TH4
4-Channel Hybrid DVR

Installation Guide

Table of Contents

System Components

The typical installation components are listed below. The actual contents of your installation package may vary, depending on the options selected.

- TH4 video recorder with hard drive, locking front cover, cable cover, fasteners, and mounting plate.

- Analog High Definition cameras (HD1W or HD1Q) and Analog Standard Definition cameras (CA10, CJ, CQ or RVC)

- Camera harness (HExHD for AHD and HE or HExHD for SD)

- Power harness (PH2X2MFJR)

- Adaptor harness (WT1)

- Expansion harness (optional)

- G-Sensor (G-SENSOR-EXT)

- Diagnostic button (optional) and extension cable

- Smart-Reach cellular router and Smart-Reach WiFi bridge

- Smart-Reach GPS receiver

- Portable video monitor (optional)

- SD card (optional)

Required Tools & Equipment

The DVR system must be installed by a professional installer. A professional installer has the experience and equipment to install and configure this DVR system to run properly.

Check that you have all the system components and inspect the units for any scratches or damage before installing.
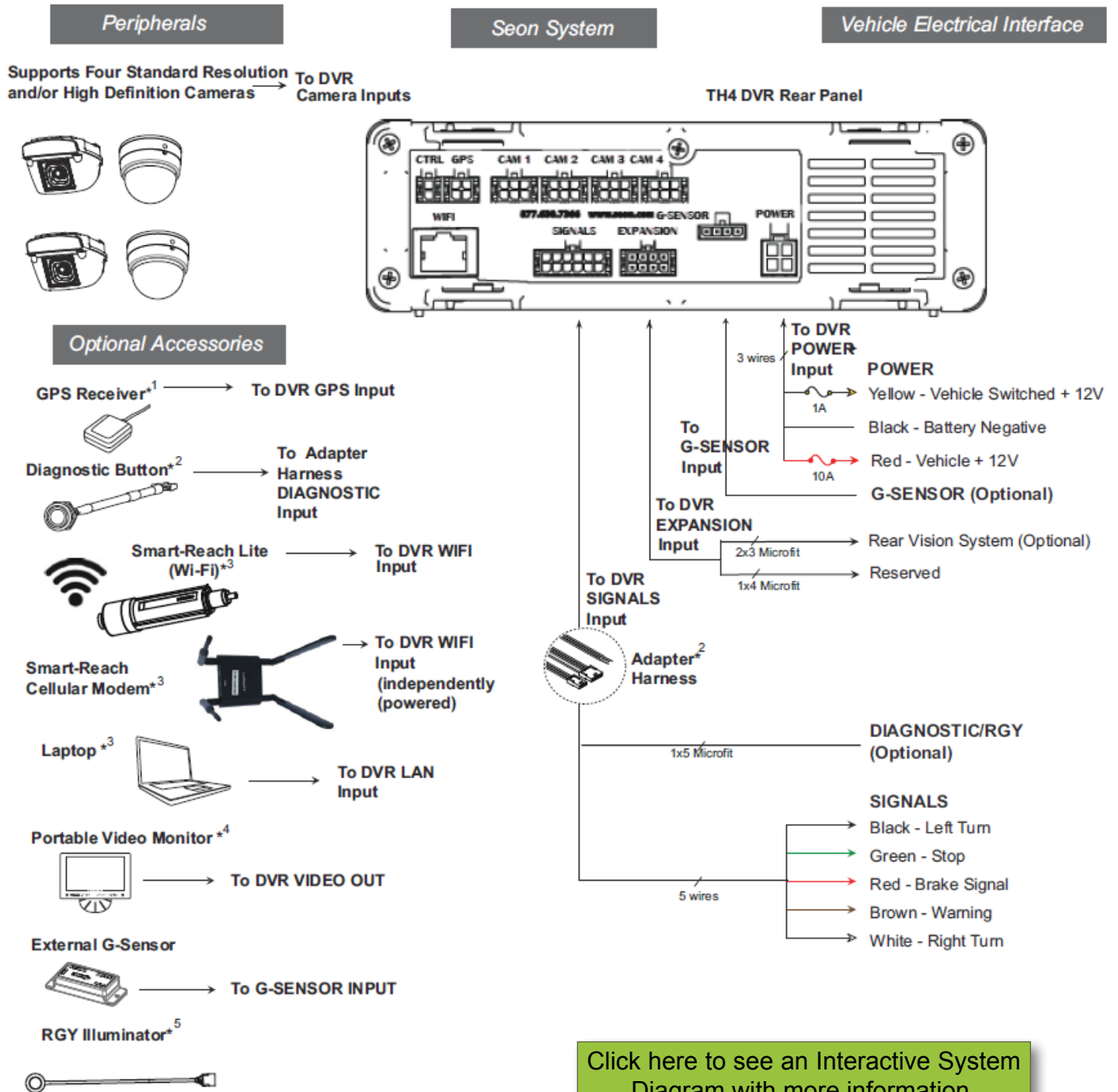
Keys included in package contents:

- DVR keys for securing the removable hard drive.

- Front cover keys for securing the removable front cover.

Configuration equipment:

- For on-screen configuration: portable video monitor and mouse.

- For vMax Web configuration: laptop and an Ethernet cable.

System Diagram

Peripherals

Supports Four Standard Resolution and/or High Definition Cameras → To DVR Camera Inputs

Seon System

TH4 DVR Rear Panel

CTRL GPS CAM 1 CAM 2 CAM 3 CAM 4
WIFI 877.498.7966 www.seon.com G-SENSOR POWER
SIGNALS EXPANSION

Vehicle Electrical Interface

Optional Accessories

GPS Receiver[1] → To DVR GPS Input

Diagnostic Button[2] → To Adapter Harness DIAGNOSTIC Input

Smart-Reach Lite (Wi-Fi)[3] → To DVR WIFI Input

Smart-Reach Cellular Modem[3] → To DVR WIFI Input (independently (powered)

Laptop[3] → To DVR LAN Input

Portable Video Monitor[4] → To DVR VIDEO OUT

External G-Sensor → To G-SENSOR INPUT

RGY Illuminator[5]

To DVR POWER Input — 3 wires

POWER
Yellow - Vehicle Switched + 12V — 1A
Black - Battery Negative
Red - Vehicle + 12V — 10A

To G-SENSOR Input — **G-SENSOR (Optional)**

To DVR EXPANSION Input — 2x3 Microfit → Rear Vision System (Optional)
1x4 Microfit → Reserved

To DVR SIGNALS Input

Adapter[2] Harness

1x5 Microfit → **DIAGNOSTIC/RGY (Optional)**

SIGNALS
5 wires →
Black - Left Turn
Green - Stop
Red - Brake Signal
Brown - Warning
White - Right Turn

Click here to see an Interactive System Diagram with more information.

TH4 Series Installation

Installation Best Practices

This section provides best practices for installing Seon TH4 DVRs. Before you begin, keep in mind that it is your responsibility to avoid damaging safety or electrical systems. If you are not confident in your ability to perform the procedures in this guide, please contact FRC Technical Service at 1.800.645.0074 or visit the FRC website Contact page for assistance.

The following table outlines the physical and environmental requirements for installing a TH4 DVR:

VENTILATION	Install the DVR away from any sort of heat outlet, heater, or AC blower. Do not operate the DVR in a closed-in area, or restrict ventilation in any way. The DVR requires air circulation to maintain optimum operation temperature and provide best performance. **Do not expose the DVR to moisture!**
SURFACE	Do not mount the DVR to a plastic panel or other surface that is subject to constant vibration.
ORIENTATION	Mount the DVR in either a horizontal or vertical orientation, or hung right side up, **but NOT upside down**.
CLEARANCE	Allow sufficient clearance of at least 6 inches in front of the DVR and 2 inches to each side for removal of the security front cover and easy access to the hard drive and USB ports. Allow sufficient clearance behind the DVR for camera cables, mounting cables, Ethernet cables, and power cables.
MOUNTING CABLES	The radius for the mounting cables will be dictated by the cable cover. The rear-most surface of the cable cover will be about 3 inches from the back of the DVR to allow camera cables to bend over each other.
ETHERNET CABLES	Avoid right angle bends in the Ethernet cables.
POWER CABLES	Provide enough slack on the power cable to prevent any force from being exerted on the connectors. A single 4-inch diameter loop is sufficient.

WARNING: ⚠

It is your responsibility to avoid damaging safety or electrical systems. Ensure you read and understand the TH Series DVR Installation Requirements.

If you are not confident in your ability to perform the procedures in this manual, please contact FRC Support at 1.800.645.0074 or service@fireresearch.com.

Installing the DVR

The DVR typically ships with the locking front cover, mounting plate, and cable cover off, but in the shipping box. The hard disk drive is in a separate box in the system shipping kit.

To install the DVR:

1. Select an appropriate mounting location and orientation: horizontal or vertical.

2. Insert a hard drive in the DVR.

3. Insert the key into the hard drive lock and rotate a quarter turn to lock the drive.

4. Use the mounting plate to mark the desired position of the DVR and drill the four mounting holes.

5. Fasten the mounting plate to the mounting surface with the four self-drilling screws.

6. Slide the rear bottom edge of the DVR into the spring tab on the back edge of the mounting tray.

7. Attach the front bottom edge to the front of the DVR using the two pan-head Phillips screws.

8. Connect the necessary cables and components.

9. Attach the cable cover to the DVR using the thumb screws provided.

10. When DVR installation is complete, attach the front door by hooking the door along the top edge and turning the key to the locked position.
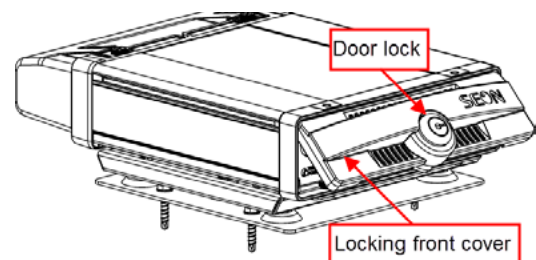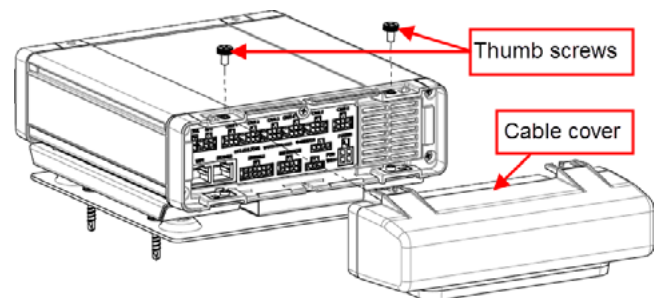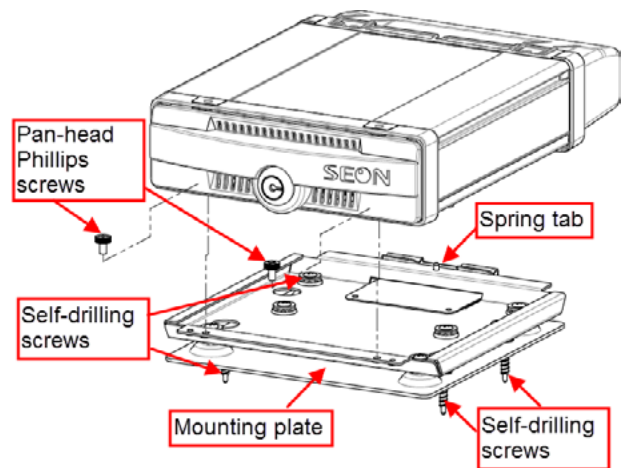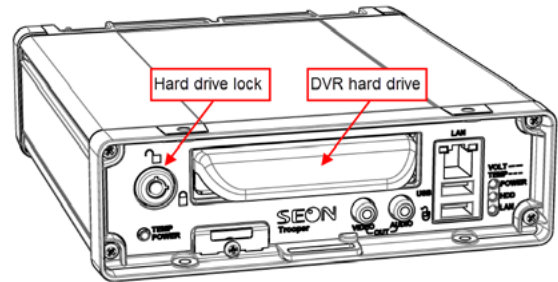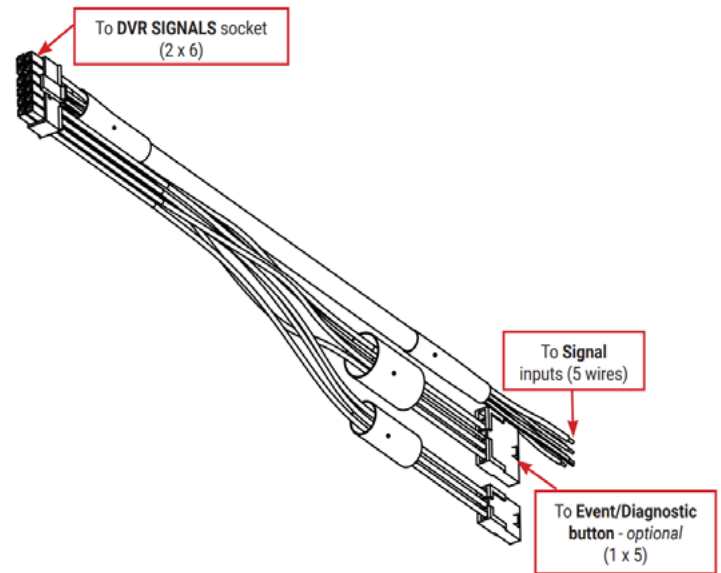
Installing the Adaptor Harness (Optional)

The Adaptor Harness (**Part # WT1**) connects the DVR to Signal inputs, and to the optional Event/Diagnostic button and Wake on Input trigger.

To install the Adaptor Harness, connect the 2x6 Microfit to the SIGNALS socket on the DVR. Then:

1. Connect the 5 signal input wires.

2. Connect the 1x5 Microfit to the Adapter harness for the Event/Diagnostic button (optional).

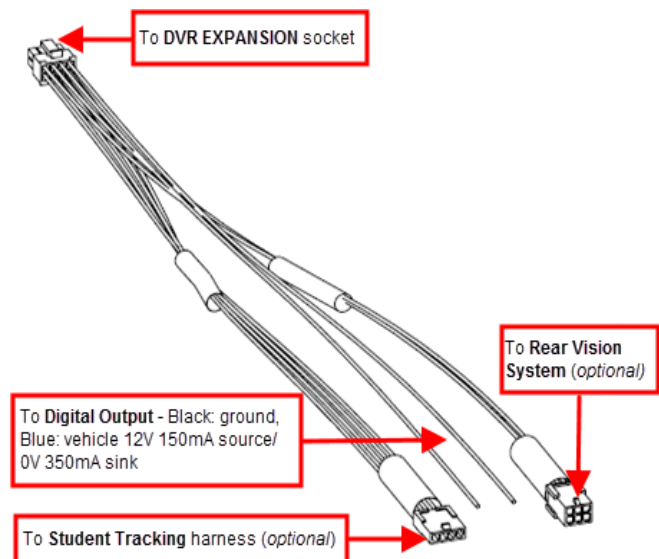3. Remove the 1x3 Microfit and connect the green and black wires to a Wake on Input trigger (optional).

To **DVR SIGNALS** socket (2 x 6)

To **Signal** inputs (5 wires)

To **Event/Diagnostic button** - *optional* (1 x 5)

Installing the Expansion Harness (Option...

The Expansion Harness (**Part # 060-1059**) can connect the TH4 DVR to Student Tracking and Rear Vision systems, and provide a digital output to trigger other devices when an Alarm is detected.

To install the Expansion Harness, connect the 2x4 Microfit connector to the EXPANSION socket on the DVR. Then:

1. Connect the 4-pin to the Student Tracking harness (optional).

2. Connect the 2-pin to the Rear Vision System harness (optional).

3. Connect the Digital Out black and blue wires (optional) as shown in the Installation Diagram.

To **DVR EXPANSION** socket

To **Rear Vision System** (*optional*)

To **Digital Output** - Black: ground, Blue: vehicle 12V 150mA source/ 0V 350mA sink

To **Student Tracking** harness (*optional*)

Firmware Updates

Firmware controls how DVR features operate, including the Playback and Configuration menu displays. Seon may direct you to install a firmware update when new features are added or specific issues are addressed.

NOTE: Firmware Updates   ℹ

Only install firmware updates as directed by FRC Service.

The current firmware version appears in the top-right corner of every Configuration menu. For instructions on opening the Configuration menus, see *TH Administration: Accessing the On-Screen Display*.
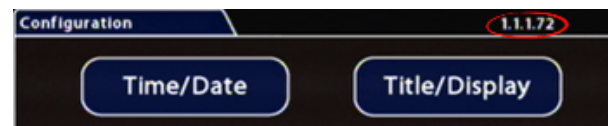

To update the Firmware version:

1. Power up the DVR using the vehicle ignition.

2. Insert the USB memory device with the new firmware version into the USB port on the DVR.

3. After the DVR starts up, right-click in the On-screen Display and select

    Configuration -> **System** -> **Program Update**

4. In the Program Update tab, click **Update**. A confirmation window appears.

5. Click **Yes** to proceed or **No** to cancel. Yes starts the firmware update, and a progress bar displays the percentage complete.

6. Once the update is finished, the DVR automatically restarts.

7. Remove the USB memory device.
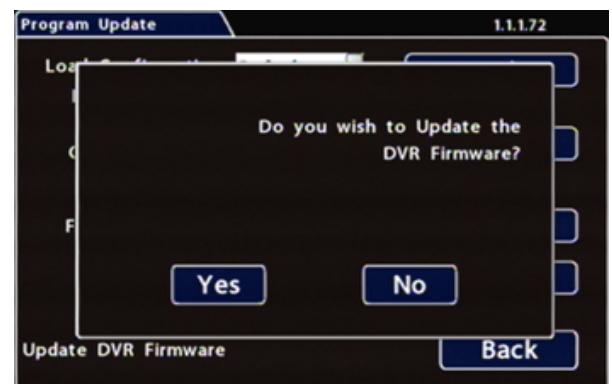
NOTE: Completing Upgrade   ℹ

After restarting, the DVR may take up to 3 minutes to load and complete the upgrade. Wait until the DVR finishes loading.

Hardware Installation Checklist

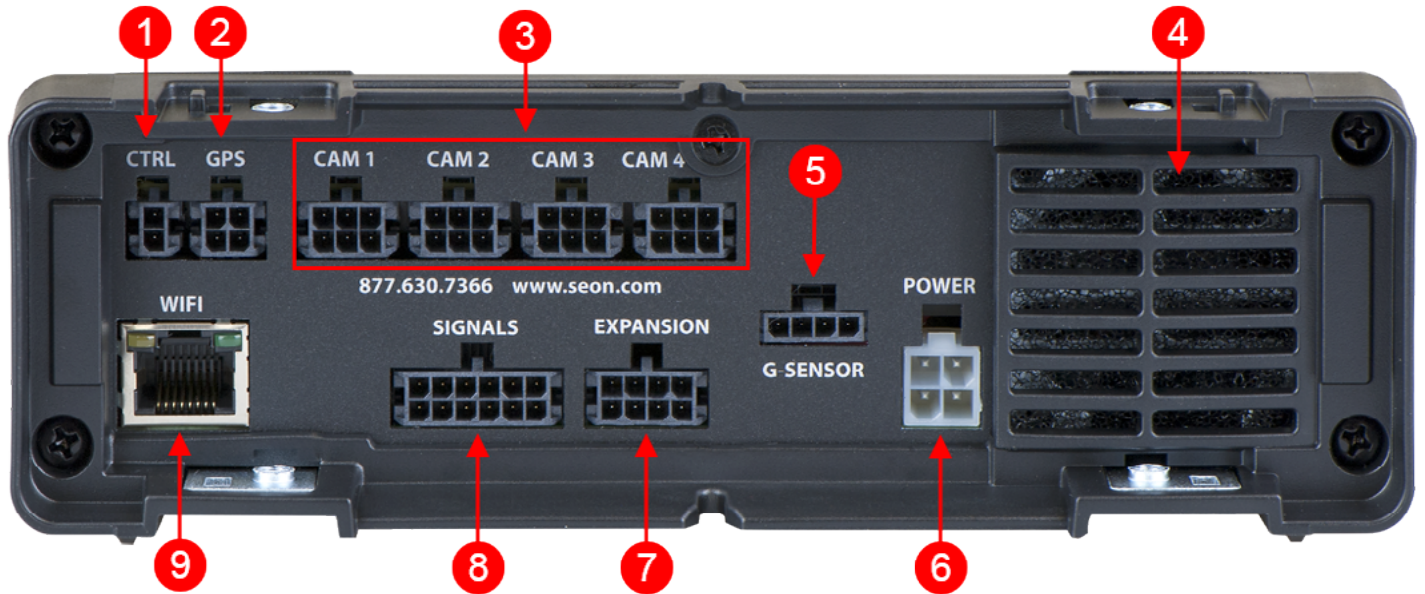|	
✓	HARNESSES (CAMERA, RECORDER, AND ACCESSORIES)
	Ensure cables and harnesses are properly secured.
	Check that sharp metal edges are not touching cables or harnesses.
	Ensure connections are solid (no shorts).
✓	CAMERAS
	Ensure tight mounting.
	Examine the internal harness connections and ensure they are solid.
	Ensure the lid is properly seated on the gasket and secured tightly.
	Check camera(s) field of view.
✓	DVR
	Ensure tight mounting.
	Check that all connections are tight.
✓	SYSTEM
	Install fuses.
	Plug portable video monitor into DVR, and power up the DVR from the vehicle ignition.
	Configure the DVR to required specifications locally using the mouse and monitor, or remotely by accessing vMax Web via WiFi or Ethernet using a PC. For more information, see "Basic Configuration" on page 21.
	Confirm the LAN, HDD, and PWR status indicators on the DVR front panel work properly.
	Confirm that all cameras and audio sources operate properly.
	Test audio/video record and playback.
	Reformat the hard drives by navigating to Main ➔Menu ➔Configuration ➔System ➔Program ➔Update ➔Format. A warning message tells you all data will be erased. Click Yes. When the process completes and a message appears, click **OK**. Exit the Configuration setting menu, and system setup is complete.
	Fasten and lock the front cover. Secure the cable cover on the DVR using the screws provided.

TH4 Operation

DVR Front Panel Features

1. DVR Drive lock requires the DVR drive key to unlock and remove the DVR drive.

2. DVR Drive for playback, remove the drive and use the HDD Dock connected to a PC.

3. LAN Port RJ45 Ethernet connector for a laptop, Smart Reach Mobile wireless equipment, or other accessories.

4. Status Lights:

   • TEMP flashes quickly when the DVR cannot power up due to temperature limitations VOLT flashes slowly when the DVR cannot power up due to voltage limitations.

   • POWER illuminates when the DVR is powered on.

   • HDD illuminates when the DVR is accessing the drive.

   • LAN illuminates when there is network activity on the Local Area Network connection.

5. Mouse Port connection for USB mouse (shown with slot dust cover).

6. USB Port (shown with slot dust cover) supports USB devices used to:

   • copy video and audio information

   • export video clips

   • update DVR firmware

   • import/export configuration data and archives

7. AUDIO-RCA jack for audio output. 8. VIDEO RCA jack for video output (playback and live viewing with a portable monitor).

8. VIDEO-RCA jack for video output (playback and live viewing with a portable monitor).

9. SD Card Slot Cover- SD card for recording low resolution ("R2") backup video stream.

10. TEMP POWER. Powers on the DVR for five minutes if held for more than 5 seconds. Powers down the DVR if held for more than 5 seconds in temporary power mode or in shutdown sequence with ignition off.

DVR Back Panel Features

1. CTRL - control connector for Seon equipment

2. GPS - input connector for GPS receiver

3. CAM 1 to CAM 4 - input connectors (6-pin) for six cameras

4. Fan - outflow fan

5. G-SENSOR - input for optional G-force sensor unit

6. POWER - input for power harness.

7. EXPANSION - connector for communicating with other devices

8. SIGNALS - connector for signal harness, with an optional adapter for the alarm button/diagnostic indicator

9. WIFI - dedicated Ethernet port for connectivity with Smart-Reach Lite wireless bridge and other equipment

Video System Status

How do I know the DVR is working properly?

Vehicle Operators should check that the DVR status light turns solid green approximately two minutes after vehicle ignition is on. Any deviations (flashing green, yellow, or red) should be reported to a supervisor.

> **TIP: Status Light**   ⓘ
>
> **Ensure status light is solid green.**

If your system is equipped with the optional **Event/Diagnostic Button** (left image), or the **RGY Indicator** (right image), colored lights provide status details:
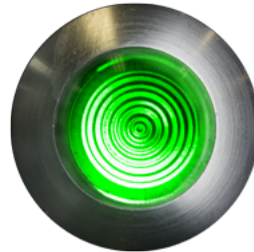
EVENT/DIAGNOSTIC BUTTON		RGY INDICATOR	
OFF	Power Down	OFF	Powered Down
FLASHING GREEN	On (Not Recording)	RED	On (Not Recording)
SOLID GREEN	On (Recording)	SOLID GREEN	On (Recording)
		YELLOW	On (Recording, but there is video loss from one or more cameras)

Video Flagging

Flagging and Event

Under normal conditions, the DVR is continuously recording when the vehicle ignition is on. If something happens that should be flagged for review, press the Event Button (A) to ensure the event is easy-to-find later.

> **NOTE: Event Button** ⓘ
>
> **The Event Button must be installed in the vehicle in order to flag video. For more information, contact FRC Support.**

Each time you flag an event with the Event Button, the system places a special Alarm tag on the video, as well as the date and time. Upon playback, any triggered Alarms are displayed, and the reviewer can jump directly to the tagged sections and see the associated video (details depend on how the DVR is configured). For more information on accessing and viewing recorded video, see the vMax View User Guide.

If your organization uses Commander, tagged video is automatically downloaded and made available to reviewers when your vehicle returns to the depot. For more information, visit the Seon Documentation Library and read the *Commander User Guide*.

Using On-screen Keyboards

Entering Data

Before you proceed, you will need a portable video monitor and a USB mouse connected. To use a mouse for entering text and numbers in OSD fields:

1. Click in an OSD field that accepts text or numbers as input. The on-screen keyboard (text or numeric, as shown below) pops up on the screen.
2. Click text or numbers to enter values with the virtual keys. Cancel closes the keyboard without saving changes.
3. When you're done, click Enter to save changes and close the keyboard.
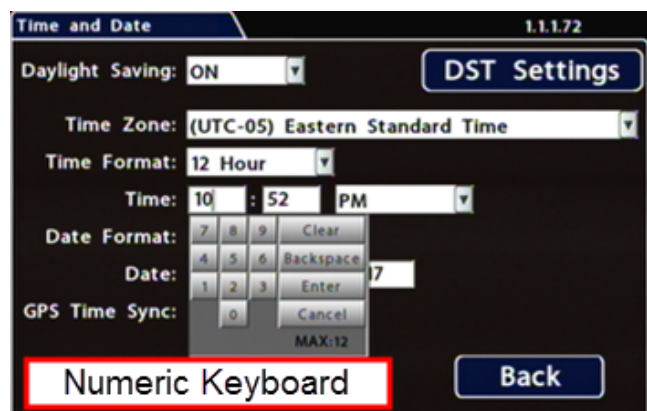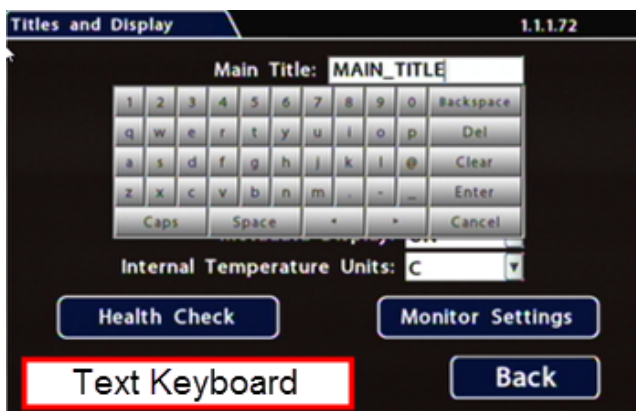
Health Check

The Health Check tab provides information on hard drive temperature, hard drive operational hours, Ethernet connections, and general DVR health.

Before you begin a Health Check, power up the DVR with a monitor and USB mouse connected, then right-click in Live view and select Configuration.

To display Health Check information:

1.   Select Title/Display

2.   Health Check
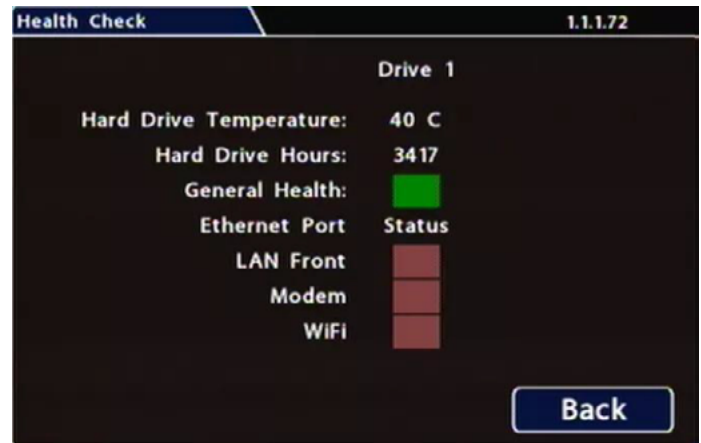
MENU ITEM	DESCRIPTION
HARD DRIVE TEMPERATURE	Current temperature inside the drive. To choose whether this value displays in Fahrenheit (USA) or Celsius (Canada), use the Titles and Display o Internal Temperature Units setting.
HARD DRIVE HOURS	The number of hours the drive has been powered on since it was manufactured.
GENERAL HEALTH	Result of the drive subsystem self-check: green indicates normal operating status, while red means a drive failure was detected.
LAN FRONT	Connectivity indicator: green when a cable is connected from the DVR's front LAN port to an operational network device; otherwise red.
MODEM	Connectivity indicator: green when a cable is connected from the DVR's rear Modem port to an operational network device; otherwise red.

TH4 Administration

Accessing the On-screen Display

Video Configuration, Playback, and Archiving

There are two ways for Installers and System Technicians to access DVR configuration, playback and archiving features:

- Locally, via the On-screen Display (OSD) and portable video monitor, as described in this tutorial.

- Remotely, via vMax Web browser interface and wireless or Ethernet connection. For more information, find the *vMax Web User Guide* here.

For full-featured video review, searching, and archiving, we recommend vMax View video management software on a Windows-based computer. For more information, see the *vMax View User Guide* in the Seon Documentation Library.

Using the On-screen Display

To use the On-screen Display:

1. Connect a portable video monitor to VIDEO OUT on the DVR front panel.

2. Plug a USB mouse in a USB socket on the front of the DVR.

3. Power up the DVR. The DVR splash screen appears briefly. The system displays live camera feeds, as described below in the following section **Live View**.
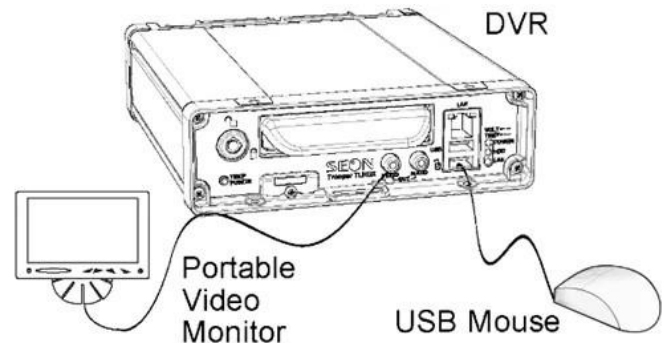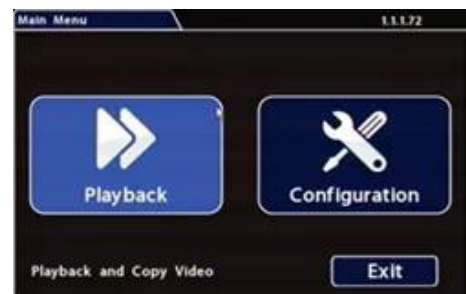

Right-click anywhere in the OSD screen to view the Main Menu:

- **Configuration** - access DVR menus to set up the system.

    For more information, see *TH Configuration: Setting up the DVR*.

- **Playback** - Search, Playback, and Archive video directly from the DVR.

    For more information, see *TH Administration: Working with Video*.

Live View

During live viewing and recording, in addition to active camera feeds, the information displayed on the OSD includes the items shown in the image and table

For how to configure camera titles, see *TH4 Configuration: Camera Settings*.

| FEATURE	DESCRIPTION
[MAIN_TITLE]	Main title of the DVR; max. 32 characters.
[CAMERA_TITLE]	Appears in the top-left corner of each viewing section (in the example, "FRONT", "MID"....)
HD SIZE	Formatted size of the DVR internal drive, in gigabytes (GB). The second value in square brackets is the size of the SD card. "OFF" indicates the storage media is not present.
HD USED	Percentage of recorded video on the DVR hard drive. The second value in square brackets indicates the percentage of recorded video on the SD card. "OFF" indicates the storage media is not present. At 100%, the message displayed depends on the Repeat Record settings in the *Recording Settings* menu.
VERSION	Connectivity indicator: green when a cable is connected from the DVR's rear Modem port to an operational network device; otherwise red.
STATUS	DVR operational status: • - LIVE (live mode - not recording) • - PLAYBACK (DVR playing locally) • - RECORD (normal recording) • - ALARM (alarm recording) • - V.LOSS (video loss or camera signal loss)

SPEED DISPLAY	Vehicle speed in MPH or Km/h.
VOLTAGE	System voltage from 8 to 32 VDC.
TEMPERATURE	DVR temperature in degrees Fahrenheit or Celsius.
TIME AND DATE	Current/recorded time and date.
GPS COORDINATES	If GPS is connected, the actual coordinates (latitude, longitude, and heading) appear. If GPS is connected but the satellite signal is not being received, zeros are displayed.
AC (ALARM COUNT)	Number of alarms triggered. Resets to 0 when DVR is restarted.
FAN	Highlights to indicate trouble with the DVR fan.
GSN	Highlights when external G-Sensor is connected.
IG	Highlights when vehicle ignition is on.

Working with Video

Playing Back and Copying Video

To search, play back, and archive video from the OSD (On-Screen Display) menus:

1. Connect a portable monitor and USB mouse, and power up the DVR. For more information, see TH Administration: Accessing the On-Screen Display.

2. Right-click anywhere in the OSD view to access the Main Menu.

3. Click **Playback**.

4. In the center of the Playback View, click the **Show/Hide** icon. The **Playback Toolbar** appears.

5. Click the icons to browse video and archive clips.
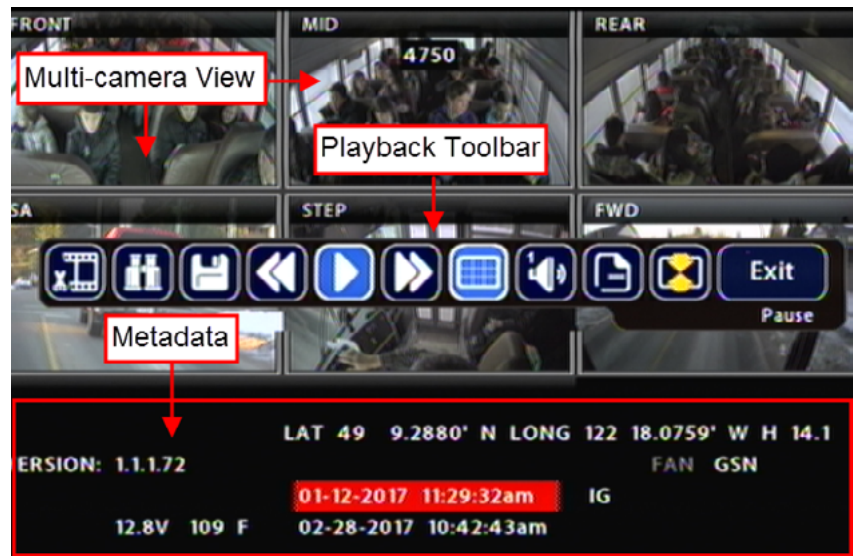
Playback Toolbar

This image displayed in the following page shows the Playback Toolbar. The corresponding features are explained in the table accompanying the figure.
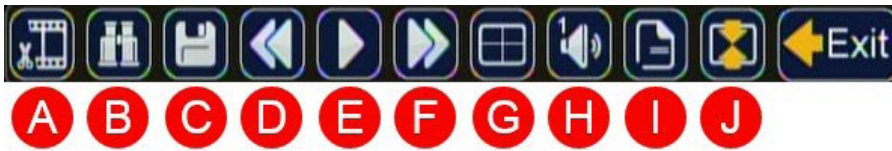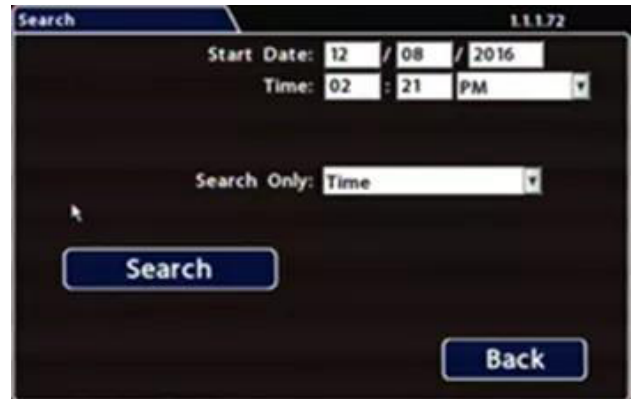
	ICON NAME	FUNCTION
A	Start of clip/End of clip	Sets the start of clip and the end of clip points for archiving.
B	Search	Searches by Date, Time, Alarm, Signals, or System Event.
C	Archive	Displays the Archive window to save a video clip to USB memory device.
D	Fast Rewind	Reverses playback. With playback paused, each click reverses the video by one frame.
E	Play/Pause	Starts/pauses playback.
F	Fast Forward	Fast forwards playback. With playback paused, each click advances the video by one frame.
G	Individual Camera/Multi-view	Displays camera 1, 2, 3, 4, 5, 6, or multi-view.
H	Audio	Cycles through Audio for channel 1, 2, 3, 4, 5, or 6.
I	Metadata Text Overlay	Turns on text overlay: temperature, system voltage, GPS data (if recorded), speed, date, and time. For more information, see Metadata Details in *TH4-CONF2: Title/Display Menu*
J	Show/Hide Playback Tool Bar	Shows/hides the playback tool bar.
	Exit	Closes the On-Screen Display

Searching Video

The DVR includes a simple, powerful search feature that quickly finds recorded information by Date and Time, Alarm, Signals, or System Events

To view the Search menu:

1. From the Playback Toolbar, click Search icon (B).

    The Search tab appears (options displayed depend on the Search Only pull-down menu selection):

2. Use the **Start/End Date** and **Time** fields to set the desired period to search. For instructions on how to enter numbers into the Date and Time fields, see *TH4 Operation: Using On-screen Keyboards.*

3. If desired, use the **Search Only** pull-down and submenus to specify Alarms, Signals, or System Events to search.

4. Click **Search**.

    - If **Search Only** is set to **Time**: Playback starts from the specified time and date (if the video exists on the hard drive).

    - If you select **Alarms, Signals,** or **System Events**, The DVR retrieves a list of recorded video segments containing the specified event type. Select an item from the list, then click **Play** to view the video captured when the event occurred.

TH4 Basic Configuration

Setting up the DVR

DVR Menu Access

You can configure the DVR with its local on-screen menus using a monitor and mouse, or through a Web browser on a connected laptop. These settings can also be accessed remotely over a wireless network.

A - Local access with On-screen Display (OSD) menus:

Connect a portable monitor to the VIDEO OUT RCA jack on the DVR front panel and plug a mouse into the USB port to work with configuration settings. For more information, see TH Administration: Accessing the On-screen Display.

To set or change a password, right-click in Live view, then choose the **Configuration** --> **System Password** options.

B - Local access with vMax Web menus:

Configure the network connection on a PC (for more information, see the vMax Web User Guide), then connect to the DVR with an RJ45 Ethernet cable. You can then use vMax Web to configure the DVR via Internet Explorer.

The default network settings only allow connecting the DVR to a laptop using an Ethernet cable.

For remote network access, consult your IT staff or Seon Design Service to configure the DVR to be on the same subnet as the laptop.

C - Remote access with vMax Web menus:

If you have Seon Smart Reach wireless access, you can also access the DVR remotely using vMax Web via Internet Explorer. Contact the Seon Support team for more information.

Basic DVR Configuration Setting

The DVR menu defaults cover most operation settings, but some basic customer and region specific settings need to be configured for the DVR to operate optimally:

| MENU NAMES	REQUIRED SETTINGS
Time and Date/DST Settings	Select display formats. Enter the current time and date, including Daylight Saving if applicable. Select the Time Zone. If GPS is installed, set GPS Time Sync ON to detect time and vehicle location
Time/Display	Enter the vehicle number in Main Title, and choose the information that displays as text when video appears

Time/Display --> Monitor Settings	If a Rear Vision Camera is installed, select monitor output settings.
Record	Set the Record Delay Off to 15-20 minutes for post trip check. If Wi-Fi is used, set the Power Delay Off to 2 hours for archive download.
Record --> Camera	Turn off any unused camera channels, to avoid VLOSS events.
Alarms and Signals --> Alarms	Configure each alarm depending on source (Signals, Speed, G Sensor, GPS Fence, Wake).
Alarms and Signals --> Signals	Configure which signals will trigger alarms. Excessive speed and G Sensor readings can be set as signal outputs.
Alarms and Signals --> Speed	If the DVR is used in Canadian fleets, select the KPH speed units.
Alarms and Signals --> (TH4 external G Sensor)	If a G Sensor is installed, Calibrate.
Network	If Wi-Fi network is used, set addresses as instructed by administrator.
System	Select the audio channel to output from the DVR audio RCA socket. If Diagnostic Indicator or RGY Illuminator is installed, select it here.
System --> Program Update	Upload DVR configuration if necessary. Format the hard drive after all settings have been made.

Time/Date Tab

Ensure that the Time/Date settings are correct for the customer location/time zone - the DVR date and time are used as an index for searching, archiving, and downloading video, and appear during playback.

To update Date/Time settings:

1. Select **Time/Date** to display the tab.

2. Select fields and/or use menus to make your changes (menu options are described below). For details on entering data with the mouse, see *TH Operation: Using On-screen Keyboards*.

3. Click **Back** to save the settings and return to the Configuration menu.
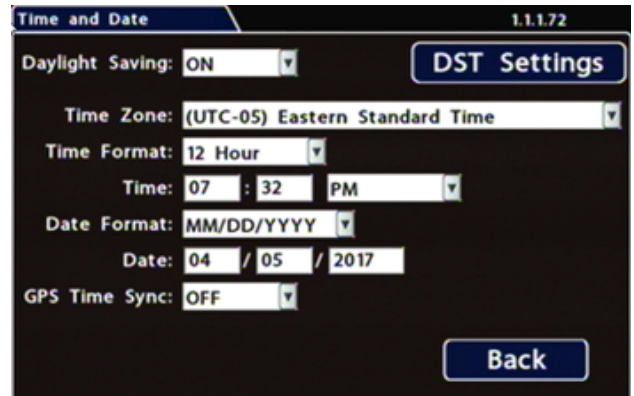
Menu Options

MENU ITEM	DESCRIPTION	
Daylight Saving	Leave ON and at default dates unless in an area that does not use daylight savings (e.g. Arizona, Saskatchewan). Click DST Settings and ensure the Start/End dates and times apply to your location.	[ON]
Time Zone	Select your local time zone.	[UTC-05 Eastern Standard Time]
Time Format	Choose 12 or 24-hour display.	[12 hour]: 12:00 am to 11:59 pm [24 hour]: 00:00 to 23:59
Time	Input the correct time	
Date Format	Select the preferred date format	[MM/DD/YYYY] [YYYY/MM/DD] [DD/MM/YYYY]
Date	Set the date for the DVR.	
GPS Time Sync	If GPS is installed, set this ON to have the system time automatically updated when satellites are detected.	[OFF]

Title/Display Tab

All options are set to display by default. You can turn OFF items that are not of interest so the related text will not appear.

To update Date/Time settings::

1. Select **Title/Display** to open the tab.
2. Enter the apparatus number in the Main Title field (if it is not already there).
    For details on using the On-screen keyboard, see Using On-screen Keyboards.
3. Choose the desired display settings, as described in Menu Options, below.
   For information about display items, see Metadata Details, below.
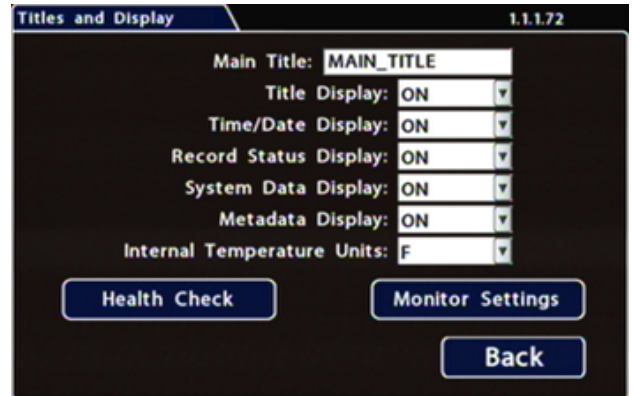
Menu Options

MENU ITEM	DESCRIPTION	VALUE [DEFAULT]
Main Title	Enter the apparatus number	MAIN_TITLE
Titles Display	Display/hide Main Title and Camera Titles	[ON], OFF
Time/Date Display	Display/hide time and date	[ON], OFF
Record Status Display	Display/hide DVR recording status (LIVE=showing camera feeds, RECORD=storing video, V.LOSS=video loss).	[ON], OFF
System Data Display	Display/hide DVR system metadata: HDD Size, % Full HDD, Voltage, Firmware Version, Fan Failure, and Internal Temperature. For more information, see Metadata Details below.	[ON], OFF
Metadata Display	Display/hide DVR metadata: Signals, GPS, Speed, Ignition State, GSensor, and Alarm Count. For more information, see Metadata Details below.	[ON], OFF
Internal Temperature Units	If Metadata Display is ON, display the ambient temperature inside the DVR in degrees. Select F (Fahrenheit) in the USA or C (Celsius) in Canada.	[F], C

Metadata Detail

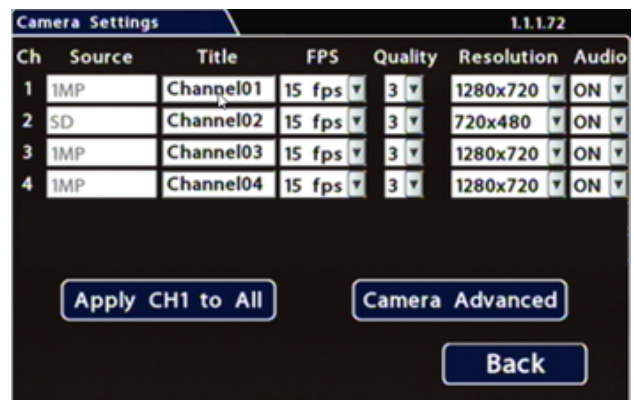| REFERENCE	DATA ITEM	DESCRIPTION
A	HD Size	Hard drive size (GB)
B	HD Used	Percentage of drive space used. If the Record o Repeat Record setting is ON, displays "Repeating". For more information, see *TH Configuration: Recording Settings*
C	Version	Firmware version
D	Status	DVR status: (LIVE=showing camera feeds, RECORD=storing video, V.LOSS=video loss)
E	Speed	Vehicle speed
F	Voltage	System input voltage
G	Temperature	Ambient temperature inside the DVR (F=Fahrenheit, C=Celsius)
H	Signals	When a signal activates, the Label is displayed. For more information, see TH Configuration: Signals
I	GPS Coordinates	Latitude/longitude, and elevation. If GPS is connected but satellite signals are not being received, zeros appear
J	Alarm Count (AC#)	The current number (19) of triggered Alarms. The value resets to 0 when the DVR restarts. For more information, see *TH Configuration: Alarms*
K	Ignition (IG)	Vehicle ignition state (highlighted=ignition on, dimmed=off)
L	Fan	Fan failure notification (highlighted=failure, dimmed=normal)
M	G-Sensor (GSN)	G Sensor threshold incident (highlighted=threshold exceeded). For more information, see *TH Configuration: G Sensor Options*
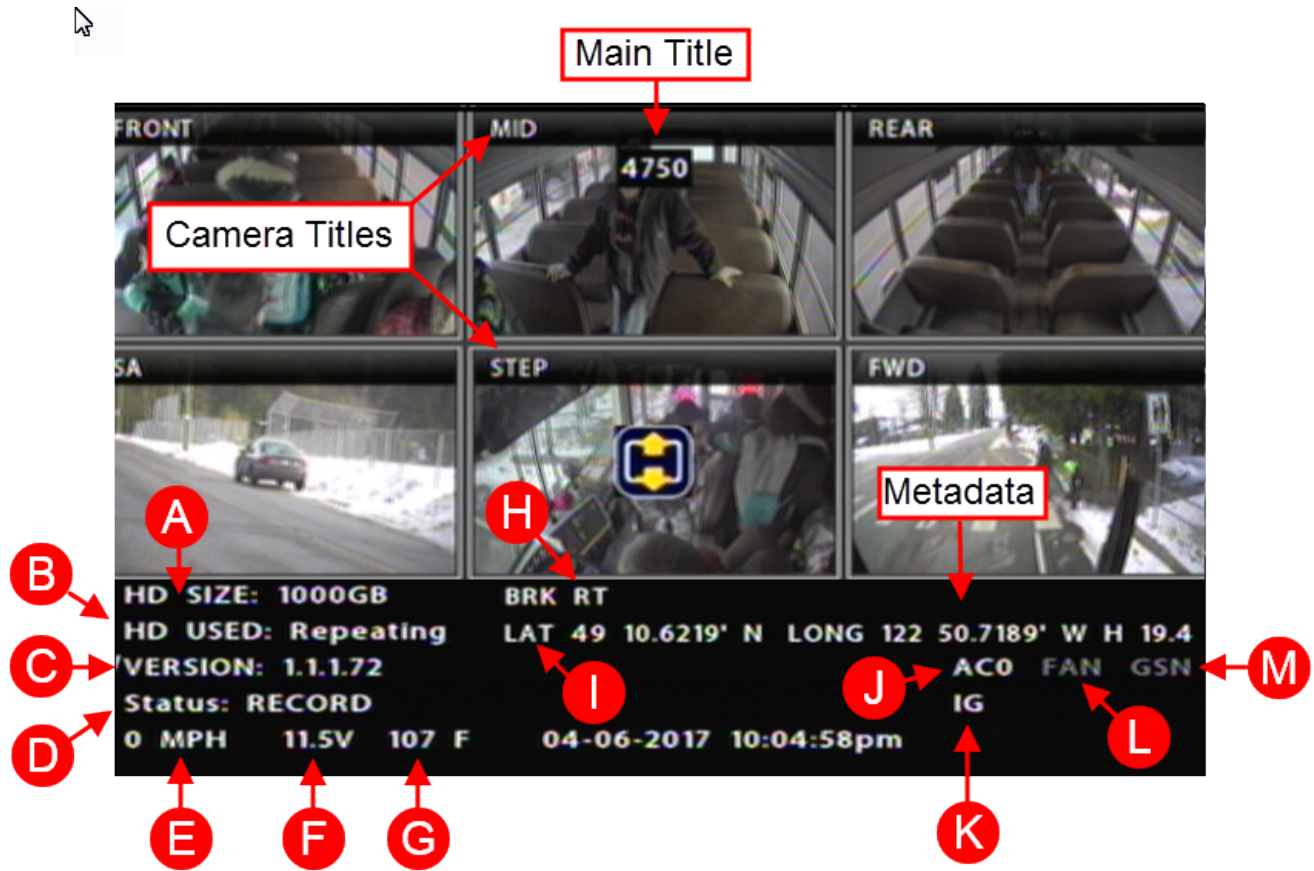
Setting the Cameras

When a DVR is installed with less than the full number of cameras connected, disable the unused camera input settings to prevent the DVR from generating Video Loss (VLoss) events for those camera inputs. In the DVR Configuration menus, disable settings for unused camera inputs as follows:

- Record ➔ FPS ➔ OFF

- Record ➔ Camera ➔ Audio ➔ OFF (to save disk space)

- Alarm/Signal ➔ Alarms ➔ FPS ➔ OFF

To set the cameras:

1. Select **Title/Display** to open the tab.
2. Enter the apparatus number in the Main Title field (if it is not already there).
   For details on using the On-screen keyboard, see Using On-screen Keyboards.
3. Choose the desired display settings, as described in Menu Options, below.
   For information about display items, see Metadata Details, below.

Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Title	For each camera, enter a name that describes the view it is recording. For example: "Front", "Step", "Mid", "Rear", "Stop Arm". For instructions on how to enter text with the mouse, see *TH Operation: Using On-screen Keyboards*. Camera titles display in live views and during playback. For more information, see Metadata Details in *TH Configuration: Title/ Display Menu*.	[Channel01]...[Channel04]
FPS	Leave channel speed at the default setting unless you have special requirements. This sets the recorded frame rate, per second.	[15 fps.], OFF, 1 fps, 5 fps, 7 fps, 10 fps, 15 fps, 20 fps, 30 fps

Quality	Leave channel resolution at the default setting unless you have special requirements. This sets the recording resolution (in pixels). Higher resolution reduces the amount of video (recording time) that can be stored.	SD source: [720x480], 720x240, 360x240 1MP source: [1280x720], 640x360, 320x180
Audio	Leave ON unless the camera is mounted on the exterior of the vehicle, or if you have special requirements. Setting Audio ON enables audio recording for the input channel. Turn OFF Audio for unused camera channels.	[ON], OFF
Apply CH1 to All	Click to apply settings selected for Channel 1 to all cameras.	n/a
Camera Advanced	Click to access the Camera Advanced tab and adjust settings for each camera with CoC (Control over Coax).	n/a

Configuring Signals

The DVR supports 10 independent signals. The first five are dedicated input wire (signal harness) connections: LT (left turn signal), STP (stop), BRK (brake), WRN (warning lights), and RT (right turn signal).

The last five can be set for other functions, such as an excessive speed event or when the installed G-sensor exceeds a threshold.

TIP: DVR Recording Limitations   ⓘ

When a signal is activated, the associated 3-character label appears on-screen during video playback. For example, "BRK" appears when the brake pedal is applied. For more information, see Metadata Details in *TH Configuration: Title/Display Menu*.
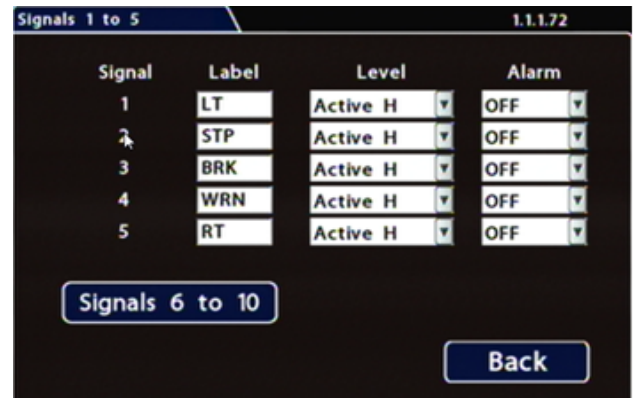
It is important to understand that you can also search video for signal events. For example, you can find every instance when the warning lights were activated. For more information, see the *View User Guide* and *TH Administration: Working with Video*.

To Configure Signals:

1. Select **Alarm/Signal ➔ Signals** to open the tab.

2. Configure signals as required.

   Each signal displays its status (label) when active, and can also trigger an Alarm. For details, see *Menu Options*, below.

3. Click **Back** to save settings, then click **Back** again to return to the Configuration menu.

Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Signal	Signals 1 through 5 are hardwired inputs, received through the signal harness (LT/left turn signal - black wire, STP/stop - green wire, BRK/brake - red wire, WRN/warning lights - brown wire, and RT/right turn signal - white wire). When these triggers are active, they generate signals and display associated labels during video playback. Signals 6 through 10 can be user-defined.	n/a
Label	You can edit the on-screen display text label (maximum 3 characters) to describe each signal as desired. For instructions on using the mouse to enter data, see *TH Operation: Using On-screen Keyboards*	Labels 1 through 5: [LT], [STP], [BRK], [WRN], [RT]. Labels 6 through 10: [S06], [S07], [S08], [S09], [S10]
Level	Control how the signal senses activation: choose Active H (high) if the circuit rests at 0 VDC and goes to 12 VDC when active; choose Active L (low) if the circuit rests at 12 VDC and drops to 0 when active.	[Active H], Active L
Alarm	Select the alarm number if the signal is also used to trigger an alarm. The alarm's input must also be set up in the Alarms menu. Note: assigning alarms to the the default signals 1 through 5 is generally not recommended, since these would be continually triggered by normal vehicle operation.	[OFF], ALM1, ALM2, ALM3, ALM4

Alarm Setup

Triggered alarms create searchable flags in the recorded video, making it easy to locate alarm events and associated metadata later (for details, see the ***vMax View User Guide***).

You can also tell the system to switch to higher recording quality settings when an alarm is triggered - for example, to help identify people or license plates when reviewing video of the event.

If the system is wirelessly enabled with Commander, flagged video can be automatically downloaded to your network (for more information, see the Commander User Guide).

The DVR supports 4 independent Alarms. By default, Alarm 1 is connected to the optional Event/Diagnostic button installed in the vehicle, for use by the operator (for more information, see Flagging Video for Review). Alarms 2-4 can be triggered automatically by vehicle speed, a G-sensor threshold, GPS fencing, or when a Signal is activated.

To Configure Alarms:

1. Select **Alarm/Signal ➔ Alarms** to open the tab.

2. Configure Alarm settings as required. For details, see *Menu Options*, below.

3. Click **Back** to save settings, then click **Back** again to return to the Configuration menu.
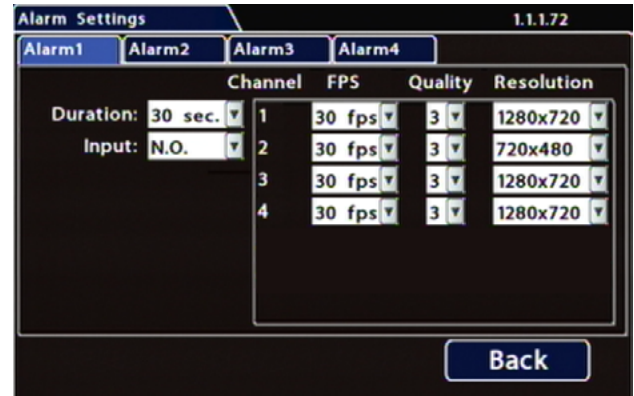
IMPORTANT   ⚠️

Set FPS (Frames per Second) OFF for unused channels to avoid DVR video loss events.

TIP: DVR Recording Limitations   ⓘ

Select higher speed (FPS), Quality, and Resolution in Alarm Settings to increase video quality for a short duration to record an alarm event. Higher quality video involves greater storage requirements, which reduces the amount of video you can store before it is overwritten. Therefore, a DVR usually records in a mode that conserves storage space.

ITEM	DESCRIPTION	VALUE [DEFAULT]
Alarm	**Click to display settings for the selected Alarm**. By default, Alarm1 is connected to the DVR Event/Diagnostic button. Alarms 2-4 can come from Signals, GPS geo-fencing, G-sensor, or Excessive Speed.	[Alarm1], Alarm2, Alarm3, Alarm4
Duration	**The length of time after the alarm has been triggered that flagged video is recorded at the alarm speed (FPS), quality, and resolution settings described below**.	0, 5, 10, [30] sec., 1, 3, 5, 10, 15, 20, 30, 45 min
Input	*Applies to Alarm 1 only*. When triggered with the Seon Event/Diagnostic button, use the default setting. **Control how the alarm input senses activation**: choose "N.O." (Normally Open) if the circuit rests at 0 VDC and goes to 12 VDC when active; choose N.C. (Normally Closed) if the circuit rests at 12 VDC and drops to 0 when active.	[N.O.], N.C.
FPS	**For each channel, the recording speed in FPS (Frames Per Second) used when the alarm is triggered**. If the DVR normally records at a mid-range or low FPS to conserve storage space, set a higher FPS value to increase video quality for a short duration to record an alarm event.	OFF, 1, 5, 7, 10, 15, 20, [30] FPS
Quality	**For each channel, the recording quality used when the alarm is triggered**. The DVR offers a range of quality settings, from 1 (low) to 4 (high).	1, 2, [3], 4
Resolution	**For each channel, the recording resolution (in pixels) used when the alarm is triggered.** The higher the recording resolution, the better the picture looks, but the shorter the recording time on a hard drive. Details depend on the camera connected to the channel (HD 720p or Standard Definition). The highest supported resolution is the default, and two lower-quality options are available.	[1280 x 720]. [720 x 480].

Copying DVR Configuration

Understanding Configuration Files

A configuration file preserves a particular DVR setup, so you can apply the settings to other DVRs in a single operation. You create a named configuration file, which contains all a DVR's current Configuration menu settings.

If you need more than one system setup for your fleet (for example, a specific number of cameras and viewpoints for different vehicle configurations), build a separate configuration file for each situation.

You can load a configuration file onto DVRs during installation or when changes are required, and all settings are applied automatically.
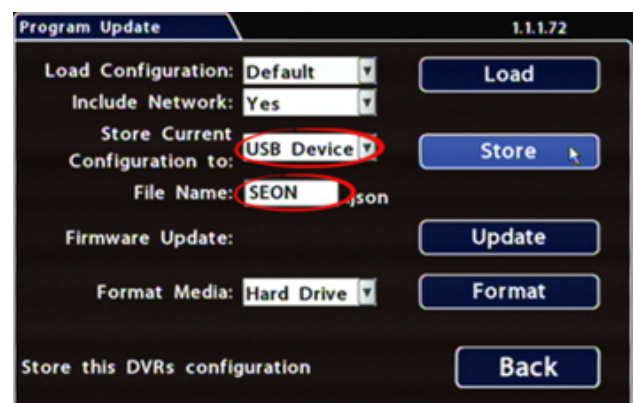
Copying DVR Settings

Before copying configuration, ensure the DVR is set up for specific vehicle type and mobile surveillance requirements, including camera names/channels, recording parameters, Alarm and Signal assignments, system preferences, and networking details.

For more information, see *TH Configuration: Setting up the DVR*.

This procedure requires physical access to the DVR you want to copy settings from, a portable video monitor, a USB mouse, and a USB storage device formatted by a Windows computer using the FAT.

To create a configuration file:

1. Insert the USB storage device in the USB port on the DVR's front panel. For more information, see TH4 Operation: Front and Rear Panel Features.
2. Access the OSD (On-Screen Display). For details, see *TH Administration: Accessing the On-Screen Display*.

3. Right-click anywhere in the OSD view to access the Main Menu.

4. Select **Configuration ➔ System ➔ Program Update**.

5. In the **Store Current Configuration to**: pull-down menu, select USB Device.

6. Click the **File Name** field and use the on-screen keyboard to change the configuration file name (maximum 4 characters). Best practice is to choose a name that references the fleet and/or configuration type.

7. Click **Store**. In the confirmation that appears, click **Yes**.

8. Click **OK**. The configuration file is created on the USB device.

Applying DVR Settings

For new DVR installations, apply predefined settings from a configuration file on a USB memory stick.

Once a DVR is set up, you can also upload a new configuration file by connecting to the DVR over a network, or via the Commander application if the DVR is equipped with wireless capabilities. Commander can also perform batch updates on multiple DVRs (for more information, find and read the *Commander Setup and User Guide* **here**).

IMPORTANT   ⚠️

Do not edit or copy DVR configuration locally when making updates over a network.


To copy configuration to a DVR from a USB storage device:

1. Power up the DVR using the vehicle ignition.

2. Connect the portable video monitor and USB mouse.

3. Insert a USB storage device containing a configuration file into the USB port on the DVR.

4. From the On-Screen Display, right-click anywhere in Live view to display the Main Menu.

5. Select **Configuration ➔ System ➔ Program Update**.

6. Use the **Load Configuration** menu to select the desired file.
   Note: only the 10 most recent configuration files in the root folder of the USB drive are available from the drop-down menu.

7. From the **Include Network** pull-down menu, select whether or not to overwrite DVR network settings:
   - **No** keeps existing DVR network settings.
   - **Yes** overwrites DVR network settings with configuration from the file.

8. Click **Load**, then select **Yes** in the confirmation dialog to proceed.

9. Click **Back** in the **Program Update** and **System Settings** tabs to return to the Configuration Menu.

10. Remove the USB memory device.

11. Confirm that the new configuration settings have been applied.
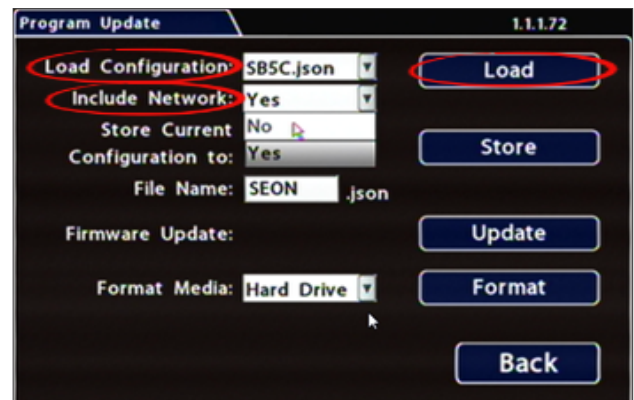
    Open the Configuration menu and verify all Time/Date settings. Also be sure to update vehicle-specific configuration, including:
    - Title/Display ➔ Main Title - generally contains the apparatus #/vehicle ID where the DVR is installed
    - Network configuration (if the DVR is equipped with wireless capabilities)
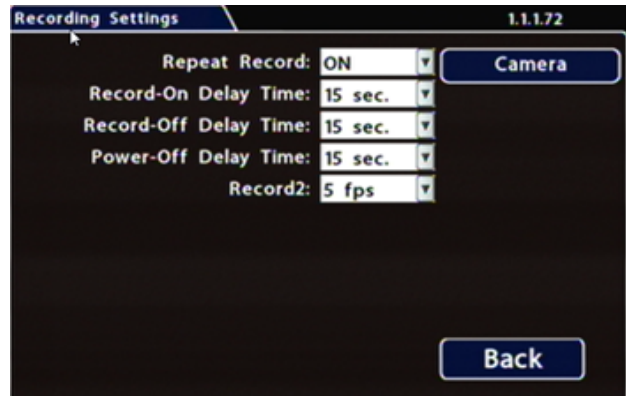   - Alarm/Signal ➔ G Sensor calibration (if the external G-Sensor is installed)
    For more information, see TH Configuration: Setting up the DVR.

TH4 Advanced Configuration

Configuring Recording Settings

To Configure Recording Settings:

1. Select **Record** to open the tab.

2. Set the record and power delay timers. For details, see *Menu Options*, below.

3. Click **Back** to save settings, or click **Camera** to configure resolution, recording speed/quality, and other camera options.

Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Repeat Record	**Leave this setting at the default [ON] for the storage media to loop, and record over the oldest video when it becomes full** (the "HD Used" metadata item displays "Repeating" - for more information see TH Configuration: Title/Display Menu). When set to OFF, the DVR stops recording when storage is full ("HD Used" displays 100%).	[ON], OFF
Record-On Delay Time	**Leave at default to let the voltage settle after the vehicle starts up to prevent voltage drops affecting the DVR**. Enables a time delay after the vehicle ignition is turned on until the DVR starts.	[15 sec.], 30 sec., 1 min., 5 min., 10 min., 20 min., 30 min.
Record-Off Delay Time	**To keep the DVR and cameras on after the ignition turns off (e.g. to record the post-trip check), set this to 10 or 20 min.** Enables a time delay to continue recording after the ignition signal to the DVR is turned off. The power output connector on the DVR rear panel remains active during this time.	[15 sec.], 30 sec., 1 min., 5 min., 10 min., 20 min., 30 min.

Power-Off Delay Time	**If the system is not using Wi-Fi, use the default setting. If Wi-Fi is used, set to 2 hours or more**. For more information, see the *Commander Setup and User Guide*. This sets the time delay from the record delay until power is shut off. The delay begins after "Record Delay Off" time ends. During this time, cameras are turned off and recording is stopped. However, the control connector on the DVR rear panel remains active to allow peripherals such as Smart-Reach to be powered up during the power delay time.	[15 sec.], 0 sec., 30 sec., 1 min., 5 min., 10 min., 20 min., 30 min., 45 min., 1 hr., 2 hr., 4 hr.
Record2	**Leave at the default setting unless instructed otherwise.** Unless set to OFF, the DVR records a low resolution second video stream at the selected frame rate. The DVR can record video in two streams: one at high resolution for full, detailed event information, and the other (Record2) at lower resolution for fast downloading or real-time viewing over a low bandwidth network such as a cellular link. In the event of an emergency, if the system is configured with Smart-Reach cellular hardware and a cellular plan, Record2 allows quick access to video online. Use the Record2 setting to specify a lower per second recording (frame rate) for the second video stream.	[5 fps], OFF, 1 fps, 2 fps, 3 fps, 4 fps, 5 fps

Network Settings

NOTE: Configuring Network Settings and Advanced Network settings ⓘ

A qualified IT administrator is required to provide information and configure Network Settings and Advanced Network settings.
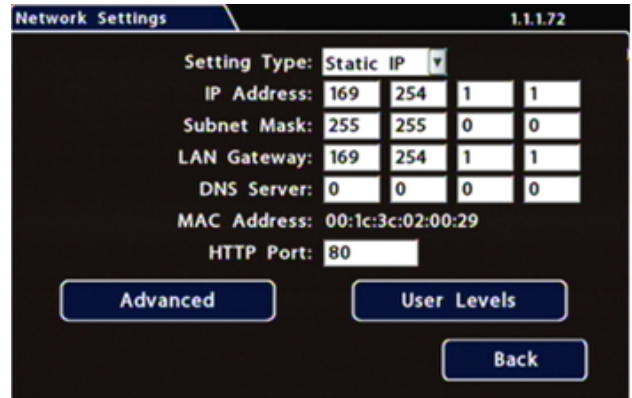
These tasks should only be performed by Seon Engineering services or the fleet system administrator.

- Each host (computer) connected to the network must have a unique IP address.

- If the DVR is attached to a WiFi bridge, change these settings to those supplied by the system administrator.

- If the IP information is changed and saved in a configuration file for upload to other DVRs, their settings must also be updated. For more information, see *TH Configuration: Copying DVR Configuration*.

Contact Seon Engineering Services or Technical Support to assign an IP address or reset the Smart-Reach Mobile wireless bridge, or for more information.

To configure Network Settings:

1. Select **Network** to open the tab.

2. Configure settings as required. For details, see *Menu Options*, below.

3. Click **Back** to save settings, or click **Camera** to configure resolution, recording speed/quality, and other camera options.

Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Setting Type	Contact your administrator to configure the setting type and IP address. OFF disables all Ethernet capability. Static IP is a permanent address on the network, assigned by the network administrator. DHCP (Dynamic Host configuration Protocol) automates the assignment of IP addresses in a network. If DHCP is used, the subnet mask, default gateway, and DNS server are configured automatically, and only the HTTP Port field is editable.	[Static IP], OFF, DHCP
IP Address	Enter the DVR IP Address, as determined by a qualified network expert.	[169.254.1.1]
Subnet Mask	Enter the Subnet Mask, as determined by a qualified network expert.	[255.255.0.0]
LAN Gateway	Gateway address uniquely identifies a host or computer on the LAN, which connects the subnet to other networks. Enter the LAN Gateway, as determined by a qualified network expert.	[169.254.1.1]
DNS Server	Uses an IP address composed of four octets, separated by decimals.	[0,0,0,0]
MAC Address	MAC (Media Access Control) is the DVR's unique hardware number.	Fixed
HTTP Port	Typically, leave the HTTP Port set to 80, unless otherwise instructed by IT personnel.	80

Advanced Network Settings

Configuring Advanced Settings

Use the Advanced Settings (vMax Live Plus) tab to set up the DVR to connect with vMax Live Plus via a cellular modem. For more information, see the resources available on the vMax Live Plus *product page*.

NOTE: Qualified IT Administrator Required ⓘ
A qualified IT administrator is required to perform network configuration, including assignment of IP addresses.
A cellular modem or gateway must also be installed and configured.
Contact Seon Engineering Services or Technical Support for more information.

To configure Advanced Settings:

1. Select **Network ➔ Advanced** to open the tab.

2. Configure settings as required. For details, see *Menu Options*, below.

3. Click **Back** to save settings, then click Back again to return to the Configuration menu.
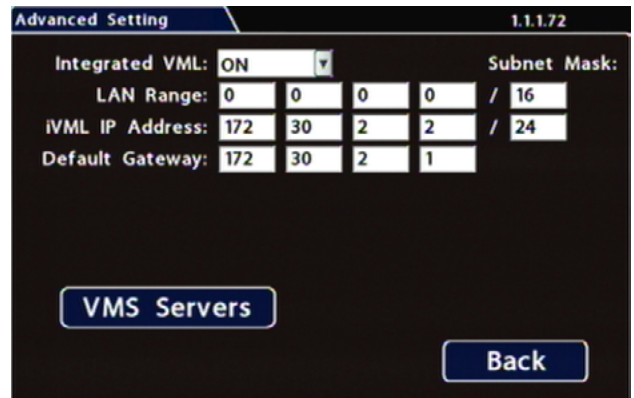
Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Integrated VML (vMax Live)	Set ON to enable the integrated VML feature. OFF disables the integrated VML feature.	[OFF], ON
LAN Range	If the customer network is outside of the DVR network: set the customer network's LAN range as determined by a qualified network expert. Note: There must be a value in this field. If not used, enter a dummy IP address such as 10.10.0.0.	[0.0.0.0]
LAN Subnet Mask	Set the LAN subnet mask used for the LAN Gateway Destination range as determined by a qualified network expert. Use a value between 0 and 32.	[16]
iVML IP Address	Enter the iVML IP Address as determined by a qualified network expert.	[172.30.2.2]

iVML Subnet Mask	Set the subnet mask for the iVML IP Address as determined by a qualified network expert. Use a value between 0 and 32.	[24]
Default Gateway	Enter the Default Gateway IP address for communicating with the cellular modem, as determined by a qualified network expert.	[172.30.2.1]

VMS Servers

Configuring VMS Servers (Commander Settings)

| NOTE: Qualified IT Administrator Required |
|---|
| **A qualified IT administrator is required to perform network configuration, including assignment of IP addresses.**

A wireless bridge and an access point must also be installed and configured.

Contact Seon Engineering Services or Technical Support for more information. |

To configure VMS Servers:

1. Select **Network** ➔ **Advanced** ➔ **VMS Servers** to open the tab.

2. Configure settings as required. For details, see *Menu Options*, below.

3. Click **Back** to save settings, then click Back on successive screens to return to the Configuration menu.
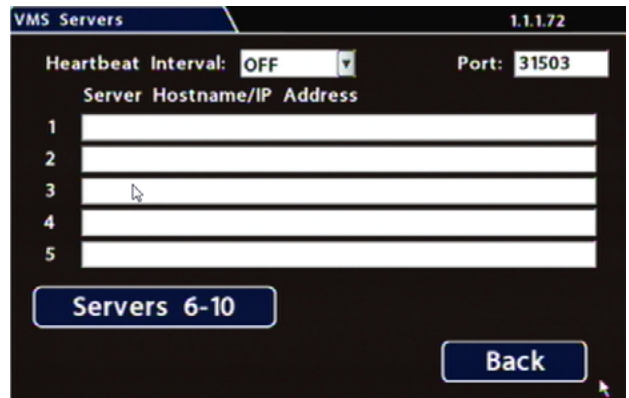
Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Heartbeat Interval	As determined by a qualified network expert, select an interval to transmit DVR status messages to all available VMS Servers. We recommend a Heartbeat Interval setting of one minute.	[OFF], 1 min, 2 min, 3 min, 4 min, 5 min
Port	Enter a Port for VMS Heartbeat communication as determined by a qualified network expert. We recommend the default Port setting.	[31503]

Servers 1 to 10		
Hostname/IP Address	Up to 10 server hostnames or IP addresses that can receive VMS heartbeat messages from the DVR as determined by a qualified network expert.	Maximum 64 characters.

G-Sensor Options

Configuring G-Sensor Options

> **NOTE: Calibration**   ⓘ
>
> **The G-Sensor must be calibrated when initially installed or if the unit is relocated, and the procedure must be performed on the vehicle (i.e. not by connecting to the DVR from a remote location).**
>
> G-Sensor settings can be adjusted to fit specific requirements. Note that if thresholds are set too low and alarms are enabled, many alarms may be generated. Details are provided below.

To configure G-Sensor settings:

1. Select **Alarm/Signal ➔ G-Sensor** to open the tab.

2. If this is a new system installation, or the G-Sensor unit has been relocated, perform the following Calibration procedure:

   i. Ensure the G-Sensor unit is mounted securely with the arrow toward the front of the vehicle. The orientation of the device has no impact on its performance provided that the arrow has been appropriately pointed towards the vehicle's front.

      The unit connects to the G-SENSOR port on the DVR rear panel. For more information see the *TH4 Quick Install Guide*

   ii. Click **Calibrate**.

      The X, Y, and Z axis planes are set, based on the mounting surface. When the process is complete, click OK in the confirmation dialog.

3. If required, adjust G-Sensor settings. For details, see Menu Options, below.

4. Click **Back** to save settings, then click Back again to return to the Configuration menu.
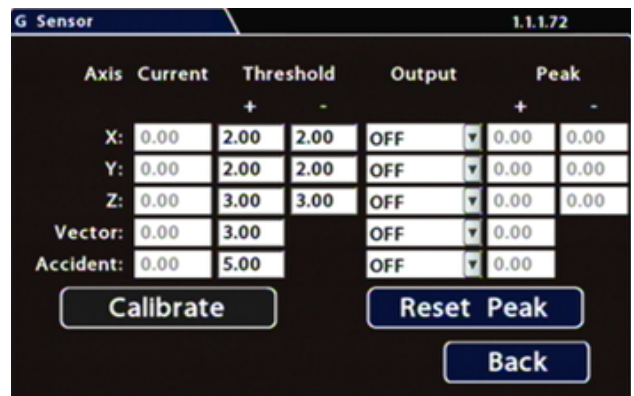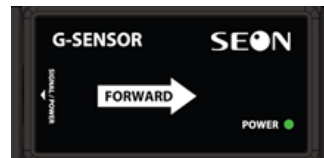
> **TIP: G Sensor settings recomendation**   ⓘ
>
> **FRC recommends the default G-Sensor settings for large apparatus movement detection.**
>
> Smaller vehicles may require lower thresholds - some experimentation may be necessary to define the optimal configuration for each vehicle type. If thresholds are set too low, they may generate many alarms.
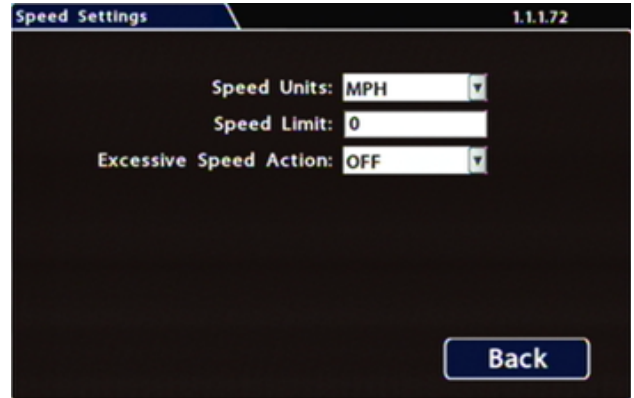
Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Axis	X - forward/back axis Y - left/Right axis Z - vertical axis Vector - combination of X and Y axes (to capture driver behavior incidents) Accident - combination of X and Y axes (higher threshold settings, to capture vehicle accidents)	n/a
Current	The current (live) values measured by the G Sensor (display only)	n/a
Threshold	Set from 0G to 6.0G. This value configures the threshold level. Any value beyond the threshold triggers the output, as configured in the Output field.	X = [+/- 2.00] Y = [+/- 2.00] Z = [+/- 3.00] V = [+ 3.00] A = [+ 5.00]
Output	If the specified G Sensor threshold value is exceeded, the DVR triggers the selected output (DVR log entry, Signal, or Alarm).	[OFF], Log, S01-S10, ALM1-ALM4
Peak	Use the observed peak values to refine threshold settings. Peak values reflect detected G Sensor levels for axis, Vector, and Accident activity.	n/a

Speed Settings

Configuring Speed Settings

To configure Speed Settings:

1. Select **Alarm/Signal ➔ Speed** to open the tab.

2. Configure speed settings as desired. For details, see *Menu Options*, below.

3. Click **Back** to save settings, then click **Back** again to return to the Configuration menu.
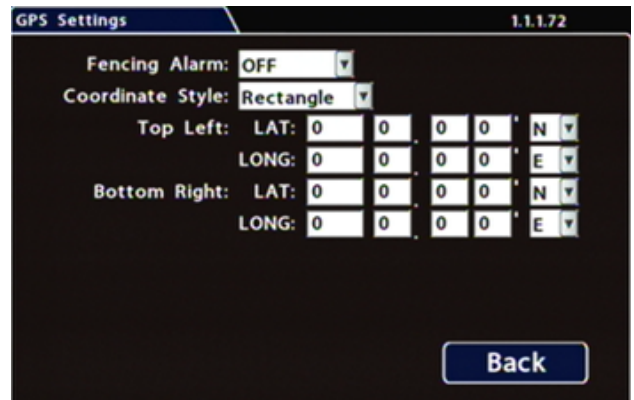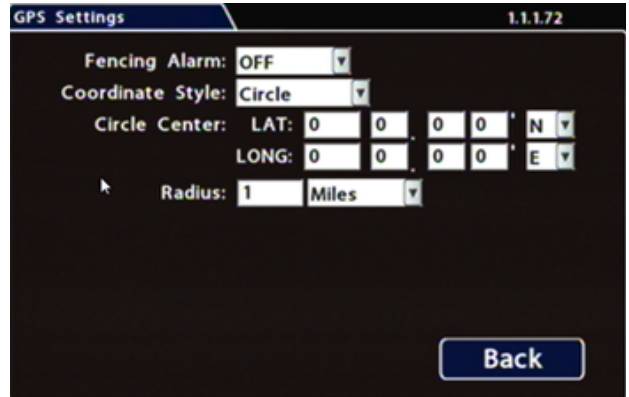

Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Speed Units	**Choose MPH in the US, or Km/h in Canada.** The speed display units; the GPS signal is converted to display speed in the selected units.	[MPH] - Miles per hour, KM/h - Kilometers per hour, KTS - Knots
Speed Limit	**Enter a speed limit to trigger notifications.** If an Excessive Speed Action is selected, this value triggers a notification if exceeded by vehicle speed.	[0]
Excessive Speed Action	Settings other than OFF trigger the selected action (S1-S10=Signal, ALM1-ALM4=Alarm, Log=DVR log entry) when the vehicle exceeds the specified Speed Limit.	[OFF], Log, S1 - S10, ALM1 - ALM4

GPS Fencing

Configuring GPS Settings

To configure GPS Settings:

1. Select **Alarm/Signal ➔ GPS** to open the tab.

2. Configure speed settings as desired. For details, see *Menu Options*, below.

3. Click **Back** to save settings, then click **Back** again to return to the Configuration menu.

Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Fencing Alarm	ALM settings trigger the selected Alarm when the vehicle crosses the fencing boundary, as defined by the selected coordinate style.	[OFF], ALM1 - ALM4
Coordinate Style	Circle - sets the area for GPS fencing by identifying the center point and radius. This option only displays "Circle center" and "Radius" data entry fields. Rectangle - Sets the area for GPS fencing by upper left and lower right rectangular coordinates. This option only displays the "Top Left" and "Bottom Right" data entry fields.	[Circle], Rectangle

Circle Center	Enter latitude and longitude of the fencing center point.	[000.00.00]
Radius	Define the size of the fencing area diameter, in miles or kilometers.	[1 Mile]
Top Left	Enter the latitude and longitude of the top left point of the fencing area.	[000.00.00]
Bottom Right	Enter the latitude and longitude of the bottom right point of the fencing area.	[000.00.00]

User Levels

Configuring User Levels

> **NOTE: Password Control** ℹ
>
> Users logging on to the DVR should have password control to protect the DVR from being accidentally reconfigured. The default password is 11111111.
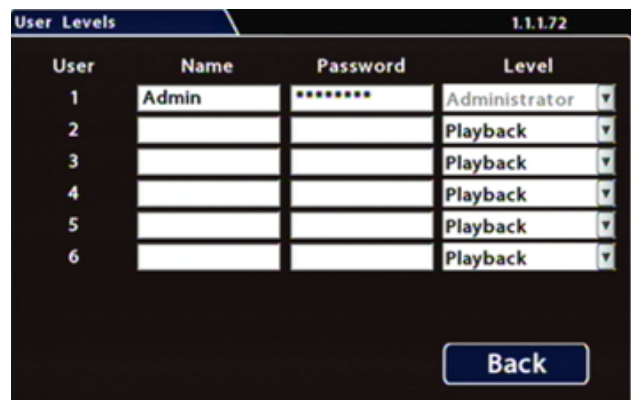>
> For security purposes, Seon recommends default login and system settings passwords should be changed.
>
> Keep a copy of your password in a secure place, in case it is lost or forgotten.

To configure User Levels:

1. Select **Network User Levels** to open the tab.

2. The default "Admin" user cannot be changed. Add other users with access levels as required.

   Enter user names, passwords, and assign levels. For details, see Menu Options, below.

3. Click **Back** to save changes, then click **Back** again to return to the Configuration menu.

Menu Options

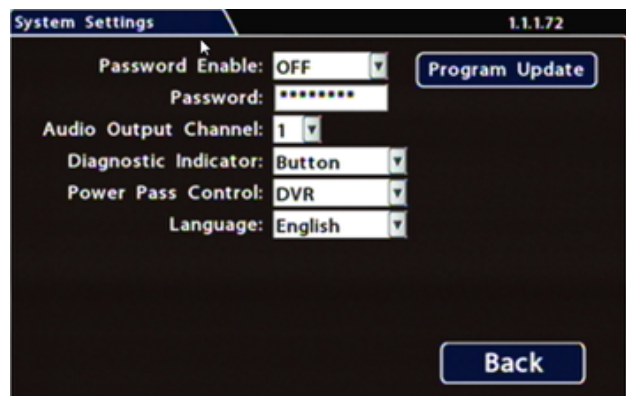| ITEM	DESCRIPTION	VALUE [DEFAULT]
Name	User names for remote access to the DVR. Names are case-sensitive, maximum 8 characters.	[Administrator] for User 1 [Blank] for other Users
Password	Set a password for each user - maximum 8 characters.	[11111111]
Level	Assign each remote user a specific access level: Administrator - complete DVR control; only Administrators can change User Levels. Configure - playback rights, plus general DVR configuration (cannot edit User Levels). Playback - only viewing and archiving recorded video and viewing live video.	[Administrator] for User 1, [Playback] for other Users, Configure

System Settings

Configuring System Settings

NOTE: Settings and Password	ⓘ

This tab allows control of system-level settings and functions that should only be changed by authorized individuals.

The Password applies to local DVR access, and generates a prompt when the unit powers up, before any other features become available. The default password is 11111111. For security purposes, Seon recommends that the default password should be changed. Keep a copy of your password in a secure place, in case it is lost or stolen.

To configure System Settings:

1. Select **System** to open the tab.

2. Adjust system settings as required.

    For details, see *Menu Options*, below.

3. Click **Back** to save changes.

Menu Options

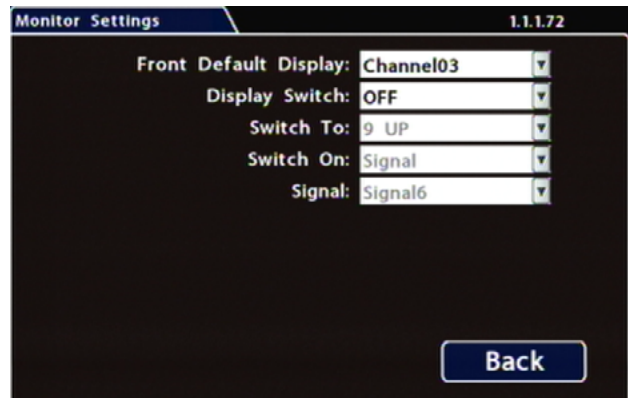| ITEM	DESCRIPTION	VALUE [DEFAULT]
Password Enable	When set to ON, local access to the DVR On-screen Display (including all DVR control, configuration, and playback features) requires the System Settings password.	[OFF], ON
Password	Maximum 8 digits.	[11111111]
Audio Output Channel	Select the audio channel output through AUDIO RCA connector on the DVR front panel.	[1], 2-6
Diagnostic Indicator	Select the type of system status indicator installed in the vehicle (for more information, see *TH Operation: DVR Status*).	[Button], RGY Illum
Language	Select a language for the DVR On-screen Display and vMax Web UI.	[English], Espanol, Francais

Monitor Settings

Configuring Monitor Settings

Monitor Settings control camera feeds sent to both the Video Out RCA jack on the DVR front panel and the Expansion socket on the rear panel.

To configure Monitor Settings:

1. Select **Title/Display ➔ Monitor Settings** to open the tab.

2. Configure options as required. For details, see *Menu Options*, below.

3. Click **Back** to save settings, then click **Back** again to return to the Configuration menu.

Menu Options

ITEM	DESCRIPTION	VALUE [DEFAULT]
Front Default Display	**Select the default monitor display setting**: all cameras (# UP) or a single camera (choose the Channel it is connected to).	[# UP], Channel 01...
Display Switch	**Enable or disable switched display.** Select **ON** if you want to switch the monitor display from the default setting to another camera feed based on an Alarm, a Signal, or a specified time, as per the options detailed below (these parameters are unavailable when Display Switch is OFF).	[OFF], ON
Switch To	**When Display Switch is ON, select the camera feed to activate based on the Alarm, Signal, or Timer setting described below**. You can choose to display a single camera (by Channel number), all connected cameras (# UP), or to show each active camera feed in sequence (Sequence - applies only to the Timer option described below).	Channel 01..., [# UP], Sequence
Switch On	**Set the trigger type that will activate the camera feed selected in the Switch To setting and cause it to display in the monitor output**. Then, from the pull-down menu below, select a specific Alarm, Signal, or Timer setting.	Alarm, [Signal], Timer
Alarm (Signal or Timer)	**For Alarm or Signal trigger types**, choose the specific Alarm/Signal to activate the selected camera view in the monitor output display when **Display Switch** is **ON**. For example, the **ALM1** setting switches monitor output to the view selected in the **Switch To** option for the duration of ALM1. **For the Timer trigger type**, select the amount of time each active video channel displays during rotation. For example, 10sec changes channels between valid camera inputs every 10 seconds.	[ALM 1]... [Signal 1]... [3 sec.], 5 sec, 10 sec. 30 sec.

Appendix

FRC Customer Service and Product Support:

(8am to 5pm EST weekdays)

- Main Phone: 631.724.8888

- Fax: 631.360.9727 (24 hours)

- Website: **Contact FRC**

If your DVR is to be returned, please contact Technical Support, and provide the model and/or serial number of your unit. Ask for a Return Merchandise Authorization (RMA) number. An RMA number allows the Service Technicians to better track your product when it comes in for service. Please show the RMA number on the outside of the package. ANY RETURNED PRODUCT WITHOUT AN RMA NUMBER MAY BE REFUSED.

Product Information

For product information and documentation related to the TH4 Hybrid 4-Camera system, please visit the inView Guardian product page on the **FRC Website**.

Or, for additional information, you may wish to visit **Safe Fleet Community website**. Please contact FRC Service for the username and password to this online help community website. If you do not have access credentials, please contact Technical Support.

Warranty

Complete warranty details are available online:

FRC Limited Warranty Page