

# ROADRECORDER® 7006 USER GUIDE

## Important Notices

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# Contents

<b>Components</b>	<b>3</b>
Front Panel	3
Rear Panel	4
LCD Control Panel	5
50-000001	5
<b>Installation</b>	<b>6</b>
Main Wiring Diagram	6
Flat Mount	8
<b>Air Filter Replacement</b>	<b>9</b>
<b>Video Retrieval</b>	<b>10</b>
<b>50-000001 LCD Control Panel</b>	<b>11</b>
<b>Configuration</b>	<b>12</b>
Connecting to the NVR	12
Help Windows	13
Product Details	14
Live View	15
Snapshot Viewer	16
Video Out	17
Firmware/Config	18
Storage	19
Network Settings	20
Date / Time	21
Change Password	22
Startup & Shutdown	23
Audio/Video Settings	25
PoE Settings	27
Sensor Settings	28
Recording	30
Thresholds	31

GPS / GEO Fence	32
Camera	33
Sensor Status	34
GPS Status	35
Recorder Status	36
Tag Events	37

## **Appendix A: Specifications 38**

## **Appendix B: Dimensions 39**

## **Appendix C: Axis Device Configuration 40**

## **Appendix D: GPS Coordinate 41**

## **Conversion 41**



## Components

### Front Panel

**1 - Status LEDs** - See table at right.

**2 - External GPS Input (top)** - Connect the Garmin® GPS antenna (part number 333401).  
**DO NOT CONNECT TO A PC.**

**3 - CANBUS (bottom)** - Connect option CANBUS compatible accessories.

**4 - USB Port (top)** - USB 2.0. For firmware uploads and Service Technician use.

**5 - USB Port (bottom)** - USB 1.1. Connect the LCD Control Panel.

**6 - LAN Ethernet (top)** - Use an Ethernet cable to connect an external Wi-Fi bridge or a computer to access the configuration web server.

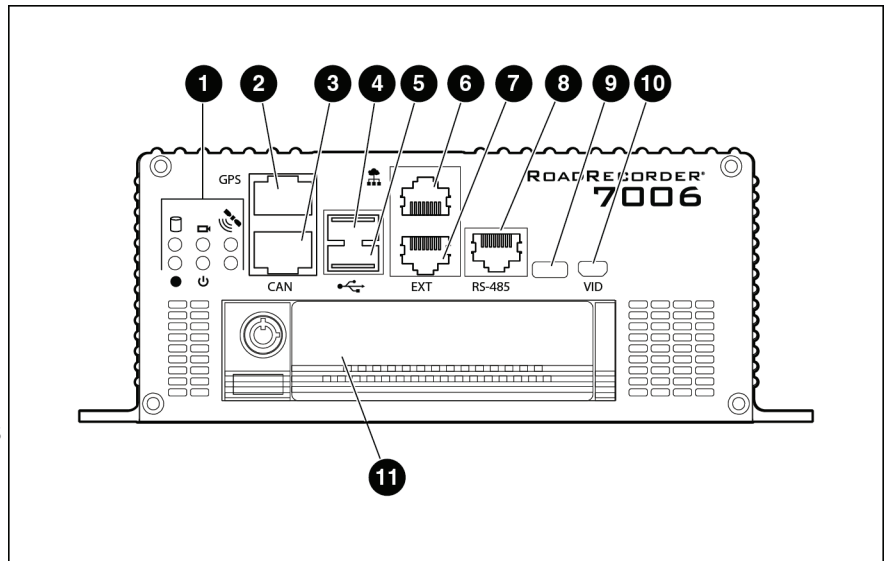
**7 - EXT Port (bottom)** - Use an Ethernet cable to connect a computer to access the configuration web server, or connect a PoE switch to add additional cameras.

**8 - RS-485** - For future development.

**9 - Micro USB** - For Service Technician use only.

**10 - Micro HDMI** - Connect an optional external monitor to display live camera feeds. See the Firmware Settings section of the Configuration chapter for more information about the Mosaic function.

**11 - Hard Drive Bay** - Insert or remove the removable hard drive. See the Hard Drive section of the Video Retrieval chapter for more information.



LED	Color	Status
	Green	<b>On:</b> NVR is ready to record <b>Blink:</b> NVR Power on (startup) condition met
	Red	<b>On:</b> Vehicle power failure, in shutdown sequence <b>Blink:</b> Shutdown condition met, shutting down
	Off	NVR shut down complete
	Green	<b>On:</b> All cameras initialized correctly and have video <b>Blink:</b> Camera initialization in progress
	Red	<b>On:</b> One or more cameras has video loss <b>Blink:</b> One or more camera initializations failed
	Green	<b>Solid:</b> GPS fix attained
	Orange	<b>Blink:</b> Searching for GPS signal
	Red	<b>Off:</b> No GPS signal or error
	Green	<b>On:</b> NVR running and recording <b>Blink:</b> NVR running, but not recording currently
	Red	<b>On:</b> One or more events have been recorded <b>Blink:</b> NVR shutting down
	Off	NVR powered off
	Green	<b>On:</b> SSD OK (mounted) <b>Blink:</b> SSD activity
	Orange	<b>On:</b> N/A
	Red	<b>On:</b> SSD error/failure/not present
	Off	SSD powered off

Note: SSD error/failure is detected when volume is mounted on SSD.

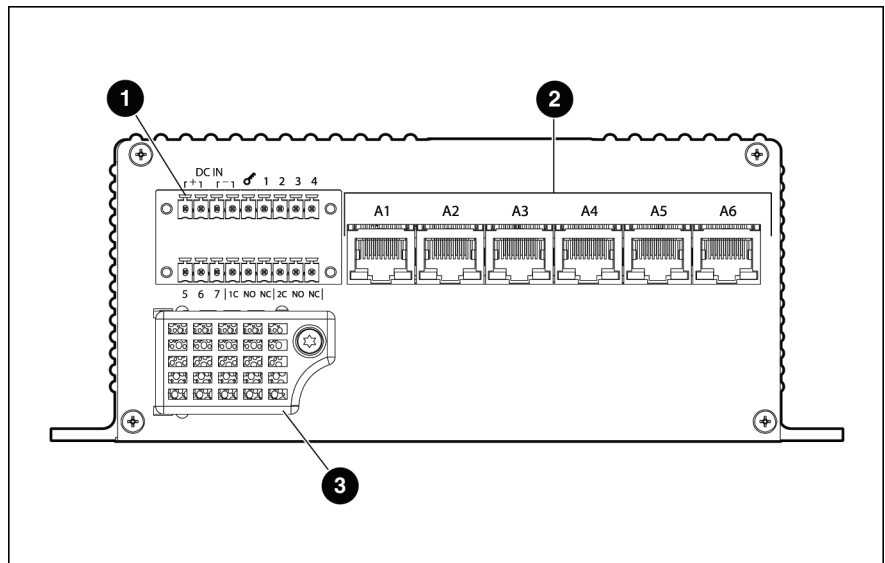
## Rear Panel

### 1 - Sensor Inputs and Ignition and Relay Outputs

**Outputs** - See diagram below.

**2 - Camera Ports** - Camera inputs A1 through A6. Each input is power over Ethernet (POE) enabled.

**3 - Air Filter Housing** - Air intake that houses a replaceable air filter. See the Air Filter Replacement chapter for more information.



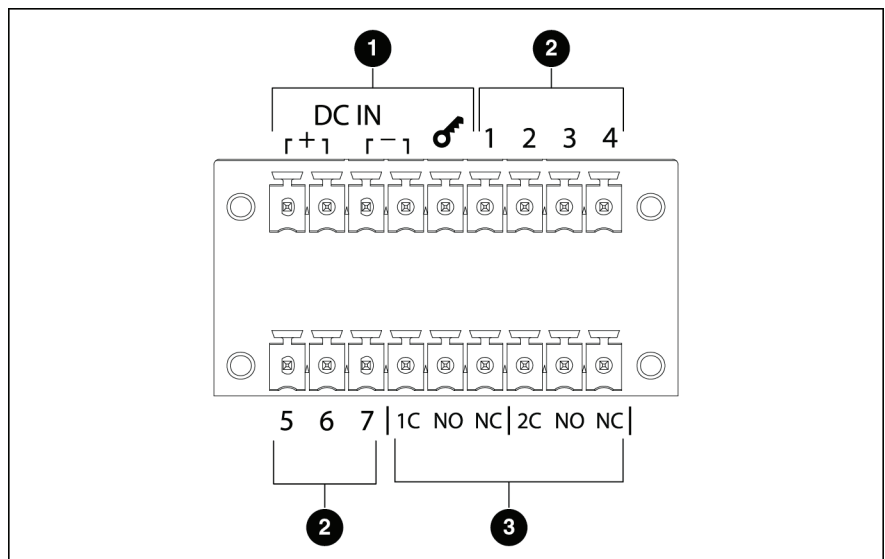
*For further information regarding the configuration of the RoadRecorder 7006 NVR, see the Configuration chapter.*

## Sensor Inputs and Ignition and Relay Outputs

### 1 - Power, Ground, Ignition

**2 - Sensor Inputs** - Attach up to 7 sensor inputs with the appropriate Phoenix connector.

**3 - Relay Outputs** - Attach relay outputs with the appropriate Phoenix connector.



## LCD Control Panel

### 50-000001

The 50-000001 LCD Control Panel is designed to provide advanced functionality with the RoadRecorder 7006 NVR. See the *50-000001 LCD Control Panel* chapter for more information.

**1 - LCD Display** - Displays alerts and statuses.

**2 - Esc Button** - Press the Esc Button to cancel the current command a return to the display.

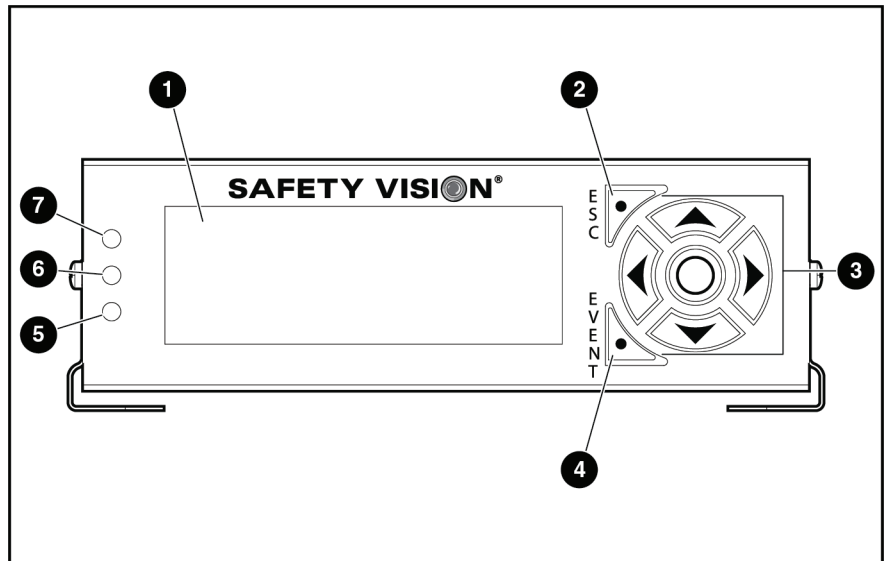
**3 - Navigation Keys** - Use the left, right, up, and down keys to navigate menus or move the cursor. Press the center key to enter a command.

**4 - Event Button** - Press the Event Button to save an event.

**5 - Error Status LED** - Displays solid red when an error has occurred, such as a disconnected camera. The LED remains red until the error is corrected. Displays solid green when no errors are present.

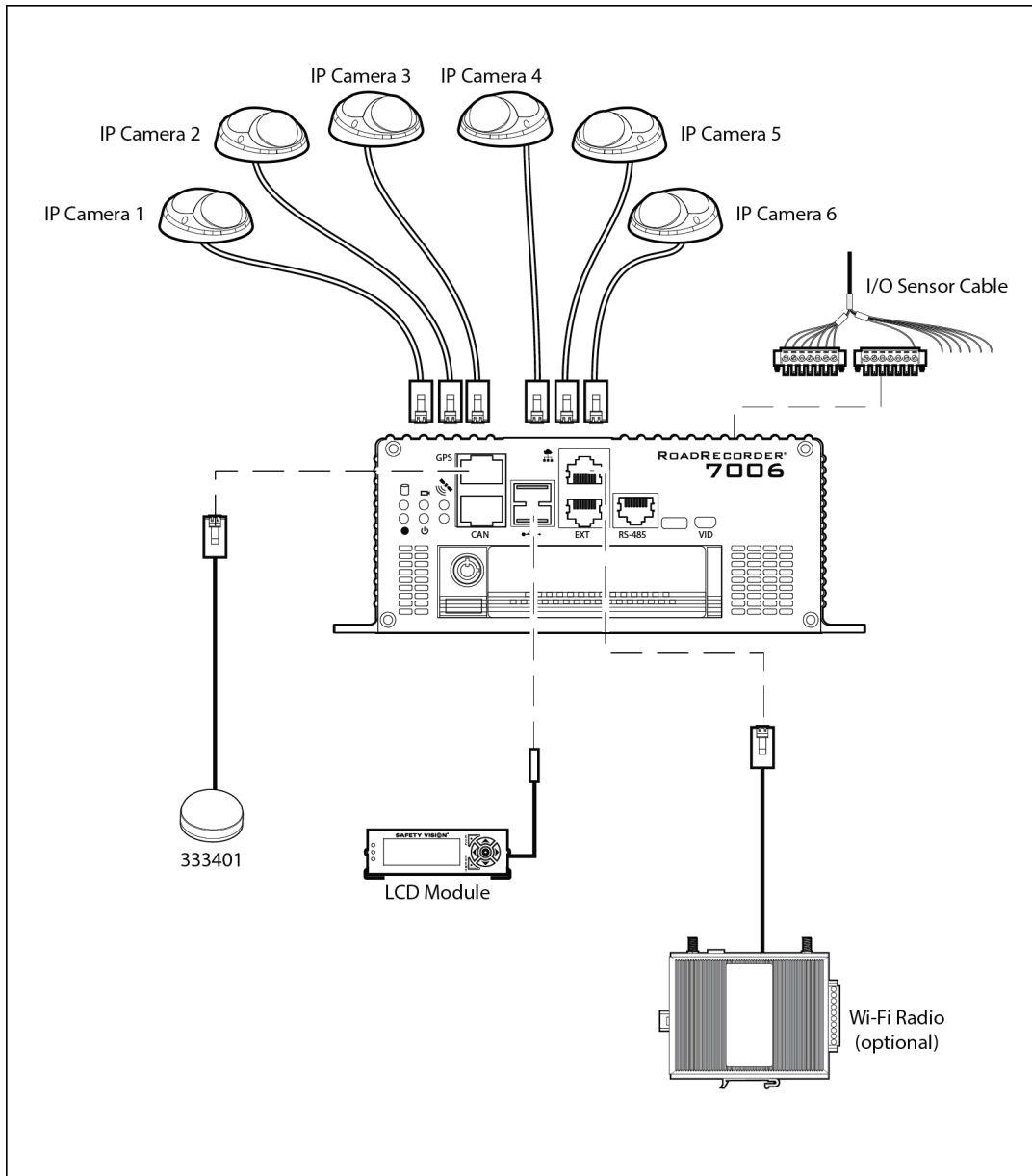
**6 - Event Status LED** - Displays solid red when an event is recording. The LED remains red until recording is finished. Displays solid green otherwise.

**7 - Offloading Status LED** - Displays solid red when recorded data is being offloaded.

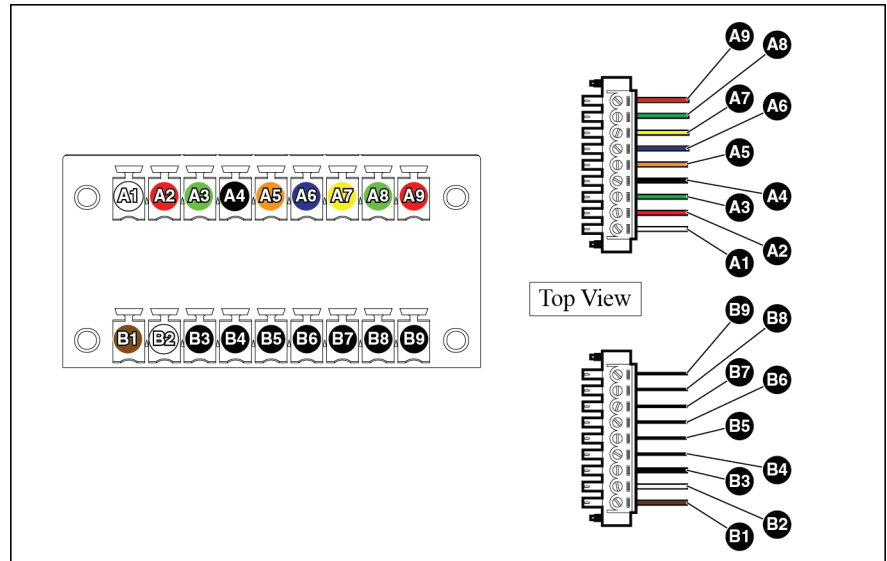


# Installation

## Main Wiring Diagram



Typical Configuration		
Sensor Wire	Color	Description
A1	White	Main Power
A2	Red	Main Power
A3	Green	Ground
A4	Black	Ground
A5	Orange	Ignition
A6	Blue	Brake
A7	Yellow	Right Turn
A8	Green	Left Turn
A9	Red	Headlights
B1	Brown	Front Door
B2	White	Wheelchair
B3	Black	Stop Request
B4		Open
B5		Open
B6		Open
B7		Open
B8		Open
B9		Open
Fuse Requirements		
P1	Red	Main Power (7.5 amp)
B1	Orange	Ignition (3 amp)



## **WARNING: REMOVING MAIN THE MAIN POWER SOURCE WHILE THE NVR IS RECORDING MAY RESULT IN CORRUPT DATA.**

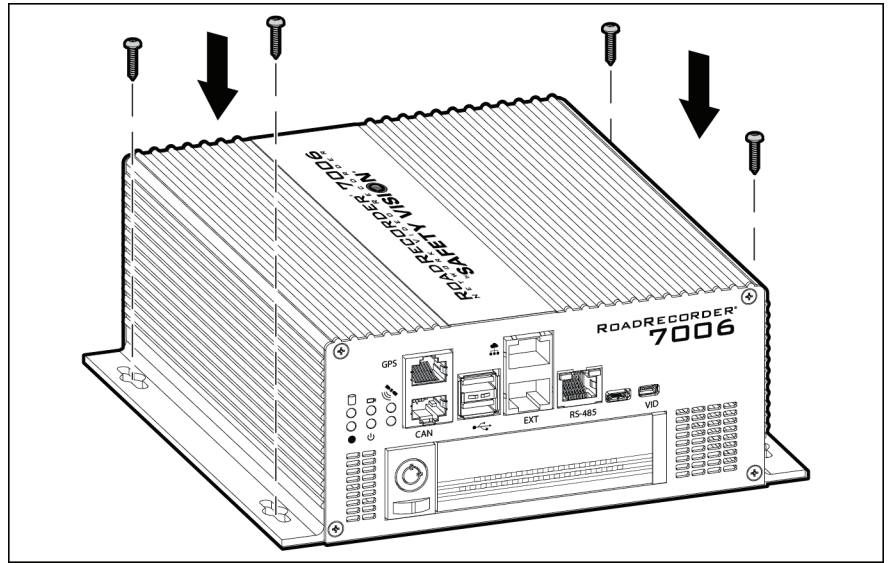
Be aware that removing and reconnecting power to the NVR in short periods of time (such as during some vehicle maintenance procedures) may cause hard drive failure, leading to corrupt recorded video and other data. Safety Vision recommends properly shutting down the NVR before removing the main power harness when cycling of the vehicle's power is to occur:

1. Remove the ignition source.
2. Wait for the NVR to completely power down.  
*The NVR may be configured to record for a period after the ignition is turned off. (Wait for the SafeStor process to complete [7000 model only]).*
3. OBSERVE THAT ALL STATUS LEDS HAVE TURNED OFF.
4. Remove the main power harness.

## Flat Mount

Secure the RoadRecorder 7006 NVR assembly to a secure flat surface with appropriate fasteners.

*NOTE: Ensure that the front panel of the RoadRecorder 7006 NVR remains visible and accessible. Do not install the RoadRecorder 7006 NVR in an area of the vehicle cabin that could interfere with the safe operation of the vehicle.*

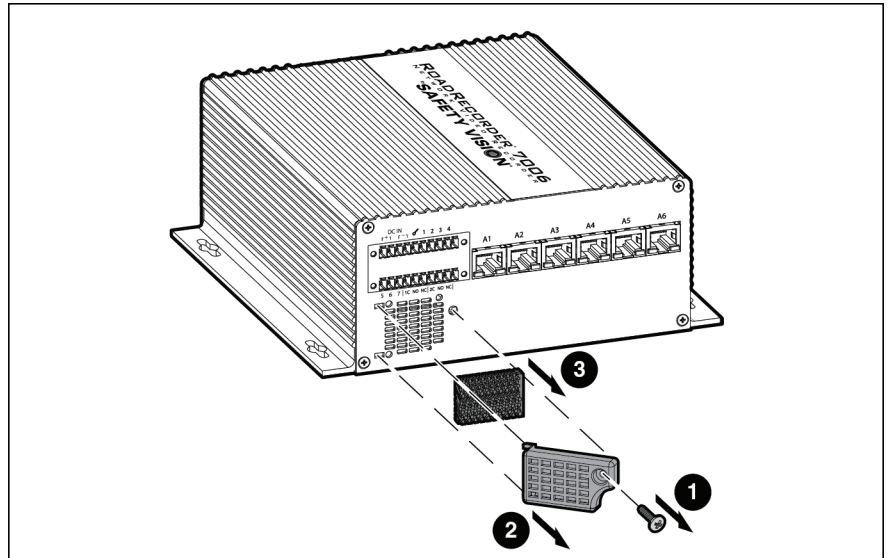


## Air Filter Replacement

The RoadRecorder 7006 NVR includes a replaceable air filter behind the rear air intake to protect the internal components from potential contaminants.

Use the following procedure to replace the air filter.

1. Remove the T10 security bit screw securing the filter housing to the front panel.
2. Pivot the filter housing out and to the left.
3. Inspect the filter medium and replace if dirty.
4. Holding the filter medium against the back panel as shown, insert the two tabs on the filter housing into the front panel and pivot it down.
5. Replace the T10 security bit screw to secure the air filter housing.



## Video Retrieval

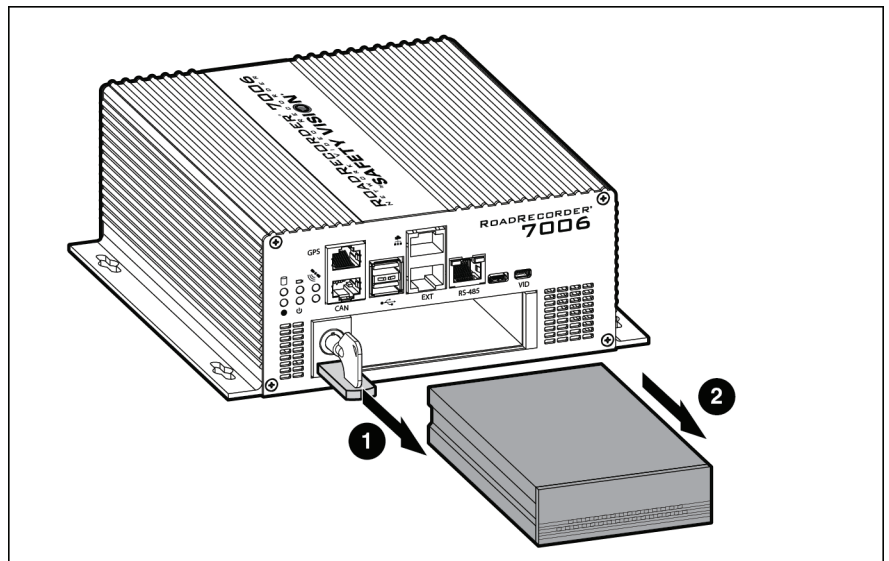
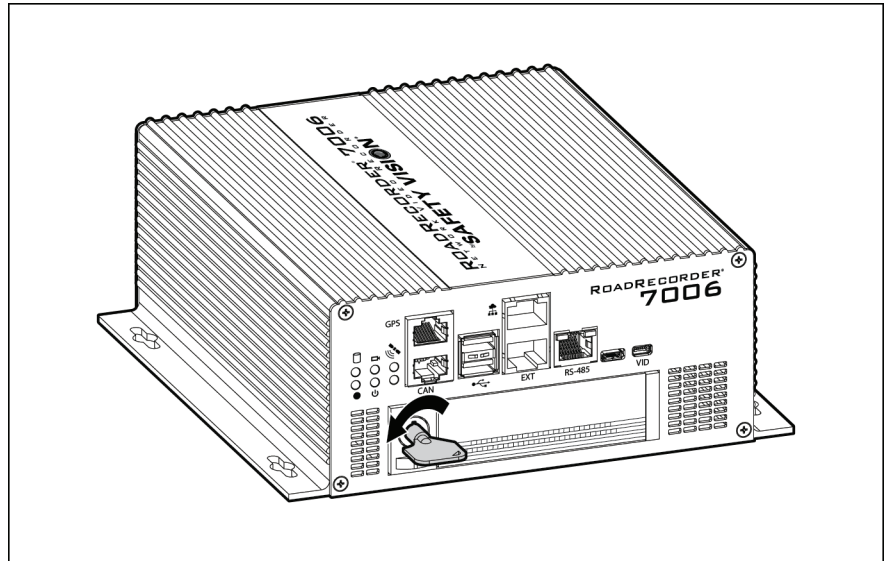
Use the following procedure to remove the hard drive.

1. Ensure the hard drive is not being accessed.
2. Insert the key as shown and turn it 90 degrees to the left.
3. Push the plunger to extend it.
4. Push the plunger again firmly to push the hard drive out.
5. Grasp the hard drive and pull it straight out.

Once removed, the hard drive can be read with the hard drive reader connected to a PC. The computer recognizes the hard drive as an external storage device. For more information, refer to the *7000 HDD Reader Quick Reference Guide*.

Use the following procedure to reinsert the hard drive.

1. Push the hard drive straight into the RoadRecorder 7006 NVR firmly until it is fully seated.
2. Push the plunger back into its unextended state.
3. Turn the key 90 degrees to the right.
4. Remove the key.





## 50-000001 LCD Control Panel

The 50-0000001 LCD Control Panel provides advanced functionality from a remote location.

Nominally, the LCD Control Panel displays the NVR's name, date, and time (as entered in the Web Configuration) in addition to any active alarms, such as recording events or errors.

### Creating Events

Press the Event Button to create an event. The LCD displays a confirmation and the Event status LED displays red until the event has finished recording. Events can be configured in the Firmware Settings page of the Web Configuration interface.

### Main Menu

Press the center navigation key to display the Main Menu. There are four options available: System Details, System Logs, Manual Offload, Remove SSD, and Help. Use the arrow keys to move the cursor and to scroll up and down through items. Press the center navigation key to confirm or enter a command, and the **Esc** key to back out of a menu, or cancel.

### System Details

Select System Details to display information about the firmware installed on the NVR. Firmware Version is the only available option.

### Firmware Version

Select Firmware version to display the firmware version currently installed on the NVR. This information may be useful when speaking with Safety Vision Technical Support.

### System Logs

Select System Logs to display a list of current and past events or errors.

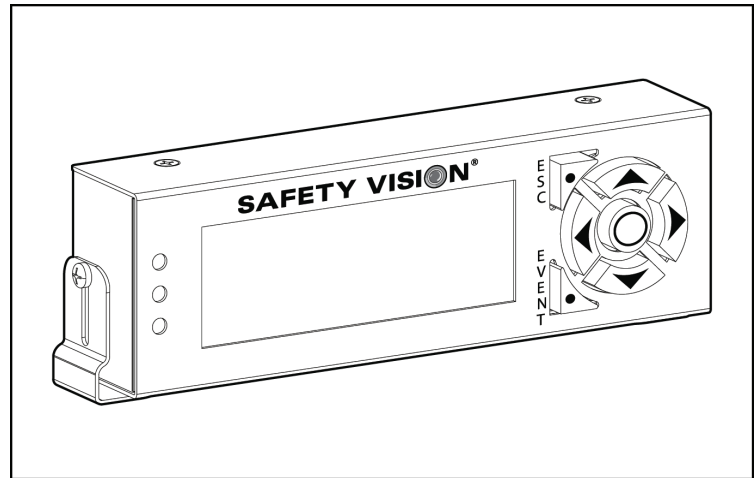
### Event Logs

Select Event Logs to display the most recent recorded event timestamps. Use the up and down navigation keys to scroll through the list of events.

### Error Logs

Select Error Logs to display the most recent errors. The nature of the error and the time at which it occurred are displayed. Use the up and down navigation keys to scroll through the list of errors.

*System Logs are stored in the LCD Control Panel's internal memory. Disconnecting the LCD Control Panel from the NVR will result in the loss of data. (This data is still recorded by the NVR, but can no longer be displayed on the LCD.)*



### Manual Offload

Select the Manual Offload option to manually offload recorded events to a USB flash drive inserted in the front of the NVR.

Press the center navigation key to select **To USB**. Use the directional navigation keys to highlight the characters of the offload password (as configured in the Change Password configuration screen) and press the center navigation key to enter them.

Once finished, highlight Done and press the center navigation key to enter the password. Confirm event or continuous recording. When the offload is taking place, the bottom LED status light displays red. When the process is complete, the LED reverts to displaying green.

### Remove SSD

Select the Remove SSD option from the main menu to remove the hard drive. Use the navigation key to highlight each character of the password and press the center navigation key to enter it. **Wait for the "Insert Storage Media" prompt appears BEFORE removing the hard drive.**

### Help

Select the Help option to display a help message regarding manual offloads.

## Configuration

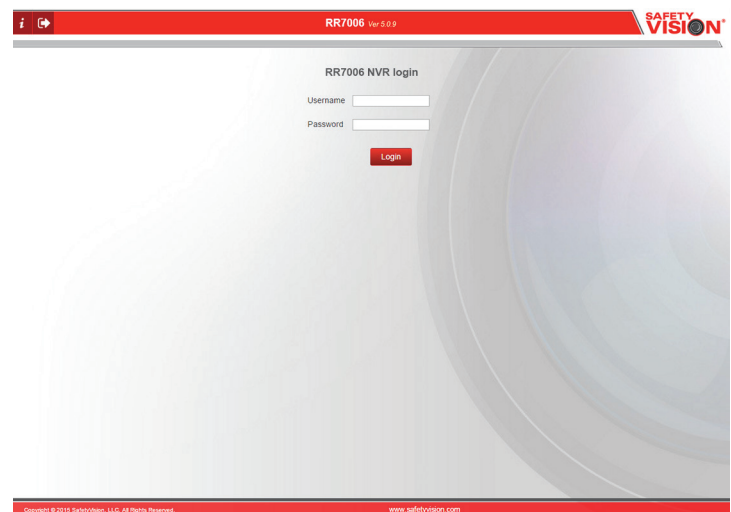
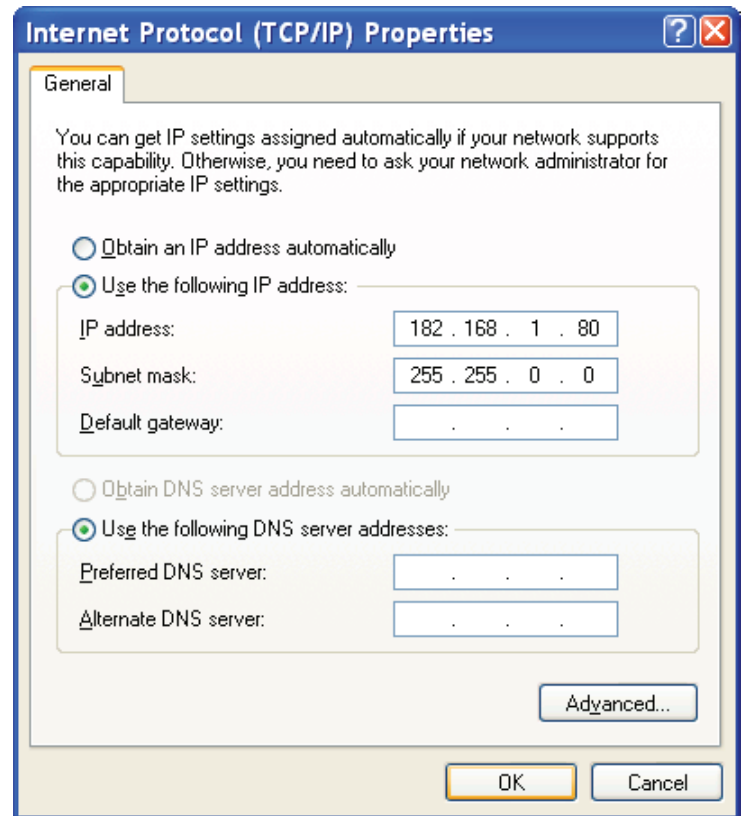
The RoadRecorder 7006 NVR can be configured through the on-board web interface, which must be accessed with a PC and web browser.

### Connecting to the NVR

Use the following procedure to access the configuration web server using the default IP address:

1. Connect the PC to the NVR's EXT port with a standard Ethernet cable.
2. Ensure the NVR and PC are receiving power and have started up.
3. Open the Internet Protocol (TCP/IP) Properties window for the LAN connection you are using.  
In Windows, open Network Connections. Right-click the LAN connection and select **Properties**. In the list of items, select **Internet Protocol (TCP/IP)** and then click **Properties**.
4. Select the **Use the following IP address** option.
5. Enter **182.168.1.80** in the **IP address** field.
6. Enter **255.255.0.0** in the **Subnet mask** field.  
This field normally defaults to 255.255.255.0. **Ensure the correct 255.255.0.0 subnet is entered.**
7. Leave all other fields blank.
8. Click **OK** on the Internet Protocol (TCP/IP) Properties window and then click **OK** on the Local Area Connection Properties window.  
Your PC's IP address and subnet mask are now configured.
9. On a web browser, navigate to **182.168.1.200**.  
The Login screen appears.  
The default user name and password are "admin". If this has been changed, contact your system administrator for your login information.
10. Enter the user name and password and click **Login**.  
The configuration web interface launches.

Access different pages of the web interface by clicking on the links on the left side of the screen.



## Help Windows

Each screen of the RoadRecorder 7006 NVR configuration interface includes a comprehensive help menu. The help menus explain the functionality and parameters of each field.

To access the help menu for a screen, simply click the **Help** button at the top right of the screen. The help menu appears in a new window.


The screenshot displays the RoadRecorder 7006 NVR configuration interface. The top navigation bar includes tabs for VIDEO, ADMIN, SETTINGS, DIAGNOSTICS, and TAG EVENTS. The SETTINGS tab is active, and the GPS / GEO Fence sub-tab is selected. The main content area shows the following fields:

- GPS Priority:** A dropdown menu with options for Garmin and oMG.
- Geo Fence:** A text input field for the Location Name.
- Get Current Location:** A button with a location pin icon.
- Map:** A Google Map showing the current location and surrounding areas.
- Delete Selected Shape:** A button.
- Circle:** A text input field for the radius.
- Points:** A text input field for the number of points.

A help window is open, displaying the 'GPS / GEO Fence' help text. The window title is '192.168.8.70/SV\_help.php?id=geo\_fence - Google Chrome'. The help text includes the following sections:

- GPS Priority**
  - Garmin**: Select the GPS source priority for Garmin GPS device.
  - oMG**: Select the GPS source priority for Garmin GPS device. User needs to input oMG server IP address and port in the network settings.
- Geo Fence**
  - User can draw 1 circle and upto 5 polygons containing max 10 points on the map.
  - Circle:** User can draw a circle on map by clicking on circle symbol on map. When vehicle moves out of the circle, geofence radius violation event will be triggered and recorded until the vehicle is back to the circle.
  - Polygon:** User can draw up to 5 polygons by clicking of polygon symbol on map. User can selected action and when to trigger that action for each polygon. Action can be SV Announce or event recording. Action can be triggered on Entry or Exit of the polygon.

## Product Details

Select the information  icon on the top left hand corner to view the Product Details page.

The Product Details page displays factory configured identification fields as well as the status of the removable hard drive (primary), SafeStor (secondary), and SD card.

**Product name:** Product Name of the NVR.

**Serial #:** Serial number of the NVR (assigned at the factory).

**MAC1 address:** MAC address of the device interface of the NVR.

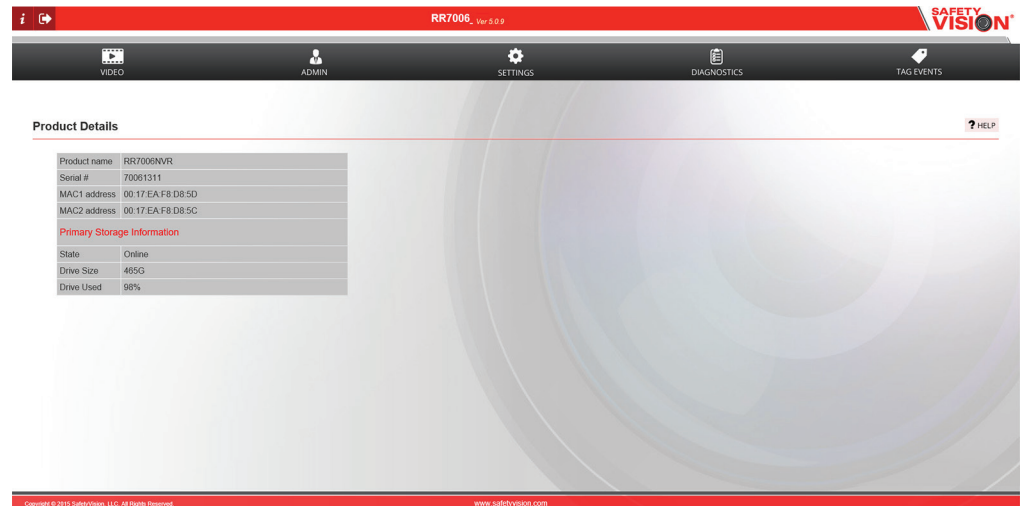
**MAC2 address:** MAC address of the wireless radio interface of the NVR.

### Primary Storage Information

**State:** If Primary Storage is present and working then it shows "Online" state otherwise it shows "Offline" state.

**Drive Size:** Total size of Primary Storage drive in GB unit if it is connected with NVR.

**Drive Used:** Total size of Primary Storage drive used (in percentage) if it is connected with NVR.



## Live View

The Live View page allows you to see the field of view of any connected camera, allowing you to focus and properly adjust the image.

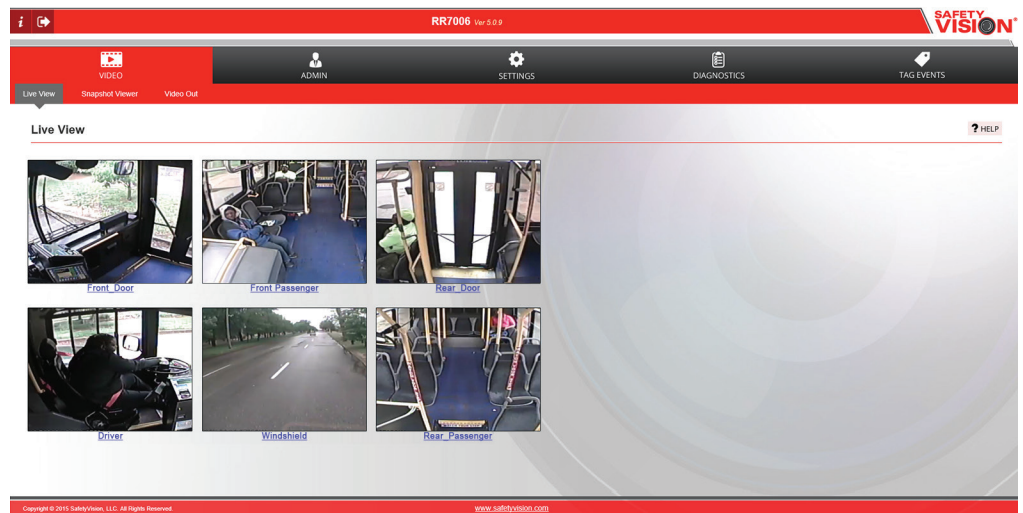
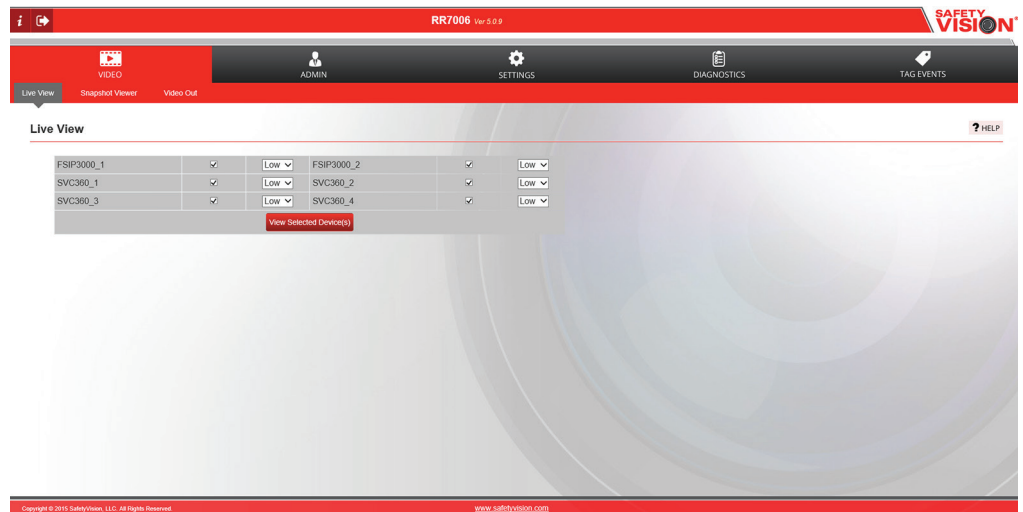
The Live View requires the installation of VLC Media Player, available free from the developer.

First, select the connected cameras that you want to view. By selecting "Low" or "High" from dropdown, user can select which stream to view. Then click "**View Selected Device(s)**".

By clicking the "**View Selected Device(s)**" button, the webUI will display live feed from devices which were selected along with a link to view that particular device page under each video feed.

The web-based configurations pages for each camera can be accessed by clicking on the hyperlinked camera name below each image.

*The default user name and password for Axis cameras is both **root**. The user name and password for SVC-2200 cameras is **Admin** and **1234**, respectively. The user name and password for the 45 and 46 Series cameras is **admin** and **SV123456**, respectively.*

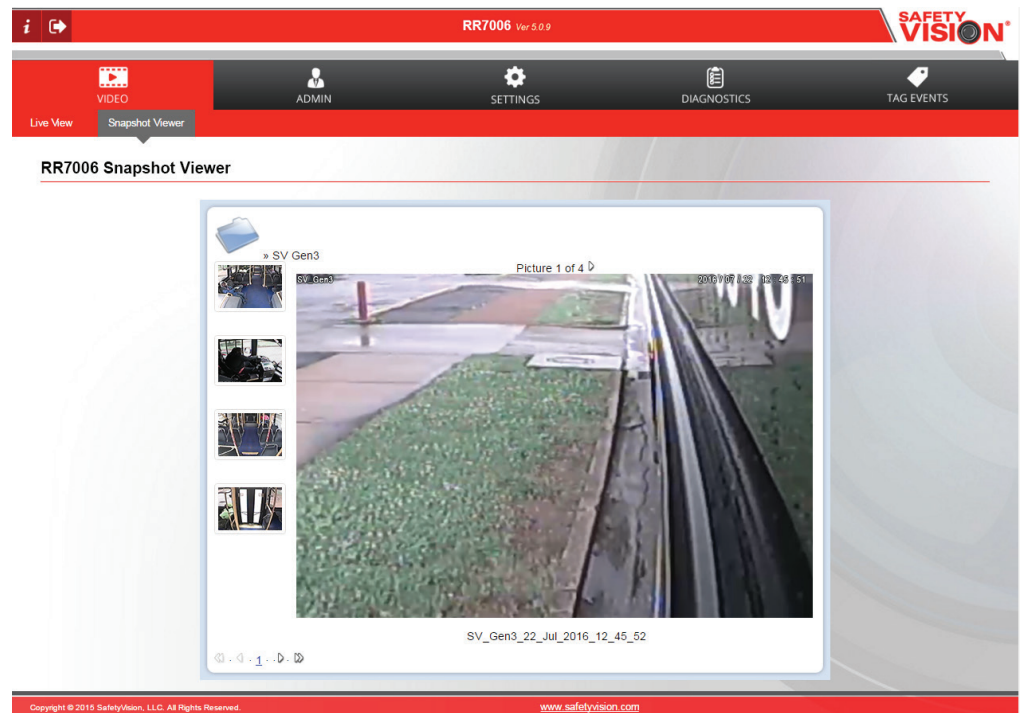
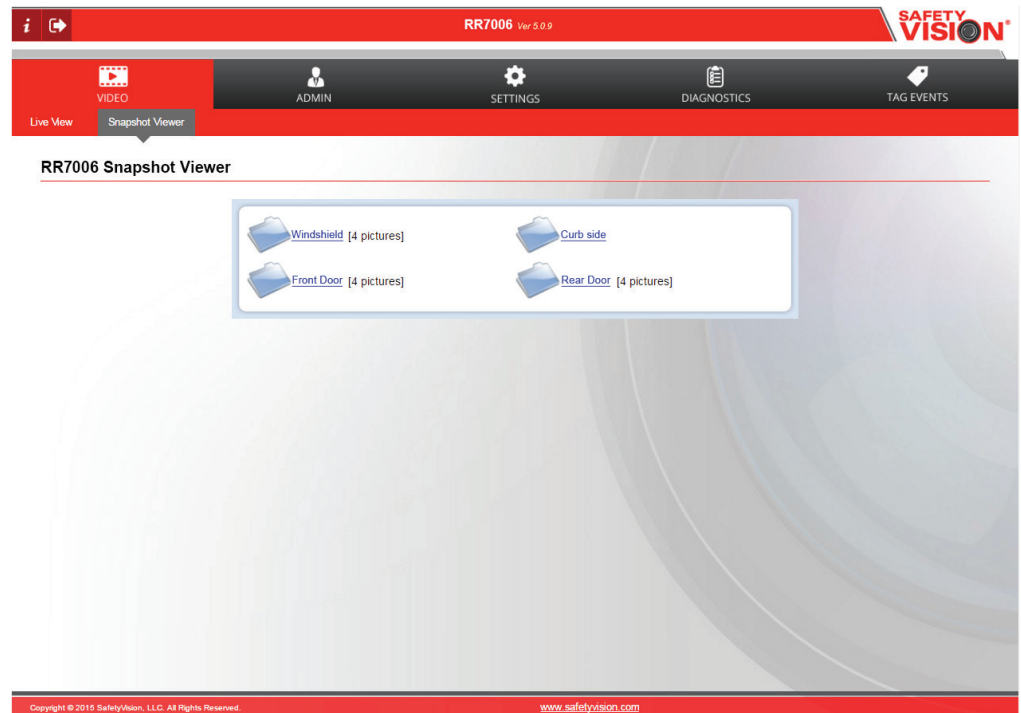


## Snapshot Viewer

The Snapshot Viewer allows you to see still images taken from camera configured to record MJPEG.

To view a camera's snapshots, first select the camera.

As the camera produces MJPEG still images, they will be available to view in sequential order. Click on the arrow buttons forward and backward to browse through available images.





## Video Out

The Video Out page configures the behavior of the video output when an optional external monitor is connected.

First, select Sequence or Static in the **Video Out Selection** field.

### Sequence

Select Sequence to have the output cycle between camera views.

Available cameras are listed in the **Camera** column. In the **Preference** column, select the order you want the camera view to appear in the sequence. In the **Dwell** column, enter the amount of time, in seconds, that you want that camera view to appear.

### Static

Select Static to have the output display up to four camera views full time. First, select the number of camera views that will appear on screen at once in the **Static Video Display Layout** field.

Then select from available cameras to appear in the **Camera Selection for Static Display** field.

Click **Save Changes** to save changed entries.

The screenshot shows the 'Video Out' configuration page for the RR7006 NVR. The 'Video Out Selection' is set to 'Sequence'. Below this, there is a table with columns for Camera, Preference, and Dwell Time.

Camera	Preference	Dwell Time
FSIP3000_1	1	10 sec
FSIP3000_2	2	10 sec

A 'Save Changes' button is located below the table. A note at the bottom states: 'Note: These settings will have lower priority than Sensor Video Control.'

The screenshot shows the 'Video Out' configuration page for the RR7006 NVR. The 'Video Out Selection' is set to 'Static'. Below this, there are fields for 'Static Video Display Layout' (set to 'Single') and 'Camera Selection for Static Display' (set to 'FSIP3000\_1').

A 'Save Changes' button is located below the fields. A note at the bottom states: 'Note: These settings will have lower priority than Sensor Video Control.'

## Firmware/Config

The Firmware/Config page allows you to save configurations, format devices, update the firmware, as well as reboot the NVR.

### Reboot

Click the **Reboot Now** button to immediately reboot the NVR and apply any saved changes. *Changed configurations are not applied to the NVR until after it is rebooted.*

### NVR Configuration

A backup file can be created that saves all of the NVR's configuration settings. The backup file can be applied in event these settings are lost or duplicated across multiple NVRs. To create a backup file, confirm all configuration settings are set appropriately and saved (click the **Save Changes** button whenever a change is made), then click the **Export** button. Your web browser prompts you to save the file in the location of your choice. The backup file is saved in the following format:

RR7000\_NVR\_[Serial number]\_MM\_DD\_YY.xml.

Backup files are interchangeable between NVRs, however unique fields such as the bus name and network information should be updated for each individual NVR.

To import a saved backup file, click the **Browse...** button. Navigate to where the appropriate file is saved and click **Open**. Confirm the appropriate file is displayed and click **Import**. The backup file is uploaded automatically.

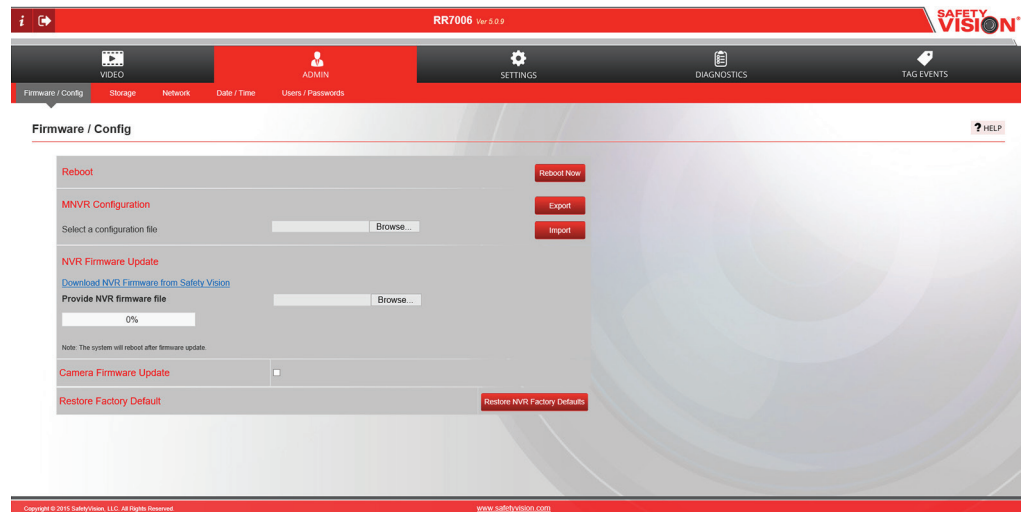
### NVR Firmware Update

The NVR Firmware Update function provides a convenient means of uploading a firmware file directly from an attached PC. Then upgrade the NVR's firmware:

1. Click the **Browse...** button.  
*A navigation prompt appears.*
2. Navigate to the location of the new firmware file (.tgz file).
3. Click Open.
4. Click the **Upload** button.  
*A status bar appears as the firmware update is automatically applied.*

### Download NVR Firmware from Safety Vision

If the connected PC has internet access, click this link to be directed directly to Safety Vision's FTP site. Contact your Account Executive for login information.



### Camera Firmware Update

Select the Camera Firmware Update option to update camera firmware through the NVR. This feature is only available for SVC-2200 Gen 2 and Gen 3, and Axis cameras.

1. Click the **Browse...** button.  
*A navigation prompt appears.*
2. Navigate to the location of the new firmware file.
3. Click Open.
4. Click the **Upload** File button.  
*A status bar appears as the firmware update is automatically uploaded.*
5. Once the file has been uploaded, select the camera to which firmware will be applied.
6. Click the **Update** button.  
*The firmware is automatically applied to the selected cameras. The process will take approximately 10 minutes. Do not remove power from or unplug any cameras or the NVR. Once the firmware update is complete, the cameras will reboot automatically.*

### Restore Factory Default

Click the **Restore NVR Factory Defaults** button to automatically set all configuration options to their factory default and immediately reboot the NVR.

**WARNING: Selecting this option immediately changes any previously changed settings to the factory default.**



## Storage

The Storage page allows you to configure the storage device(s) of the NVR.

### Primary Storage

#### Primary Storage Media Device:

NVR will use Removable SSD for Primary Storage Media and start recording on it.

#### Delete file option for primary storage:

This option allows user to configure the setting for deleting files from storage media and create sufficient space for recording new data.

**Overwrite When Full:** This option will allow user to delete older files when storage is full.

**Overwrite Max Time:** This option will allow user to delete file if the timestamp on the file is older than specified time. The timestamp of all files will be regularly checked at an interval of 1 hour.

**No Overwrite (Stop When Full):** This option will allow users to not delete any files from storage. Recording will be stopped.

### Secondary Storage

**Enable Safestor:** By default, this is enabled and does not allow user to disable.

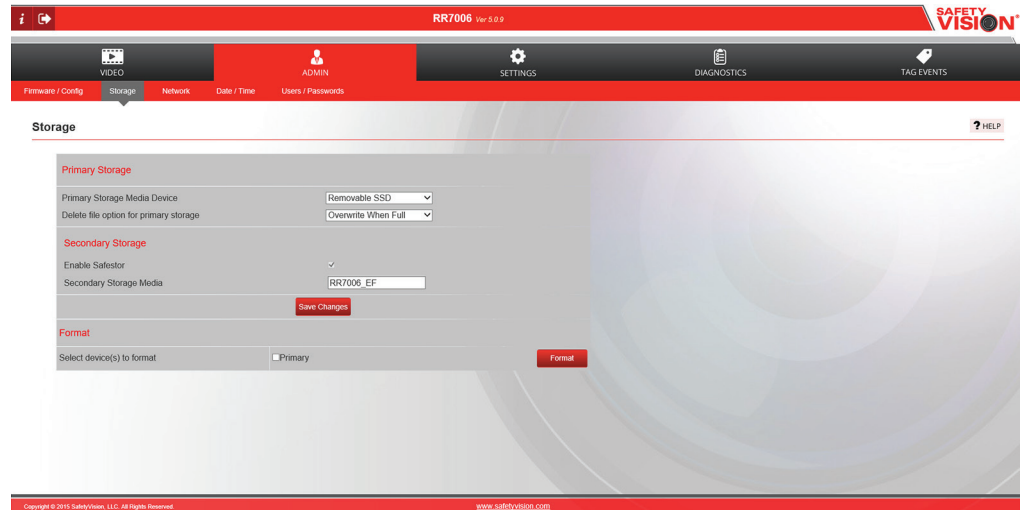
**Secondary Storage Media:** Drive label for the removable SSD

### Format

Select a device, then click the Format button to immediately format it. The NVR automatically reboots after formatting the device.

**WARNING: Formatting a device completely erases any saved data, including recorded video.**

Click **Save Changes** to save changed entries.



## Network Settings

The Network Settings page configures the WLAN interface and Mail server settings.

### NVR Detail

**NVR name:** Enter the name of the NVR

*Restrictions: Only alphanumeric characters are allowed with a maximum length of 15 characters. Names with “\_” (underscore) are also accepted. No other special characters can be used for “NVR Name”.*

The screenshot shows the 'Network Settings' page of the RR7006 NVR web interface. The page has a red header with the 'SAFETY VISION' logo and a navigation bar with tabs for VIDEO, ADMIN, SETTINGS, DIAGNOSTICS, and TAG EVENTS. The 'ADMIN' tab is selected, and the 'Network' sub-tab is active. The 'Network Settings' page contains several sections: 'MNVR Detail' with a text field for 'MNVR name' (value: RR7006\_EF); 'Main Network Interface' with fields for 'IP address' (192.168.208.31), 'Netmask' (255.255.255.0), and 'Gateway' (192.168.208.1); 'Mail Server' with a checkbox; 'LiveTrax' with a checkbox; 'SafetyNet Server Announce' with a checked checkbox and fields for 'Server IP address' (192.168.208.2), 'Server Port' (63542), 'Gateway', and 'Netmask'; 'oMG Server' with a checkbox; 'Default Routing' with a dropdown menu set to 'Main'; and 'Web Port' with a dropdown menu set to '80'. A 'Save Changes' button is located at the bottom right of the form area. The footer of the page includes copyright information for 2015 SafetyVision, LLC and the website www.safetyvision.com.

### Main Network Interface

**IP Address:** IP Address of the NVR for Main Network Interface connected to wireless access points.

**Netmask:** Netmask of NVR for Main Network Interface connected to wireless access points.

**Gateway:** Gateway IP Address of NVR for Main Network Interface connected to wireless access points.

### Show/Hide Network Information

User will have to click on particular checkbox to view configured network related information.

### Mail Server

If enabled, mail will be sent when event is triggered. If disabled, mail will not be sent on event.

**Server IP Address:** Mail Server IP address which is used to send e-mails if any event generated on NVR.

**Username:** Username which is used to login into Mail Server for sending emails regarding any event generated on NVR.

**Password:** Password which is used to login into Mail Server for sending emails regarding event generated on NVR.

**Port Number:** Contact your IT administrator for Mail Server Port Number

**Mail to:** Email Address to which all emails will be sent regarding any event generated on NVR.

**Mail from:** Email Address from which emails will be sent regarding any event generated on NVR.

### LiveTrax

If enabled, LiveTrax Server will be able to receive and send packets to NVR. If disabled, LiveTrax Server Application will be stopped.

**Server IP address:** IP Address of the LiveTrax Server.

**Send Port:** Data packet is sent to LiveTrax server from this port to NVR. The valid port range is 1025 to 65535.

**Receive Port:** Data packet is received from LiveTrax server to this port of the NVR. The valid port range is 1025 to 65535.

**Gateway:** LAN IP address of router where livetrax server is connected.

**Netmask:** Netmask of LiveTrax server

### SafetyNet Server Announce

If enabled, SafetyNet Server will be able to accept Web Requests on specified server port. If disabled, SafetyNet Server Application will be stopped.

**Server IP address:** IP Address of the SafetyNet Server.

**Server Port:** Web Request is sent to SafetyNet server to this port. The valid port range is 1025 to 65535.

**Gateway:** LAN IP address of router where SafetyNet server is connected.

**Netmask:** Netmask of SafetyNet server.

### oMG Server

If enabled, oMG Server will connect with specified TCP port. If disabled, oMG Server Application will be stopped.

**Server IP address:** IP address of the oMG Server

**Server Port:** TCP port of the oMG server. The valid port range is 1 to 65535.

### Default Routing

Option to configure default routing option.

### Web Port

Option to configure NVR web port.

Click **Save Changes** to save changed entries.

## Date / Time

The Date / Time settings page configures allows modification of the NVR's time zone.

### Timezone

Select the time zone the vehicle travels in most frequently.

### Time Sync Priority

Use the Time Sync Priority fields to select which device has priority in providing the NVR with time stamp data. Select 1, 2, 3, or 4 (or N/A if the device is unavailable) in the **GPS**, **Manual Sync**, **COSMOS**, and **J1939** fields.

### Sync RTC Date & Time

Select the **Sync with computer time** option to sync the time automatically with the connected computer, or select the **Sync with manual time** option, then click the calendar button to manually select a date and time. After confirming the time is correct, click the **Sync Now** button (the NVR reboots automatically).

Click **Save Changes** to save changed entries.

The screenshot displays the 'Date / Time' configuration page of the ROADRECORDER 7006 NVR. The interface features a top navigation bar with tabs for VIDEO, ADMIN, SETTINGS, DIAGNOSTICS, and TAG EVENTS. The ADMIN tab is active, showing sub-options like Firmware / Config, Storage, Network, Date / Time, and Users / Passwords. The 'Date / Time' sub-option is selected.

The main content area is titled 'Date / Time' and includes a 'Timezone' dropdown menu set to 'Central'. Below this is the 'Time Sync Priority' section, which contains four dropdown menus for GPS, Manual Sync, COSMOS, and J1939. The GPS dropdown is set to '1', Manual Sync to '2', COSMOS to 'N/A', and J1939 to 'N/A'. The 'Sync RTC Date & Time' section offers two radio button options: 'Sync with computer time' (selected) and 'Sync with manual time'. The 'Sync with computer time' option shows a timestamp of '03/09/2018 10:43:25'. The 'Sync with manual time' option shows a timestamp of '03/09/2018 10:28:27' with a calendar icon. At the bottom of the form are 'Sync Now' and 'Save Changes' buttons. The footer of the page contains copyright information: 'Copyright © 2015 SafetyVision, LLC. All Rights Reserved.' and the website 'www.safetyvision.com'.

## Change Password

### webUI Password

Change password for login into NVR system

**User:** Select the user for which you want to change webUI password. Several different levels of user access can be selected in the User field:

**admin:**

(default password: admin) - can access the entire web interface

**user:**

(default password: user) - can access the entire web interface except the pages under the Administration tab

**viewer:** (default password: viewer) - can only access the Live View and Change Password pages.

**Admin Password:** Provide current admin password in order to change password for any user

**New password:** Provide new password to set for selected user. New password should be 3-25 characters long

**Confirm password:** Provide new password for confirmation.

**Change password:** Web Interface login password will be changed if you have specified correct password otherwise it will give an appropriate error message. Password will be changed runtime.

**These are all default passwords. It is highly recommended that the password be changed for security.**

### LCD Password

Change password required for initiating offload data manually or format SD Card from LCD.

**Old password:** Provide current password which a user needs to change.

**New password:** Provide new password which a user needs to change. New password should be 6 alphanumeric characters long.

**Confirm password:** Provide new password for confirmation.

**Change password:** LCD password will be changed if a user has specified correct old password otherwise it will give an appropriate error message.

**The default password is "abc123". It is highly recommended that the password be changed for security.**

Click **Change Password** to save changed entries.

## Startup & Shutdown

The Startup & Shutdown page configures conditions when the NVR can automatically start and shut down.

### Startup

**Enable startup due to acceleration:** If enabled, acceleration above threshold value will be counted as a start-up condition and recording will be done for user-configurable duration.

**Accelerometer RMS:** Acceleration is one of the start-up conditions for the NVR. It will only be considered if “Enable startup due to acceleration” field is enabled. If acceleration above the specified value is sensed, the NVR boots-up and recording starts as usual.

**Restriction:** Decimal values between 0.1 to 16 allowed.

### Recording duration for startup due to acceleration:

If NVR is started due to vehicle acceleration, then recording will only be done for specified amount of time. NVR will gracefully shutdown after the time interval is completed.

**Restriction:** Recording durations can be configured from 1 to 1440 minutes.

**Enable Ignition Boot and Record:** If enabled, ignition above threshold value will be counted as a start-up condition and recording will be done for user-configurable duration.

**Record Duration:** If NVR is started due to application of ignition, then recording will compulsorily done for specified amount of time. After the interval expires and ignition if ignition is not connected, the NVR will shutdown.

**Restriction:** Recording durations can be configured from 1 to 1440 minutes.

**Enable Temperature check Startup Delay:** If enabled, Firmware will read temperature before starting the NVR. If the NVR temperature rises to threshold temperature the firmware will start immediately.

**Minimum Threshold Temperature:** The minimum temperature the NVR should contain for starting the NVR. If the temperature is below threshold, then the firmware will wait for some duration to allow temperature to rise.

**Duration:** The NVR will wait maximum of configured time for the NVR temperature to rise. If temperature of NVR is still below threshold the firmware will still start.

**Restriction:** Recording durations can be configured from 1 to 1440 minutes.

## Startup & Shutdown (cont.)

### Shutdown

**Continue recording after Ignition Off:** If enabled, Recording continues for the specified period, even after the shutdown even is triggered, provided that vehicle power is available.

**Record Duration:** Specified the time up to which recording should be continued.

*Restriction: Recording duration can be configured from 0 to 300 minutes.*

**Enable Offload to Safety Net:** If this option is disabled then firmware will not send requests to SafetyNet server.

**Max Transfer Duration:** After all the data is captured on Primary, Primary is kept mounted for user to retrieve data.

*Restriction: Host offload time limit can be configured from 0 to 360 minutes. Decimal values are not allowed.*

**Safety Net Announce:** It has three options.

**None:** If this option is enabled, then web request will never be sent to SafetyNet server.

**Always:** If this option is enabled, then web requests will be sent to SafetyNet server after recording starts at interval of 60 seconds.

**Geo fence:** If this option is enabled, then web requests will be sent to SafetyNet server as per geo-fence configuration.

### Scheduled Reboot

**Enable Scheduled Reboot:** If enabled, User can Schedule the NVR reboot time. NVR will reboot on the specified day and at a specified time.

**Days:** User can select the days to schedule the time for NVR reboot.

**Time:** User can specify a time for reboot (*in 24 hour format*).

Click **Save Changes** to save changed entries.

## Audio/Video Settings

The Audio/Video Settings page sets the number of cameras connected to the NVR in addition to their individual configurations.

### Camera Discovery

Click **Discover All** to search for all available connected cameras upon initial installation and setup of the NVR. Click **Discover New** to find new cameras after cameras have been added or replaced. Click **Last Result** to automatically recover the result from the last time Discover All was used.

### Add Credential

User can toggle “Add Credential” button according to their need.

**Add to List:** This will add camera credential to device configuration list. User can not add same credential again to device configuration list.

**Limitation:** Length of username and password should be less than 32 characters.

**Restriction:** Listed special characters may not be used: “”[]~{}(),!% ^ \*;

**Import/Export Device Configuration:** User can toggle “Import/Export” button according to their need.

**Import:** This button will import device configuration list to NVR. This will add new credentials to current device configuration list.

**Export:** This button will export device configuration list.

**Combine Event & Continuous:** When the checkbox is checked, all event streams will get disabled. User can configure Live video stream.

**Total audio + Video Device(s) (1-6):** Select the number of devices you want to configure. This specifies the number of ports that must be used to connect devices to the NVR. These ports must be sequential. For example, if you select to connect 6 cameras, only ports 1 through 6 on the front panel can be used.

**Enable/Disable Camera:** This tag will help user to enable and disable cameras and same will be reflected in populate camera setting.

RR7006 ver 5.0.9

SAFETY VISION

VIDEO ADMIN SETTINGS DIAGNOSTICS TAG EVENTS

Startup / Shutdown Auto / Video POE Settings Sensor Settings Recording Thresholds GPS / GEO Fence

Audio / Video

Camera Discovery

Discover All Discover New Last Result Add Credential Import/Export

Total Audio + Video Device(s): 6

Combine Event & Continuous

Enable	No	Device Name / Type	Recording Type	Stream Type	Codec	Resolution	FPS	Bit Rate	Rotation	Audio	Audio Codec	Snapshot	Time Display	NTP	Static IP
<input checked="" type="checkbox"/>	1	FSIP3000_1	<input checked="" type="checkbox"/> Continuous & Event	Main	H264	3M	15	6144		<input type="checkbox"/>	ulaw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		FS-IP3000	<input checked="" type="checkbox"/> Live	Sub	H264	VGA		1024		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	2	FSIP3000_2	<input checked="" type="checkbox"/> Continuous & Event	Main	H264	3M	15	6144		<input type="checkbox"/>	ulaw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		FS-IP3000	<input checked="" type="checkbox"/> Live	Sub	H264	VGA		1024		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	3	SVC360_1	<input checked="" type="checkbox"/> Continuous & Event	Main	H264	2K	20	6144	0	<input checked="" type="checkbox"/>	alaw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		SVC-360	<input checked="" type="checkbox"/> Live	Sub	H264	QHD		1024		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	4	SVC360_2	<input checked="" type="checkbox"/> Continuous & Event	Main	H264	2K	20	6144	0	<input checked="" type="checkbox"/>	alaw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		SVC-360	<input checked="" type="checkbox"/> Live	Sub	H264	QHD		1024		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	5	SVC360_3	<input checked="" type="checkbox"/> Continuous & Event	Main	H264	2K	20	6144	0	<input checked="" type="checkbox"/>	alaw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		SVC-360	<input checked="" type="checkbox"/> Live	Sub	H264	QHD		1024		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	6	SVC360_4	<input checked="" type="checkbox"/> Continuous & Event	Main	H264	2K	20	6144	0	<input checked="" type="checkbox"/>	alaw	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		SVC-360	<input checked="" type="checkbox"/> Live	Sub	H264	QHD		1024		<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Populate Settings: Select Camera

☐ Select All

☐ FSIP3000\_1

☐ FSIP3000\_2

☐ SVC360\_1

Save and Configure

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## Audio/Video Settings (cont.)

**Device Name:** Enter a unique name. A device can be uniquely identified by this name.

**Restriction:** *Maximum allowed length for device name is 15 characters.*

**Type:** Camera model of selected device.

**Recording Type:** If “Combine Event & Continuous” checkbox is checked, user will get two options for stream selection:

- **Continuous & Event:** Enable Continuous and Event stream. Even files can be generated from continuous data.
- **Live:** Enable Live video stream to view video on web interface. Select Low resolution stream (<1080p) with bitrate below 2Mbps for live looking.

If “Combine Event & Continuous” checkbox is not checked, user will get two options for stream selection:

- **Continuous:** Enable Continuous stream.
- **Event:** Enable Event Stream

### Stream Type:

- **Main:** Main stream is a high resolution stream.
- **Sub:** Sub stream is a low resolution stream.

**Codec:** Set the codec format for the particular stream. Supported codec are MJPEG, H.264 and H.265.

**Resolution:** Set the resolution for the particular stream. Supported resolution carries as per the selected codec.

**FPS:** Set the frame speed for particular stream. Frames per second (fps) is same for both the streams. Supported FPS are 5, 10, 15, 30.

**Bitrate:** Sets the maximum allowed bitrate for the particular stream. Supported bitrate are 256, 512, 1024, 2048, 4096 and 6144 Kbps for H.264 and H.265 stream and 20, 40, 60 for MJPEG stream.

**Rotation:** Sets the video rotation of stream. Video Rotation is same for both the streams. Supported video rotation are 0 degrees, 90 degrees, 180 degrees, 270 degrees.

**Audio:** If audio is enabled for continuous/event recording stream then audio data is also captured and stored with video data.

**Audio codec:** Supported audio codecs are ulaw and alaw for camera and ulaw for Audio IO device.

**Snapshot:** Streams configured as mjpeg can be used for taking photos at regular intervals. To configure a stream for mjpeg codec, select mjpeg in the dropdown menu for Codec and enable the option for taking snaps.

**Time Display:** If this option is enabled, then time stamp will be displayed on the video data of the camera.

**NTP:** If this option is enabled, then camera time will be synced with the NTP server. NVR is NTP server.

**Static IP:** If the checkbox is checked, device will be considered as static device.

**Static IP address:** Assign static IP address to the device. Valid range for static ip is (182.168.1.100 to 182.168.1.149).

**Populate Settings:** This feature allows users to populate device settings to another or multiple devices. Configuration of selected device from the first dropdown will be saved devices from the second multi selection box. This will save all camera configurations. Cameras will be reconfigured on next boot.

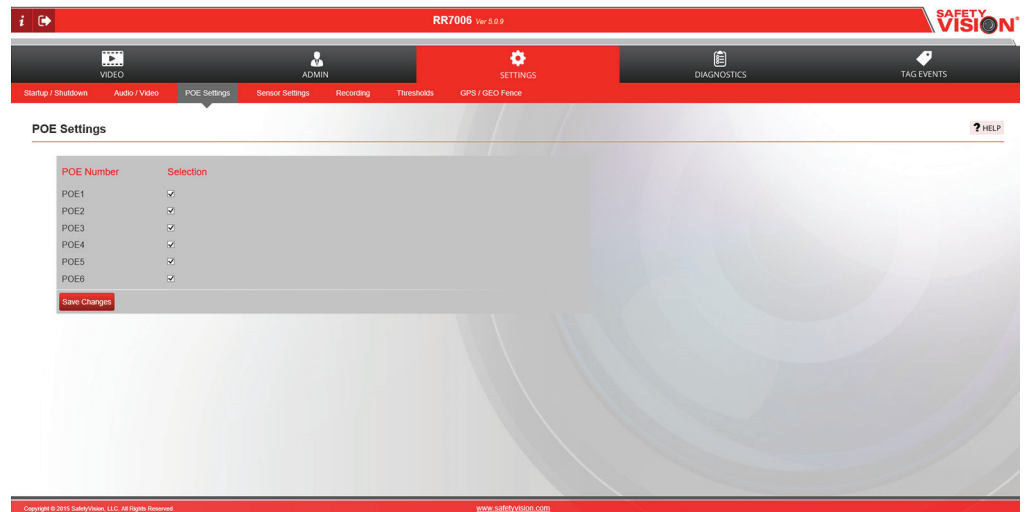


## PoE Settings

The PoE Settings page configures the PoE ports of the NVR.

If the checkbox is checked, PoE port is active and is receiving power. If not utilizing a PoE port, uncheck the checkbox to turn off power to selected port. By default all PoE boxes are checked.

Click **Save Changes** to save changed entries.



## Sensor Settings

The Sensor Settings page configures settings for the sensors and fault statuses.

### Sensor Inputs

**Name:** The NVR has trigger inputs, and for easy identification these trigger inputs can be configured to have user defined names which can be entered in this field for any particular trigger input.

**Restrictions:** The name can contain any alphanumeric value including a single space & “\_”. The trigger input name can only be 15 characters max.

The screenshot displays the 'Sensor Settings' page of the ROADRECORDER 7006 NVR. The interface includes a top navigation bar with tabs for VIDEO, ADMIN, SETTINGS, DIAGNOSTICS, and TAG EVENTS. The 'SETTINGS' tab is active, and the 'Sensor Settings' sub-tab is selected. The main content area is titled 'Sensor Settings' and contains several sections:

- Sensor Inputs:** A table with 5 columns: Sensor, Name, Threshold, Action, and Display. It lists three inputs: 1 (Brake), 2 (Left Turn), and 3 (Right Turn). Each input has a threshold of 12 Volts, an Action of Metadata, and a Display of None.
- Enable J1939:** A checkbox that is currently unchecked.
- Control Output:** A dropdown menu set to 2.
- Relay Out1:** A dropdown menu set to External Device.
- Relay Out2:** A dropdown menu set to Fault Status.
- Fault Status Priority:** A section with three dropdown menus: On (set to High), Slow Pulse Rate (set to Medium), and Fast Pulse Rate (set to Low).
- Fault Status:** A section with eight checkboxes, all of which are currently unchecked: SSD Failure, Camera Failure, Vehicle High Speed, Temperature, SSD Full, GEO Violation, Vehicle High Acceleration, and GPS Failure.

**Threshold:** The Threshold value configured here are in Volts for a particular trigger input and it is used to treat that input as either ON or OFF depending on type of Action defined for that input (ACTIVE HIGH or ACTIVE LOW).

- **ACTIVE HIGH:** If Trigger Action is ACTIVE HIGH and the voltage read on that particular trigger input is higher than the threshold voltage configured here, then that trigger input will be considered as ON else it would be considered as OFF.
- **ACTIVE LOW:** If Trigger Action is ACTIVE LOW and the voltage read on that particular trigger input is less than the threshold voltage configured here, then that trigger input will be considered as ON else it would be considered as OFF.

**Restrictions:** The trigger input threshold voltage can be configured to have any voltage between 1V and 30V. By default the trigger input Threshold Voltage is set to 5V and Trigger Actions is set to Metadata.

**Action:** The Action configured here for a particular trigger input is used for recording various types of events as described below:

**Metadata:** The Metadata Action is ACTIVE HIGH. If Trigger input is configured as Metadata then Event will not be recorded for that input. Trigger status (Active/Inactive) entry will be found in Metadata Log only.

**Backup Power Event:** The Backup Power Event Action is ACTIVE LOW. Only Trigger seven input can be configured as Backup Power Event. Backup power event will not record audio/video streams. It will set timer for Backup Power Duration (1 to 15 Min). When time expires, NVR will shutdown. If trigger becomes active in between, timer will be aborted.

**Timed Event:** The Timed event Action is ACTIVE HIGH. If Trigger input is configured as Timed Event then Event

## Sensor Settings (cont.)

will be recorded for (Pre + Post) Time duration for that input. Trigger status (Active/Inactive) entry will also be found in Metadata log.

**Event While Active:** The Event While Active Action is ACTIVE HIGH. If Trigger input is configured as Event While Active then Event will be recorded for (Pre + Active + Post) Time duration for that input. Trigger status (Active/Inactive) entry will also be found in Metadata Log.

**Start Event:** The Start/Stop Event Action is ACTIVE HIGH. If Trigger input is configured as Start Event then Event will be recorded for (Pre + Active) till stop event is not triggered. Trigger status (Active/Inactive) entry will also be found in Metadata Log. If one Start Event is selected than on Stop Event should also be selected.

**Stop Event:** The Stop Event Action is ACTIVE HIGH. If Trigger input is configured as Stop Event then all Start Event will stop recording. Trigger status (Active/Inactive) entry will also be found in Metadata Log. Stop Event can only be selected with Start Event.

**Power Fail Event:** The Power Failed Event is ACTIVE HIGH. Only Trigger seven input can be configured as Power Fail Event. NVR will shutdown as soon as vehicle power is failed.

When each sensor triggers, an attached optional monitor can be configured to display specific camera views.

**Display:** Select Single (one camera full screen), Split (two cameras), or Quad (four cameras)

**Priority:** Select the priority this sensor triggering has over other sensors

**Dwell Time:** Select the amount of time the configured camera view displays after the sensor is triggered

**Cameras:** Select which available camera views appear in the displayed position; the number of fields changes depending on the entry in the Display field

**Enable J1939:** If this option is enabled, J1939 related functionality would be enabled in the firmware else it would be disabled by default.

**Control Output:** Control outputs 1 and 2 of NVR will be configured as per the settings configured in Control Out 1 and Control Out 2 respectively. Currently, one can select between External Device, Fault Status or None. Selecting External Device will turn ON that Control output to switch ON the external device connected to that control out, selecting Fault Status will enable functionality to support Fault Status interface on that control output and selecting None will disable that control output.

By default, Control out 1 is selected as External Device & Control out 2 is selected as None.

### Fault Status Priority

Select High, Medium, or Low in the **On, Slow Pulse Rate**, and **Fast Pulse Rate** fields to prioritize the fault statuses below assigned those respective signals.

### Fault Status

For each fault status, select Off, On, Slow Pulse Rate, or Fast Pulse Rate signal.

**Off:** If this option is configured for any fault, notification will not be given on relay for that fault.

**On:** If this option is configured for any fault, then on occurrence of the fault the relay will be set to ON state. The relay will continue to be in this state till the fault is cleared.

**Slow Pulse Rate:** If this option is configured for any fault, then on occurrence of the fault the relay will toggle at a frequency of 0.5 Hz. The relay will continue to be in this state till the fault is cleared.

**Fast Pulse Rate:** If this option is configured for any fault, then on occurrence of the fault the relay will toggle at a frequency of 2 Hz. The relay will continue to be in this state till the fault is cleared.

- SSD Failure
- SSD Full
- Camera Failure
- GEO Violation
- Vehicle High Speed
- Vehicle High Acceleration
- Temperature
- GPS Failure

Click **Save Changes** to save changed entries.

## Recording

The Recording page configures file sizes and how the NVR records events.

### File Size

**Continuous recording file size:** Size of file to be created for continuous recording.

**Restrictions:** File size can be configured from 50 MB to 1024 MB. Decimal values not allowed.

**Event recording file size:** Size of file to be created for event based recording.

**Restrictions:** File size can be configured from 50 MB to 1024 MB. Decimal values not allowed.

**Safety Vision strongly recommends retaining the default settings of 100MB.**

### Event Recorder Settings

When any event is triggered, audio/video data of event interval is recorded in a different file which can be extracted later. Audio/video data specific to the event is thus obtained.

**Pre event recording:** Audio/video data of specified minutes before the event starts are also copied to event file.

**Post event recording:** Audio/video data of specified minutes after the event is triggered are also copied to event file.

### Enable Event Write Protection

If this option is enabled, event files will not be deleted from the storage device in case of insufficient free space.

### Snapshot

**Capture interval:** Camera enabled for snapshots capture data at specified intervals. To enable snapshot for a particular camera, enable "Take snapshots" in individual camera configuration page.

**Restrictions:** Snapshot interval can be configured from 10 to 3600 sec. Decimal values are not allowed.

Click **Save Changes** to save changed entries.

The screenshot displays the 'Recording' configuration page of the RR7006 NVR. The interface features a top navigation bar with 'SETTINGS' selected, and a sub-menu with 'Recording' highlighted. The main content area is divided into sections: 'File Size' with input fields for 'Continuous recording file size' and 'Event recording file size', both set to 100 MB; 'Event Recorder Settings' with dropdowns for 'Pre event recording' and 'Post event recording' set to 1 minute, and a checkbox for 'Enable Event Write Protection'; and 'Snapshot' with a 'Capture interval' set to 60 seconds. A 'Save Changes' button is located at the bottom of the settings panel. The footer includes the copyright notice 'Copyright © 2015 SafetyVision, LLC. All Rights Reserved.' and the website 'www.safetyvision.com'.

## Thresholds

### Ignition

#### Startup minimum ignition value:

Minimum ignition value, given in volts, to start NVR system. The NVR system will power on only if given ignition power is greater than configured ignition value.

**Restrictions:** Start-up ignition value should be always greater than shutdown ignition value.

#### Shutdown minimum ignition

**value:** Minimum ignition value to shutdown NVR system. The value is in Volts Unit. Our NVR system will power down gracefully if given ignition power is less than configured ignition value.

**Restrictions:** Shutdown ignition value should be always smaller than start-up ignition value.

### Accelerometer

**RMS:** The NVR contains a 3-axis accelerometer. Event is triggered when RMS (root, mean, square) value of all the axes is greater than specified.

**Restrictions:** RMS value can be configured from 0.1g to 16g.

### GPS

**Speed:** The NVR has GPS which will provide vehicle speed. Event is triggered when vehicle speed is greater than specified.

**Restrictions:** Speed value can be configured from 0mph to 100mph.

Click **Save Changes** to save changed entries.

## GPS / GEO Fence

The GPS / GEO Fence page configures the GPS signal priority and sets up the Geo Fence feature.

### GPS Priority

Use the GPS Priority fields to select which device has priority in providing the NVR with GPS data. In the **Garmin** and **OMG** fields, select 1 to give that device priority, select 2 for the secondary device.

### Geo Fence

A geo fence is a defined area where a vehicle operates. When a vehicle crosses the fence, an event can be triggered or the NVR can announce itself to a SafetyNet CMS wireless network.

### Get Current Location

By clicking on Get Current Location Symbol, user can redirect to current location of NVR.

### To set up a geo fence:

Click the circle or polygon icon in the upper left of the map. To create a circular geo fence, click the circle, then click the map in the location of the center of the circle. Drag the mouse to increase the radius, then click again. You can further adjust the circle radius by clicking and dragging the image "handles."

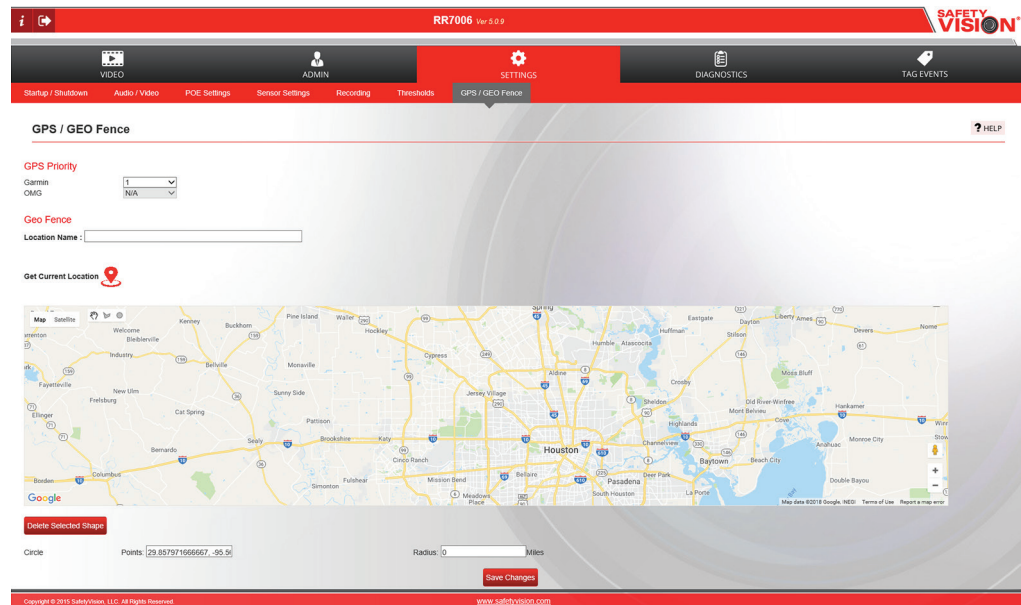
To create a free-form, polygonal geo fence, click the polygon icon. Click a location on the map, then a second. A line appears. Each click creates a geo fence "post." Continue creating posts until you return to the original post, creating a complete fence. The fence can further be adjusted by clicking and dragging on the image "handles."

Only one circular geo fence can be created at once, while multiple polygonal geo fences can be created. Circular geo fences can only trigger events when the vehicle exits the fence.

For each created geo fence, select **Exit**, to trigger the geo fence effect when a vehicle leaves the defined area, or **Entry**, to trigger the geo fence effect when a vehicle enters it. Then select **Event** to trigger an event, or **SVAnnounce** to trigger a ping to be sent to a SafetyNet CMS wireless network.

Select a shape and click **Delete Selected Shape** to delete a shape and start over.

Click **Save Changes** to save changed entries.



## Camera

The Camera diagnostics page provides comprehensive support for technicians installing and troubleshooting the NVR's camera installation.

### Camera Status

The Camera Status display shows the camera name, IP address, and operational status of each camera. Click on the camera's name or IP address (depending on if you are connected through the WAN [top] or LAN [bottom] Ethernet port) to automatically go to that camera's live view and configuration page.

**Camera Status**

Camera Name	IP Address	Status
FSP3000_1	182.168.1.150	online
FSP3000_2	182.168.1.152	online
SVC360_1	182.168.1.155	online
SVC360_2	182.168.1.156	online
SVC360_3	182.168.1.151	online
SVC360_4	182.168.1.153	online

**Camera Ping Status**

Packet Size:  Packet Count:  Camera:

**Power Rating**

Power Rating
Camera Connected on PoE1
Camera Connected on PoE2
Camera Connected on PoE3
Camera Connected on PoE4
Camera Connected on PoE5
Camera Connected on PoE6

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### Camera Ping Status

Select the **Packet Size** and **Packet Count**, then select an individual camera or Select All, then click **Go** to perform a camera ping test. At the end, the result is displayed below.

### Power Rating

The Power Rating display shows the power each camera is drawing from the NVR.

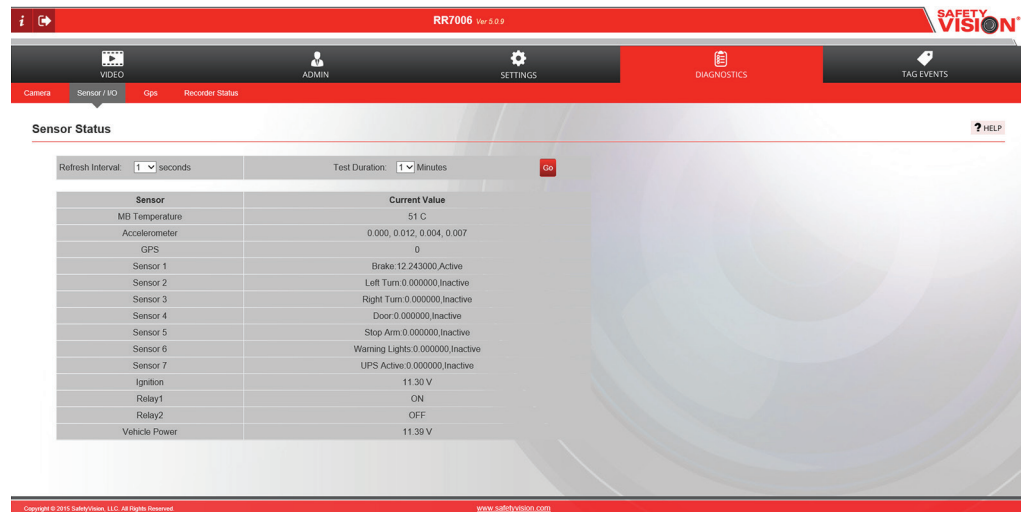


## Sensor Status

The Sensor Status diagnostics page provides assistance when installing or troubleshooting the NVR's sensors.

Select a **Refresh Interval** (the frequency at which the web page will refresh) and the **Test Duration** (in minutes), then click **Go**.

Sensor activation and their values can be observed in the display on the right.



The screenshot displays the 'Sensor Status' page of the RoadRecorder 7006 NVR. The page has a red header with the 'SAFETY VISION' logo and a navigation bar with tabs for Camera, Sensor / I/O, GPS, Recorder Status, ADMIN, SETTINGS, DIAGNOSTICS, and TAG EVENTS. The 'Sensor / I/O' tab is selected. Below the navigation bar, the 'Sensor Status' section is visible. It includes a 'Refresh Interval' dropdown set to '1' seconds and a 'Test Duration' dropdown set to '1' Minutes, followed by a 'Go' button. A table displays the current values for various sensors.

Sensor	Current Value
MB Temperature	51 C
Accelerometer	0.000, 0.012, 0.004, 0.007
GPS	0
Sensor 1	Brake: 12.243000, Active
Sensor 2	Left Turn: 0.000000, Inactive
Sensor 3	Right Turn: 0.000000, Inactive
Sensor 4	Door: 0.000000, Inactive
Sensor 5	Stop Arm: 0.000000, Inactive
Sensor 6	Warning Lights: 0.000000, Inactive
Sensor 7	UPS Active: 0.000000, Inactive
Ignition	11.30 V
Relay1	ON
Relay2	OFF
Vehicle Power	11.39 V

At the bottom of the page, there is a copyright notice: 'Copyright © 2015 SafetyVision, LLC. All Rights Reserved.' and the website address 'www.safetyvision.com'.



## GPS Status

The GPS Status diagnostics page provides assistance when installing or troubleshooting the NVR's GPS.

Select a **Refresh Interval** (the frequency at which the web page will refresh) and the **Test Duration** (in minutes), then click **Go**.

The screenshot displays the 'GPS Status' page within the RoadRecorder 7006 NVR web interface. The page features a top navigation bar with icons for VIDEO, ADMIN, SETTINGS, DIAGNOSTICS, and TAG EVENTS. Below this, a sub-navigation bar highlights 'Camera', 'Sensor / I/O', 'GPS', and 'Recorder Status'. The main content area is titled 'GPS Status' and includes a 'Refresh Interval' dropdown set to '1' seconds and a 'Test Duration' dropdown set to '1' minutes. A 'Go' button is positioned to the right of these dropdowns. Below the dropdowns is a table displaying various GPS status metrics.

GPRMC	0
Valid	No
Latitude	0.000000
Longitude	0.000000
Altitude	0.000000
Speed	0.000000 mph
Heading	0.000000
Satellite	0

At the bottom of the page, a footer contains the copyright notice 'Copyright © 2015 SafetyVision, LLC. All Rights Reserved.' and the website address 'www.safetyvision.com'.

## Recorder Status

The Recorder Status page allows you to download NVR logs and diagnostic reports, as well as display the status of the removeable hard drive (primary) SafeStor (secondary).

### NVR Status

The status of the NVR is displayed as Recording, Configuring, Offloading, or Safetynet Offloading.

### Export Reports

To download the NVR's log or a diagnostic report, click on **USB** (to download to a USB flash drive inserted into the front port of the NVR) or **PC** (to download to a location on an attached PC). These reports can be useful to technical support personnel when troubleshooting.

### Primary Storage Information

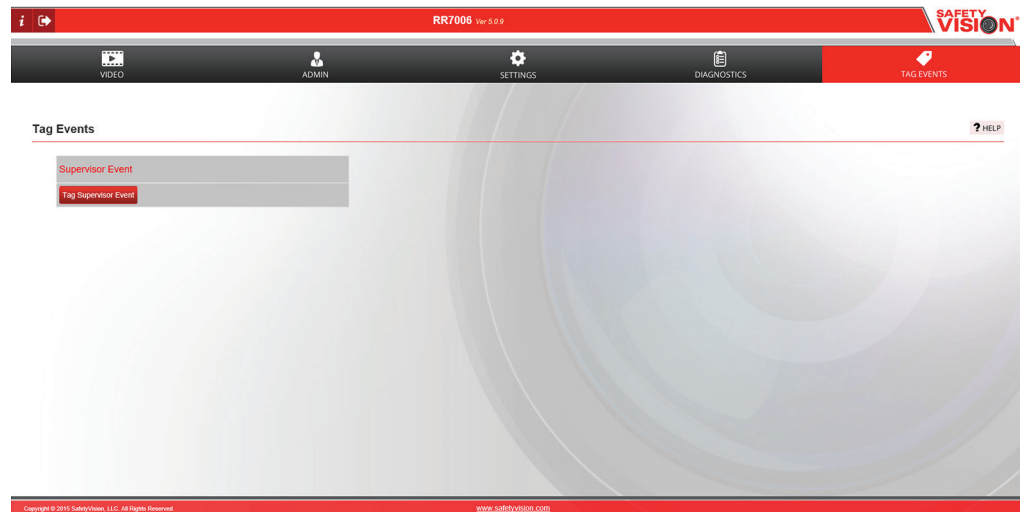
The **State** of the drive is displayed as "Online" or "Not online". The drive's total capacity is displayed in the **Drive Size** field and the percentage of that capacity used is displayed in the **Drive Used** field.

The screenshot displays the 'Recorder Status' page of the RoadRecorder 7006 NVR web interface. The top navigation bar includes 'Camera', 'Sensor / I/O', 'Cops', 'Recorder Status' (selected), 'ADMIN', 'SETTINGS', 'DIAGNOSTICS', and 'TAG EVENTS'. The 'Recorder Status' section contains three main areas: 'NVR Status' showing 'Recording', 'Export Reports' with links for 'Export NVR Logs on: USB | PC' and 'Export Diagnostics Report on: USB | PC', and 'Primary Storage Information' showing 'State: Online', 'Drive Size: 465G', and 'Drive Used: 98%'. The footer includes copyright information and the website URL.

Recorder Status	
<b>NVR Status</b>	
NVR Status:	Recording
<b>Export Reports</b>	
Export NVR Logs on:	<a href="#">USB   PC</a>
Export Diagnostics Report on:	<a href="#">USB   PC</a>
<b>Primary Storage Information</b>	
State:	Online
Drive Size:	465G
Drive Used:	98%

## Tag Events

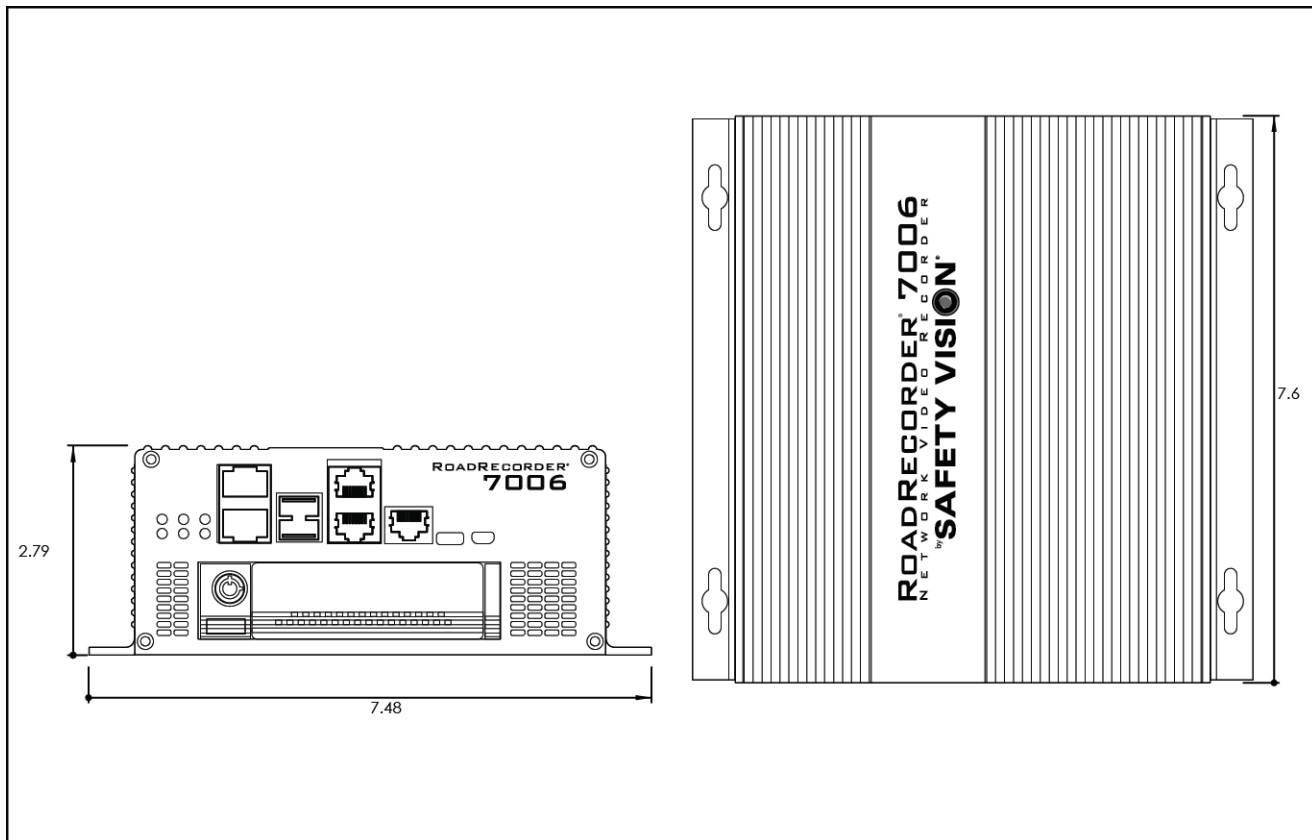
The Tag Events screen allows a supervisor or other authorized user to manually and immediately trigger an event by clicking **Tag Supervisor Event**. This feature is useful in emergency situations where the web interface can be accessed wirelessly by a supervisor vehicle. (For more information regarding this feature, contact Safety Vision Technical Support.)



## Appendix A: Specifications

SPECIFICATIONS	
Part No. 7006-NVR	
Operating System	Embedded Real Time Linux
Audio/Video Inputs	Audio: 6 channels (network RJ45 connector) Video: 6 channels (network RJ45 connector) *10 channels with external PoE switch
Audio/Video Outputs	N/A
Audio/Video Compression	G.711 / H.264
Resolution	2048 × 2048, 1920 × 1080 (1080p), 1280 × 720 (720p), 720 × 480 (D1), 352 × 240 (CIF)
Frame Rate	30 FPS (all channels, all resolutions)
Image Quality (bit rate)	256 KB/sec - 6 MB/sec
Storage	1 × SATA II 1 TB SSD (2 TB max)
Recording Mode	Continuous (dual stream) / Scheduled / Event (sensor trigger, speed, acceleration, video loss, temperature), Pre/Post Recording
Pre-Event Recording	Configurable up to 5 minutes
Post-Event Recording	Configurable up to 10 minutes
Ethernet	Gigabit Ethernet; 2 × RJ45; 12 × 100 mb PoE
GPS (External Antenna Required)	Location tracking, speed detection, and sync time
Interfaces	1 × RS232, 1 × USB, 1 × micro-USB, 1 × CAN
Accelerometer	3-Axis, 0.1 G resolution
Sensors	7 inputs plus ignition / 2 outputs (dry contact)
Power Input	6 ~ 36V DC
Power Consumption	80W (max)
Environmental Control	Integrated cooling fan
Operating Temperature	32° F ~ 155° F (0° C ~ 70° C)
Dimensions (w × h × d)	7.48 × 2.79 × 7.60 in (189.99 × 70.87 × 193.04 mm)
Certifications	J1939
Encryption	Hardware AES, DES, 3DES

## Appendix B: Dimensions

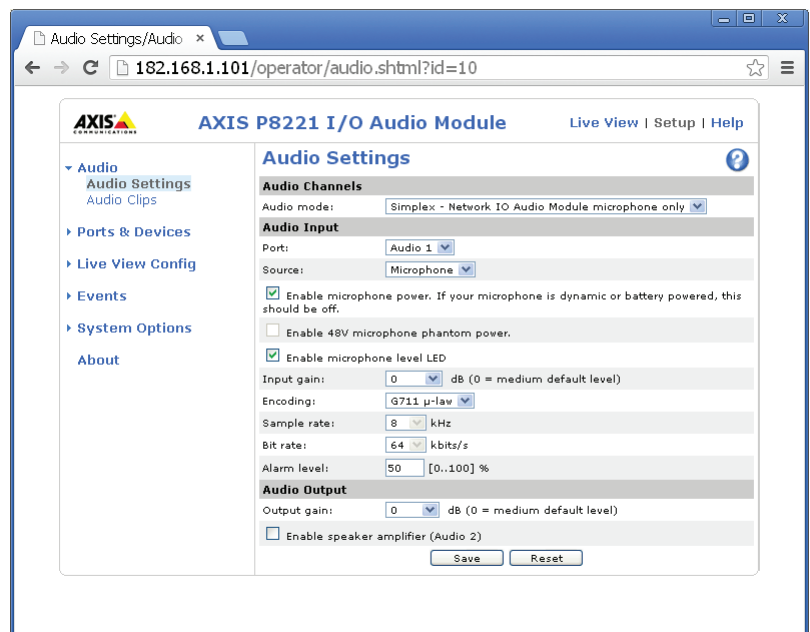


## Appendix C: Axis Device Configuration

The RoadRecorder 7006 NVR supports both the Safety Vision SVC-2200 series cameras in addition to Axis network cameras. Configuration is identical except Axis cameras must be configured with the login and password both set to root. Use the following procedure to properly configure an Axis network camera:

1. Connect both a PC and the Axis device to a power over Ethernet (PoE) switch and ensure the PC is on and the PoE switch is receiving power. Allow the camera enough time to start up (1 to 2 minutes).
2. Configure a static IP address on the PC to **192.168.0.100**.  
In Windows, open Network Connections. Right-click the LAN connection and select **Properties**. In the list of items, select **Internet Protocol (TCP/IP)** and then click **Properties**.
3. On the PC, in an internet browser, navigate to **192.168.0.90**.  
The camera's login screen appears.
4. Enter **root** in the **Password** and **Confirm password** fields.
5. Click **OK**.  
A prompt appears requesting a login with the newly set password.
6. Enter **root** for both the username and password.
7. Click **OK**.  
A prompt screen appears requesting the power line frequency in your area.
8. Ensure the appropriate Hz value is entered in the field and click **OK**.  
The Axis camera is now configured to operate with the RoadRecorder 7006 NVR.

For Axis audio devices, follow the steps above, then additionally ensure that the **Encoding** field is set to **G711  $\mu$ -law** under **Audio Settings**, as shown in the screenshot.



## Appendix D: GPS Coordinate Conversion

The Threshold Settings page of the Web Configuration requires GPS coordinates be entered in degrees, minutes, and decimal minutes format. However, GPS coordinates are typically displayed in decimal degree format. Use the following procedure to determine the required GPS coordinates and convert them to the required format:

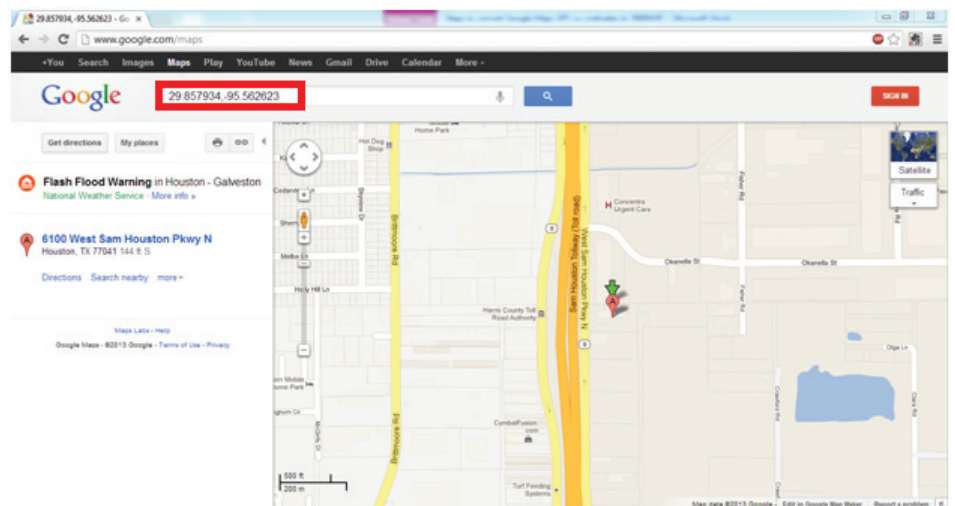
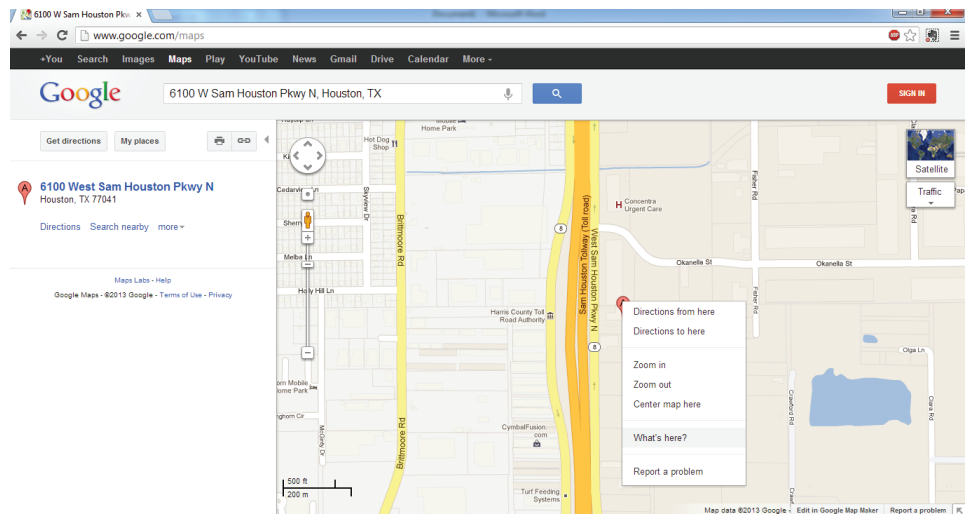
1. Enter the address of the required GPS location in Google Maps.  
Google Maps can be accessed at [www.google.com/maps](http://www.google.com/maps)  
Safety Vision's headquarters is used as an example.
2. Confirm the appropriate address appears on the map as a red balloon marker.
3. Right click on the red balloon marker.
4. Select the **What's here?** option.  
The longitude and latitude appear, separated by a comma, in the Google Maps search bar.  
In the example, Safety Vision's coordinates are displayed as 29.857934,-95.562623.
5. Use the following formula to convert these decimal degree format coordinates to the degrees, minutes, and decimal minutes:  

$$(DD \times 100) + (0.DDDDDD \times 60)$$
 In the example, the longitude 29.857934 is converted as follows:  

$$(29 \times 100) + (0.857934 \times 60)$$

$$= 2900 + 51.47604$$

$$= 2951.47604$$
6. Apply the calculated GPS coordinate to the appropriate field in the Threshold Settings page of the Web Configuration.





## FCC Compliance Statement

### NOTE

This device has been tested and found to comply with the limits for a ***Class A digital device***, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference in which case the user will be required to correct the interference at his own expense.

### CAUTION

Any changes or modifications in construction of this device which are not expressly approved by the party responsible for the compliance could void the user's authority to operate the equipment.

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