterby vehicle type, color, and time. This application note explains how to set up the OPS9243-A which delivers vehicle speed data to the Verkada Command dashboard.

Camera + Radar System Architecture

The system architecture includes a Verkada camera and an OPS9243-A traffic monitor (Figure 1) mounted with the same roadway field of view. The Verkada camera is connected via Power-over-Ethernet (PoE) to send its video data to the Verkada Command dashboard. OPS9243-A uses PoE for power and to send speed data to the Verkada Command dashboard.

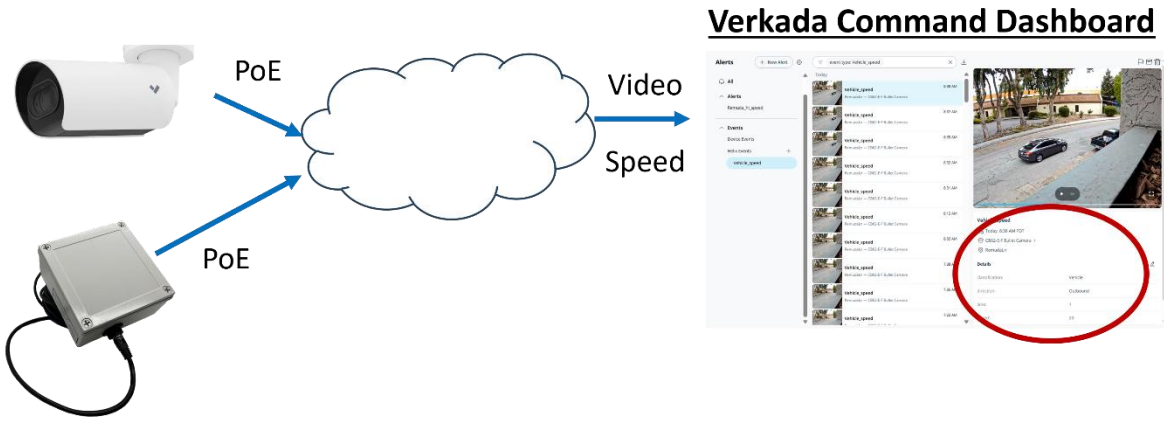

Figure 1. Verkada Camera and OPS9243-A Radar System Architecture

A Node Red server is utilized for initial configuration of the OPS9243-A to send speed data to the Verkada Command dashboard. When provided the sensor serial number, MAC address, Verkada API Key, and camera ID, the OPS9243 automatically generates the proper Helix event and is ready to send speed data to the Command dashboard.

Mounting Camera and OPS9243-A

The camera and OPS9243-A should be mounted in a location where they view the same area of the roadway. OPS9243-A has a much narrower field of view (FoV) at 20° (horizontal) x 24° (vertical) and it should be focused on the center of the roadway monitored. If a two-lane road, use the middle of the two lanes as the target center point of the sensor FoV. On the OmniPreSense website is a FoV calculator which can help determine where the sensor is focused based on the mount height, angle looking into the roadway, and the down angle. The OPS9243-A has a built-in down angle of 10°.

Verkada cameras have a much wider FoV at 107° (horizontal) x 62° (vertical). When zoomed in, the FoV is 43° (horizontal) x 24° (vertical). Make sure to match the camera FoV with the radar as much as possible to eliminate detecting vehicles outside of the radar FoV (ex. parking lot to left side in Figure 2).

Figure 2. Camera and Radar Sensor Field of View

OPS9243-A Verkada Command Configuration

Configuring the OPS9243-A for the Command dashboard is a relatively easy process which takes only a couple minutes. As a first step, identify the camera you want to link to the speed data from the OPS9243-A. The camera should already be configured on the Command dashboard and may or may not be mounted. It is advisable to configure OPS9243-A before mounting in case there are issues with the configuration which need to be addressed. The following are the steps for configuration.

Step 1: Generate API Key

The API Key is generated on the Command dashboard. Go to the square (nine dots) in the upper left of the dashboard or All Products. Selecting this brings up a pop-up window and select Admin (Figure 3).

Next, select API & Integration (Figure *4*) and the on the following window select API Keys (Figure 5). This brings up the main window for any existing API Keys. Press the blue + Add button (Figure 6) to bring up the Add New API Key configuration window (Figure 7).

In the New API Key configuration, provide a name for your key and select the Endpoints type. For sending speed data into Command, select Helix and make sure its Read/Write. Then select the Expiration time and remember it will eventually need to be renewed. It's suggested to set the time frame for the key as long as possible. Hitting Generate Key (Figure 8) will provide the API Key. Make sure to save this away in a secure location as it will be used later for the API Token generation.

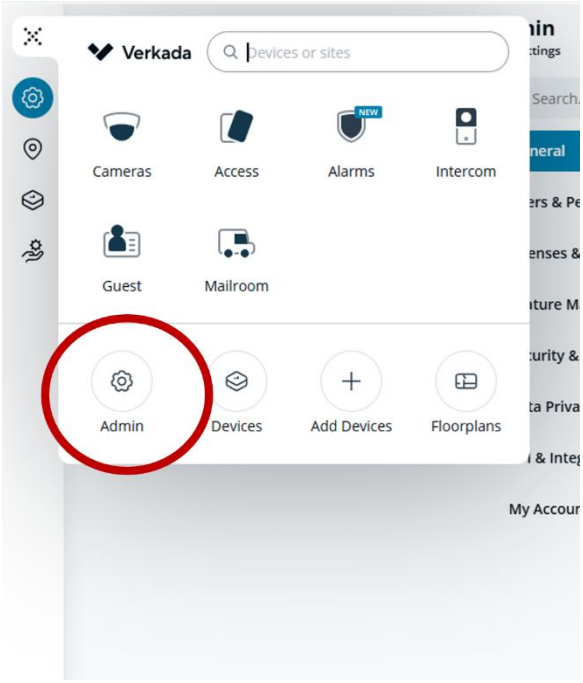

Figure 3. API Key Generation – Select Admin

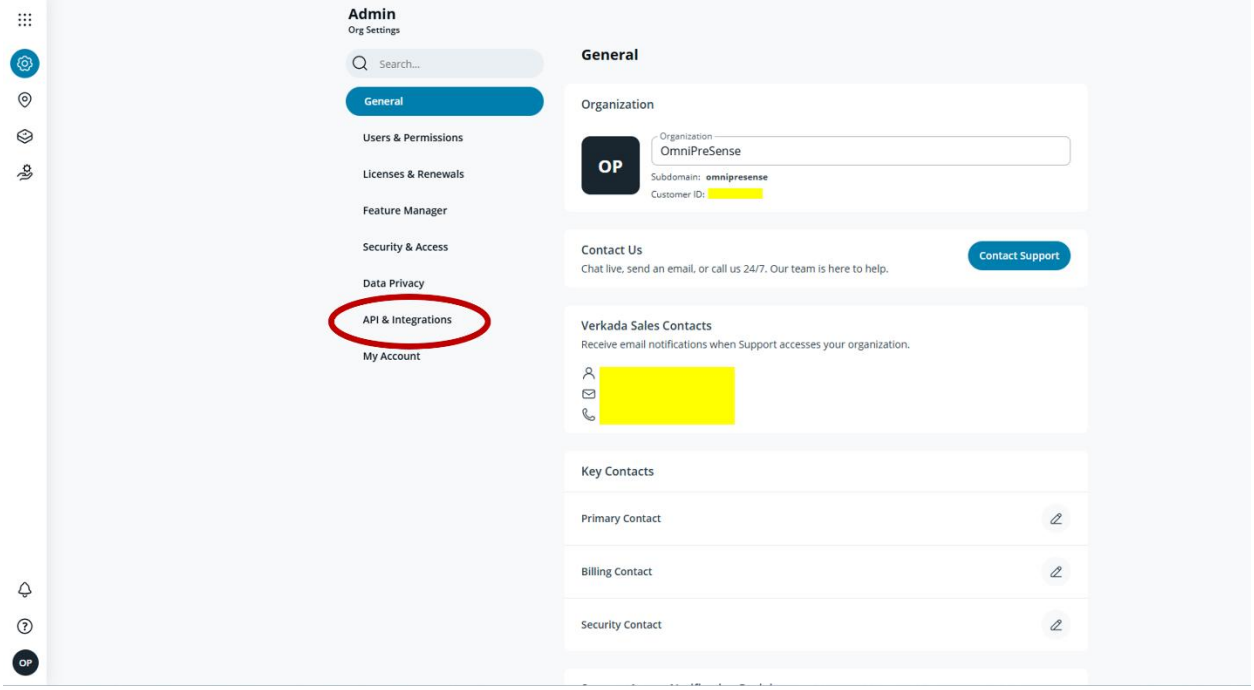

Figure 4. API Key Generation – Select API & Integration

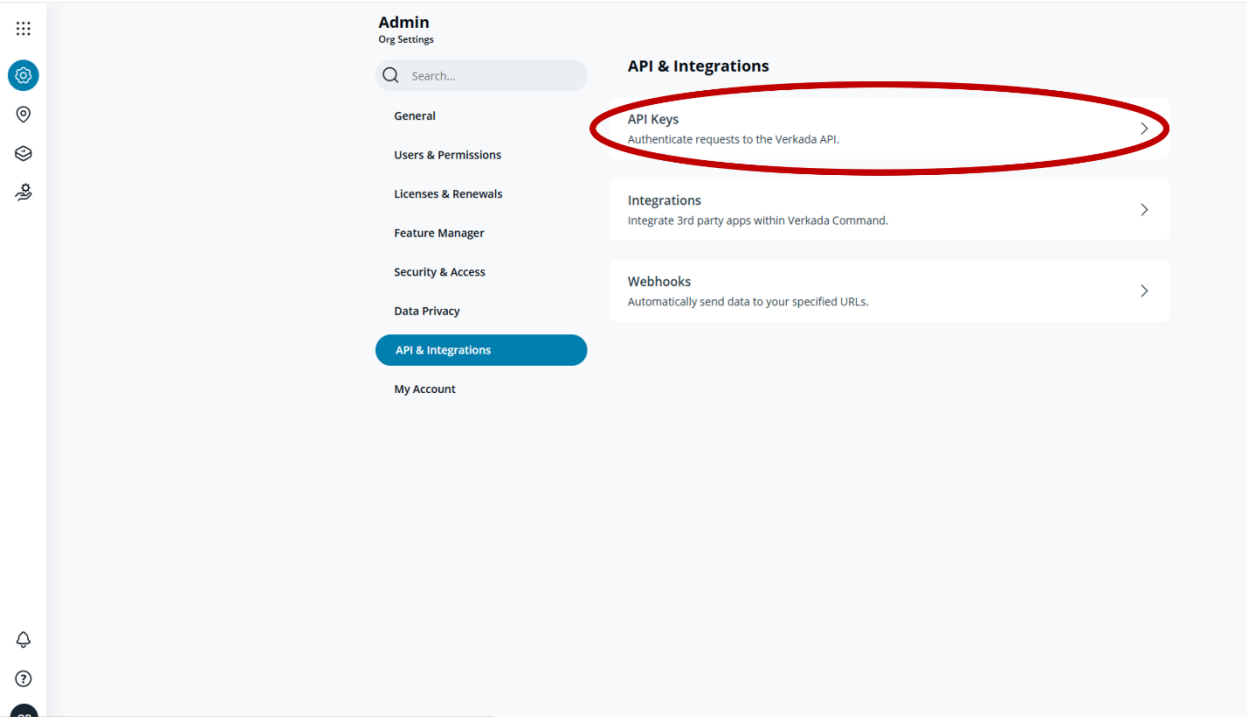

Figure 5. API Key Generation – Select API Keys

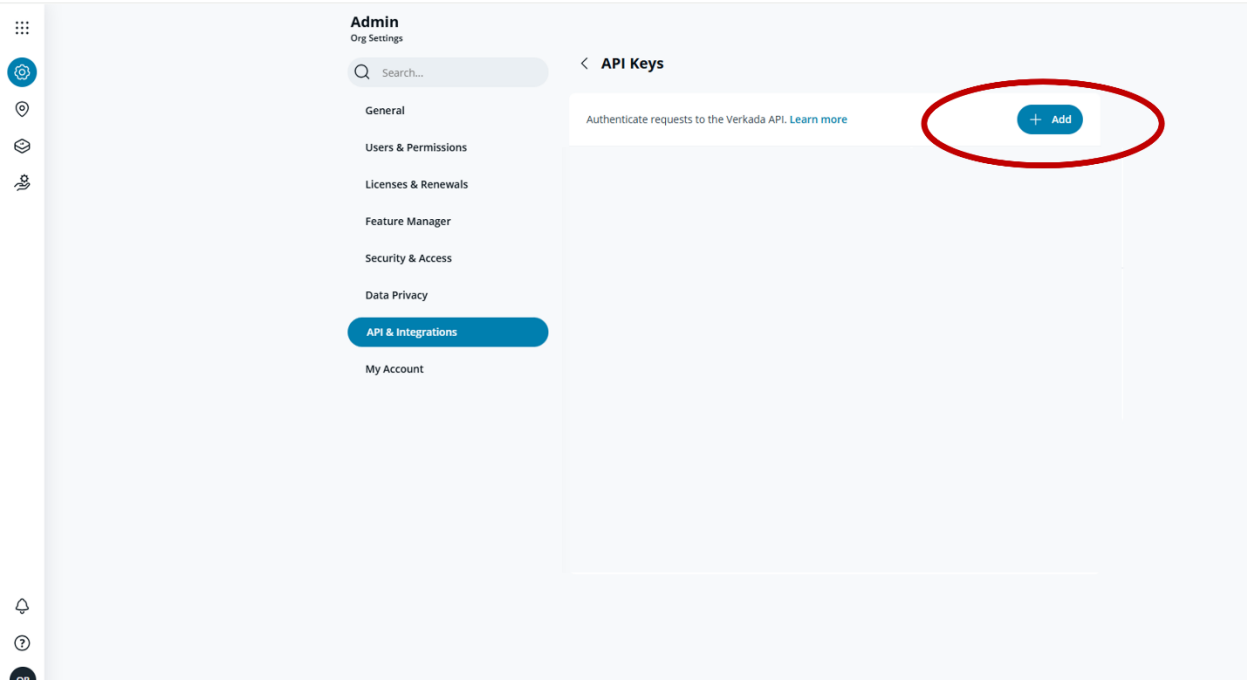

Figure 6. API Key Generation – Select + Add

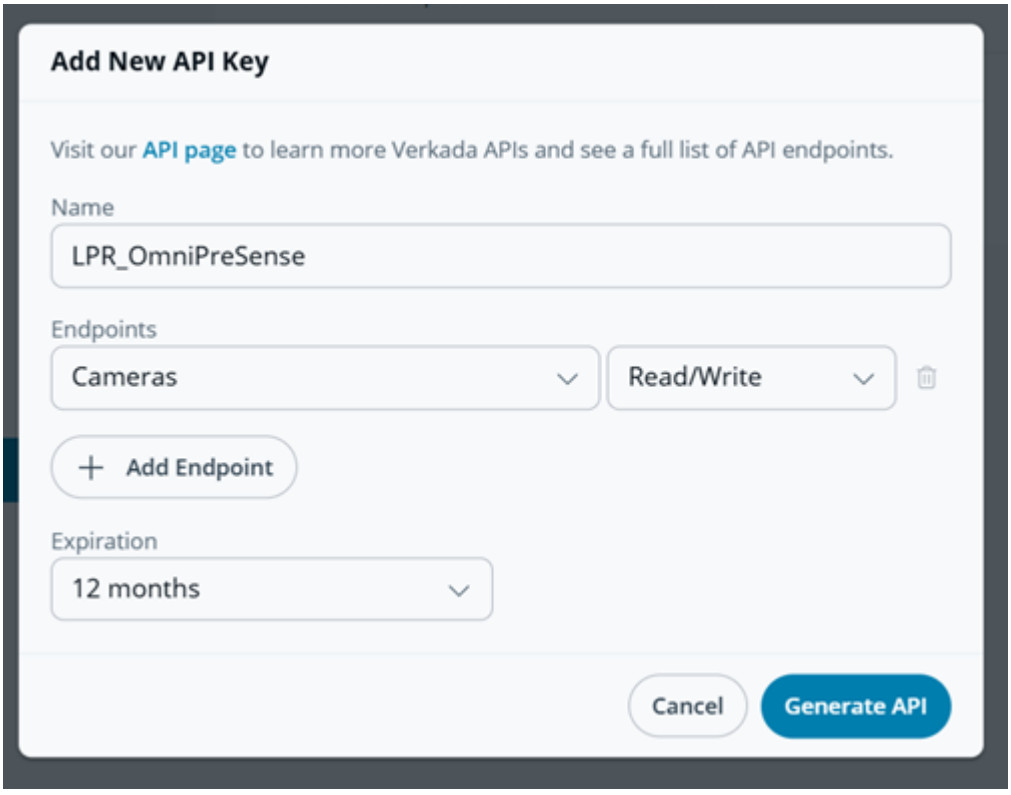

Figure 7. API Key Generation – New API Key Generation

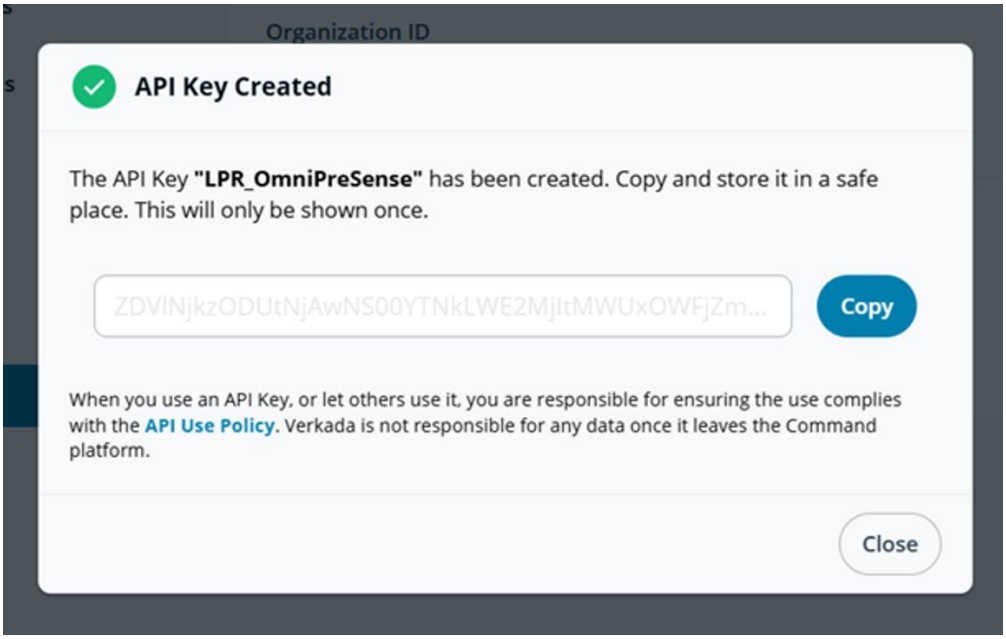

Figure 8. API Key Generation – New API Key

Step 2: Configure OPS9243-A

Plug the OPS9243-A into the network with a PoE cable. If properly set on the network, the LED will turn blue after 10-30 seconds.

Next, go to the OPS9243-A provisioning website located at (Figure *9*):

http://provverkada.omnipresense.net:1905/live/#!/2

Upon shipping of the OPS9243-A, you will receive an email with information about the provisioning process and a link to the provisioning website above, a username/password to log into the provisioning website, the traffic monitor serial number, and MAC address.

Log into the provisioning website using the information provided to get to the following screen (Figure *10*).

Select the region for your camera (N. America, Europe, or Australia). Input the traffic monitor serial number and MAC address provided along with the API Key value generated in step 1.

On your Verkada Command dashboard select the camera you want to link to the traffic monitor speed data. When the camera is selected and its field of view is visible, copy the camera ID from the url in your browser. The url will look like the following with the camera ID to the end of the url:

https://omnipresense.command.verkada.com/alerts/custom-events/<camera_id>

Enter the camera ID in the provisioning website and press Submit. The provisioning process will happen automatically, and a test message is sent with a speed of 1 mph and direction of “test”. You can see this by going to the Alerts in the lower left of the Command dashboard and selecting under Events – Helix Events – OPS9243_Speed_Report (Figure *11*). The test message will show on the lower right. There after any speed events will appear on the Command dashboard here with an associated video clip of the vehicle detected.

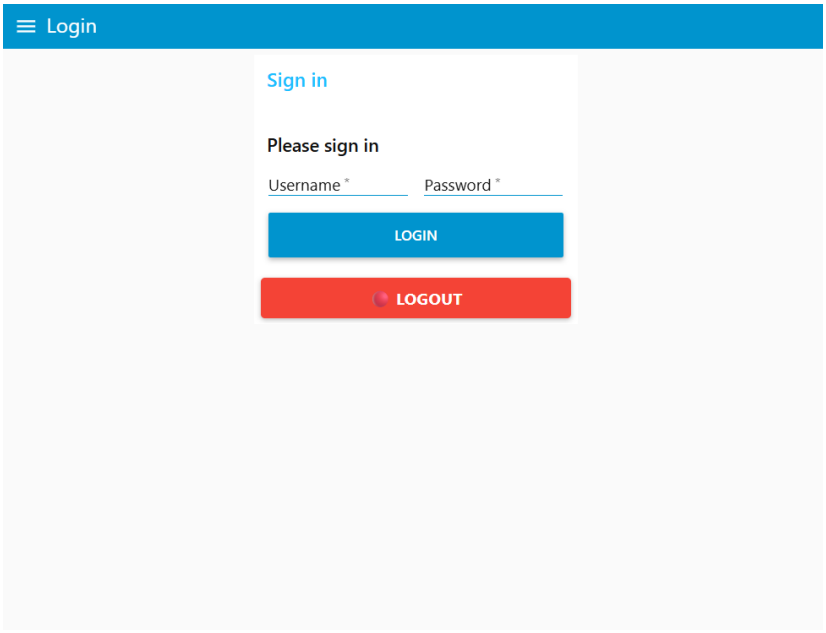

Figure 9. OPS9243 Provisioning Website

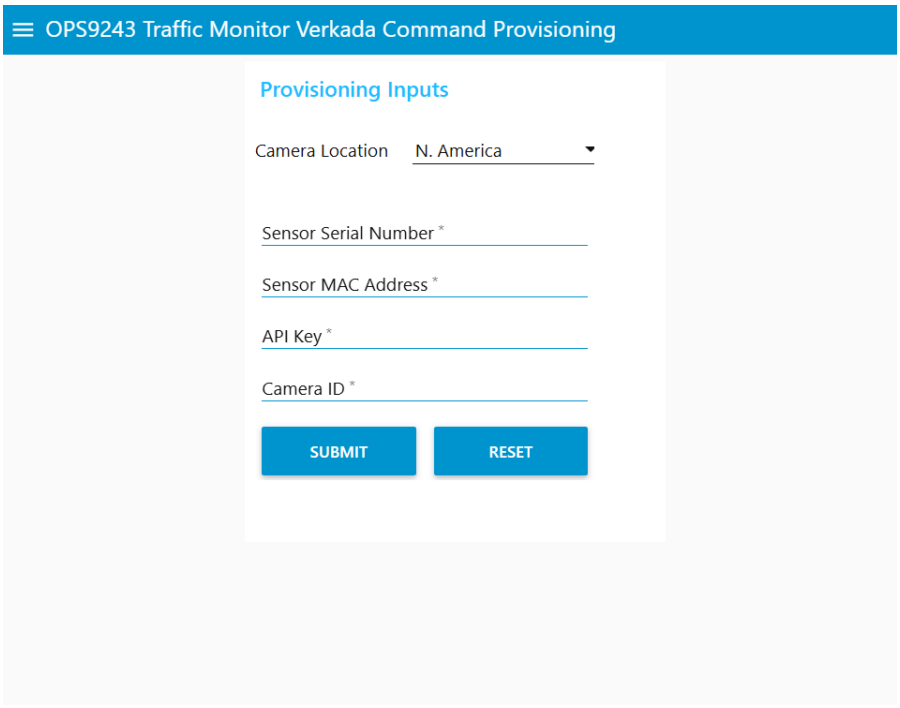

Figure 10. OPS9243 Provisioning Main Panel

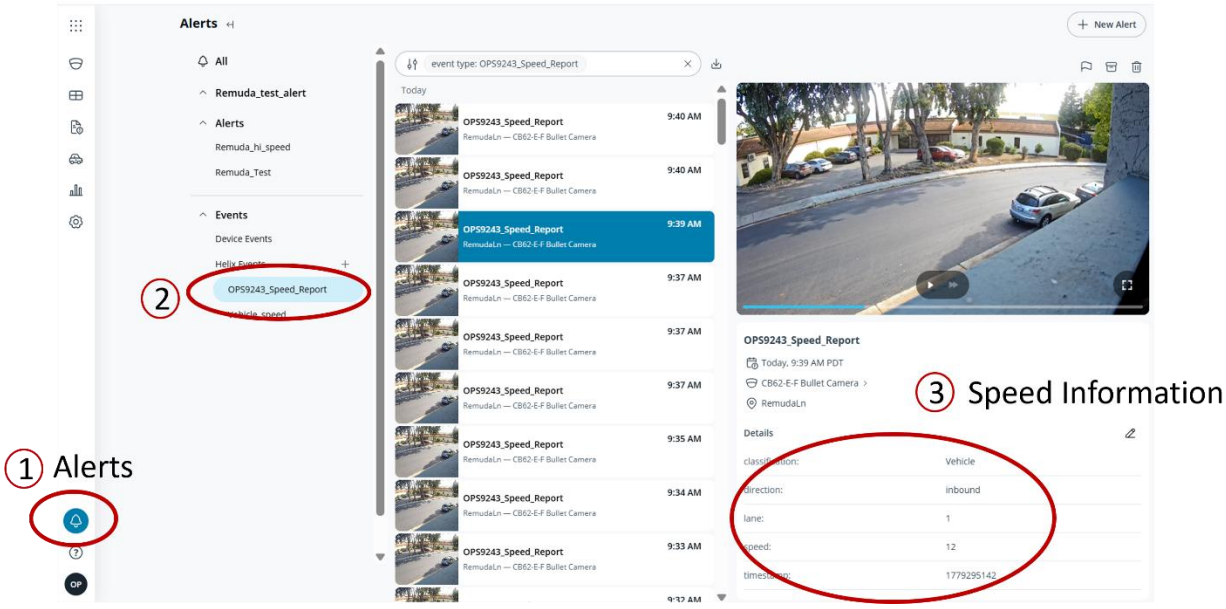

Figure 11. OPS9243_Speed_Report Helix Event Window

Revision History

Version	Date	Description
A	July 24, 2025	Initial release.
B	May 20, 2026	Updated information for simplified Verkada Command provisioning sequence.