REAR VIEW SAFETY

A Safe Fleet Brand

RVS-96D Installation and Setup Guide

Date: 12-Oct-2017 17:27

Table of Contents

Introduction

This document introduces the the RVS-96D Six-Channel DVR Monitor and provides instructions for its installation and system configuration.

The RVS-96D:

- Enables you to connect and record up to 6 cameras simultaneously.
- Supports NTSC and PAL standards.
- Comprises a built-in GPS receiver and G-sensor
- Supports 2 SD cards up to 128GB each.

RVS-96D Kit Contents

RVS-96D Kit Contents

Front Panel

Controls and Indicators

Back Panel

Showing GPS connector, lock, SD compartment open.

SD Compartment

Right Side - USB Port
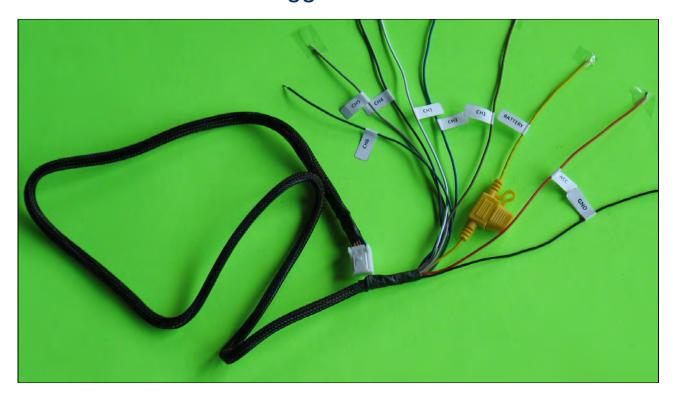
Bottom Panel Connectors
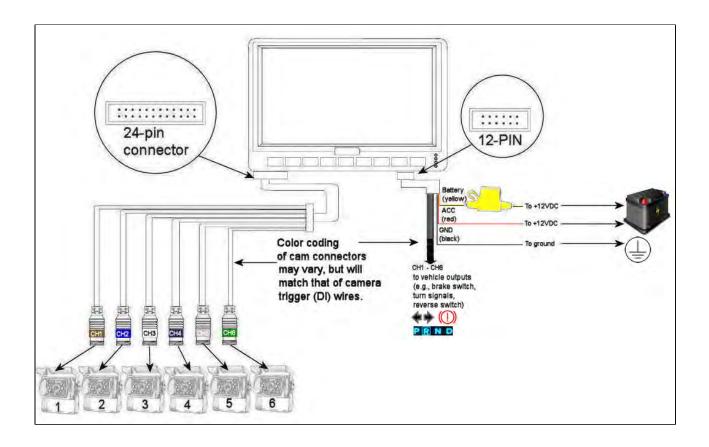
Camera Connection Cable

Power and Camera-Trigger Cable

Making RVS-96D Connections

Camera Connection

Connect up to 6 cameras to the RVS-96D using camera connectors **CH1** through **CH6**.

> ⓘ   Channels 2, 3, and 4 are special purpose cameras. To ensure full functionality, assign these channels appropriately, as defined in the legend in the following table.

CAMERA TRIGGER SIGNALS (DIGITAL INPUTS) LEGEND	
Channel	**Camera Purpose**
1,5, 6	General purpose cameras.

2	**Reverse**. Color back-up guides superimposed on view.
3	**Left turn signal**. Delayed cancellation of image display/record.
4	**Right turn signal**. Delayed cancellation of image display/record.

Camera Trigger Connections

Camera trigger wires must be connected to the vehicle's outputs.

Ensure that cameras with special associated trigger signals (i.e., Reverse, Left Turn, Right Turn) are connected to the output terminals receiving the appropriate vehicle input signals to the terminal block.

Power Connection

The 12V tap must be after the battery disconnect (i.e., turning battery disconnect off eliminates 12V to the mobile platform. Turning battery disconnect on reapplies 12V). Other names for the battery disconnect are night switch and kill switch.
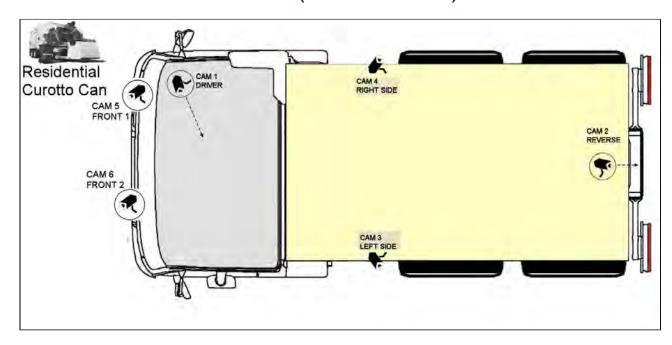See RVS-96D Electrical Tapping Points Reference Guide.

> ⚠️ Power should NOT be connected to the vehicle's ignition key switch.

Recommended RVS-96D Camera Locations
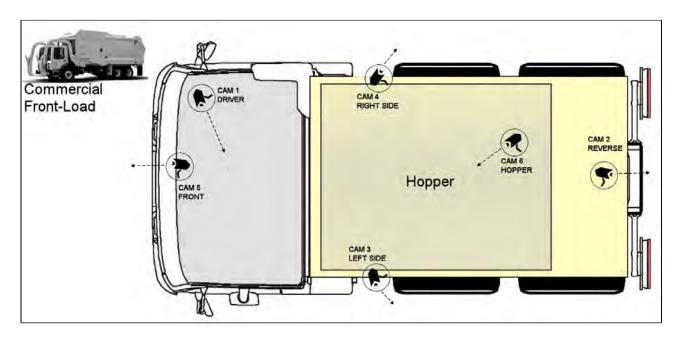
Recommended RVS-96D Camera Locations
and Settings

Optimal camera configuration will ultimately depend on customer preference and the requirements involved for the various types of waste collection. As a guideline, Rear View Safely proposes the following configurations based on actual installations performed by our installation team. The configurations presented here are "minimal" configurations, i.e., not all 6 cameras need be used in each scenario. You can use as many cameras as you deem appropriate for your particular application.
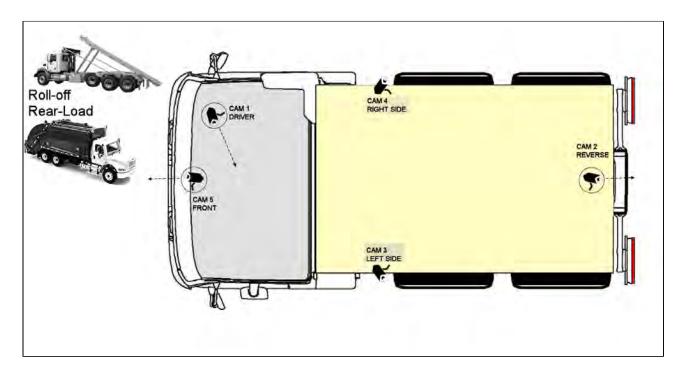
Residential Front-Load (Curotto-Can)
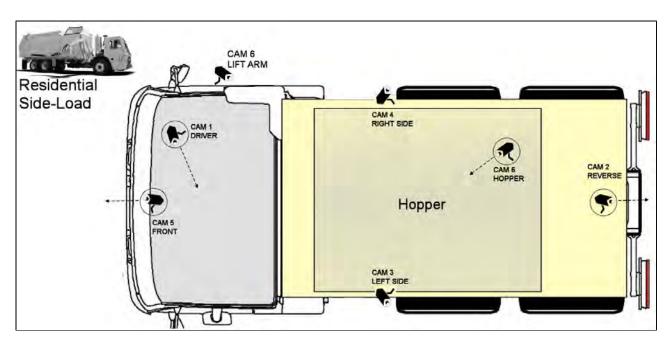
Commercial Front-Load

Roll-off and Rear-Load

Residential Side-Load

RVS-96D Electrical Tapping Points

RVS-96D Electrical Tapping Points Reference Guide

⚠ The material presented here is provided solely for the purposes of locating DC voltage source locations within various vehicle types. The equipment depicted in the images is not relevant within this context and, as such, may vary from that being used in your installation.

Quick Links - Sample Vehicle Installations

Mack - MRU

Mack - MR

Mack - LEU600

Mack - CT713

Autocar

Peterbilt

International - 7600

Freightliner - M2 12yd Minimax 2014

CCC

Sterling - Condor

American - LaFrance

Electrical Requirements

12v

The 12v tap must be after the battery disconnect (i.e., turning battery disconnect off eliminates 12v to the Fleetmind mobile platform. Turning battery disconnect on reapplies 12v). Other names for the battery disconnect are night switch and kill switch.
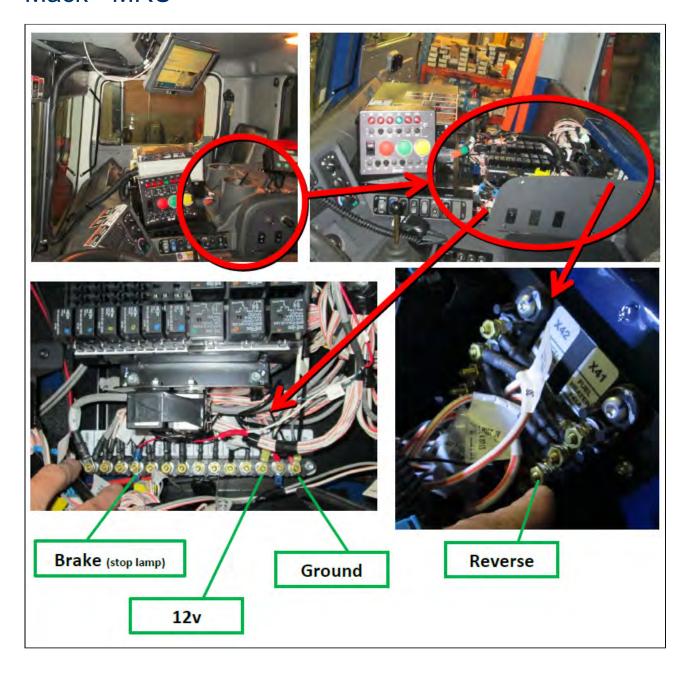
Ground

Most trucks have a dedicated ground stud while some trucks require locating the screw that is tapped into the chassis as ground. Note that a clean ground implies direct contact to a rust free metal surface.

Reverse & Brake

For both reverse and brake, the Fleetmind mobile platform is expecting a state change from 0v (disengaged/off) to 12v (engaged/on).

Mack - MRU

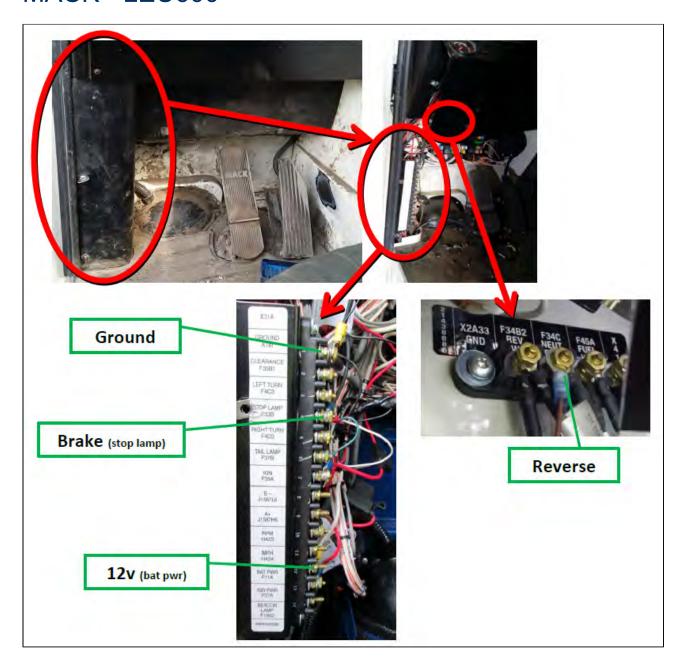

Brake (stop lamp)

12v

Ground

Reverse

Mack - MR

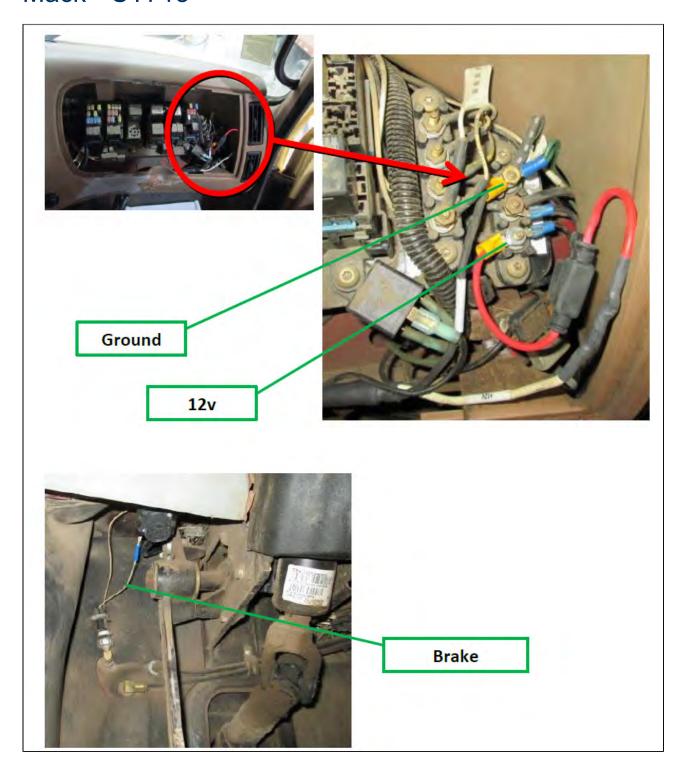
12v, Ground, Reverse and Brake (stop lamp) are located behind these 2 access panels along a labelled busbar similar to the Mack MRU

MACK - LEU600
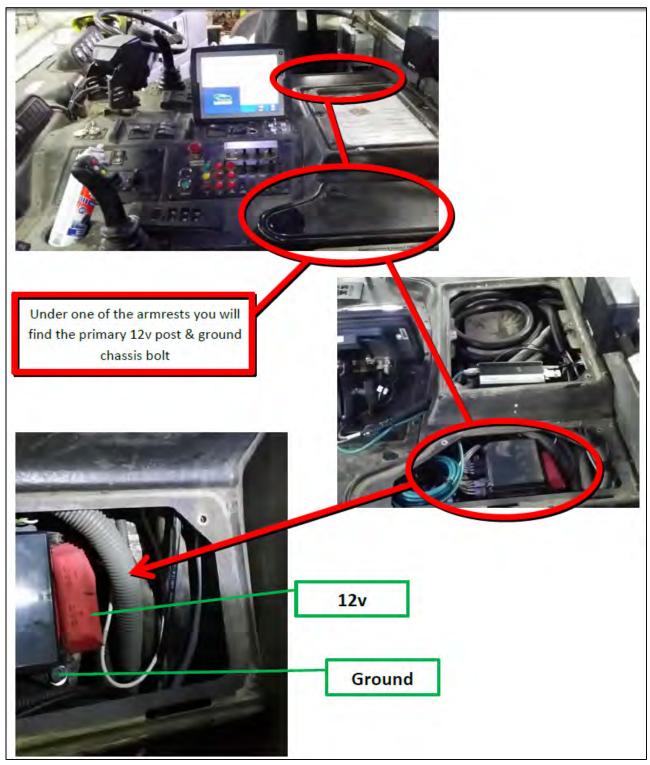
Mack - CT713

Ground

12v

Brake

Autocar

12V & Ground (Configuration 1)

Under one of the armrests you will find the primary 12v post & ground chassis bolt

12v

Ground

12V & Ground (Configuration 2)

12V & Ground (Configuration 2)

Under one of the armrests you will find the primary block of fuses. You need to dismount the fuse block from its mooring to the chassis to get to the 12v post underneath. The ground is one of the chassis bolts of the fuse block mounting bracket.

12v

Ground

12V & Ground (Configuration 3)

Behind the steering column you will find the primary block of fuses. You need to dismount the fuse block from its mooring to the chassis to get to the 12v post underneath. The ground is a chassis bolt to the left of the fuse block

Ground

12v

Brake and Reverse (Configuration 1)

Under any of these doghouse panels you will find the Brake and Reverse wires, most typically closer to the rear of the cab. You will need to hunt through all the various split looms to locate these wires which are usually labelled Brake or Stop, Reverse or Rev (most common labels)

Brake

Reverse

Brake and Reverse (Configuration 2)

Above the brake & gas pedals are several Borg Warner switches. Using a multimeter, you can test all the posts until you locate the one that provides a 0v to 12v state change when the brake pedal is depressed.
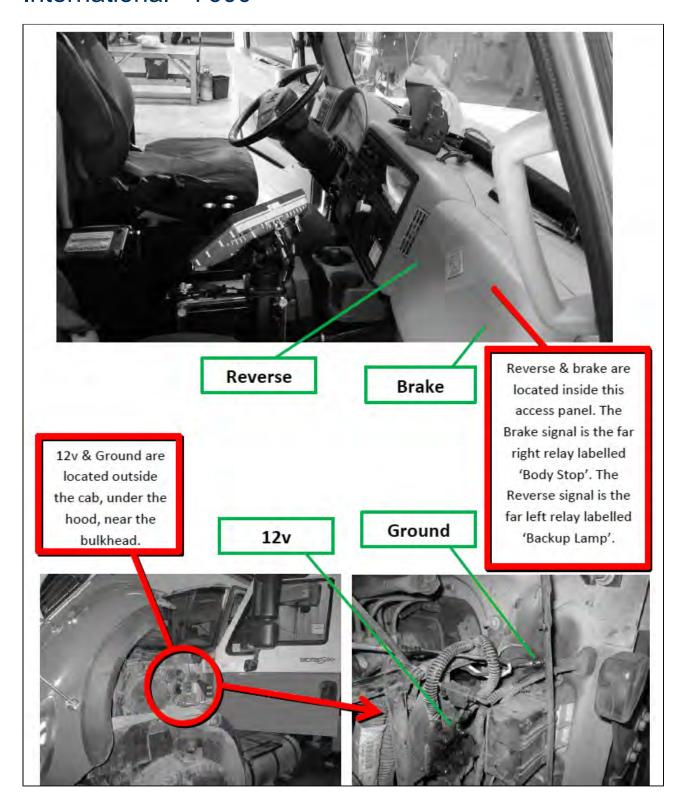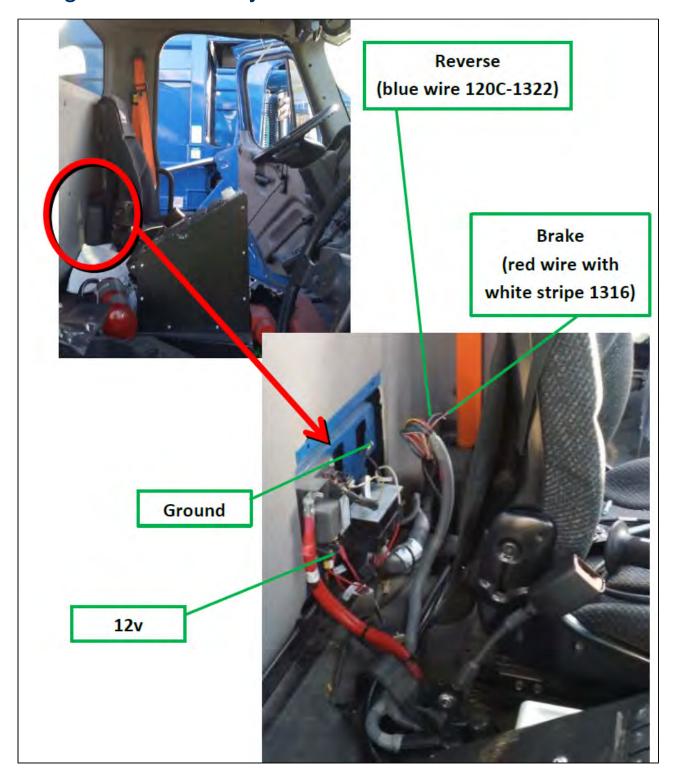
Brake

Peterbilt

12v, Ground, Reverse & brake are all located inside this access panel. The 12v bolt is located to the right/front. The ground bolt is located in the middle/front. The brake post is located in the left/front. The reverse post is located in the middle/back near the 9pin ECM connector.
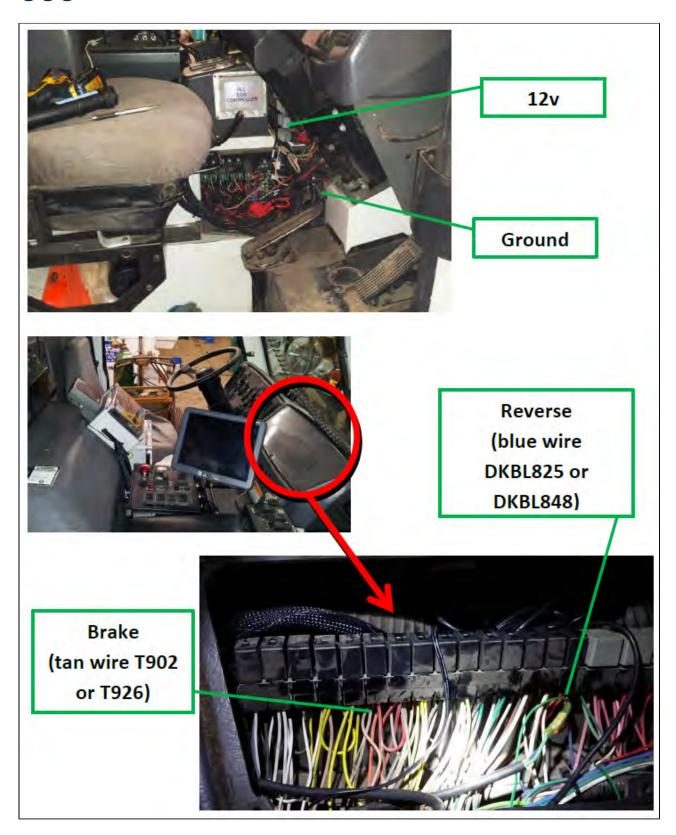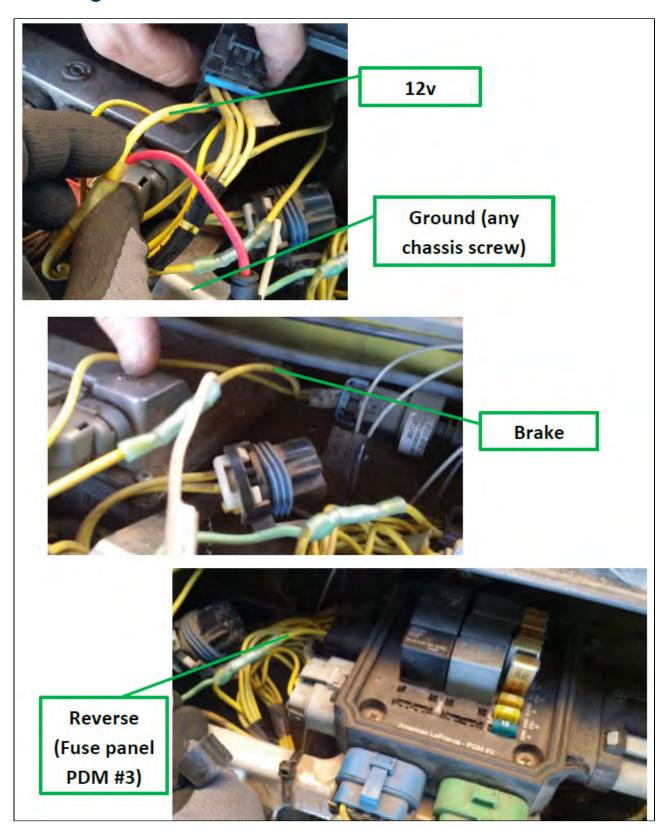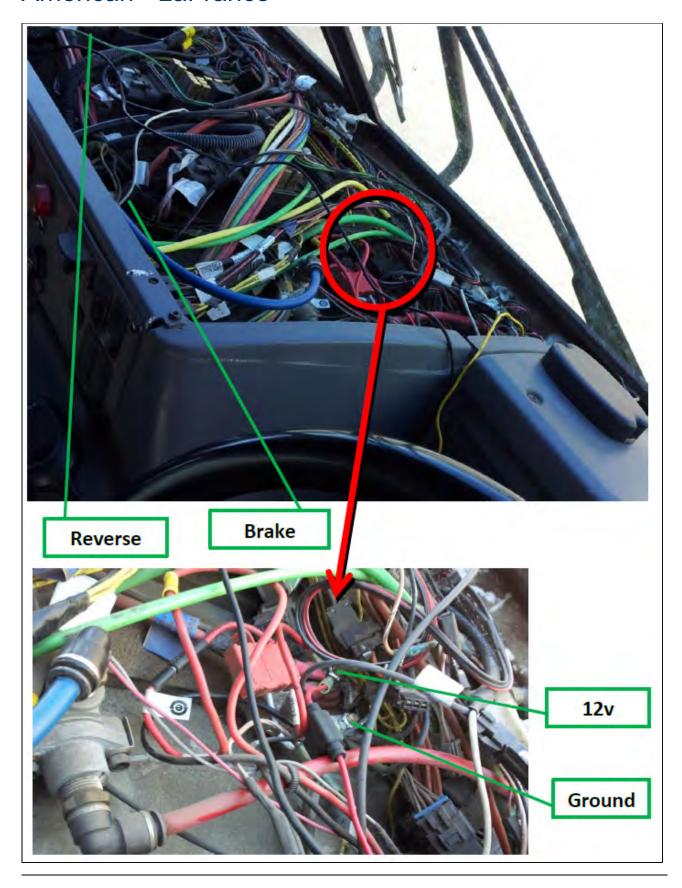
International - 7600

Reverse

Brake

Reverse & brake are located inside this access panel. The Brake signal is the far right relay labelled 'Body Stop'. The Reverse signal is the far left relay labelled 'Backup Lamp'.

12v & Ground are located outside the cab, under the hood, near the bulkhead.

12v

Ground

Freightliner - M2 12yd Minimax 2014

Reverse
(blue wire 120C-1322)

Brake
(red wire with
white stripe 1316)

Ground

12v

CCC

12v

Ground

Reverse
(blue wire
DKBL825 or
DKBL848)

Brake
(tan wire T902
or T926)

Sterling - Condor

12v

Ground (any chassis screw)

Brake

Reverse (Fuse panel PDM #3)

American - LaFrance

Reverse

Brake

12v

Ground

Lift signal tap points

Peterbilt

1. The white wire on the camera harness is usually connected to a proximity switch on the arm assembly.

2. White wire (1753 212) in a large bundled harness near the rear of the cab, leading to the joystick.

3. 2015 Scorpion trucks have a white wire underneath the joystick that has a programmable output signal and can be triggered off any of the proximity switches on the arm.

Labrie Arms

1. The majority of Labrie systems have a wire labelled 235i inside the PTO box associated with a proximity switch on the arm when it is elevated.

2. Other possiilities include wires labelled 'Auto-cam switcher' and 'Arm Mid Position'.

Zero Radius – Autocar 2014
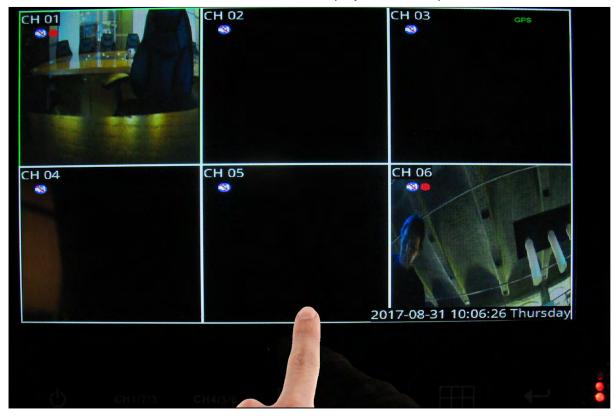
Behind an access panel located on the body, driver side, near the front, are a series of fuse assemblies. A part of assembly 1483835, there is a green wire labelled 'Arm up stowed prox' associated with the proximity switch on the arm when stowed all the way up.

RVS-96D System Configuration

Accessing the System Configuration Menus

In order to set up system configuration parameters, you must use the system menus.

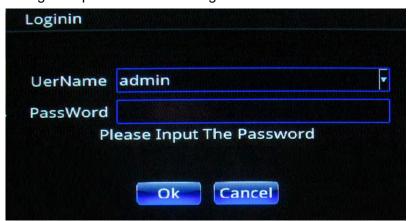1. Touch and hold the lower area of the screen to display the control panel.

2. Select **System**.

3. Use the Admin user name and, If required, enter the password.
   For first-time access, do not enter a password / leave password blank. You can
   change the password later using the User Accounts menu.

The Main Menu displays.

Setting Date/Time and Operating Language

1. Select **System Settings**.
   The System Settings menu displays.

2. Select **General Settings**.
   The General Settings menu enables you to set date and time parameters and choose an operating language.
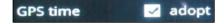
You can set the date and time:

a. Manually

b. Automatically

c. To set date and time manually:

    i. Touch their respective fields to display the numeric keypad.

    ii. Use the keypad to specify new values; use the arrow keys to move the cursor position forward and backward.

    iii. Select **Enter** when done.

d. To set date and time automatically using UTC time (Coordinated Universal Time, formerly Greenwich Mean Time, or GMT) reported by the GPS:

    i. Select the **GPS time adopt** check box.

    The time on the device is coordinated with UTC time.

    ii. To display local time for your current time zone, you must use the plus ➕ or minus ➖ check boxes and the hours/minutes numeric menu to specify the deviation from UTC.

> ⊘ **For Example**
>
> USA Eastern time is either UTC -5 or UTC -4, depending whether DST
> is in effect.

3. Choose a date format.

4. Select a time format.

5. Select a language.
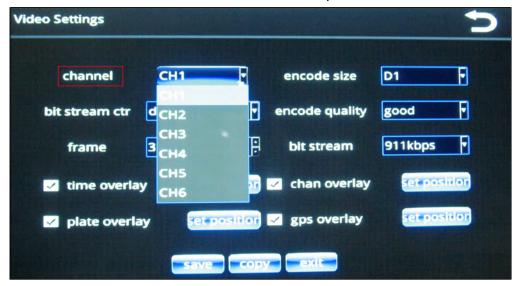
Setting Video Parameters

1. From the System Settings menu, select **Video Settings**.
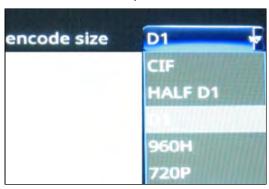
The Video Settings menu enables you to specify video properties for each of the six channels, which are selectable from the channel pull-down menu.

After you select a channel from the menu, you can apply properties for that channel as described in the following steps.

2. Set the encode size, which determines the level of video compression.

3. Choose a type of bit stream, either fixed or dynamic, according to your requirements. Dynamic can be used to adapt to changing network conditions in order to provide playback with fewer stalls and/or re-buffering.
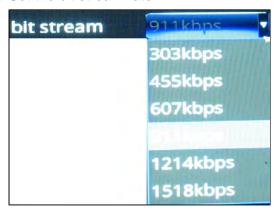
4. Select video encoding quality.

5. Select the frame rate—number of frames per second (fps).
   Generally, the higher the FPS, the smoother the motion appears.
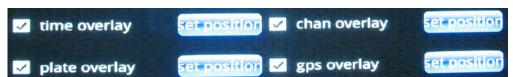
6. Set the bit stream rate.

7. Set overlay positions.
   RVS-96D provides 4 overlays for video that can be turned on or off and repositioned on the screen:

   a. time

   b. (license) plate

   c. channel

   d. GPS

8. Use the check boxes to turn on or off the overlays.

9. To reposition the overlays:

     a. Choose set position.

       The screen refreshes, showing a preview image.

     b. Touch a new position on the screen.

       The overlay moves to the new position.

   **c.** Press the **Back** button to return to the Video Settings screen.
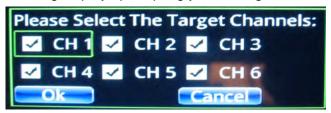
10. Once you have finished specifying all settings, press **Save** to preserve your changes.

Copying Your Video Settings to Other Channels

To copy your settings from one channel to one or more of the other ones:

1. Press the **Copy** button.
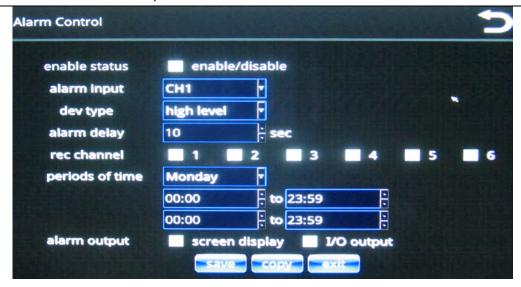
A dialog displays prompting you for target channel(s).
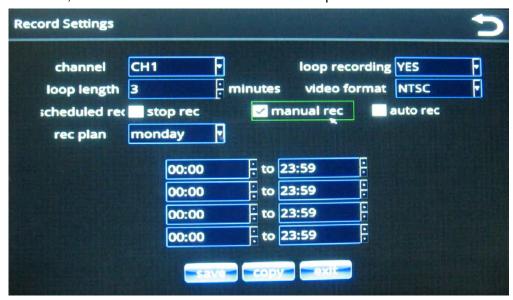
2. Select your target channels, and then press **Ok**.

Specifying Record Settings

1. From the System Settings menu, select **Record Settings**.
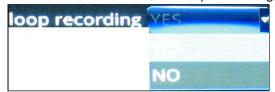
The Record Settings menu enables you to set recording properties for each of the six channels, which are selectable from the channel pull-down menu.

After you select a channel from the menu, you can apply properties for that channel as described in the following steps.

2. With loop recording , the video files are stored on the memory card, with the newest video continuously replacing the oldest video.
Select **Yes** or **No** from the loop recording pull-down menu.

3. Choose a loop length (in minutes) for each video segment.

4. Choose a video format, NTSC or PAL.

   NTSC is the most commonly used video system or standard used in North America and most of South America, while PAL is common in Europe and parts of Asia.

   Select the standard appropriate to your regional or technical requirements.

5. **Stop Rec, Manual Rec**, **Auto Rec** check boxes.
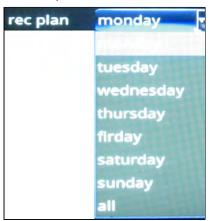
   a. **Stop Rec** stops all recording.

   b. **Manual Rec** sets manual mode recording. In this mode you can set up to 4 schedules daily.

   c. **Auto Rec** sets automatic mode recording. In this mode, recording is on at all times.

6. Select a recording plan.

   ⚠   For manual recording only. This option is not available for auto recording.

   The recording plan defines a schedule for manual mode recording.

   Use the **day-of-the-week** menu below in conjunction with the hourly schedule menus to define up to 4 different schedules per day.
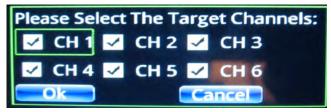
7. Once you have finished specifying all settings, press **Save** to preserve your changes.

Copying Your Record Settings to Other Channels

To copy your settings from one channel to one or more of the other ones:

1. Press the **Copy** button.

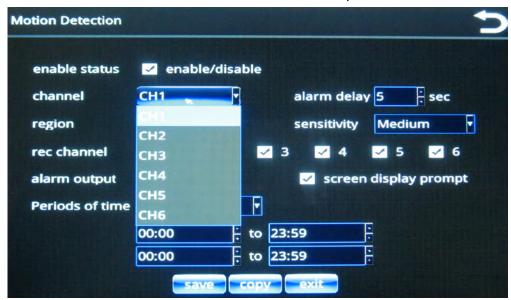   A dialog displays prompting you for target channel(s).

2. Select your target channels, and then press **Ok**.

Specifying Alarm Settings

1. From the System Settings menu, select **Alarm Setting**.

   The Alarm Settings menu enables you to set alarm properties for each of the six trigger channels, which are selectable from the channel pull-down menu.
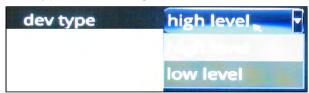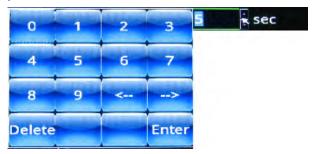
After you select a channel from the menu, you can apply properties for that channel as described in the following steps.

2. **Enable Status**: use the check box to enable and disable alarms.

3. **Dev type:** choose **high level** or **low level** from the menu.

Alarm triggers can be either high voltage (high level) or GROUND (low level).

4. Alarm Delay (seconds).
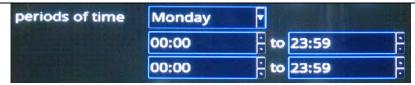
Alarm delay is the length of time the alarm channel displays in full-screen mode and with a recorder.

5. Rec Channel.
Use the check boxes to specify which channels to record when an alarm occurs on the specified input channel.

6. Periods of time.

7. Alarm output.
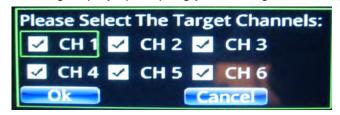
Both options can be selected. I/O output can be used, for example, to send a signal to an additional device such as a beeper.

Copying Your Alarm Settings to Other Channels

To copy your settings from one channel to one or more of the other ones:

1. Press the **Copy** button.

   A dialog displays prompting you for target channel(s).

2. Select your target channels, and then press **Ok**.

Specifying Motion Detection Settings

1. From the System Settings menu, select Motion Detection.

The Motion Detection menu enables you to set motion detection properties for each of the six channels, which are selectable from the channel pull-down menu.

After you select a channel from the menu, you can apply properties for that channel as described in the following steps.

2. **Enable Status**: use the check box to enable and disable motion detection.

3. Select the alarm delay (in seconds) by pressing in the field and using the numeric keypad. press **Enter** when done.
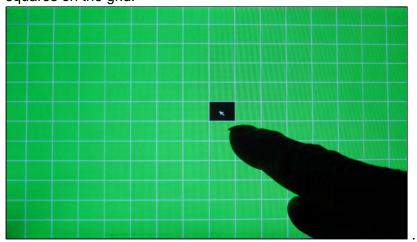
Alarm delay is the length of time the alarm channel displays in full-screen mode and with a recorder.

4. Set detection region(s) for the channel:

a. Press the **Set** button.
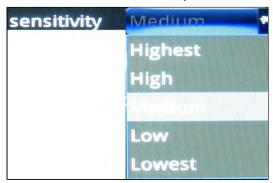
A grid displays on a green screen, where you can select detection regions by touching squares on the grid.

b. After making your selection (one or multiple squares), press the **Back** button to return to the Motion Detection screen.
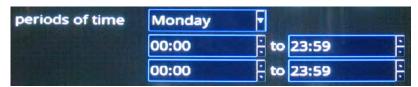
5. Select a detection sensitivity level from the Sensitivity menu.

6. Use the check boxes to select channel(s) for recording when motion is detected.

7. Periods of time.

8. Alarm output.

As with alarms, both options can be selected. I/O output displays a yellow "motion" icon on the screen..

Copying Your Motion Detection Settings to Other Channels

To copy your settings from one channel to one or more of the other ones:

1.
   a. Press the **Copy** button.

      A dialog displays prompting you for target channel(s).

   b. Select your target channels, and then press **Ok**.

Specifying Vehicle Information
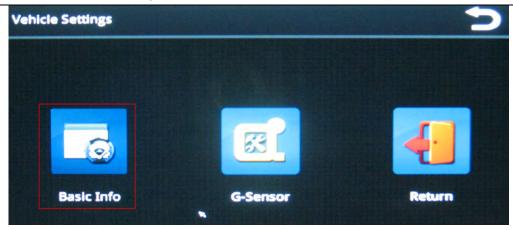
Specifying vehicle and driver information is useful for data collection and analysis and for record keeping.

Vehicle information is used for.....TBD

1. From the Main menu, select Vehicle Settings.
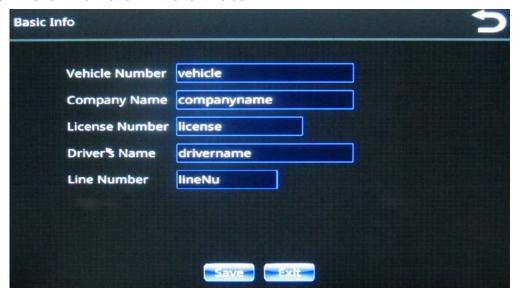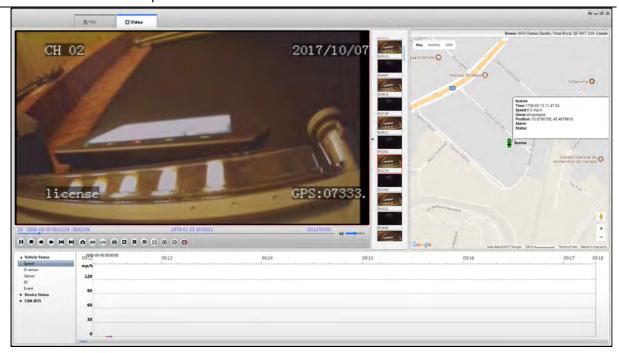
2. From the Vehicle settings menu, select Basic Info.

3. Enter all information in the text fields.

This information is made available to the MDVR player software for viewing in the status window during playback.
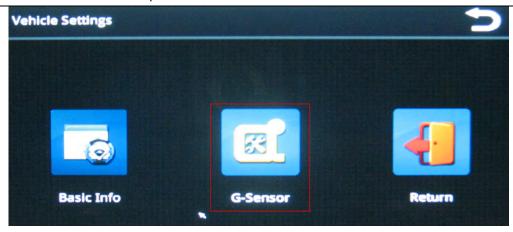
4. Select **Save** when done.

Specifying G-Sensor Settings

1. From the Main menu, select Vehicle Settings.
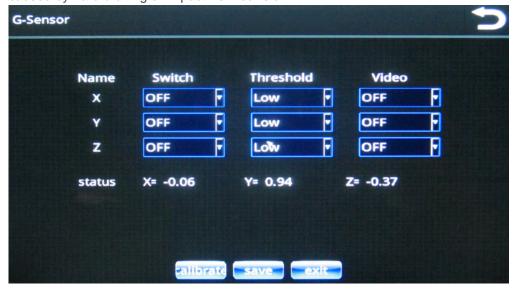
2. From the Vehicle settings menu, select G-Sensor.
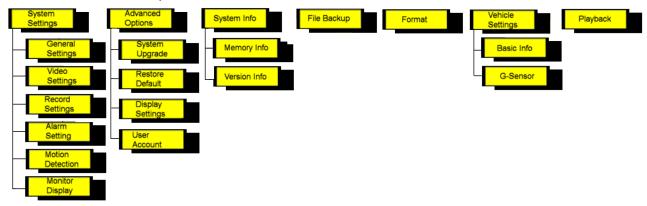
The G-sensor menu enables you to specify accelerometer thresholds for the X, Y, and Z axes. These are the thresholds at which the cameras will detect a sudden change in direction, which could be caused by hard braking or impact from collision.
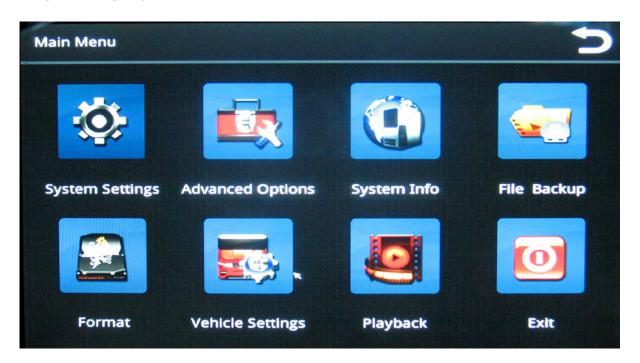
3. Make your choices from the menus, and then press **Save**.

4. To calibrate, TBD.

System Setup Menus

This section provides an overview of the RVS-96D System Menu hierarchy, along with images of all menus and their options.
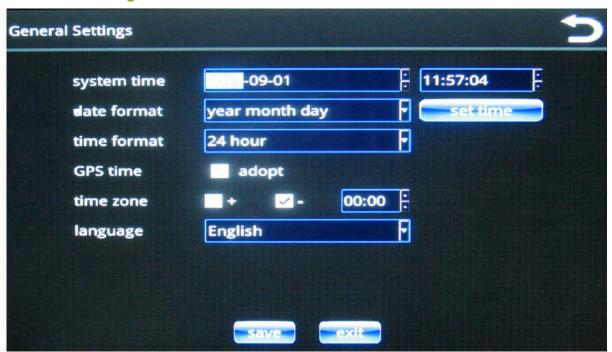
Main Menu
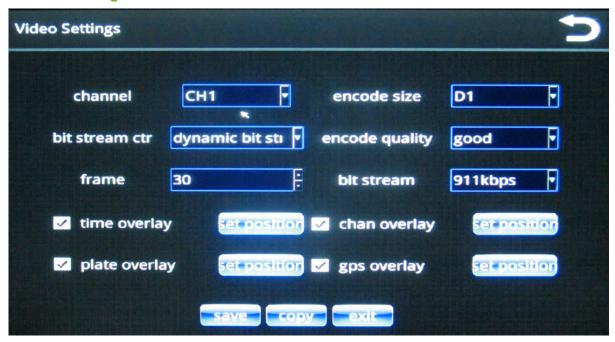
System Settings
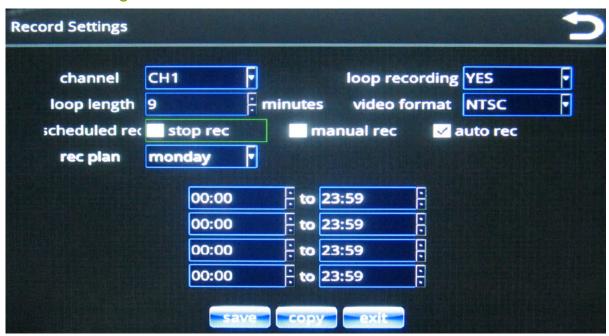
General Settings
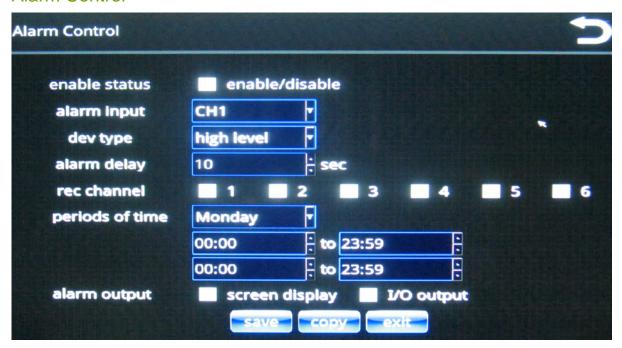
Video Settings
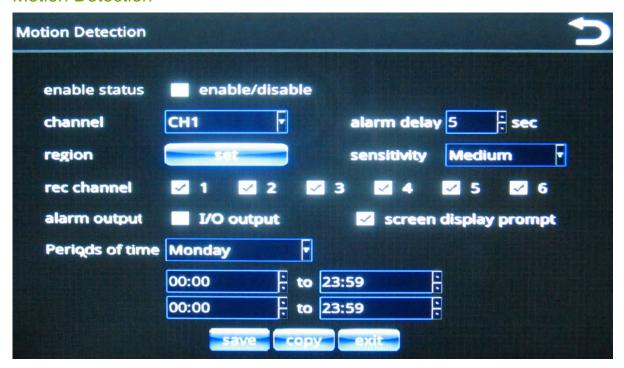
Record Settings
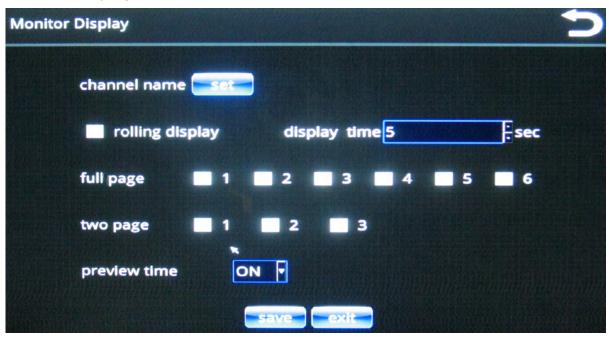
Alarm Control
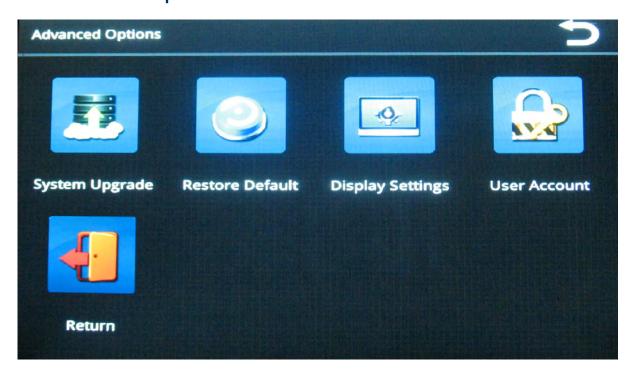
Motion Detection
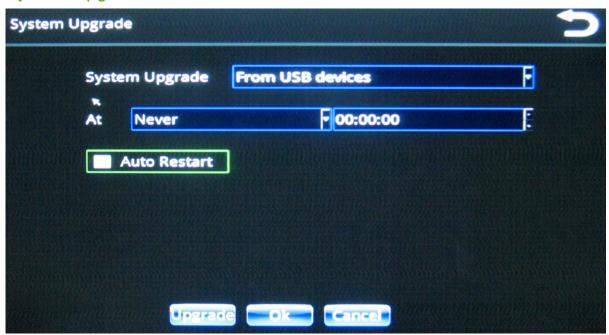
Monitor Display
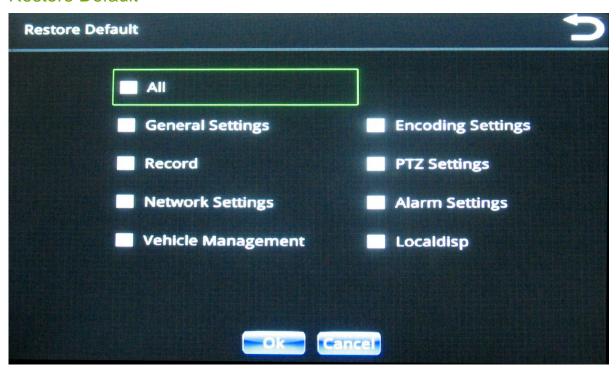
Advanced Options

System Upgrade
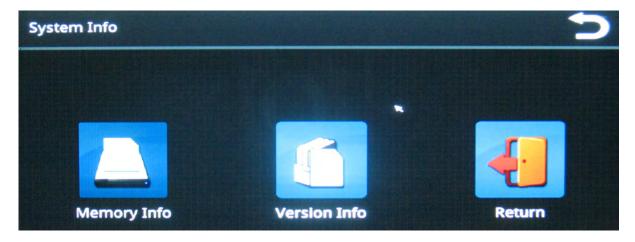
Restore Default

User Accounts
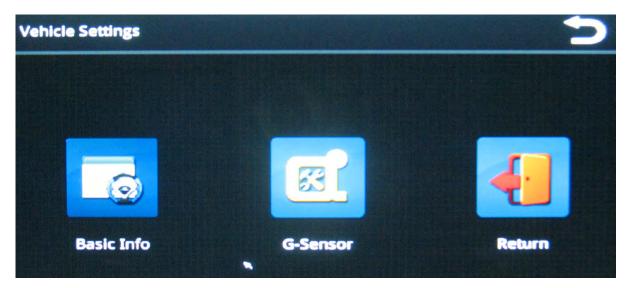

System Info

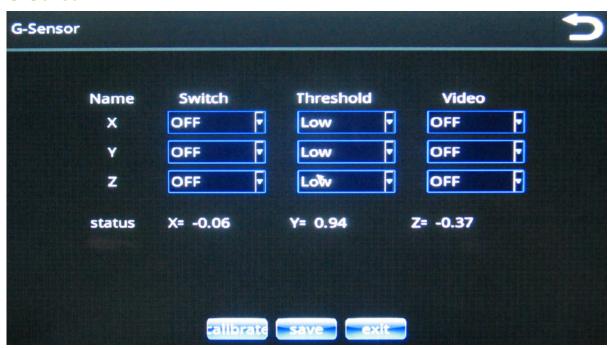## Memory Info
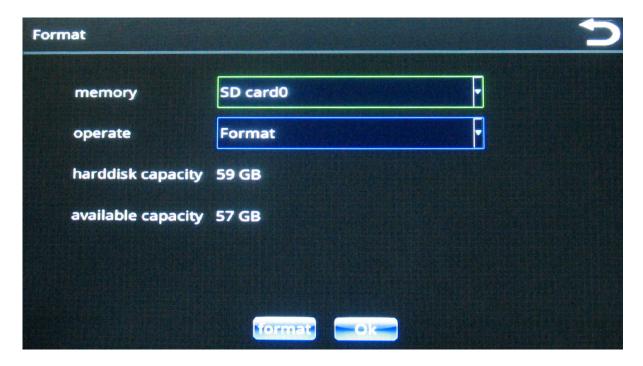
Version Info

File Backup

Format

Vehicle Settings
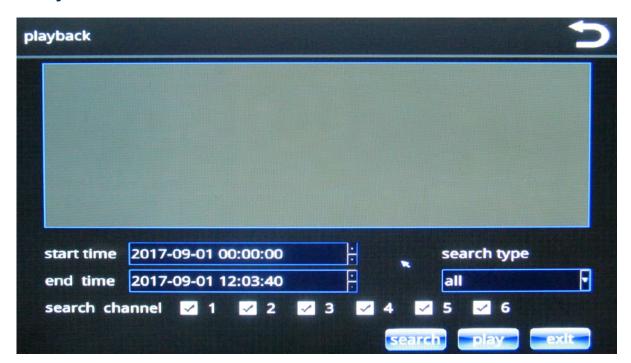
Basic Info

G-Sensor

Playback

RVS-96D User Management

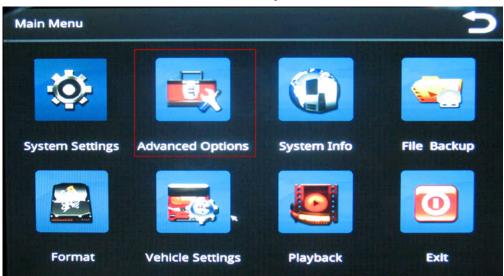RVS-96D provides two built-in user accounts, neither of which can be deleted:

- **Admin**, a full-privilege administrator account. Privileges for this user account cannot be modified.

- **Default**, an account whose access privileges can be limited to certain functions.
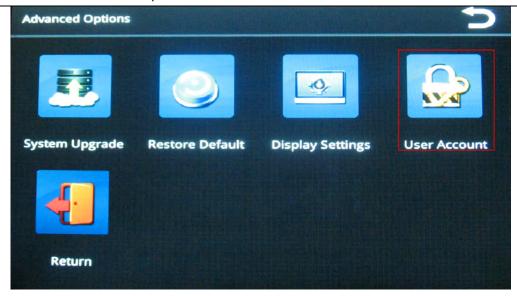
> ⚠ In the current software version, it is not possible to add further user accounts.

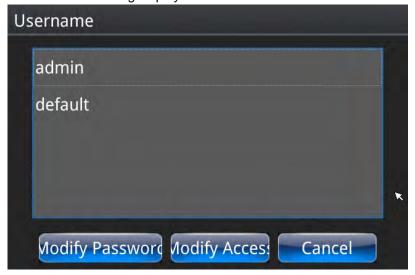You perform user management for RVS-96D using the User Accounts menu.

1. From the Main menu, select **Advanced Options**.

2. From the Advanced Options menu, select **User Account**.

The Username dialog displays.

3. Select a user name from the list.

4. To modify or create a password, select **Modify Password**.
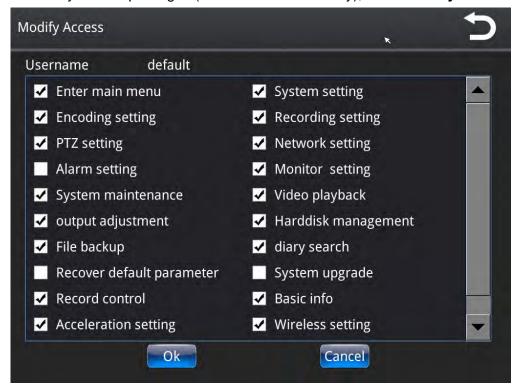
⚠️   The RVS-96D is configured before shipping with the default password 456789.
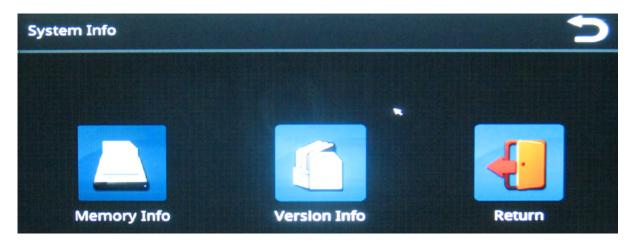
Make your required changes, and then select **Ok**.

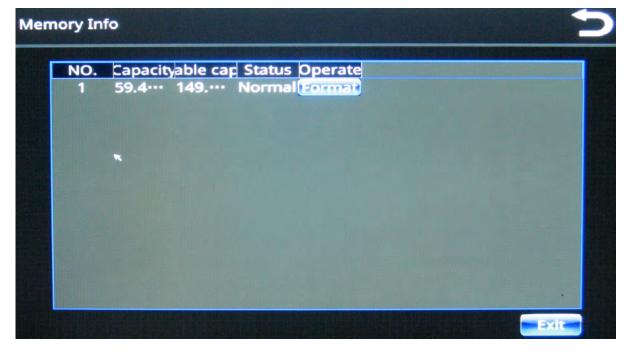5. To modify access privileges (for Default account only), select **Modify Access**.

6. Make your required changes, and then select **Ok**.
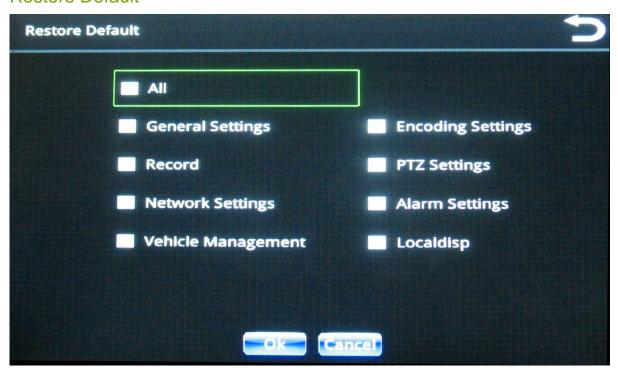
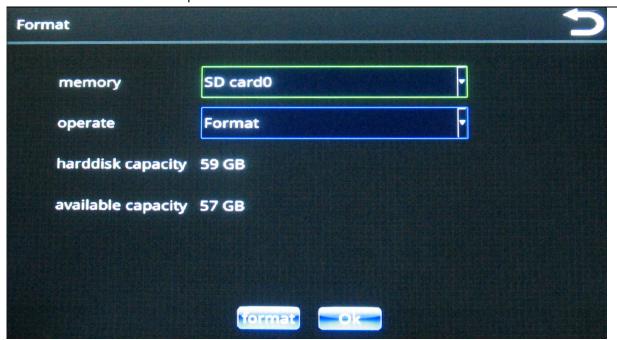# System Information, Disk and File Management

System Info

Version info

KERNEL VERSION: V2017032301

FILESYSTEM VERSION: V2017062101

SOFTWARE VERSION: V2017071904

MCU VERSION:

Confirm

Backup and Restore

Backup

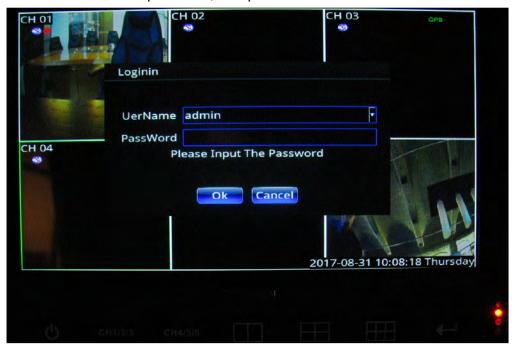## Restore Default

Playing Back Videos

1. Touch lower area of screen to display controls.

2. Press the Playback button.

3. Enter user name and password, if required.

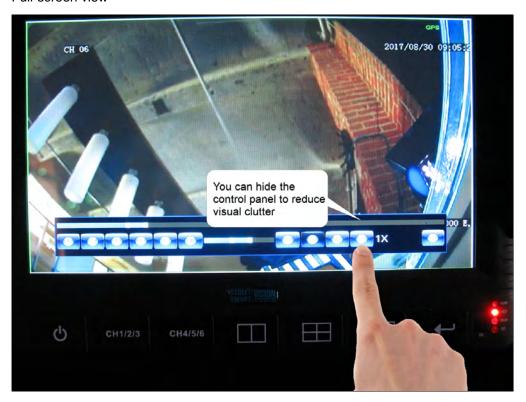4. Select a date/time range, and press **search**.

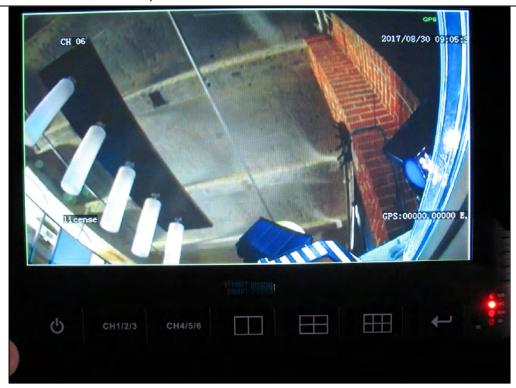5. Select a saved video from the list, and press **play**.

Video plays in the currently selected view (i.e.,two/four/six-panel view or full-screen).

Full-screen view

Control panel hidden

To show the control, tap the lower area of the screen and select the menu option.

Control Panel