



DVR Firmware Version 2.0
Document Part Number 700-1014 R001

About This Guide

This guide describes the installation steps for the TL-HD DVR with firmware version 2.0 and higher.

This guide provides information to help you install the TL-HD DVR System hardware and configure the DVR menus to user requirements with the DVR On Screen Display or vMax Web.

Related guides include:

- *Explorer® TL-HD Mobile DVR User Guide, 700-1015*
- *vMax View User Guide, 700-0137*

Conventions Used

	CAUTION Cautions identify conditions or practices that could result in damage to the unit or other equipment.
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Tip: These notes provide tips for optimum performance of the DVR system.

Important: These notes provide important information, which are not as serious as a Caution.

Abbreviations and Acronyms

Acronym	Definition	Acronym	Definition
CAN	Controller area network	MPEG	Moving Picture Experts Group
DVR	Digital video recorder	OSD	On-Screen Display
FPS	Frames per second	RA	Return Authorization
GPS	Global Positioning System	TCM	Transmission Control Module
HD or HDD	Hard drive Hard disk drive	TCP/IP	Transmission Control Protocol/ Internet Protocol
H.264	H.264 video compression	USB	Universal Serial Bus
LAN	Local area network	UTC	Universal Time Coordinated

Finding Information Online

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Contents

Installation

1.1. Tools and Equipment	1-1
1.2. Trooper TL-HD System Package Contents	1-2
1.3. Installation Diagram	1-3
1.4. Installation Best Practices	1-4
1.5. Dimensions	1-5
1.6. DVR and Component Installation	1-6
1.6.1. DVR Installation	1-6
1.6.2. Camera Installation	1-7
1.6.3. Alarm Button Installation	1-8
1.6.4. Adapter Harness Installation	1-9
1.6.5. Expansion Harness Installation (Optional)	1-9
1.6.6. Power Pass Through Cable Installation (Optional)	1-10
1.6.7. Diagnostic Button Installation (Optional)	1-10
1.6.8. RGY Illuminator Installation (Optional)	1-10
1.6.9. 12 Volt Installation Details	1-11
1.7. Hardware Installation Final Checklist	1-12

DVR Setup

2.1. DVR Menu Access	2-1
2.2. Basic DVR Configuration Settings	2-2
2.3. vMax Web Laptop Configuration	2-15
2.3.1. Connecting the DVR to the Laptop	2-17

Advanced Setup

3.1. DVR Configuration Uploads	3-2
3.1.1. Configuration Upload from USB Memory Device	3-2
3.1.2. Configuration Uploads in vMax Web	3-6
3.2. DVR Firmware Updates	3-10
3.3. Email Notifications	3-11
3.3.1. On-Screen Display Email Setup	3-11
3.3.2. vMax Web Email Setup	3-14

DVR Configuration Menus

4.1. DVR Configuration Menu Tree	4-2
4.2. Time and Date Menu	4-3
4.2.1. DST (Daylight Savings Time) Settings Menu	4-4
4.3. Titles and Display Menu	4-5
4.3.1. Monitor Settings Menu	4-6
4.3.2. Diagnostic Display Menu	4-7

Contents

- 4.3.3. Health Check Menu ----- 4-8
- 4.4. Recording Menu ----- 4-9
 - 4.4.1. Camera Menus ----- 4-10
 - 4.4.2. Timer Menu ----- 4-11
 - 4.4.3. HD Camera Menu ----- 4-12
 - 4.4.4. HD Camera Advanced Menu ----- 4-13
- 4.5. Alarms and Signals Menu ----- 4-14
 - 4.5.1. Alarm Menu ----- 4-15
 - 4.5.2. Signals Menu ----- 4-16
 - 4.5.3. Speed Menu ----- 4-17
 - 4.5.4. GPS Menu ----- 4-18
 - 4.5.5. G Sensor Menu ----- 4-19
 - 4.5.6. G Sensor Calibrate Menu ----- 4-20
 - 4.5.7. Others Menu ----- 4-21
- 4.6. Network Menu ----- 4-22
 - 4.6.1. Advanced Network Menu ----- 4-23
 - 4.6.2. VMS Servers Menu ----- 4-24
 - 4.6.3. Supervisor Menu ----- 4-25
 - 4.6.4. User Levels Menu ----- 4-26
 - 4.6.5. DDNS (Dynamic Domain Name Server) Menu ----- 4-27
- 4.7. System Menu ----- 4-28
 - 4.7.1. Program Update Menu ----- 4-29
 - 4.7.2. E-mail Menu ----- 4-31

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- Contact Information ----- L-1

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- Advance Replacements ----- W-1
- Disclaimer ----- W-2

CHAPTER 1

Installation

This chapter describes the installation steps for the Trooper TL-HD DVR with firmware version 2.0 or higher. This chapter contains the following sections:

[Tools and Equipment, on page 1-1](#)

[Trooper TL-HD System Package Contents, on page 1-2](#)

[Installation Diagram, on page 1-3](#)

[Installation Best Practices, on page 1-4](#)

[Dimensions, on page 1-5](#)

[DVR and Component Installation, on page 1-6](#)

[DVR Installation, on page 1-6](#)

[Camera Installation, on page 1-7](#)

[Adapter Harness Installation, on page 1-9](#)

[Expansion Harness Installation \(Optional\), on page 1-9](#)

[Power Pass Through Cable Installation \(Optional\), on page 1-10](#)

[12 Volt Installation Details, on page 1-11](#)

[Hardware Installation Final Checklist, on page 1-12](#)

1.1. Tools and Equipment

This 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:

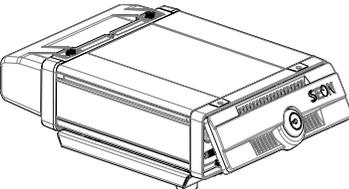
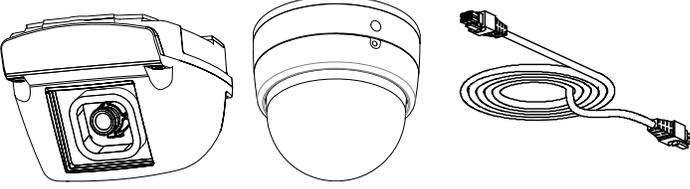
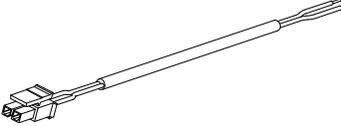
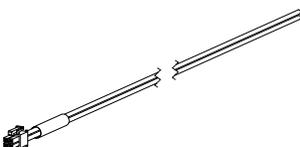
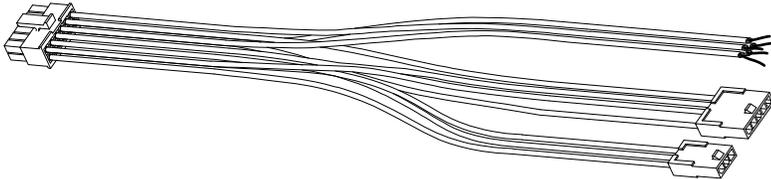
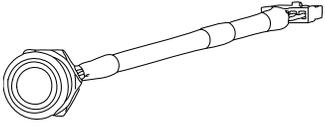
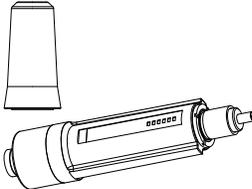
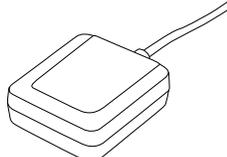
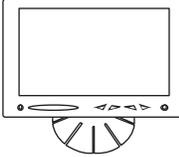
- DVR keys for securing the removable hard drive
- Front cover keys for securing the removable front cover

Configuration equipment:

- For on-screen configuration: portable video monitor and trackball mouse
- For vMax Web configuration: laptop and an Ethernet cable

1.2. Trooper TL-HD System Package Contents

The required and optional contents of a typical installation package are shown below. The actual contents of your installation package may vary, depending on the options selected.

<p>Trooper TL-HD DVR with hard drive, locking front cover, cable cover, and mounting plate</p> 	<p>Cameras (up to 5) and extension cables</p> 	
<p>Alarm Switch and cable</p> 	<p>Alarm input harness</p> 	<p>Ignition input harness</p> 
<p>Adapter harness</p> 		<p>Diagnostic Button (optional, and extension cable, not shown)</p> 
<p>Smart-Reach Cellular (optional, and power pass through cable, not shown)</p> 	<p>Smart-Reach Lite (optional)</p> 	<p>Expansion Harness (optional)</p> 
<p>GPS receiver (optional)</p> 	<p>Portable video monitor (optional)</p> 	<p>RGY Illuminator (optional, and extension cable, not shown)</p> 

1.3. Installation Diagram

Use the installation diagram below to install the typical TL-HD DVR system.

Explorer® TL-HD Typical System Setup

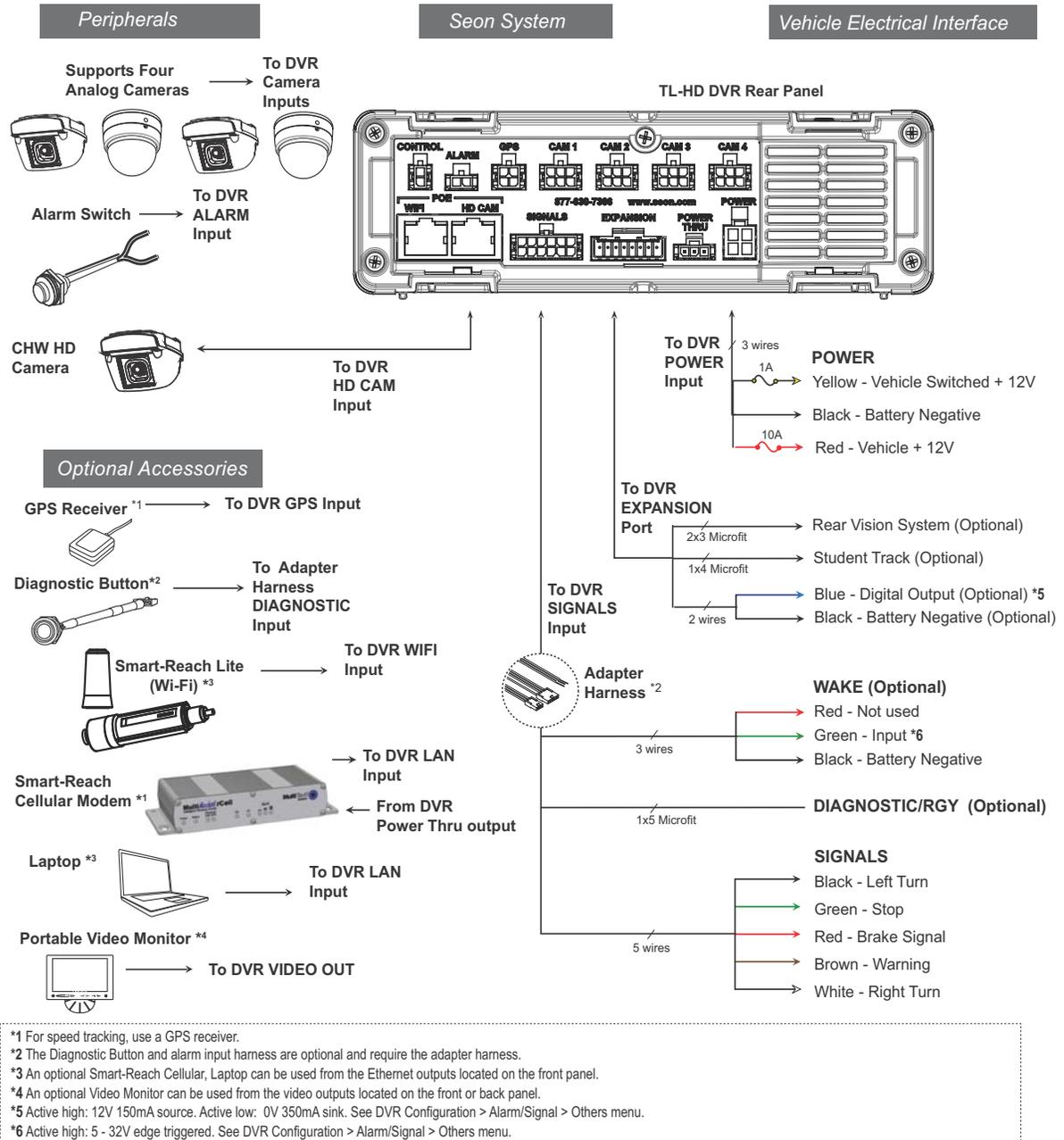


Figure 1 Typical TL-HD System

1.4. Installation Best Practices

	<p>CAUTION: Heat or Moisture Damage Risk</p> <p>Do not install the DVR in a location where the unit is exposed to excessive heat or moisture. Installation close to extreme heat or moisture will void the product warranty.</p> <p>Route the wiring and cables away from sharp edges that might damage the insulation. Avoid sharp bends in the cable.</p> <p>Contact Seon before attaching the DVR to other equipment in the vehicle.</p>
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The TL-HD DVR is secured with a security front cover and a cable cover. The cable cover allows wiring to enter from the under side of the back of the unit.

The DVR can be installed horizontally or vertically but not upside down.

	<p>CAUTION: Install DVR Level For G Sensor Data</p> <p>In order for the G Sensor calibration to work correctly, one DVR surface must be parallel to the front of the vehicle. Failure to install either vertically or horizontally will render the G Sensor data unusable.</p>
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Before installing the TL-HD DVR, keep in mind that a well-ventilated location and sufficient clearance around the unit are key factors in performance and maintenance. See [Table 1](#) for information on installation requirements.

Table 1 Choosing a Location and Other Installation Requirements

Ventilated location	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 operating temperature and provide best performance. Do not expose the DVR to moisture.
Mount to secure surfaces only	Do not mount the DVR to a plastic panel or other surface that is subject to constant vibration.
Mounting orientation	Mount the DVR in either a horizontal or vertical orientation, or hung right side up but not upside down.
Clearance around the DVR	Allow sufficient clearance of at least six (6) inches in front of the DVR and two (2) inches on 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 rearmost 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.

1.5. Dimensions

Important: Specifications are subject to change without notice.

- Weight: 4.0 lb (1.8 kg)
- Material: steel base, aluminum housing, plastic

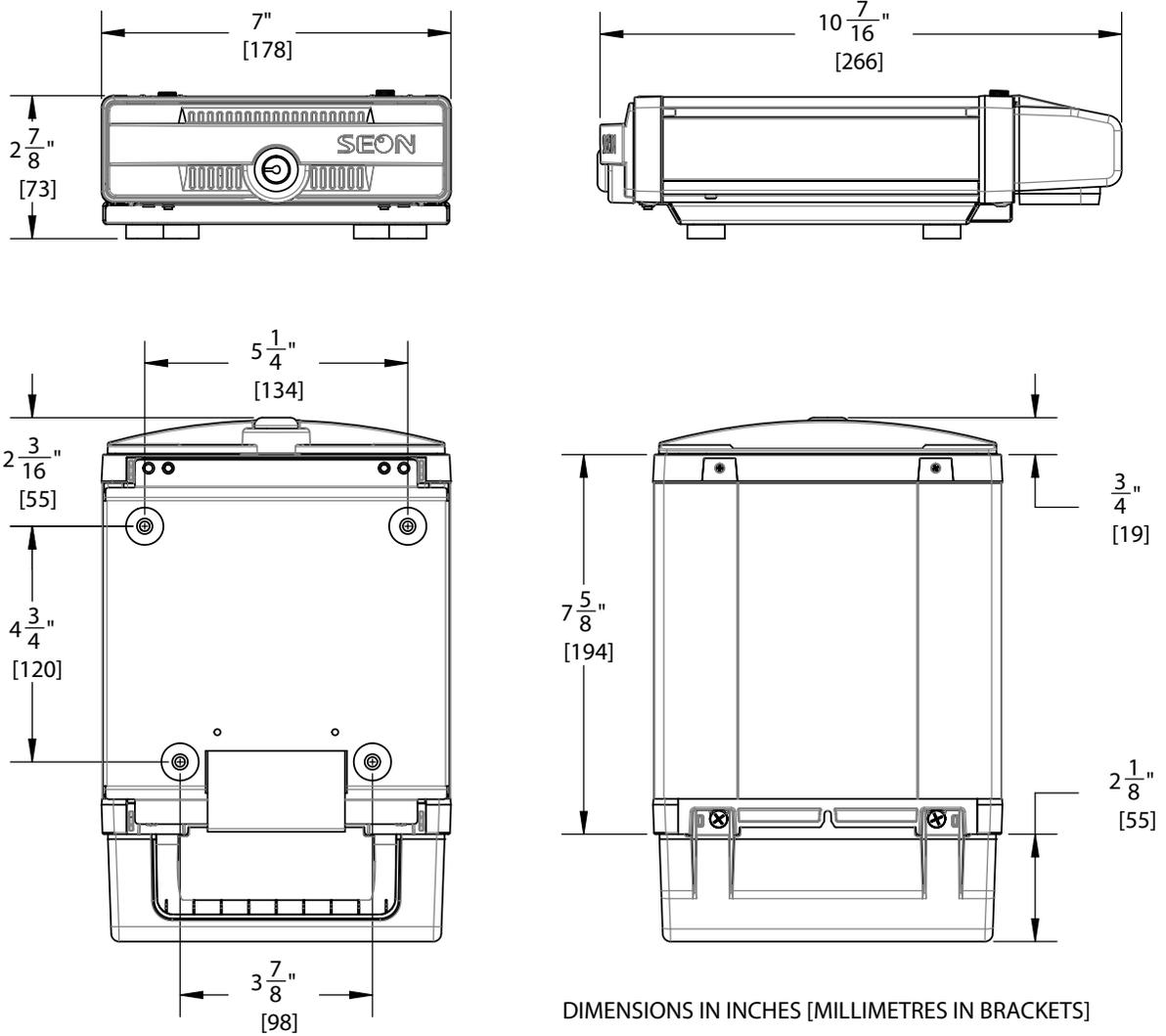


Figure 1-1 Trooper TL-HD Dimensions

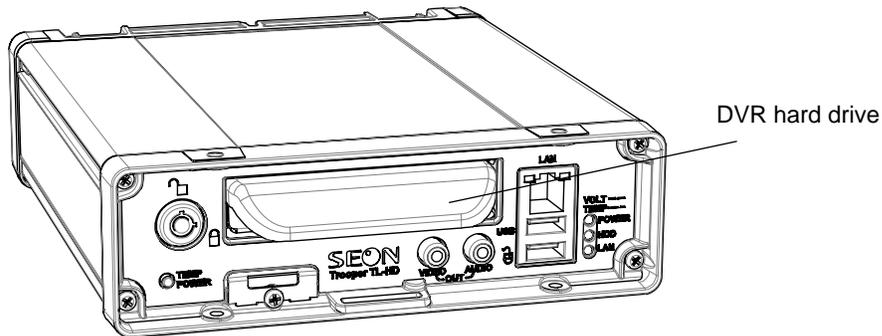
1.6. DVR and Component Installation

1.6.1. DVR Installation

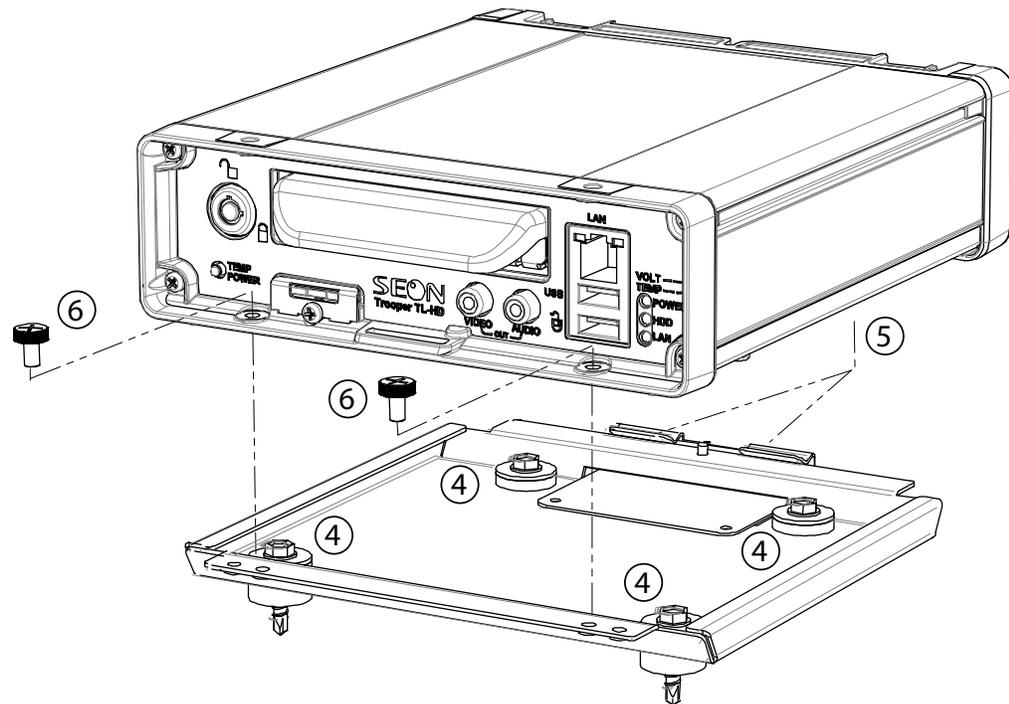
The DVR typically ships with the locking front cover, mounting plate, and cable cover off but in the shipping box. The hard disk drive is in a separate box in the system shipping kit.

To install the TL-HD DVR:

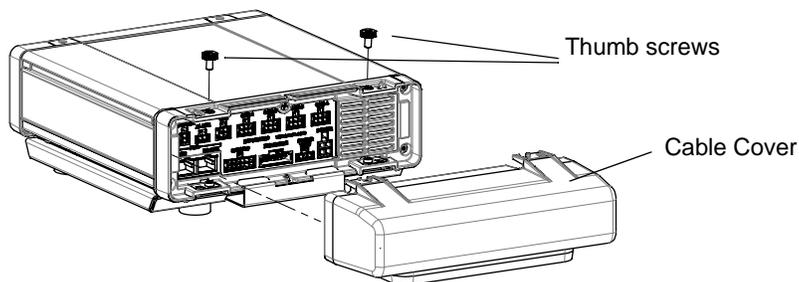
1. Select an appropriate mounting location and orientation, horizontal or vertical. For the dimensions and location of the mounting holes, see [Dimensions, on page 5](#).
2. Insert a hard drive inside the DVR and lock the HDD drive.



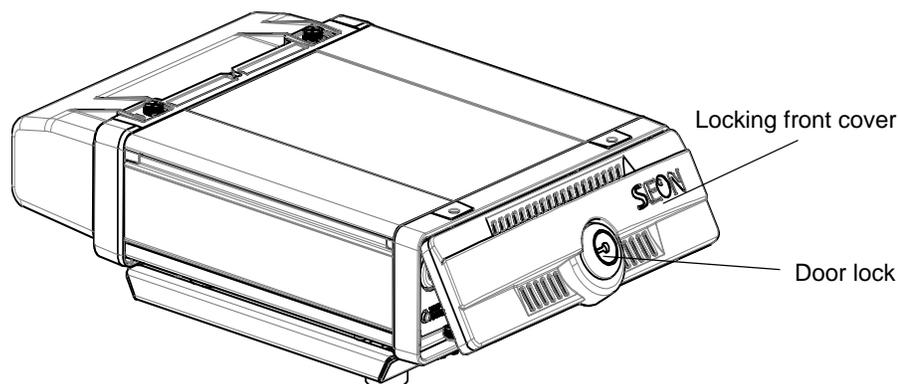
3. Use the mounting plate to mark the desired position of the DVR and drill the four mounting holes.
4. Fasten the mounting plate to the mounting surface with the four #10 × 1" self-drilling screws.



5. Connect the rear bottom edge of the DVR to the spring tab on the rear edge of the mounting tray.
6. Attach the front bottom edge to the front of the DVR using the two pan-head Phillips 3/16" screws.
7. Connect the necessary cables and components.
8. Attach the cable cover to the DVR using the provided thumb screws.



9. 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.



1.6.2. Camera Installation

Install the cameras according to the product documentation that is included with the camera.



CAUTION: Wiring Damage

Route the wiring and cables away from sharp edges that might damage the insulation. Avoid sharp bends in the cable.

1.6.3. Alarm Button Installation

To install the alarm button:

1. Mount the Alarm Switch into a ½" hole.
2. Attach the black wire of the Alarm Switch to the black wire of the Alarm Input harness. See [Figure 1-2](#).
3. Attach the red wire of the alarm button to the red wire in the Alarm Input harness.
4. Connect the Alarm Input harness connector to the ALARM socket on the DVR.

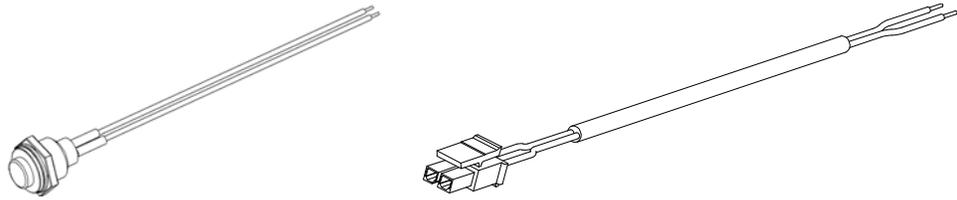


Figure 1-2 Alarm Button and Alarm Input Harness

1.6.4. Adapter Harness Installation

To install the adapter harness:

1. Connect the 12-pin connector to the SIGNALS socket on the DVR.
2. Connect the 3-pin harness to the active high DVR wake signal (optional).
3. Connect the 5-pin to the Diagnostic Button or RGY Illuminator (optional).
4. Connect the 5 signal wires as shown in [Installation Diagram, on page 1-3](#).

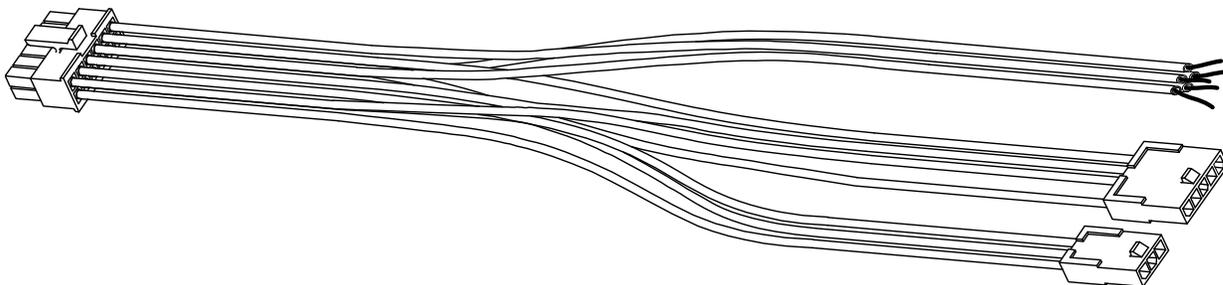


Figure 1-3 Adapter Harness

1.6.5. Expansion Harness Installation (Optional)

To install the Expansion Harness:

1. Connect the 12-pin connector to the EXPANSION socket on the DVR.
2. Connect the 4-pin to the Student Tracking harness (optional).
3. Connect the 6-pin to the Rear Vision System harness (optional).
4. Connect the Digital Out black and blue wires (optional) as shown in [Installation Diagram, on page 1-3](#).

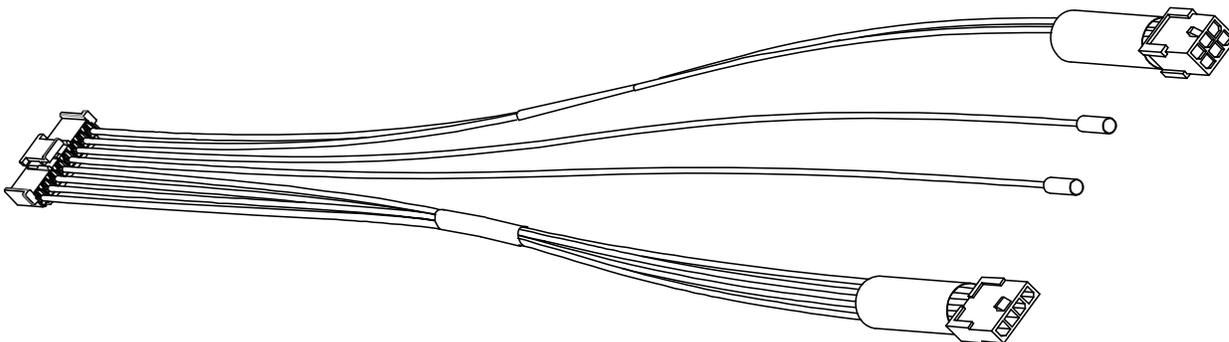


Figure 1-4 Expansion Harness

1.6.6. Power Pass Through Cable Installation (Optional)

Use the power pass through cable to pass power to a device such as the Smart-Reach Cellular modem for communication with vMax Live Plus.

The DVR Power Thru connector is not regulated and has a 2 Amp current rating. The power to the device is fused by the main DVR fuse.

To install the Power Pass Through cable:

1. Connect the 3-pin connector to the POWER THRU socket on the DVR.
2. Connect the modem power connector to the Smart-Reach Cellular modem power socket.
3. Connect the wires as shown in the Installation Diagram, on page 1–3.

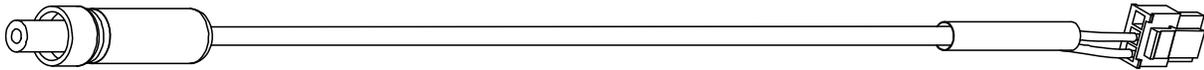


Figure 1-5 Power Pass Through Cable

4. See the Power Thru option on the System Menu, on page 4–28 for configuration details.

1.6.7. Diagnostic Button Installation (Optional)

When installed, press the Diagnostic Button to cause an alarm event to be recorded by the DVR.

To install the Diagnostic Button, see the *Diagnostic Button Installation Guide*, document number 700-0142.

1.6.8. RGY Illuminator Installation (Optional)

When installed, the RGY Illuminator LED displays DVR status conditions.

To install the Diagnostic Button, see the *RGY Illuminator Installation Guide*, document number 700-0139.

1.6.9. 12 Volt Installation Details

	<p>CAUTION: Adverse operation of the DVR</p> <p>Seon does not recommend extending the power cable. Power drops created by additional wiring can cause adverse operation of the DVR. However, if a power cable extension is required, ensure that the voltage drop does not exceed 1.0 volt by using the correct cable size. See Table 2. Connections for power cables should be soldered and sealed to prevent corrosion and voltage drop across connections.</p> <p>Once complete, ensure the DVR's voltage display is above 11 VDC with the vehicle off and the DVR recording.</p>
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Important: Both the power and ground wires must be of increased gauge.

Table 2 12 Volt Installation Cable Length and Size

Cable length	Cable size	Voltage drop
20 ft. extension	12 AWG	0.65 VDC
20 ft. extension	10 AWG	0.50 VDC
40 ft. extension	10 AWG	0.79 VDC
40 ft. extension	8 AWG	0.52 VDC

1.7. Hardware Installation Final Checklist

✓	Harnesses (camera, recorder, and accessories)
	Check that the cables and the harnesses are properly secured.
	Check that sharp metal edges are not touching the cables or harnesses.
	Check that the connections are solid (no shorts).
✓	Cameras
	Check for tight mount.
	Check the internal harness connections.
	Check that the lid is properly seated on the gasket and secured tightly.
	Check camera(s) field of view.
✓	DVR
	Check for tight mounting of hardware.
	Confirm that the cable grommet is properly installed.
	Check that all connections are tight.
✓	System
	Install the fuses.
	Plug the portable video monitor into the DVR.
	Power up the DVR from the vehicle ignition.
	Configure the DVR to required specifications locally using the trackball mouse and monitor, or remotely by accessing vMax Web via Wi-Fi or Ethernet using a PC. See Basic DVR Configuration Settings, on page 2-2 .
	Confirm the LAN, HDD, and PWR status indicators on the DVR front panel work properly:
	Confirm that all the cameras and audio sources are operating properly.
	Test audio/video record and test audio/video playback.
	Reformat the hard drives by navigating to Main Menu > Configuration > System > Program Update > Format. A warning message appears, "Formatting the Hard Drive will erase all data. Do you wish to continue?" Click Yes . Once formatting of the hard drive is completed, a confirmation message appears, "Hard drive format completed. 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.

CHAPTER 2

DVR Setup

This chapter provides information and procedures for configuring the TL-HD.

This chapter contains the following sections:

[DVR Menu Access, on page 2-1](#)

[Basic DVR Configuration Settings, on page 2-2](#)

[vMax Web Laptop Configuration, on page 2-15](#)

[Connecting the DVR to the Laptop, on page 2-17](#)

2.1. DVR Menu Access

The DVR menus can be accessed locally with a monitor and mouse or a laptop. The menus can also be accessed remotely over a wireless network.

Local access with On Screen Display (OSD) menus:

Connect to VIDEO OUT on the TL-HD front panel with a portable video monitor and use a USB mouse to set the configuration settings. The password setting can be changed in the System Settings Menu.

Local access with vMax Web menus:

Configure the network connection on the computer, then connect the DVR to a computer using an RJ-45 Ethernet cable. Use vMax Web to configure the DVR via Internet Explorer (32 bit version only).

To configure the Laptop network settings for vMax Web, see [vMax Web Laptop Configuration, on page 2-15](#).

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

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

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 (32 bit version only).

2.2. Basic DVR Configuration Settings

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.

Table 1 DVR Menu Configuration Requirements

Menu	Required Setting
Time/Date	Select the date display format. Enter the current time and date.
Title/Display	Enter the vehicle number and camera view names to display in overlay text.
Monitor Settings	If a Rear Vision Camera is installed, select monitor output settings.
Diagnostic Display	If the DVR is used in Canadian fleets, select the Celsius DVR temperature display.
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.
Camera	Turn off any unused camera channels, to avoid VLOSS events.
Alarms	Configure each alarm depending on source. Signals, Speed, G Sensor, GPS fence, Wake
Signals	Configure which signals will trigger alarms. G Sensor info can be set as signal outputs
Speed	If the DVR is used in Canadian fleets, select the KPH speed units. Select GPS if GPS is installed.
GPS	If GPS is installed, set GPS Time to On to detect time and vehicle location. Select the time zone.
G Sensor	Set thresholds and alarm event outputs.
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.
Program Update	Upload DVR configuration if necessary. Format the hard drive after all settings have been made.

Once the unit is installed and power and cabling settings are complete, set up the DVR in the configuration menus. These are the typical DVR configuration settings. If the customer wishes to further modify the settings, see [DVR Configuration Menus, on page 4-1](#) for a complete description of all available menu options.

These steps cover configuration in the DVR OSD. Configuration can be done in the DVR OSD with a monitor and USB mouse or remotely with vMax Web via Wi-Fi or Ethernet cable in Internet Explorer 11 (32 bit version only).

On power-up, with a monitor and USB mouse connected to the DVR, the TL-HD splash screen appears briefly before the DVR enters live view.



Figure 2-1 TL-HD Splash Screen

During recording and live viewing, the screen information is dynamic and can include the items shown in [Figure 2-2](#).



Figure 2-2 On-Screen Display during Live Viewing and Recording

Basic DVR configuration settings:

1. In the live view, right click anywhere to show the DVR Main menu. Click on **Configuration**.



Figure 2-3 Main Menu

2. In the Configuration menu, click **Time/Date**.



Figure 2-4 Configuration Main Menu

Note: To enter data in OSD fields, click with the mouse to display a keyboard. Use the on screen popup keyboard to select letters or numbers to input to fields. Examples are shown in [Figure 2-5](#).



Figure 2-5 On-screen Keyboard with Text or with Numbers

- In the Time and Date menu, select the following fields to show time and date for the video overlays:



Time Format: Choose 12 or 24 hour time display format.

Time: Input the correct time.

Date Format: Select the date format.

Date: Input the correct date.

Note: If GPS is installed and GPS time is selected in the Alarm/Signal Speed and GPS settings then the date and time automatically update when the GPS detects satellites.

Auto Daylight Saving: should be left On and dates left as default unless in a geographic area that does not subscribe to daylight savings such as Arizona, Hawaii, or Saskatchewan.

Click **Back** to save the menu settings.

Figure 2-6 Time and Date Menu

- In the Configuration menu, click **Titles/Display**.
- In the Titles and Display menu, enter vehicle ID and camera output labels to display on overlay and menus.



Main Title: Enter the bus number.

Main Title Display: Leave On to display.

Camera 1-4: Select camera titles that reflect the views they are recording. Typical camera titles are:

- Front
- Step
- Mid
- Rear
- Stop Arm

Click **Back** to save the menu settings.

Figure 2-7 Titles and Display Menu

- In the Titles and Display menu, click Monitor Settings.

- In the Monitor Settings menu, select options to provide monitor display for the camera output.



Default Setting: Choose a monitor view setting which will display all the cameras you have connected.

Display Switch: Leave On to switch the display as per the following settings.

Switch To: If a rear view camera is installed, select the channel that will display the rear camera view or select the camera channel customer wishes to switch to when the

following alarm or signal setting triggers the switch.

Switch On: Select the switch type (alarm or signal) that will activate the selected camera to be displayed on the monitor output.

Alarm: Select the specific alarm or signal that will activate the selected camera to be displayed on the monitor output.

Click **Back** to save the menu settings.

Figure 2-8 Monitor Settings Menu

- In the Titles and Display menu, click Diagnostic Display.
- In the Diagnostic Display menu, select options to display as overlays in the play view.



The diagnostic display options are a customer preference. Leave all these settings On.

Internal Temp Display: For temperature measurement display, leave on default F for Fahrenheit (USA) or choose C for Celsius (Canada).

Click **Back** to save the menu settings.

Figure 2-9 Diagnostic Display Menu

- In the Configuration menu, click Record.

- In the Record menu, set up record and power delay timers.



Repeat Record: Leave at default for the hard drive to loop and record over the first recordings when it is full.

Record Delay On Time: This sets the time period from when ignition is turned on until the DVR starts. Leave at default to let the bus voltage settle after the bus starts up to prevent voltage drops affecting the DVR.

Record Delay Off Time: Set to 10-20 minutes to keep the DVR and cameras on after the ignition turns off to record the bus post-trip check.

Power Delay Off Time: This delay begins after Record Delay Off time ends. This sets the time delay from the record delay till power is shut off. During this time the cameras are turned off and recording is stopped. If Wi-Fi is used, set to 2 hours or more. If no Wi-Fi, leave at default.

Alarm Partition Size: Leave Off unless instructed otherwise.

Click **Back** to save the menu settings.

Figure 2-10 Recording Settings Menu

- In the Recording Settings menu, click Camera. Set the recording parameters for each camera here.



New titles will display here as well as in the play view overlays.

Speed: Leave the channel speed at default settings unless you have special requirements. Set any unused cameras' speed to Off, so the DVR will not generate video loss events.

Resolution: Leave the channel resolution at default settings unless you have special requirements.

Quality: Leave the channel quality at default settings unless you have special requirements.

Audio: Leave audio settings On unless the camera is mounted on the exterior of the vehicle or if you have special requirements.

Click **Back** to save the menu settings.

Figure 2-11 Camera Settings Menu



CAUTION: Set Unused Cameras Off

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

- Record Settings menu: Camera Speed OFF,
Camera Audio OFF (to save disk space)
- Alarms/Signals menu: Channel Speed OFF.

13. In the Recording Settings menu, click Record2. Select the desired recording speed for the secondary video stream. Turn off the Camera Speed settings for any unused cameras. Click Back to save the settings.

14. In the Recording Settings menu, click Timers only if you have a specific requirement for timers.



Leave the **Enable Timers** setting set to Off, unless instructed otherwise and provided specific start and end timer information.

The timer function can only operate when the ignition is on. It cannot be set to record when the vehicle is off.

Click **Back** to save the menu settings.

Figure 2-12 Timer Settings Menu

15. In the Recording Settings menu, click HD Camera.



Leave the HD Camera settings at defaults unless you have special requirements.

Do not adjust the Advanced Settings unless specifically instructed to do so.

Click **Back** to save the menu settings.

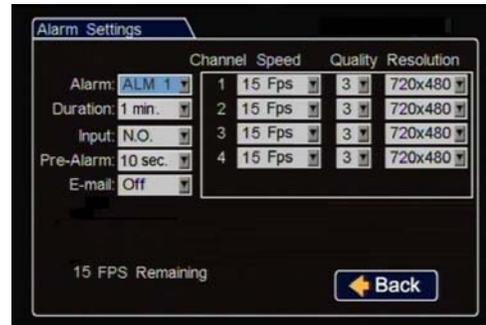
Figure 2-13 Timer Settings Menu

16. In the Configuration menu, click Alarm/Signal.
17. In the Alarms and Signals menu, click Alarms.



CAUTION: Select Menu Options for Each Alarm

From the Alarm drop down list, when any alarm (ALM 1, ALM 2, ALM3, or ALM 4) is selected, ALL of the settings on the Alarm Settings menu must be configured for that alarm. Configure settings for each alarm.



Alarm: By default, Alarm 1 is connected to the DVR alarm button. Alarms 2-4 can come from signals, GPS geo-fencing, G sensor, or excessive speed.

Duration: Set the Duration for how long the DVR will record video flagged at the alarm record settings.

Input: Applies to Alarm 1 only.

Choose Normally Open or Normally Closed, depending on the switch type used.

Pre-Alarm: Select how many seconds of pre-alarm video is included in the flagged alarm recording.

Email: This setting is used to automatically send an email when this alarm is triggered. Leave at default unless instructed otherwise.

Speed, Quality, and Resolution: For each alarm, select record settings to be used for the duration of the Alarm. Turn off unused channels to avoid DVR video loss events.

Click **Back** to save the menu settings.

Figure 2-14 Alarm Settings Menu

18. In the Alarms and Signals menu, click Signals.



Label: For signals 1-5, labels are provided for left turn, stop, brake, warning light, and right turn. The labels can be edited and changed, maximum 3 characters. Signals 6-10 are available for advanced signal wiring if required.

Level: Set all signal levels as required. Choose Active High if the circuit you are installing into rests at 0 VDC and goes to 12 VDC when active. Choose

Active Low if the circuit rests at 12 VDC and drops to 0 VDC when active.

Alarm: Select the alarm number if the signal is also to be used to trigger an alarm. That alarm's input must also be set up in the Alarms menu.

Click **Back** to save the menu settings.

Figure 2-15 Signals 1 to 5 Menu

The DVR signal harness has 5 dedicated signal input wire connections:

- LT - black wire
- STP - green wire
- BRK - red wire
- WRN - brown wire
- RT - white wire

19. In the Alarms and Signals menu, click Speed.



Speed Units: Choose MPH for US or KPH for Canada.

Speed Limit: Enter the speed limit which will trigger the excessive speed alarm when exceeded.

Excessive Speed Action: Select the alarm which will be triggered by excessive speed.

Click **Back** to save the menu settings.

Figure 2-16 Speed Settings Menu

20. In the Alarms and Signals menu, click GPS.



GPS Display: If a GPS receiver is installed, select On to display the coordinates on the play view overlay.

GPS Time: Select On to have the play view overlay time set by the GPS.

UTC Reference: Set the time zone:

- 4 Atlantic
- 5 Eastern
- 6 Central
- 7 Mountain
- 8 Pacific

Click **Back** to save the menu settings.

Format the drive after GPS settings are complete.

Figure 2-17 GPS Settings Menu



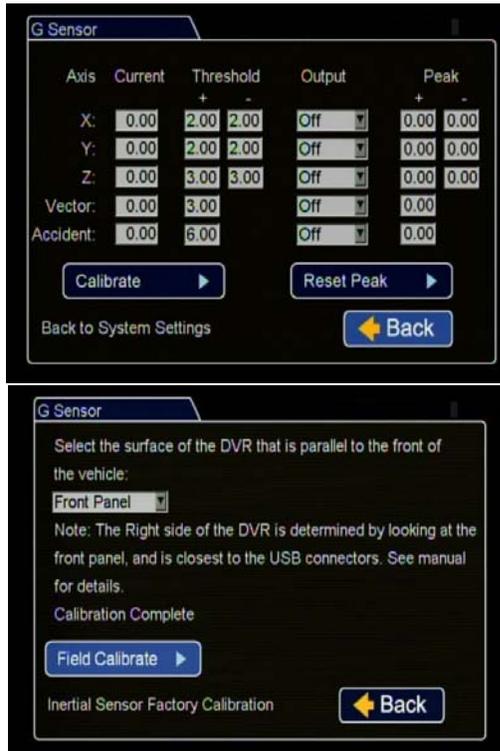
CAUTION: Recording over Multiple GPS UTC Reference Settings

Whenever the GPS UTC reference setting is edited, format the DVR hard drive before the DVR starts recording.

This is to prevent the DVR from accidentally recording over the same time period in different time zones. That can happen if a DVR records for a while in the default Eastern UTC reference setting but the DVR is installed in a Central or other western time zone.

After installing and configuring, if the bus is driven out of the garage and the GPS detects satellites and resets the time, it can attempt to record the same existing time stamp and cause errors on playback.

21. In the Alarms and Signals menu, click G Sensor.



Current: Display only, shows current live readings.

Threshold: G Sensor threshold defaults are set for large bus movement detection.

- X – Forward/Back axis, set to +2.0/-2.0.
- Y – Left/Right axis, set to +2.0/-2.0.
- Z – Vertical axis, set to +3.0/-3.0.
- Vector – Combination of X and Y, set to +3.0.
- Accident – Combination of X and Y, set to +6.0.

Smaller vehicles may require lower thresholds - some experimentation may be required to define optimum settings for each vehicle type. If the thresholds are set too low, they will generate many alarms.

Output: Select an alarm or signal

output for the settings if required.

Peak: Use the observed peak values to refine threshold settings.

Click **Calibrate** to open the Calibration menu. From the drop down menu, select the DVR front surface. Click **Field Calibrate** for the G Sensor to set the X/Y/Z axis planes based on the mounting surface selection.

Click **Back** to save the menu settings.

Figure 2-18 G Sensor Menu

22. In the Alarms and Signals menu, click Others.



Wake On Input: Select if requested.

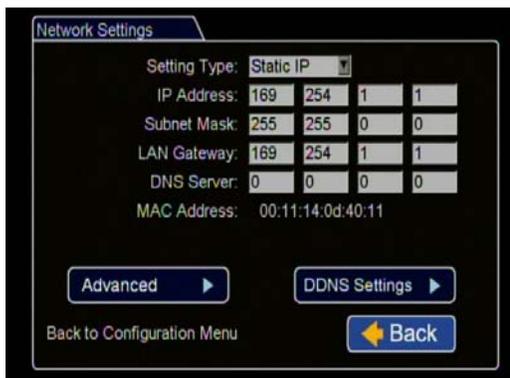
Digital Output: Select if requested.

Click **Back** to save the menu settings.

Figure 2-19 Others Settings Menu

23. In the Configuration menu, click Network to edit the DVR network settings.

	<p>CAUTION: Network and Advanced Settings</p> <p>Network and Advanced network settings should only be configured by Seon Engineering Services or the fleet system administrator.</p>
---	---



Setting Type: Leave at default Static IP setting.

Use the IP address shown to communicate with the DVR over the internet with vMax Web.

If the DVR is attached to a Wi-fi 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 will have to be updated as well.

See [vMax Web Laptop Configuration](#), on page 2–15.

Figure 2-20 Network Settings Menu

24. In the Network Settings menu, click Advanced, then User Levels to assign users access permissions.



Users logging on to the DVR locally or remotely should have password control to protect the DVR from being accidentally reconfigured. Leave the default Admin user and add other users with access levels as needed.

Enter user names, passwords, and assign levels:

Admin level user has complete DVR control.

Configure level cannot edit user levels or IP settings.

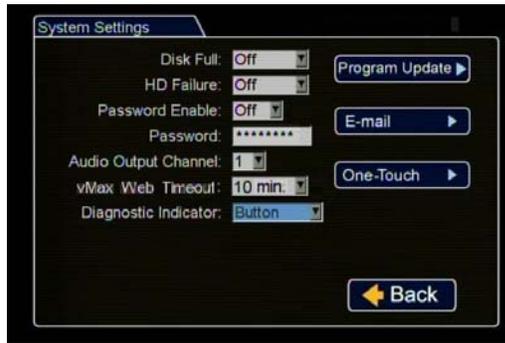
Playback level can only view and archive recordings.

Click **Back** to save the menu settings.

Figure 2-21 User Levels Menu

	<p>CAUTION: DVR Password Security</p> <p>The default password is 11111111. For security purposes, Seon recommends that the user default login and system settings passwords should be changed. Seon is not responsible if the password is lost or forgotten.</p>
---	---

25. In the Configuration menu, click System and in System Settings menu, configure as follows.



Disk Full, HD Failure: Leave Off unless your network is configured to receive emails from the DVR.

Password Enable: Leave Off unless instructed otherwise.

Audio Output Channel: Select the default audio channel that will be available from the audio RCA port on the front of the DVR.

vMax Web Timeout: Leave at default 10 minutes.

Diagnostic Indicator: If installed, select Button or RGY Illum.

Click **Back** to save the menu settings.

Figure 2-22 System Settings Menu

26. In the System Settings menus click Program Update and in the Program Update menu, store the DVR configuration as a file to upload to other DVRs.



Select USB Device as the file saving destination. Plug a USB memory device into the front of the DVR. Click **Store** to save the file on the USB memory device.

Load: For details on uploading configurations to the DVR, see [DVR Menu Access, on page 2-1](#).

Update: Firmware updates can also be delivered by a USB device. The DVR will reboot when done.

Format: Format the hard drive when the configuration is complete and before final delivery of the installation to the customer.

Click **Back** to save the menu settings.

Figure 2-23 Program Update Menu

2.3. vMax Web Laptop Configuration

The TL-HD DVR can be managed using vMax Web using Internet Explorer (32 bit version only) with the laptop connected to the DVR using an RJ-45 Ethernet cable.

Make sure the DVR and other system components are already installed and configured in order to access the DVR via vMax Web.

Configure your laptop to obtain IP addresses automatically, using DHCP (Dynamic Host Configuration Protocol). If it is not configured to DHCP, or you need to verify the setting, then follow these steps to configure your laptop.

To configure your laptop:

1. Navigate to Windows Local Area Connection properties in Windows 7 or XP as follows:

Windows 7: click Start > Control Panel > Network and Internet > Network and Sharing > Local Area Connection.

Windows XP: click Start > Control Panel > Network Connections > Local Area Connection.

The Local Area Connection Status window appears.

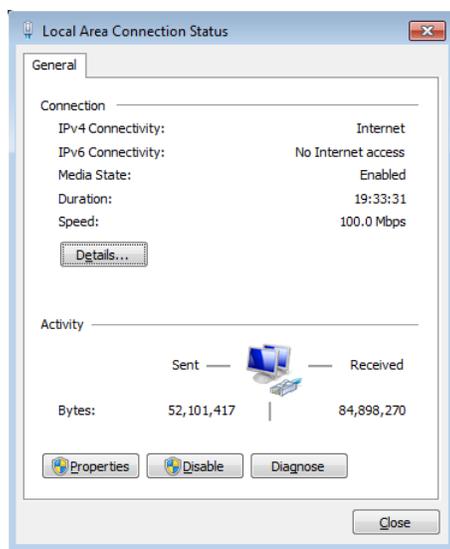


Figure 2-24 Local Area Connection Status window

2. In the Local Area Connection Status window, click on Properties.

The Local Area Connection Properties window appears.

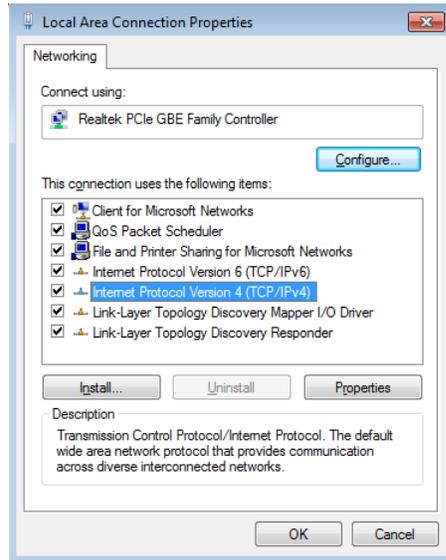


Figure 2-25 Local Area Connection Properties window

3. In the Local Area Connection Properties window, select the click to highlight the current **Internet Protocol Version**, (in Windows XP select **Internet Protocol (TCP/IPv4)**), and then click **Properties**.

The Internet Protocol Version Properties window appears.

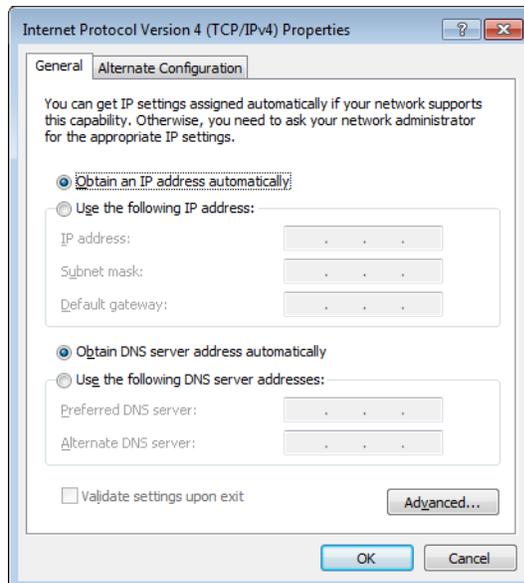


Figure 2-26 Internet Protocol Properties window

4. In the Internet Protocol Properties window, select **Obtain an IP Address Automatically**. Click OK and then close the Windows dialogs.
5. Continue to connect the DVR to a laptop instructions.

2.3.1. Connecting the DVR to the Laptop

To connect the DVR to the laptop:

1. Connect one end of the Ethernet cable to a network port on the laptop. Connect the other end to a network port on the DVR.
2. The laptop uses Automatic Private IP Addressing (APIPA)¹ to select an IP address. This process may take up to 90 seconds.
3. Once connected, the laptop Local Area Connection should report limited connectivity using an Automatic Private IP Address. Confirm by opening your network connections.

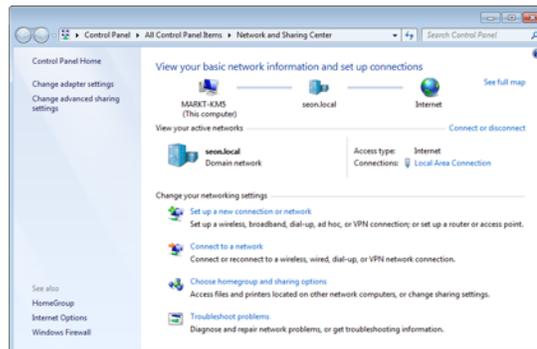


Figure 2-27 Network Connections

4. In very rare instances, the laptop may select the same IP address, **http://169.254.1.1**, used by the DVR and cause a conflict. If this is the case, manually set the laptop IP address to **http://169.254.1.2**. Click Ok and then close the Windows dialogs.

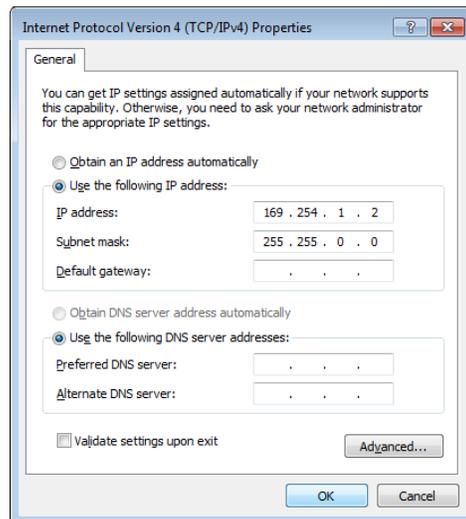


Figure 2-28 Update IP Address

1.APIPA is a feature available since Windows 98 that allows for devices to provide their own IP address when there is no DHCP server present.

5. Open Internet Explorer and, in the address bar, type in the DVR default IP address: **http://169.254.1.1**. Click Enter.

The DVR Login screen appears.

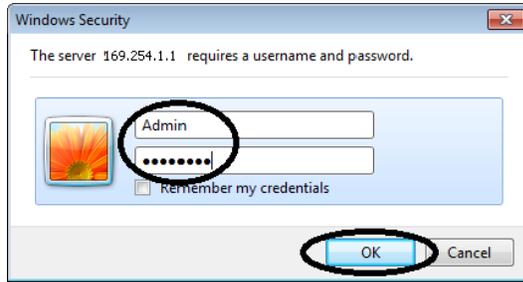


Figure 2-29 DVR Login Screen

6. At the login prompt, enter the user name and password to access the internet browser user interface. The user name is case sensitive.

	<p>CAUTION: DVR Password Security</p> <p>The default password is 11111111. For security purposes, Seon recommends that the user default login and system settings passwords should be changed. Seon is not responsible if the password is lost or forgotten.</p>
---	---

7. Click Ok.

vMax Web opens with the DVR cameras displaying in Live view.



Figure 2-30 vMax Web Live View

8. See the DVR User manual for details on using the vMax Web.

CHAPTER 3

Advanced Setup

This chapter provides information on uploading configuration files and firmware updates to the DVR, and setting up email notifications when events are detected on the DVR.

**CAUTION: Administrator Permissions Required**

These procedures should only be performed by administrator level staff. If you have questions about these procedures, contact Seon support.

This chapter contains the following sections:

DVR Configuration Uploads, on page 3-2

Configuration Upload from USB Memory Device, on page 3-2

Configuration Uploads in vMax Web, on page 3-6

DVR Firmware Updates, on page 3-10

Email Notifications, on page 3-11

On-Screen Display Email Setup, on page 3-11

vMax Web Email Setup, on page 3-14

3.1. DVR Configuration Uploads

A configuration file is usually uploaded to a DVR when the DVR is first installed or when settings need to be changed on multiple DVRs in a fleet.

Configuration files can be uploaded at the DVR with a USB memory device or over the network using vMax Web or vMax Commander applications.

To upload configurations with vMax Commander, see the vMax Commander Installation and Configuration Guide (700-0100).

3.1.1. Configuration Upload from USB Memory Device

This method requires physical access to the DVR, a portable video monitor, and a USB mouse.

To load a configuration update to the DVR, the USB memory device must be formatted by a Windows-based computer using the FAT file format.

To upload a configuration update on the TL-HD via USB:

1. Copy the configuration file at the root of the USB memory device folder.

Important: For USB uploading, the configuration file name can have no more than four characters.
Example: TLHD.seon.

2. Power up the DVR using the vehicle ignition.
3. Connect the portable video monitor and USB mouse.
4. Insert the USB memory device into the USB port on the DVR.
5. In the DVR on screen display, right click to open the menu, click Configuration, and then click System.



Figure 3-1 Main Menu and System Menu

- In the System Settings menu click Program Update.



Figure 3-2 System Settings Menu

- From the Load Configuration menu, select the file to upload and click Load.



Figure 3-3 Loading USB Configuration

Important: The Load Configuration drop down list only displays the ten most recent configuration files on the USB drive. Only file names with 4 or less characters can be displayed.

- From Include Network, select whether or not to overwrite the existing DVR network settings with the new configuration settings. The default setting of NO keeps your existing network settings.

	CAUTION: DVR Communication Disruption Risk Avoid unintentionally changing the DVR network settings when uploading a new configuration. When saving or changing network settings, communication with the DVR can be disrupted.
---	---



Figure 3-4 Program Update Menu Include Network

	CAUTION: Risk of Network Settings Loss Configurations uploaded to the DVR from the USB device do not get written to the DVR until the DVR powers down and restarts. If the DVR settings are edited locally after this configuration is uploaded but before the DVR is restarted, the settings uploaded from the USB device will be lost.
--	---

- Click Load.



Figure 3-5 Program Update Menu Load

- In the DVR configuration confirmation dialog, click Yes to proceed.

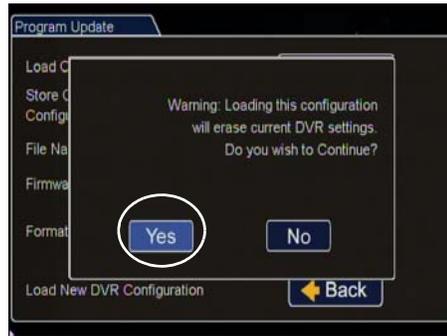


Figure 3-6 Load Configuration: Warning Message

- Click Back in the Program Update and then System Settings menus to save and exit the menu.



Figure 3-7 Click Back to Save Configuration

- From the Configuration menu, click Title/Display, and in the Titles and Display menu, update the text in the Main_Title field.



Figure 3-8 Titles and Display Menus

- Click Back to save.
- Remove the USB memory device.
- If required, update the network settings.
- Turn off the DVR, restart the DVR, and confirm that the new configuration settings have been applied.

3.1.2. Configuration Uploads in vMax Web

To remotely install a configuration update, the configuration file (received from Seon or created and saved from a DVR in your network) must be on a computer with network access to the DVR and with Internet Explorer 8, 9, or 10 (32 bit version only) to access vMax Web.

To upload a configuration update to the TL-HD via vMax Web:

1. On a computer connected to the DVR, copy the DVR configuration file.
2. Power up the DVR using the vehicle ignition.
3. Open Internet Explorer and type the DVR IP address in the address bar.
The Seon default IP address is http://169.254.1.1.
4. If necessary, agree to Windows Run Add-On requests.
5. At the login prompt, enter a user name and password. User names and passwords are case sensitive.

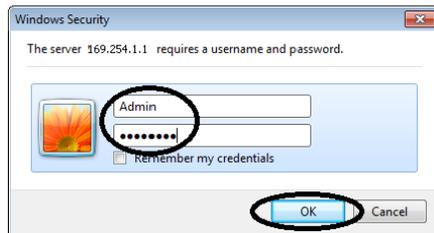


Figure 3-9 DVR Login Screen

	<p>CAUTION: DVR Password Security</p> <p>The default password is 1111111. For security purposes, Seon recommends that the user default login and system settings passwords should be changed. Seon is not responsible if the password is lost or forgotten.</p>
--	--

6. Click Ok.
vMax Web opens with the DVR cameras displaying in Live view.



Figure 3-10 vMax Web Live View

7. Select the Configuration tab and on the Configuration tab, click the System icon.



Figure 3-11 vMax Web System Settings

8. In the Program Update Settings area, the default (cleared) Include Network Settings check box setting keeps your existing network settings during the configuration upload.

Select the Include Network Settings check box only if you need to overwrite the existing DVR network settings with the new configuration settings.

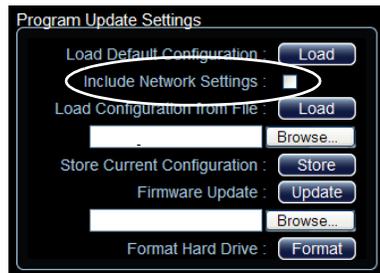


Figure 3-12 vMax Web System Configuration Program Update Settings

9. In the Program Update Settings area, below the Load Configuration from File field, select Browse to open the computer search window.

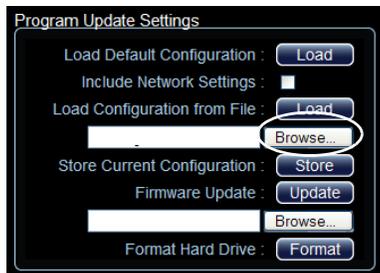


Figure 3-13 vMax Web Program Update Settings

10. In the computer file search window, navigate to the configuration file and click Open.

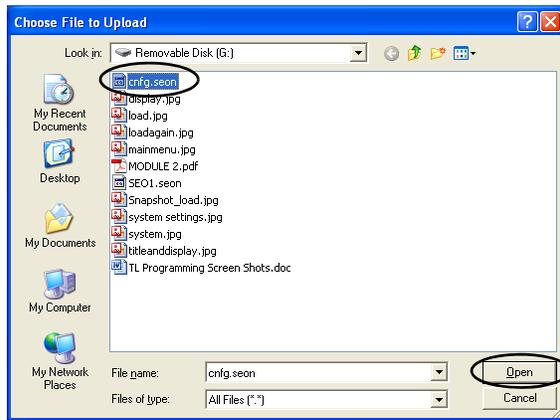


Figure 3-14 Windows File Search

Important: For consistency, Seon recommends that the configuration upload file name should be kept to four characters maximum (****.seon) in the event that the file needs to be loaded to the DVR from the USB port. The DVR USB upload interface supports only four characters in the file name.

The configuration file name and location appear in the location field.

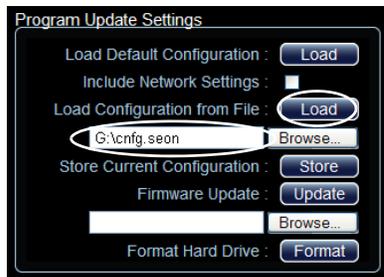


Figure 3-15 vMax Web Load Configuration from File

11. Beside the Load Configuration from File field, click Load.
12. In the Message from web page dialog, click OK to start the configuration upload.

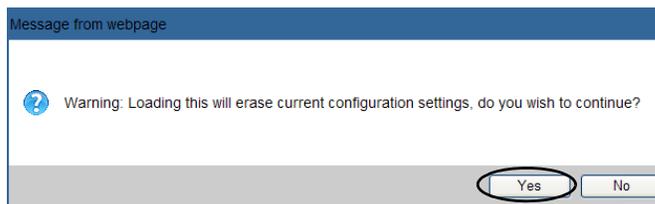


Figure 3-16 Loading Confirmation

13. If necessary, agree to Windows Run Add-On requests.

- When the progress bar shows the update is 100% complete, click OK.



Figure 3-17 Loading Complete

- In the Titles/Display menu, update the text in the Main_Title field.

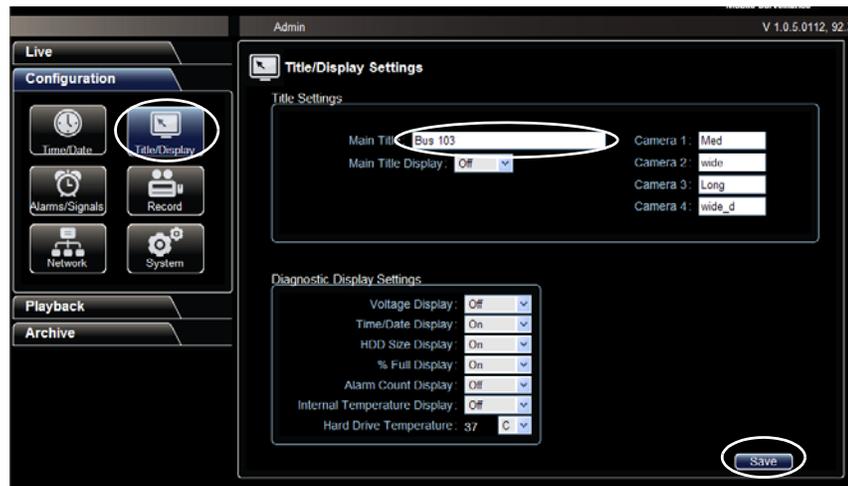


Figure 3-18 vMax Web Titles and Display Menu

- Click Save to save the settings to the DVR.
- If required, update the network settings.
- Power down and restart the DVR.
- Login with vMax Web and refresh the vMax Web browser view.
- Confirm that the new configuration settings are in place.

3.2. DVR Firmware Updates

The firmware version is displayed on the top right corner of every menu. The firmware update must be obtained from Seon Design. To install a firmware update, a USB memory device must be formatted by a Windows®-based computer using the FAT file format.

	<p>CAUTION: Equipment damage</p> <p>Do not crank the vehicle power or remove the power while updating the DVR firmware. Equipment damage may result.</p>
---	---

To install a firmware update on the TL-HD DVR:

1. Load the Program Update file onto the USB memory device formatted by a Windows®-based computer using the FAT file format.
2. Power up the DVR using the vehicle ignition.
3. Insert the USB memory device with the new firmware version into the USB port on the DVR. After the DVR has started, go to the System Settings menu > Program Update.
4. Click Update, and in the confirmation window, click Yes to proceed.



Figure 3-19 Updating DVR Firmware Dialog Box

5. Once the update is finished, the DVR will automatically restart when the ignition is on.

Important: On restarting, the DVR will take up to 3 minutes to load as it completes the upgrade process. Wait until the DVR finishes loading.

6. Confirm the DVR firmware version has updated.
7. Remove the USB memory device.

3.3. Email Notifications

If required by the customer, Seon DVRs can be configured to send emails when certain events are recorded. An SMTP server is required to support network email addresses.

When the DVR is in range of a network, an email will be sent, the alarm recording can be viewed remotely, and the event can be addressed.

Set up the DVR to send emails locally or remotely using the following steps:

On-Screen Display Email Setup, on page 3–11

vMax Web Email Setup, on page 3–14.

3.3.1. On-Screen Display Email Setup

1. Power up the DVR using the vehicle ignition.
2. Connect monitor and mouse to the DVR.
3. In the DVR on screen display, right click to open the menu, click Configuration, and then click System.

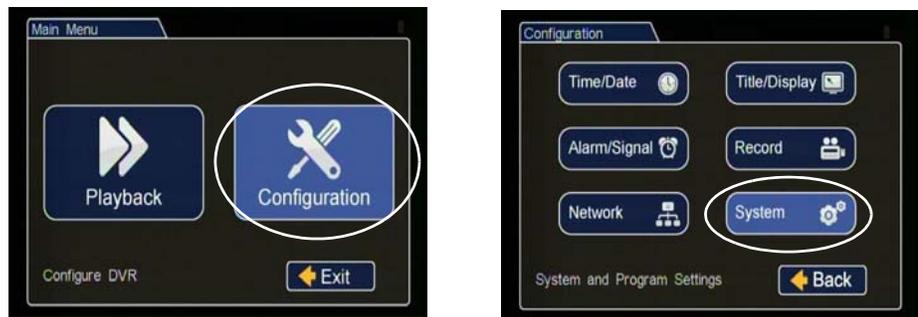


Figure 3-20 Main Menu and Configuration Menu

4. In the System Settings menu, click E-mail.



Figure 3-21 System Settings Menu

5. In the E-mail settings menu, populate the E-mail configuration fields as required.



Figure 3-22 E-mail Settings Menu

6. Click Back to save.
7. In the System Settings menu set the Disk Full and HD Failure options to E-mail.



Figure 3-23 System Settings Menu

8. Click Back to exit the System configuration menu.
9. In the main Configuration menu, click Alarm/Signal.



Figure 3-24 Configuration Menu

10. In the Alarm/Signal menu, click Alarms.



Figure 3-25 Alarms and Signals Menu

11. In the Alarm Settings menu, select the alarm from the drop down list, and set Email to On.

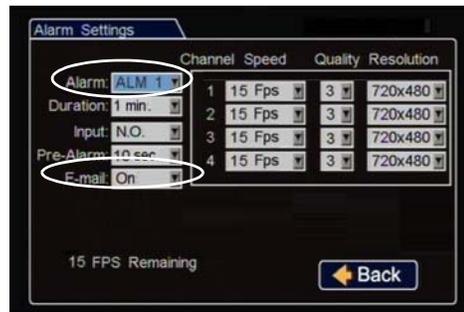


Figure 3-26 Alarms Settings Menu

12. Repeat for all alarms requiring email notification.
 13. Click Back to save and exit the configuration menus.

If the configured alarm or system events occur, an email will be sent when the DVR connects to a network.

3.3.2. vMax Web Email Setup

1. In the Network Email settings window, populate the E-mail configuration fields as required.

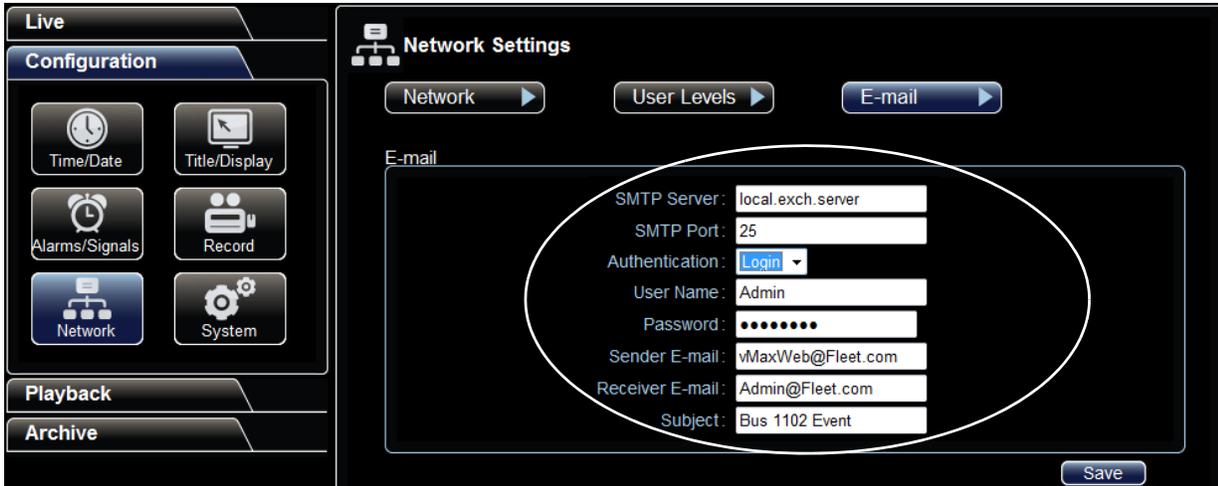


Figure 3-27 vMax Web E-mail settings

	<p>CAUTION: DVR Password Security</p> <p>The default password is 11111111. For security purposes, Seon recommends that the user default login and system settings passwords should be changed. Seon is not responsible if the password is lost or forgotten.</p>
--	---

2. In the Alarm configuration menu, select the E-mail check box for each alarm configuration requiring email notification.

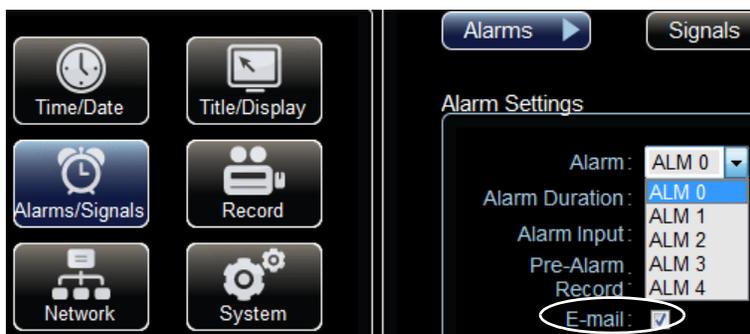


Figure 3-28 Alarm Email Setting

3. In the System menu, select E-mail from the Disk Full and HD Failure drop down menus.

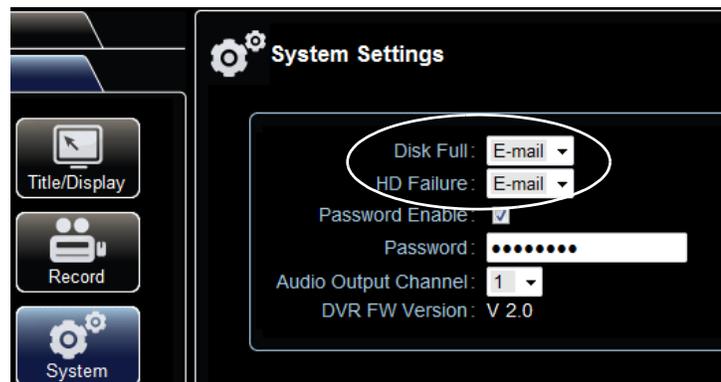


Figure 3-29 System Settings Email

4. Click Save.

If the configured alarm or system events occur, the email will be sent when the DVR is within range of a Smart-Reach access point.

CHAPTER 4

DVR Configuration Menus

This chapter describes the functions and defaults of the fields and options on each configuration menu.

This chapter contains the following sections:

[DVR Configuration Menu Tree, on page 4-2](#)

[Time and Date Menu, on page 4-3](#)

[DST \(Daylight Savings Time\) Settings Menu, on page 4-4](#)

[Titles and Display Menu, on page 4-5](#)

[Diagnostic Display Menu, on page 4-7](#)

[Recording Menu, on page 4-9](#)

[Camera Menus, on page 4-10](#)

[Timer Menu, on page 4-11](#)

[HD Camera Menu, on page 4-12](#)

[HD Camera Advanced Menu, on page 4-13](#)

[Alarms and Signals Menu, on page 4-14](#)

[Alarm Menu, on page 4-15](#)

[Signals Menu, on page 4-16](#)

[Speed Menu, on page 4-17](#)

[GPS Menu, on page 4-18](#)

[G Sensor Menu, on page 4-19](#)

[G Sensor Calibrate Menu, on page 4-20](#)

[Others Menu, on page 4-21](#)

[Network Menu, on page 4-22](#)

[Advanced Network Menu, on page 4-23](#)

[VMS Servers Menu, on page 4-24](#)

[Supervisor Menu, on page 4-25](#)

[User Levels Menu, on page 4-26](#)

[DDNS \(Dynamic Domain Name Server\) Menu, on page 4-27](#)

[System Menu, on page 4-28](#)

[Program Update Menu, on page 4-29](#)

[E-mail Menu, on page 4-31](#)

4.1. DVR Configuration Menu Tree

The TL-HD Configuration Main Menu shown in [Figure 4-1](#) applies to the on screen display configuration and to the Web browser configuration menus.

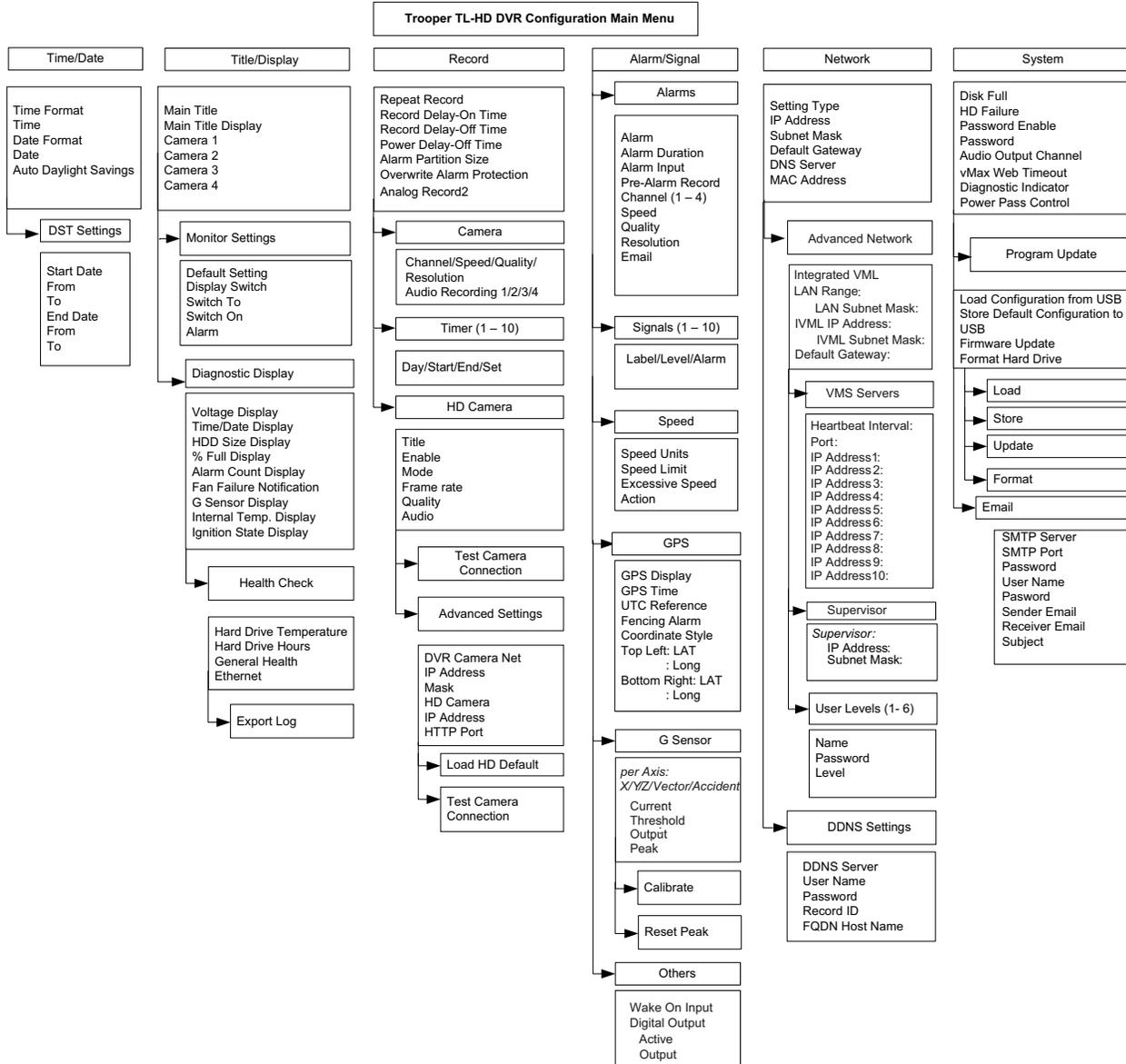


Figure 4-1 Configuration Main Menu for On Screen Display and Web Browser

4.2. Time and Date Menu

Use the Time and Date menu to set the time and date settings and Auto Daylight Savings settings.



Figure 4-2 Time and Date Menu

Table 1 Time and Date Configuration Items

Menu Item	Description	Values [Default]
Time Format	Set the time in 12-hour or 24-hour format.	[12 Hour], 24 Hour
Time	Set the time for the DVR.	12:00 am to 11:59 pm for 12 Hour format, 00:00 to 23:59 for 24 Hour format
Date Format	Set the preferred date format.	[mm-dd-yyyy], dd-mm-yyyy, yyyy-mm-dd
Date	Set the date for the DVR.	Depends on selected Date Format setting.
Auto Daylight Saving	Auto Daylight Saving set to On automatically adjusts the internal clock to daylight saving time. The times and dates can be adjusted as required.	[On], Off

4.2.1. DST (Daylight Savings Time) Settings Menu

Configure the start and end date settings for daylight savings.

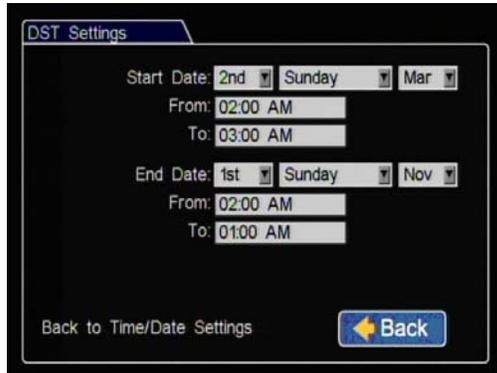


Figure 4-3 DST Settings Menu

Table 2 DST Settings Configuration Items

Menu Item	Description	Values [Default]
Start Date	Set the week, day, and month for daylight saving to start.	[2nd Sunday Mar]
From	Set the time for daylight saving to start.	[02:00 AM]
To	Set the time for daylight saving to end.	[03:00 AM]
End Date	Set the week, day, and month for daylight saving to end and return to Standard Time.	[1st Sunday Nov]
From	Set the time for daylight saving to start.	[02:00 AM]
To	Set the time for daylight saving to end.	[01:00 AM]

4.3. Titles and Display Menu

Use the Titles and Display menu to set the main title, camera titles, and other camera view overlay options.



Figure 4-4 Titles and Display Menu

Table 3 Titles and Display Configuration Items

Menu Item	Description	Value [Default]
Main Title	Set a title.	[Main_Title] Maximum 32 characters
Main Title Display	Show or hide the main title display.	[On], Off
Camera 1 to Camera 4	Set a title.	[Camera01] to [Camera04] Maximum 8 characters

4.3.1. Monitor Settings Menu

Use the Monitor Settings menu to set monitor default and switched views.



Figure 4-5 Diagnostic Display Menu

Table 4 Diagnostic Display Configuration Items

Menu Item	Description	Value [Default]
Default Setting	Select the default monitor display setting, all cameras or a single camera.	[4 Up], CH1 - CH4
Display Switch	Enable or disable switched display.	[Off], On
Switch To	When Display Switch is set to On, select the camera to view.	[CH1], CH2 to CH4, 9 Up, Sequence
Switch On	When the Display Switch is set to On, set the trigger that will make the camera switch to the view selected in the Switch To setting.	[Alarm], Signal, Timer
Alarm (Signal or Timer)	When Display Switch is set to On, set which specific trigger will make the monitor switch from the default setting to the view selected in the Switch To setting. For example, ALM1 will make the monitor switch to the view selected in the Switch To option for the duration of ALM1.	[ALM 1], ALM2, ALM 3, ALM4

4.3.2. Diagnostic Display Menu

Use the Diagnostic Display menu to set various diagnostic options to display on the camera view overlays.



Figure 4-6 Diagnostic Display Menu

Table 5 Diagnostic Display Configuration Items

Menu Item	Description	Value [Default]
Voltage Display	Display the system input voltage.	[On], Off
Time/Date Display	Display the time/date display.	[On], Off
HDD Size Display	Display the hard drive size.	[On], Off
% Full Display	Display the percentage of the hard drive space used.	[On], Off
Alarm Count Display	Display the current alarm count (1 to 9). Alarm count resets to 0 when the DVR is restarted.	[On], Off
Fan Failure Notification	Display a message if the DVR fan fails.	[On], Off
G Sensor Display	Display G Sensor threshold incidents.	[On], Off
Internal Temperature Display	Display the ambient temperature inside the DVR.	C (Celsius), [F (Fahrenheit)], Off
Ignition State Display	Display the vehicle ignition state.	[On], Off

4.3.3. Health Check Menu

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

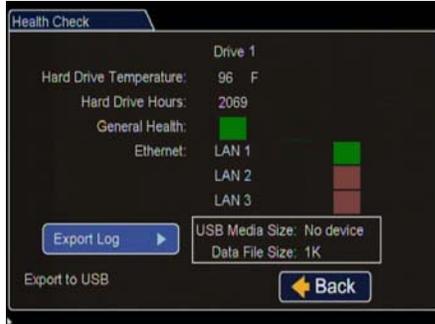


Figure 4-7 Health Check Menu

Table 6 Diagnostic Display Configuration Items

Menu Item	Description	Value [Default]
Hard Drive Temperature	Display the temperature inside the hard drive.	C (Celsius), Off [F (Fahrenheit)]
Hard Drive Hours	Displays the amount of time in hours that the hard drives have been operating.	
General Health	A self-check of the hard drive sub systems indicates operating condition of the DVR hard drives.	Green, [Red]
Ethernet Connections	Indicates if network connectivity is operational or not.	LAN 1/2, Green, [Red]
Export Log	Exports the data to a USB memory device. Saves to a Notepad .txt file with the date (YYYYMMDD format) and time (24 hr format). For example, 20100902-1348. A Configuration Saved or No USB Device Present message appears when the Export Log is clicked.	

4.4. Recording Menu

Use the Recording Settings menu to set the resolution, recording speed in frames per second (FPS), image quality, Record Delay-On and Record Delay-Off times, and other recording options.



Figure 4-8 Recording Settings Menu

Table 7 Record Configuration Items

Menu Item	Description	Value [Default]
Repeat Record	Enables recording over older video data once the hard drive is full. <ul style="list-style-type: none"> When On, the DVR continues recording, overwriting the first recorded data. the HD used overlay shows “N/A Repeating”. The DVR continues recording overwriting the first recorded data. When Off, at 100%, the on screen display HD Used message shows “100%. The DVR stops recording. 	[On], Off
Record Delay-On Time	Enables a time delay after the ignition signal turns on until the DVR is turned on.	0, [30 sec], 1, 5, 10, 20, 30, 45, 60 min
Record Delay-Off Time	Enables a time delay to continue recording after the ignition signal to the DVR is turned off. The power output connector on the DVR back panel remains active during this time.	0, [15], 30 sec, 1, 5, 10, 20, 30, 45, 60 min
Power Delay-Off Time	Enables a time delay after the record delay-off time expires to keep the DVR on but not recording. The control connector on the DVR back panel remains active to allow peripherals such as Smart-Reach to be powered up during the power delay time.	0, [15], 30 sec, 1, 5, 10, 20, 30, 45, 60 min, 2, 4 hours
Alarm Partition Size	Enables a portion of the hard drive to be reserved for alarm data that needs to be protected and not erased by the Repeat Record function.	[Off], 10, 20, 30, 40%
Overwrite Alarm Partition	When an Alarm Partition size is selected, enable or disable recording over older protected alarms once the alarm partition is full.	[Off], On
Analog Record2	The DVR can record video in two streams, one at high resolution for full detailed event information, and the other (Analog 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 cellular plan, AnalogRecord2 allows quick access to video on-line to assess the situation. Use the Analog Record 2 settings menus to set lower frame per second recording rates for the analog cameras selected in the Camera menu.	Off, 1, 2, 3, 4, [5] fps

4.4.1. Camera Menus

Use the Camera Settings menus to set the FPS, picture quality, recording resolution, and audio recording for up to four cameras.



Figure 4-9 Camera Settings Menu

	<p>CAUTION: Set Unused Cameras Off</p> <p>When a DVR is installed with less than the full complement of cameras connected, disable unused camera input settings to prevent the DVR from generating Video Loss (VLoss) events for those camera inputs. In the DVR Configuration menus, disable unused camera inputs as follows:</p> <ul style="list-style-type: none"> Record Settings menu: Camera Speed OFF, Camera Audio OFF (to save disk space) Alarms/Signals menu: Channel Speed OFF.
--	--

Table 8 Camera Settings Configuration Items

Menu Item	Description	Value [Default]
Speed	Set the recording frame rate. The TL4/2 has a maximum total combined frame rate of 80 frames per second which can be distributed between up to 4 cameras.	Off, 1, 5, 7.5, 10, [15], 30 fps
Quality	Set the picture quality option. Setting 1 is the lowest quality, setting 4 is the highest quality. The higher the quality, the more space is used on the hard drive. The DVR uses H.264 video compression to extend the recording time on the hard drive. See Estimated Recording Time tables in the TL DVR User Guide, 700-0098.	1, 2, [3], 4
Resolution	Set the recording resolution in pixels. The higher the recording resolution, the shorter the recording time on the hard drive.	[720 × 480], 720 × 240, 360 × 240
Audio Recording	Enables audio recording for the input channel. Turn off audio for camera channels that are not used.	Off, [On]

4.4.2. Timer Menu

Use the Timer Settings menu to set the timer schedules to turn the recording on and off.

The timer function can only operate when the ignition is on. It cannot be set to record when the vehicle is off.

The DVR supports ten independent timers that can be used to control when and how the DVR records.



Figure 4-10 Timer Settings Menus

Table 9 Timer Settings (1 to 10)

Menu Item	Description	Value [Default]
Enable Timers	Enables preset times for recording.	[Off], On
Day	Set the timer to record on a specific day, daily, every weekday (WDY), or only on the weekend (WND).	DLY, [WLY], WND, SUN, MON, TUE, WED, THU, FRI, SAT
Start	Set in 12-hour format. Set in 24-hour format.	<ul style="list-style-type: none"> [12:00 AM] to 11:59 PM for 12 hr format, 00:00 to 23:59 for 24 hr format
End	Set in 12-hour format. Set in 24-hour format.	<ul style="list-style-type: none"> [12:00 AM] to 11:59 PM for 12 hr format, 00:00 to 23:59 for 24 hr format
Set	Enables and disables the timer.	[Off], On

4.4.3. HD Camera Menu

Use the HD Camera menu to change the CHW camera settings to meet different video recording requirements.



Figure 4-11 HD Camera Settings Menus

Table 10 HD Camera Settings

Menu Item	Description	Value [Default]
Title	Enter a camera title.	[HD Cam] Maximum 8 characters
Enable	Select to enable or disable the camera to record video.	[On], Off
Mode	Select the recording mode.	[Record], Record2
Frame Rate	Depending on the mode selected, select a frame rate for the camera. When Record2 mode is selected, 5 is the maximum frame rate available.	Record: 5, 10, [15], 30 fps Record2: 1, [5] fps
Quality	Depending on the mode selected, select a recording quality for the camera. When Record2 mode is selected, 3 is the maximum recording quality available. See Estimated Recording Time tables in the TL-HD User Guide.	Record: 1, 2, [3], 4 Record2: 1, [2], 3
Audio	Not available.	[Off]
Test Camera Connection	Click to test camera connection.	Green = working Red = not working.

4.4.4. HD Camera Advanced Menu

The Advanced Settings menu is used to change the HD camera's IP subnet address. These IP settings should only be changed if the HD camera subnet conflicts with the DVR network subnet. If the IP address in this menu is edited, the IP address stored on the camera must be similarly changed. Contact Seon Support if you wish to edit settings on this menu.

	<p>CAUTION: HD Camera Network</p> <p>Contact Seon Support if you wish to edit settings on this menu.</p> <p>In order for the DVR to communicate with other network equipment, the IP Addresses, Subnet Mask, and HTTP port must be set correctly. If not set correctly, communication failure including loss of recording will result.</p>
---	---



Figure 4-12 HD Camera Advanced Settings Menus

Table 11 HD Camera Advanced Settings

Menu Item	Description	Value [Default]
DVR Camera-Net IP Address	Enter the DVR's subnet IP address for communicating with the attached HD camera.	[172.30.1.100] Maximum 12 characters
Mask	Enter a subnet mask, (12 characters maximum). The DVR uses the Mask to auto-complete the common segments of the HD Camera IP Address.	[255.255.255.0]
HD Camera IP Address	Enter the attached HD camera's subnet IP address (12 characters maximum).	[172.30.1.1]
HTTP Port	Enter an HTTP port.	[80], 1025 to 65535
HD Cam Defaults	Click to reload the default settings for the IP addresses, subnet mask, and HTTP port, and the HD Camera menu settings.	
Test Camera Connection	Click to test camera connection.	Green = working Red = not working.

4.5. Alarms and Signals Menu

Use the Alarms and Signals menu to set the options and actions that occur when an external alarm is received by the DVR. Usually, a driver-activated switch or other external device causes the alarm.



Figure 4-13 Alarms and Signals Menu

4.5.1. Alarm Menu

Select an alarm (1-4) from the menu and configure it as required.



Figure 4-14 Alarm Settings Menu

Table 12 Alarm Settings Configuration Items

Menu Item	Description	Value [Default]
Alarm	ALM 1 to ALM 4 are available.	[ALM 1], ALM 2, ALM 3, ALM 4
Alarm Duration	The alarm duration is the length of time after an alarm has been received that the video is recorded at the alarm speed, quality, and resolution.	0, [5], 10, 30 sec, 1, 3, 5, 10, 15, 20, 30, 45 min
Alarm Input	Available only for Alarm 1. Set the alarm input to normally open or normally closed.	[N.O.], N.C.
Pre-Alarm Record	Set the DVR to include video recorded up to 10 seconds before the alarm is triggered.	[Off], 5 sec, 10 sec
Speed	For each channel, set the recording speed, in frames per second, to the desired setting. A DVR usually records in a mode that conserves hard drive space, but increases video speed and quality for a short duration to record an alarm event.	Off, 1, 5, 7.5, 10, [15], 30 FPS
Quality	For each channel, set the alarm recording quality. The DVR offers a range of quality settings from 1 low to 4 high. See Recording Capacity for DVR Hard Drive Storage, in The TL DVR User Guide 700-0098.	1, 2, [3], 4
Resolution	For each channel, set the recording resolution, in pixels, to one of three different levels. The higher the recording resolution, the better the picture looks, but the shorter the recording time on a hard drive.	[720 × 480] 720 × 240 360 × 240
E-mail	This feature requires network connectivity. Sends alarm information to a designated e-mail receiver. Set e-mail address in Email Notifications, on page 3-11 .	[Off], On

4.5.2. Signals Menu

Use the Signals menu to configure signals and the actions they generate. The TL-HD supports 10 independent signals. The first five are designated as follows: 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. All of these signals can be used to indicate the status of any indicator, maximum 3 characters.



Figure 4-15 Signals Menu

Table 13 Signals Configuration Items

Menu Item	Description	Value [Default]
Signal 1	On screen display text for left turn signal.	LT, maximum 3 characters
Signal 2	On screen display text for stop signal.	STP, maximum 3 characters
Signal 3	On screen display text for brake signal.	BRK, maximum 3 characters
Signal 4	On screen display text for warning lights signal.	WRN, maximum 3 characters
Signal 5	On screen display text for right turn signal.	RT, maximum 3 characters
Signal 6	User generated on-screen display text.	S06, maximum 3 characters
Signal 7		S07, maximum 3 characters
Signal 8		S08, maximum 3 characters
Signal 9		S09, maximum 3 characters
Signal 10		S10, maximum 3 characters
Level	Indicates the activation level for the signal. <ul style="list-style-type: none"> If Active High is selected, 12 VDC applied to a signal causes the text to be displayed. If Active Low is selected, 0 VDC applied to a signal causes the text to be displayed. 	[Active H], Active L
Alarm	When the alarm setting is enabled, signals can trigger an alarm. See Alarm Menu, on page 4-15 .	[Off], Alm 1, Alm 2, Alm 3, Alm 4

4.5.3. Speed Menu

Use the Speed Settings menu to set the options for recording vehicle speed data.



Figure 4-16 Speed Settings Menu

Table 14 Speed Settings Configuration Items

Menu Item	Description	Value [Default]
Speed Units	The desired speed display units must be selected. Selecting MPH converts the GPS signal to display speed in miles per hour.	[MPH] - Miles per hour KPH - Kilometers per hour KTS - Knots
Speed Limit	The selected value will trigger notifications if exceeded by the vehicle speed.	0
Excessive Speed Action	The vehicle will trigger the selected action when the vehicle speed exceeds the programmed limit.	[Off], Log, E-mail, S1 to S10, A1 to A4

4.5.4. GPS Menu

Use the GPS Settings menu to set the options for recording vehicle time and location data.



Figure 4-17 GPS Settings Menu

Table 15 GPS Settings Configuration Items

Menu Item	Description	Value [Default]
GPS Display	Show or hide the GPS display on the main screen overlay. With a GPS module connected to the DVR, the latitude and longitude of the vehicle location are displayed.	[On], Off
GPS Time	Show or hide the GPS time on the main screen overlay.	[Off], On
UTC Reference	UTC refers to the atomic clock standard in Greenwich, England. The DVR location is a certain time difference from UTC time. Determine your time difference from UTC time and select this time. <ul style="list-style-type: none"> For example, Eastern Standard Time is -5 hours from UTC time. Pacific Standard Time is -8 hours from UTC time. 	-12 [-5] to -1, 0, +1 to +12
Fencing (Geo-fencing) Alarm	Using GPS, Geo-fencing lets the administrator set a designated geographic radius and if the vehicle deviates from this area, the DVR can be configured to trigger an alarm. Enable or disable the fencing alarm to record an alarm or not.	[Off], ALM 1, ALM 2, ALM 3, ALM 4
Coordinate Style: Circle	Set the coordinate style to a circle. Enter information for LAT and LONG, as displayed above.	[Circle], Rectangle
Circle Center: LAT	Set the latitude to 0° 00.00.00' through 90° 00.00.00'.	[0 0.0 0 N]
Circle Center: LONG	Set the longitude 0° 00.00.00' through 180° 00.00.00'.	[0 0.0 0 E]
Distance	If the coordinate style is circle, this option defines the radius.	[1] to 999
Units	Set the units in miles or kilometers.	[Miles] KM
Coordinate Style: Rectangle	Set the coordinate style to a rectangle. Enter information for Top Left: LAT and LONG and Bottom Right: LAT and LONG appear, as displayed above.	
Top Left: LAT *	Set the latitude to 0° 00.0000' through 90° 00.0000'.	[0 0.0 0 N]
Top Left: LONG *	Set the longitude to 0° 00.00.00' through 180° 00.00.00'.	[0 0.0 0 E]
Bottom Right: LAT *	Set the latitude to 0° 00.00.00' through 90° 00.00.00'.	[0 0.0 0 N]
Bottom Right: LONG *	Set the longitude to 0° 00.00.00' through 180° 00.00.00'.	[0 0.0 0 E]

* The Geo-fencing rectangular area is defined by the top left and bottom right coordinates. If other coordinates are entered, such as top right and bottom left, inaccurate results may be generated.

4.5.5. G Sensor Menu

Use the G Sensor Settings menu to set the options for recording vehicle acceleration, deceleration, and lateral motion data.

- X – Forward/Back axis, set to +2.0/-2.0.
- Y – Left/Right axis, set to +2.0/-2.0.
- Z – Vertical axis, set to +3.0/-3.0.
- Vector – Combination of X and Y axes, set to capture driver behaviour incidents, +3.0/-3.0.
- Accident – Combination of X, Y and Z axes, set to capture vehicle accident incidents +6.0/-6.0.

These settings can be adjusted to fit specific requirements. If the thresholds are set too low, they will generate many alarms.

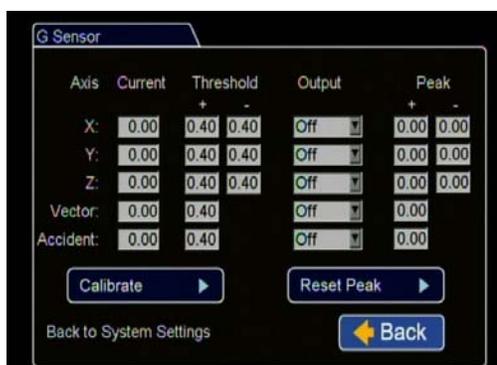


Figure 4-18 G Sensor Menu

Table 16 GPS Settings Configuration Items

Menu Item	Description	Value [Default]
Axis	X – Forward/Back axis. Y – Left/Right axis. Z – Vertical axis. Vector – Combination of X and Y axes. Accident – Combination of X and Y axes, higher threshold settings.	
Current	Display only. This field displays the current values measured by the G Sensor.	
Threshold	Set from 0 to 6.0. This value sets the threshold level. Any value beyond the set threshold will trigger the output, as set in the next field.	[0.4]
Output	If the user-selected G Sensor value is exceeded, the DVR will trigger the selected output:	[Off], Log, E-mail, S01, S02, S03, S04, S05, S06, S07, S08, S09, S10, ALM1, ALM2, ALM3, ALM4
Peak	Display only. Indicates peak detected levels for each axis and Vector and Accident activity.	[0.4]

4.5.6. G Sensor Calibrate Menu

When the G Sensor threshold data is to be used, the DVR must be field calibrated. Based on the installation orientation selected in the G Sensor calibration menu, the DVR detects gravity and determines the X, Y, and Z axis orientations.

To calibrate the G Sensor:

1. Make sure the DVR is mounted securely in a horizontal or vertical position.
2. In the G Sensor menu, click Calibrate.
3. In the G Sensor calibration menu, from the drop down field, select the DVR surface that is parallel to the front of the vehicle.



Figure 4-19 G Sensor Menu

4. Click Field Calibrate for the G Sensor to set the X/Y/Z axis planes based on the mounting surface selection.
When the process is complete, a Calibration Complete message is displayed.
5. Click Back to save settings.

4.5.7. Others Menu

In the Others menu, set DVR wake inputs and digital outputs.



Wake On Input: Select if requested.

Digital Output: Select if requested.

Click **Back** to save the menu settings.

Figure 4-20 Others Settings Menu

Table 17 Others Menu Items

Menu Item	Description	Value [Default]
Wake On Input	<p>Select the input action which will wake the DVR.</p> <p>If Off is selected, the DVR will ignore the Wake on input.</p> <p>If TEMP PWR is selected, the DVR will wake into temp power mode and be active for 5 minutes before shutting down.</p> <p>If ALM 1 is selected, the DVR will wake up and enter Alarm 1. In the Alarm menu, configure the Alarm 1 duration, pre alarm time, record quality, and email settings as required.</p> <p>A 12 VDC or Open Collector input can be used.</p>	[Off], ALM 1, TEMP PWR
Digital Output: Active	<p>Select the type of system event which, if detected by the DVR, will generate a DVR output signal to AVL, lamp, audio, etc. through the Expansion port.</p> <p>If Alarms is selected, the DVR will generate an output whenever an alarm is detected.</p> <p>If Video Loss is selected, the DVR will generate an output whenever a video loss event is detected.</p>	[Off], Alarms, Video Loss
Digital Output: Output	<p>If Alarms or Video Loss is selected above, set the type of signal output that the DVR will send out the Expansion port to the output destination (AVL, lamp, audio etc.).</p> <p>Active H: 12 V 150mA source Active L: 0V 350mA sink</p> <p>When Off or not triggered, this output is at high impedance.</p>	[Active H], Active L

4.6. Network Menu

The TL-HD DVR has three Ethernet ports for connecting to a computer, HD camera, and Smart-Reach Lite wireless network equipment.

See [Installation Diagram, on page 1–3](#).



CAUTION: Network Configuration

To connect using the network connection, each host (computer) connected to the network must have a unique IP address. A qualified IT administrator is required to provide information about the network settings and to configure the Network settings, Advanced Settings, DDNS settings, and E-mail settings. Contact Seon Engineering Services or Technical Support to perform any configuration, assign an IP address, reset the Smart-Reach Mobile wireless bridge or operating information.

Use the Network settings menu to set the network communication parameters needed to use the Smart-Reach Mobile wireless bridge equipment and Ethernet on the TL-HD.

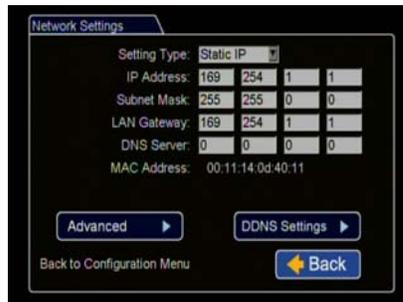


Figure 4-21 Network Settings Menu

Table 18 Network Settings Configuration Items

Menu Item	Description	Value [Default]
Setting Type	For network settings, consult your IT administrator to configure the setting type and IP address. If DHCP is used, the subnet mask, default gateway and DNS server are configured automatically.	Off, [Static IP], (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
IP Address	Enter the DVR IP Address as determined by a qualified network expert.	[169.254.1.1]
Subnet Mask	Enter the network 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 or network administrator.	[169.254.1.1]
DNS Server	Uses an IP address composed of four octets separated by decimals. See DDNS (Dynamic Domain Name Server) Menu, on page 4–27 .	[0.0.0.0]
MAC Address	MAC (Media Access Control) is the DVR’s unique hardware number.	Fixed

4.6.1. Advanced Network Menu

Use to enable the DVR for live video streaming and vehicle tracking in vMax Live Plus.

	<p>CAUTION: Advanced Settings Configuration</p> <p>For advanced settings, a qualified IT administrator is required to perform any configuration including assigning IP addresses. A cellular modem or gateway must also be installed and configured.</p> <p>Contact Seon Engineering Services or Technical Support.</p>
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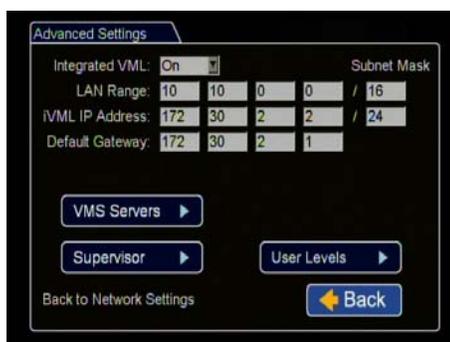


Figure 4-22 Advanced Network Settings Menu

Set up to enable the DVR to simultaneously connect with cellular and Wi-Fi networks using a Seon Smart-Reach Cellular modem. See the Smart-Reach Cellular Install and Setup Guide, 700-1018, for details.

Table 19 Advanced Network Configuration Items

Menu Item	Description	Value [Default]
Integrated VML	Set to On to enable the integrated VML feature. Off disables the integrated VML feature.	[Off] On
LAN Range	Set the customer network's LAN range as determined by a qualified network expert. Use if the customer network is outside of the DVR network. 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 as determined by a qualified network expert.	[172.30.2.1]

4.6.2. VMS Servers Menu

Set up to enable communication with Seon vMax Commander software.

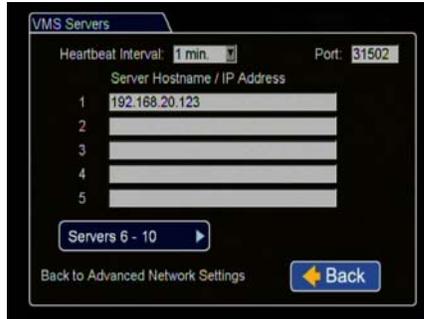


Figure 4-23 VMS Servers Menu

Table 20 VMS Servers Configuration Items

Menu Item	Description	Value [Default]
Heartbeat Interval	Select an interval as determined by a qualified network expert, to transmit DVR status messages to all available VMS Servers every 1 to 5 minutes.	[Off], 1, 2, 3, 4, 5 minutes
Port	Enter a Port for VMS Heartbeat communication as determined by a qualified network expert. Set a value between 1 and 65535	[31502]
Server 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

4.6.3. Supervisor Menu

Set up to enable supervisor users in wireless environments.

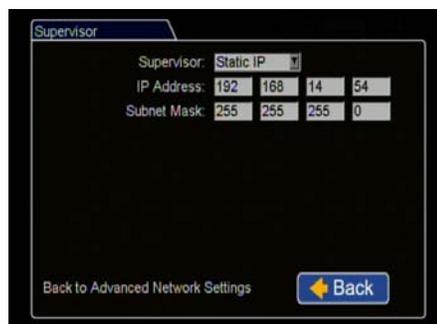


Figure 4-24 Supervisor Menu

Set up to enable supervisor users in wireless environments.

Table 21 VMS Servers Configuration Items

Menu Item	Description	Value [Default]
Supervisor	Select Static IP to add a supervisor vehicle DVR's Static IP Address to the Ethernet port.	[Off], Static IP
IP Address	Enter the IP Address as determined by a qualified network expert.	[0.0.0.0]
Subnet Mask	Enter the subnet mask as determined by a qualified network expert.	[0.0.0.0]

4.6.4. User Levels Menu

Set up to enable multiple users to access the DVR from vMax Web View with various permission levels.



Figure 4-25 User Levels Menu

	<p>CAUTION: DVR Password Security</p> <p>The default password is 11111111. For security purposes, Seon recommends that the user default login and system settings passwords should be changed. Seon is not responsible if the password is lost or forgotten.</p>
--	---

Table 22 User Levels Configuration Items

Menu Item	Description	Value [Default]
User 1 (User 2 to 6)		
Name	Six user names can be configured to have remote access to the DVR. These are case sensitive.	[Admin] for User 1 [Blank] for User 2 to 6, Maximum 8 characters
Password	Set the password for each individual user.	[11111111] Maximum 8 characters
Level	Each user is assigned a specific access level. Three levels are supported: <ul style="list-style-type: none"> • playback - allows the user to play and archive recorded video and view live video. • configure - allows the user playback rights plus DVR configuration. • administrator - allows user full rights to the DVR setting. 	[Administrator] for User 1, [Playback] for User 2 to 6

4.6.5. DDNS (Dynamic Domain Name Server) Menu

Use this menu to assign a specific host name to a DVR which is using a DHCP IP address.

Figure 4-26 DDNS Settings Menu

Table 23 DDNS Settings Configuration Items

Menu Item	Description	Value [Default]
DDNS (Dynamic Domain Name Server)	DynDNS currently supported.	Maximum 64 characters
User Name	Set the user name.	Maximum 32 characters
Password	Set the password.	Maximum 32 characters
Record ID	This is typically a numeric string.	Maximum 16 characters
FQDN Host Name	The fully qualified domain name for the host. I.e. mydvr.myname.dyndns.com	Maximum 64 characters

4.7. System Menu

The System Settings menu allows control of system level settings and functions that should only be accessed by authorized individuals.



CAUTION: DVR Password Security

The default password is 11111111. For security purposes, Seon recommends that the user default login and system settings passwords should be changed. Seon is not responsible if the password is lost or forgotten.

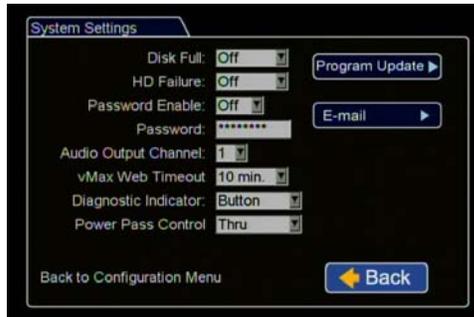


Figure 4-27 System Settings Menu

Table 24 System Settings Configuration Items

Menu Item	Description	Value [Default]
Disk Full	Set to send e-mail notification when the disk is full.	[Off], E-mail
HD Failure	Set to send e-mail notification if the hard drive fails.	[Off], E-mail
Password Enable	If set to On, the STOP/TEMP PWR button on the DVR and the main OSD menu is locked out and requires a password.	[Off], On
Password	The password is maximum eight digits.	[11111111], 00000000 to 99999999
Audio Output Channel	Select the audio channel that is output on the Audio RCA connector on the front of the DVR.	[1], 2, 3, 4, 5, 6, 7, 8
vMax Web Timeout	Set the amount of time after the last user action when vMax Web will log the user out and close.	Off, 5 min, [10 min], 20 min, 30 min, 45 min, 1 hr
Diagnostic Indicator	Select the type of panel button to indicate DVR diagnostics.	[Button], RGY Illum
Power Pass Control	Set to allow battery power from the vehicle to pass through the Power Thru connector on the DVR to a device. <ul style="list-style-type: none"> • DVR - power to device passes only when DVR is on. • Thru - power to device passes whether or not the DVR is on. 	[DVR], Thru

4.7.1. Program Update Menu

The Program Update menu enables users to update the internal firmware and to store and load the DVR configuration.



Figure 4-28 Program Update Menu

Table 25 Program Update Configuration Items

Menu Item	Description	Value [Default]
Load Configuration	Load the configuration settings from a USB device. MEM1 and MEM2 are customized configuration settings. The drop down list will only show the most recent 10 configuration files on the USB device.	[Default], MEM1
Include Network	Select to include network information when the configuration is loaded.	[NO], YES
Store Current Configuration	Store the DVR configuration settings to a USB device.	[USB Device], MEM1, MEM2
File Name	Set the file name of the configuration file you are saving.	[SEO1] Maximum 4 characters
Load	Load the new DVR configuration settings.	
Store	Store the DVR's configuration to a USB device.	
Update	Upgrade the firmware. See DVR Firmware Updates, on page 3–10 .	
Format	Format the hard drive.	

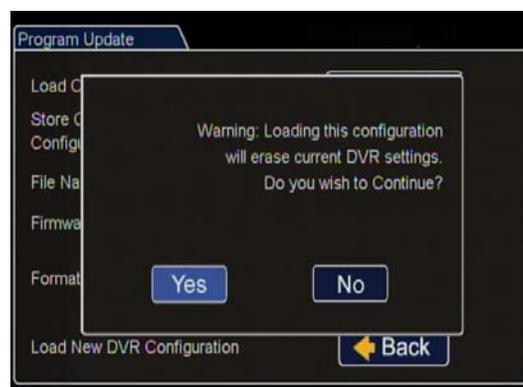


Figure 4-29 Load Configuration: Warning Message



Figure 4-30 Store DVR Configuration to USB Device Message



Figure 4-31 Update DVR Firmware Message

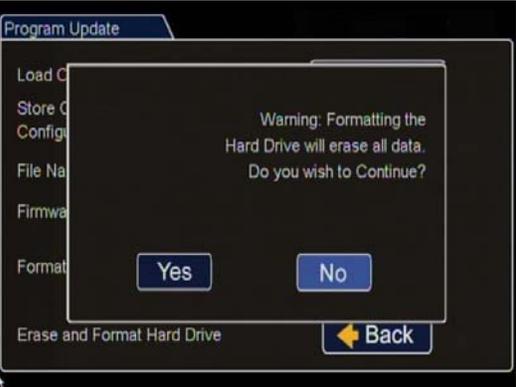


Figure 4-32 Formatting the Hard Drive Message

4.7.2. E-mail Menu

The E-mail Settings feature requires network connectivity.
See [Network Menu](#), on page 4-22.

The screenshot shows the 'E-mail Settings' menu with the following fields and values:

- SMTP Server: local.exch.server
- SMTP Port: 25
- Authentication: Login
- User Name: Admin
- Password: *****
- Sender: fleet@fleet.com
- Recipient: admin@fleet.com
- Subject: bus1102_event

At the bottom, there is a 'Back to System Settings' link and a 'Back' button with a left-pointing arrow.

Figure 4-33 Email Settings Menu

Table 26 Email Settings Configuration Items

Menu Item	Description	Value [Default]
SMTP Server	Set the server name.	Maximum 32 characters
SMTP Port	Set the SMTP port.	[25], 1 through 9999
Authentication	Set the authentication.	Login, [None]
User Name	Set the user name, when Login is selected.	Maximum 32 characters
Password	Set the password, when Login is selected.	Maximum 32 characters
Sender	Set the sender e-mail.	Maximum 64 characters
Receiver	Set the receiver e-mail.	Maximum 32 characters
Subject	Set the subject.	Maximum 32 characters

Legal Notice

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Seon Design Inc. is a specialist in the design and manufacture of video surveillance systems for mobile applications. Seon has been the preferred solutions provider for the pupil transportation industry since 1999. Today, we are proud that our success in this area has made us the leading manufacturer of mobile video surveillance systems in North America.

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Printed in Canada

Seon Design Inc.® Product Warranty

Seon Design Inc. (Seon) warrants the cameras and components listed below against defects in workmanship and materials provided that such defects appear or are discovered within the respective periods specified below and provided further that the purchaser of such products notifies Seon of such defects within thirty (30) days of the appearance or discovery of such defects:

- Three (3) years from date of purchase, parts and repair labor on all Cameras
- Three (3) years from date of purchase, parts and repair labor on the Explorer® Premier, DX, TX, EX, MX, and Trooper® TL series mobile DVR Systems
- Three (3) years from date of purchase, parts and repair labor on all storage media (including hard drives)
- One (1) year from date of purchase, parts and repair labor on the Smart Reach® Wireless systems and other Wireless products
- One (1) year from date of purchase, parts and repair labor on the VML Controller, Student Tracking RFID reader, and other vMax Live Plus hardware products
- One (1) year from date of purchase, parts and repair labor on all other products and accessories

If Seon repairs any camera or component which is out of warranty Seon warrants such repaired cameras or components against defects in workmanship and materials provided that such defects appear or are discovered within 90 days from date of shipment of such repaired camera or component to customer by Seon and provided further that the purchaser of such products notifies Seon of such defects within thirty (30) days of the appearance or discovery of such defects.

Subject to the terms and conditions listed below, during the relevant warranty period, Seon will repair, replace, or refund the purchase price for the defective product, whichever Seon considers to be appropriate in the circumstances, in Seon's sole and arbitrary opinion, free of charge, any defective products returned prepaid. In the event purchaser has a problem with any Seon product, please call and request a RETURN AUTHORIZATION (RA) NUMBER from the Service Department. Please call 877-630-7366 or (604) 941-0880 and ask for the Service Department. Be sure to have the model number, serial number and the nature of the problem available for the customer service representative. Prior authorization MUST be obtained for all returns, exchanges, or credits. ITEMS SHIPPED TO SEON WITHOUT A CLEARLY IDENTIFIED RA NUMBER MAY BE REFUSED.

Products returned will be tested to verify for possible defects. Upon verification of a defect, the product will be repaired or exchanged, or the purchase price will be refunded or credited to the customer's account, at the sole option of Seon. In the event of replacement, the returned product will be credited to the customer's account and a new invoice issued for the replacement item. Seon reserves the right to refund the purchase price or to issue a credit only in lieu of replacement. Seon may use new or refurbished replacement parts for repairing its products, at its sole and arbitrary discretion. Seon may replace an entire unit with an equivalent model, at its sole and arbitrary discretion. If a unit is exchanged, the returned product shall become the property of Seon and the exchange product becomes the property of the purchaser, and the remainder of the warranty that applied to the original unit purchased shall apply to the exchanged product. Exchange units may be new units, or units that have been repaired to full factory specifications, at Seon's discretion. If the product is found to be in good working order or its inability to function properly is not covered by this warranty, the product will be returned in the same condition as received unless repair is possible and requested by the customer. Repairs of such nature will incur a charge for parts and labor and will proceed only by agreement with the customer to accept the charge.

Advance Replacements

If there is a defect in workmanship or materials covered by this warranty in a camera, recorder or component and customer notifies Seon of such within sixty (60) days of:

- (a) the date of installation of such product if the installation of such product was done by Seon; or
- (b) if Seon did not install the product, of the date of shipment of the product to the customer by Seon,

and the customer requests advance replacement of such product by Seon, Seon will replace such product without charge in advance of return of such product by customer to Seon provided that if customer has not returned the defective product to Seon within sixty (60) days of the date of shipment by Seon of the advance replacement then Seon will invoice the customer for the purchase price of the advance replacement product including shipping costs and any taxes, duties or other charges related to the advance replacement and the customer shall pay to Seon the amount invoiced within 30 days of receipt of invoice, or if the customer has a written agreement with Seon regarding credit terms, then the customer shall pay the amount invoiced in accordance with the agreed upon credit terms.

This warranty shall not apply:

- (a) to equipment not supplied by Seon;
- (b) to computer equipment supplied by Seon (such as monitors, printers, servers and laptops) not manufactured by Seon. The customer must contact original manufacturer of such equipment for warranty terms and service;
- (c) to equipment, including, any components, which shall have been operated in excess of rated capacity, subject to negligence, accident, or damage by circumstances beyond Seon's control, or to improper installation, operation, maintenance, servicing, alterations or storage, modification without Seon's written authorization, misuse, vandalism, fire, floods or acts of nature so as, in Seon's exclusive and arbitrary judgment, to affect the same adversely;
- (d) to equipment that is installed utilizing installation products not supplied by Seon;
- (e) if the warranty seal on the DVR has been broken or tampered with;
- (f) if the serial number for the product has been altered in any way; or

Seon Design Inc.® Product Warranty

- (g) if the product has been operated outside of the specified Operating Environment specified in the Seon User's Manual for such product, or
- (h) to cover any costs incurred by the customer for the removal of defective cameras or components or of non-defective cameras or components, or for the installation of repaired cameras or components or for the reinstallation of non-defective cameras or components, all of which are for the account of the customer.

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Provisions Applicable to American Customers

For those customers whose mailing address is in the United States, Seon's offer and any agreement of sale resulting therefrom shall be governed by and construed in accordance with the internal and domestic laws of the State of WASHINGTON without giving effect to the conflict of laws rules thereof. The Superior Court of Washington for Whatcom County and U.S. District Court for the Western District of Washington (the "U.S. Closed Courts") shall have exclusive jurisdiction to entertain and determine all disputes and claims, whether for specific performance, injunction, declaration or otherwise arising out of or in any way connected with the construction, breach, or alleged, threatened or anticipated breach of the contract resulting from this offer and shall have jurisdiction to hear and determine all questions as to the validity, existence or enforceability thereof. Customer specifically consents to such Court's exercise of jurisdiction over it. The purchaser attorns to the exclusive jurisdictions of the jurisdiction of the U.S. Closed Courts, waives any obligation to venue in any action or proceeding regarding Seon Products and waives any objection that the U.S. Closed Courts are an inconvenient forum or do not have jurisdiction over the purchaser of Seon. The United Nations Convention On Contracts For The International Sale Of Goods shall not apply.

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For those customers whose mailing address is in Canada, Seon's offer and any agreement of sale resulting therefrom shall be governed by and construed in accordance with the internal and domestic laws of the Province of BRITISH COLUMBIA and the laws of Canada applicable therein without giving effect to the conflict of laws rules thereof. The courts of British Columbia (the "Canadian Closed Courts") shall have exclusive jurisdiction to entertain and determine all disputes and claims, whether for specific performance, injunction, declaration or otherwise arising out of or in any way connected with the construction, breach, or alleged, threatened or anticipated breach of the contract resulting from this offer and shall have jurisdiction to hear and determine all questions as to the validity, existence or enforceability thereof. The purchaser attorns to the exclusive jurisdictions of the jurisdiction of the Canadian Closed Courts, waives any obligation to venue in any action or proceeding regarding Seon Products and waives any objection that the Canadian Closed Courts are an inconvenient forum or do not have jurisdiction over the purchaser of Seon. The United Nations Convention On Contracts For The International Sale Of Goods shall not apply.

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The following extended warranty ("Extended Warranty") provisions apply to products ("Extended Warranty Products") in respect of which the customer has purchased the Extended Warranty as a separate product from Seon. If any provisions of the Extended Warranty conflict or are inconsistent with the provisions of the basic warranty set forth above, the provisions of the Extended Warranty shall govern.

Seon warrants the Extended Warranty Products against defects in workmanship and materials provided that such defects appear or are discovered within the extended warranty period set forth in the applicable warranty purchased by the customer and provided further that the purchaser of such products notifies Seon of such defects within 30 days of the appearance or discovery of such defects.

Under the Extended Warranty:

- (a) Seon will provide repairs to the Extended Warranty Product at no extra charge during the Extended Warranty period;
- (b) normal wear and tear IS covered, including replacement of hard drives if necessary;
- (c) the parts and repair labor required to complete all warranted repairs are included;
- (d) Seon will arrange and pay the cost of ground freight between customer's location and the Seon U.S.A. service facility (or such other location) as is designated by Seon in the relevant Return Material Authorization issued by Seon in respect of such Extended Warranty Product; and
- (e) Seon will pay freight, brokerage and duty costs to bring the goods to Canada, if required, in the sole and arbitrary opinion of Seon.

In addition to the telephone numbers provided above for reporting a warranty matter, purchasers of Extended Warranty products may report warranty matters by e-mail to Seon at: service@seon.com.

The purchaser reporting an Extended Warranty issue may request Seon to arrange for pick-up of the Extended Warranty Products and shall provide information as to the number of parcels and shall request a RETURN AUTHORIZATION (RA) NUMBER.

Seon will only be responsible for the cost of ground freight. Any additional costs for express modes of freight will be paid by the purchaser of the Extended Warranty Product. Advance replacements will not be provided.

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