

# OBSERVER™ 4100 USER GUIDE

**SAFETY  
VISION®**

## Important Notices

Title: Observer™ 4100 User Guide

Firmware Version: X3-4-T642681

Document Version: 2.4

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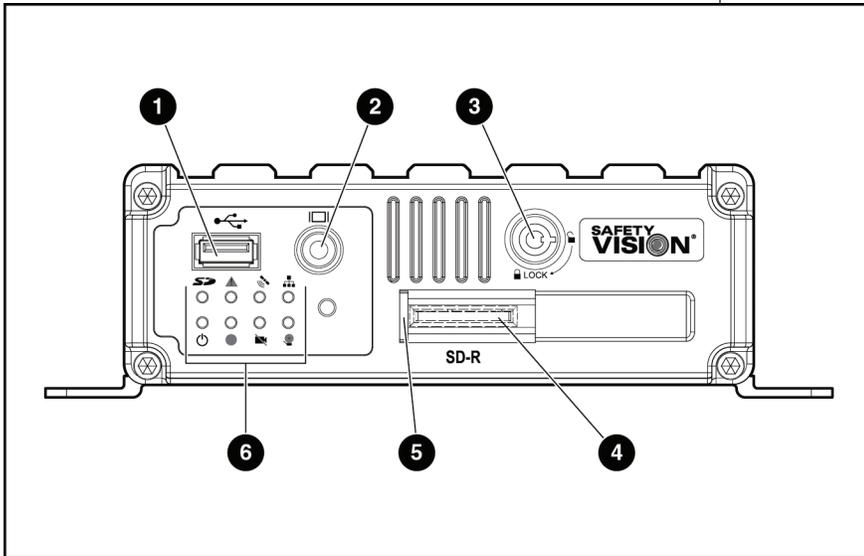
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## Components

**1 - USB Port** - Insert a USB flash drive to download events quickly without having to remove the Secure Digital (SD) card.

**2 - External Monitor Output** - Attach an external monitor to the Observer 4100 with an RCA plug here to configure the mobile digital video recorder (MDVR).

**3 - Door Lock** - The Door Lock secures the door over the SD card slot for security.

**4 - SD Card Slot** - Insert an SD card into the slot behind the door until it clicks. To remove the SD card, briefly press it in until it ejects.

**5 - SD Card Slot Door** - The SD Card Slot Door protects the SD card from contaminants and damage.

**6 - Status LEDs** - The Status LEDs illuminate to display the current status of the Observer 4100.

 - Flashes when the SD card is being accessed.

 - An error may have occurred.

 - The GPS LED illuminates when the GPS module is searching for a signal; it then flashes steadily when locked on.

 - The unit is interfacing with an optional Ethernet device.

 - The unit is receiving power.

 - The unit is recording video.

 - One or more cameras have become detached or are malfunctioning.

 - An alarm has occurred (as configured in the Configuration Menu).

*For further information regarding the configuration of the Observer 4100, see the Configuration chapter.*

## SD Card Insertion

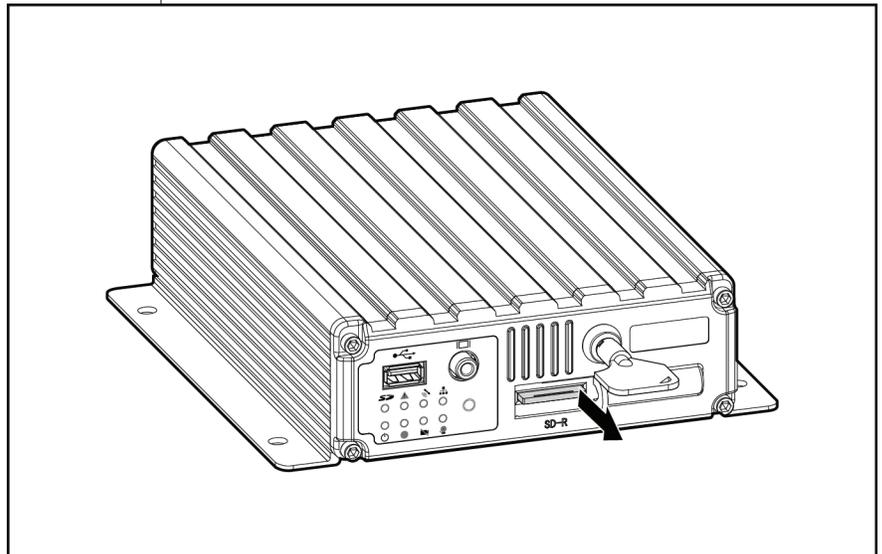
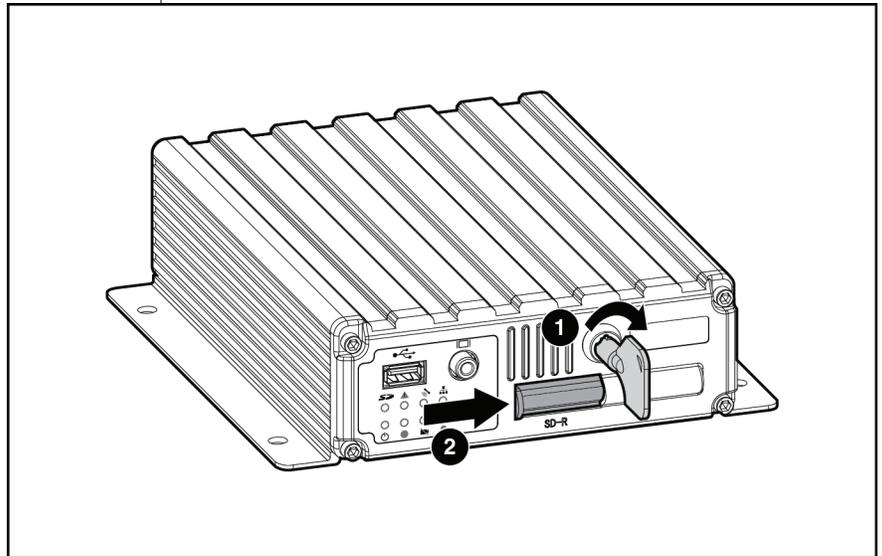
To insert an SD card into the Observer 4100:

1. Insert the key and turn it counterclockwise.
2. Push the SD card slot door firmly to the right.
3. Insert an SD card into the Observer 4100 label-side up, with the notch to the right, until it clicks in place.
4. Push the SD card slot door to the left firmly and confirm it is closed all the way.
5. Insert the key and turn it clockwise to lock the door.

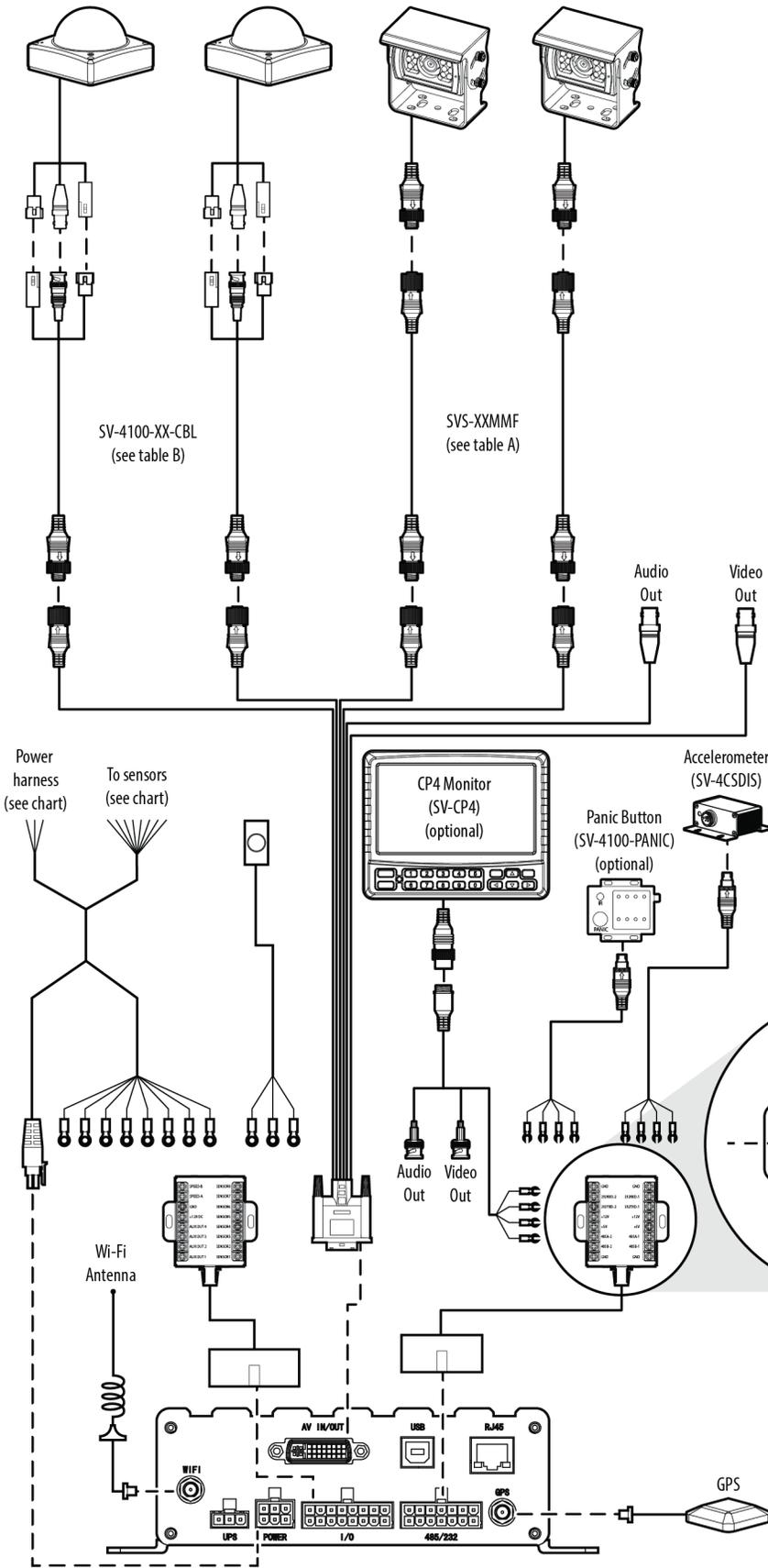
**Do not force the SD card into the Observer 4100 upside down or backwards.**

To remove the SD card, follow the procedure above, press the card into the slot until it clicks, then allow it to spring out.

**Do not remove the SD card until the Observer 4100 is turned off.**



**Important Notice: Proper maintenance procedures for digital media require that recorded data be reviewed on a regular basis to ensure the DVR is operating correctly. Consult with your fleet or vehicle maintenance manager to implement a regular data review policy that fits with your facility routines to ensure data integrity.**



WIRING HARNESS CONNECTIONS	
Recommended Sensor Connections (12V)	
Sensor 8	Stop Arm Lights (school bus)
Sensor 7	Amber Warning Lights (school bus)
Sensor 6	Door (or wheel chair lift)
Sensor 5	Head Lights
Sensor 4	Event Button (see note)
Sensor 3	Brake Lights
Sensor 2	Left Turn Signal
Sensor 1	Right Turn Signal
Power Harness	
Red	Power (12 - 32V DC)
Black	Ground
White	Ignition (Yellow on some models)

Table A	
Cable	Length
SVS-3MMF	10'
SVS-5MMF	16'
SVS-10MMF	33'
SVS-15MMF	49'
SVS-20MMF	65'

Table B	
Cable	Length
SV-4100-10-CBL	10'
SV-4100-20-CBL	20'
SV-4100-35-CBL	35'
SV-4100-50-CBL	50'

**Note:**

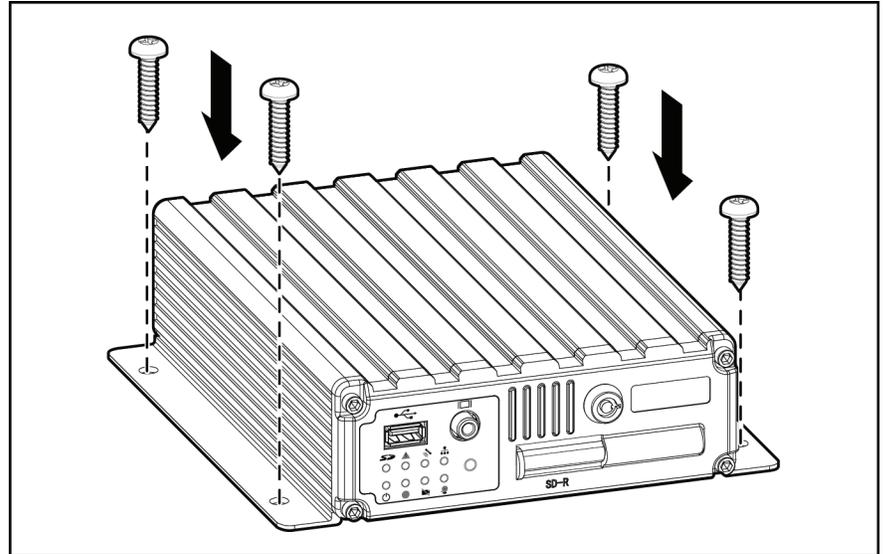
After connecting a Panic Button or CP3/4 monitor, they must be configured in the Settings > Peripheral > Ext. Com. Setup menu. Select the accessory in the field for the appropriate COM connection.

## Installation

### Flat Mount

Secure the MDVR to the surface with self-tapping screws or rivets.

*Ensure that the front panel of the MDVR remains accessible and there is a minimum 2.5 inches of clearance for cables.. Do not install the Observer 4100 in an area of the vehicle cabin that could interfere with the safe operation of the vehicle.*

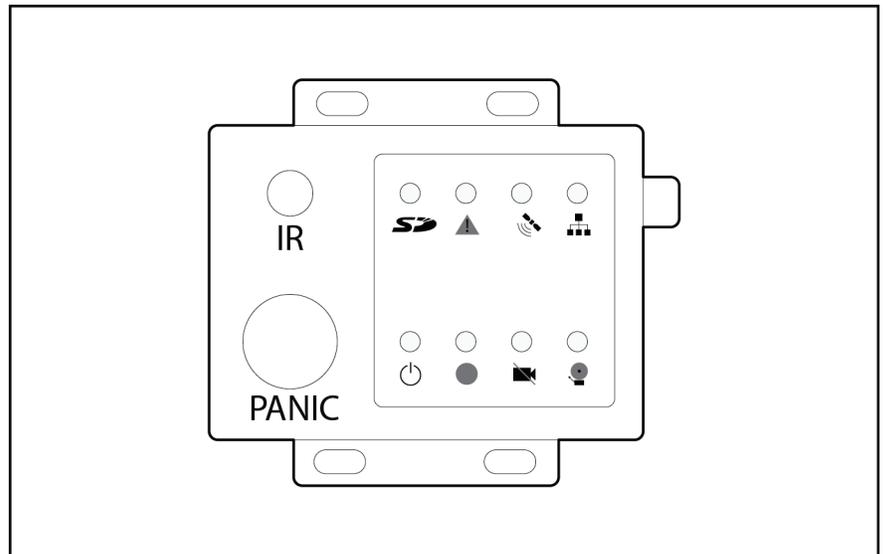


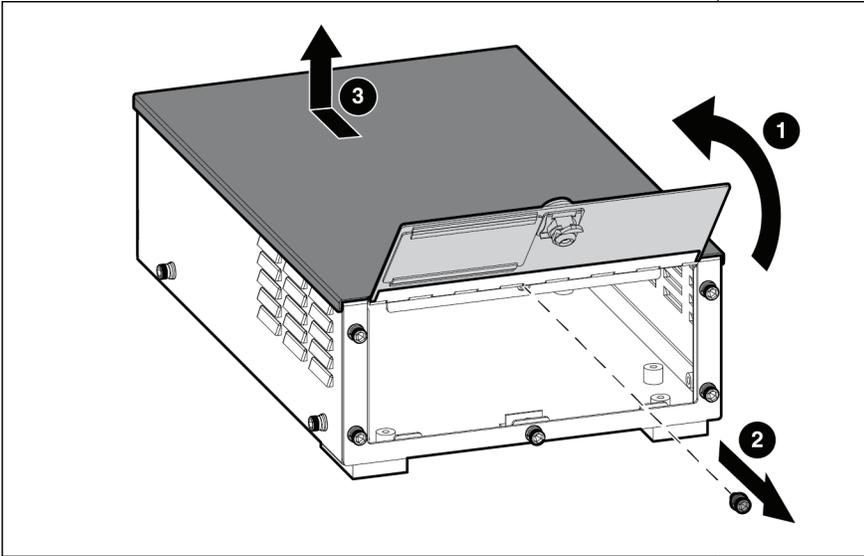
### Panic Button (Part #SV-4100-PANIC)

An optional panic button module is available. The panic button provides an additional status LED display, remote control sensor, and external monitor output in addition to the panic button.

When the panic button module is installed, ensure the following settings are configured properly:

1. In the Settings menu, select Peripheral, then Ext. Com. Setup. Select PANIC BUTTON in COM4.
2. Ensure the panic button module is connected to the 485A-2 and 485B-2 terminals.
3. In the Settings menu, select Event, then "Emergency Alarm" (Alarm of Panic Button screen). Select ON in the EN (enable) and ALARM fields.
4. Ensure the module is connected to ground and 5V.

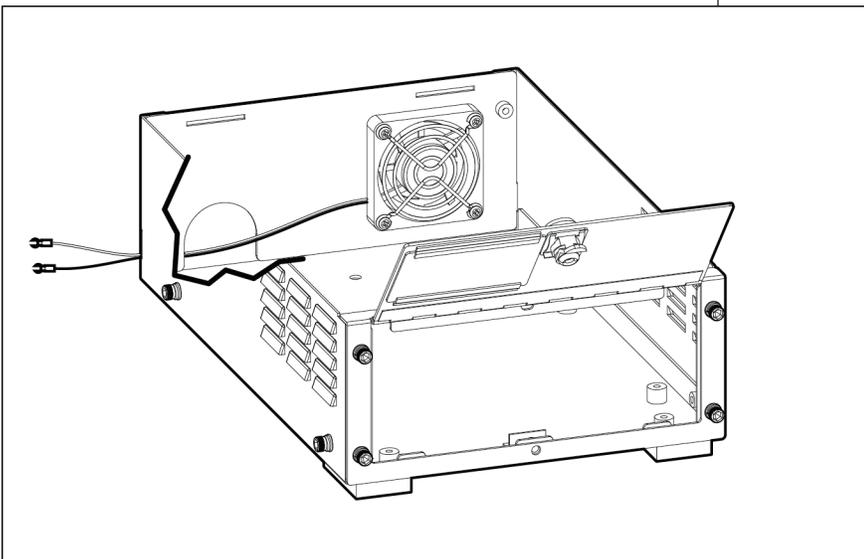




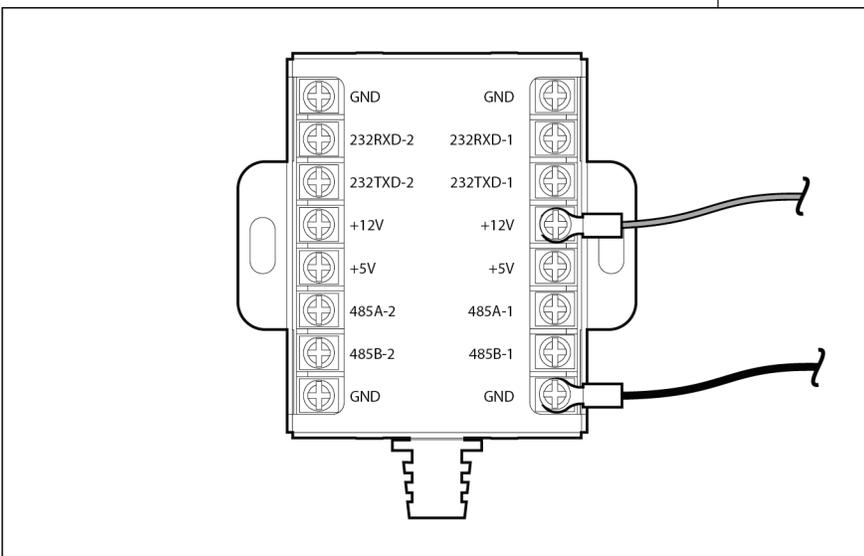
### Lock Box (Part #SV-4100LB)

Use the following procedure to install the Observer 4100 in the SV-4100LB Lock Box::

1. Open the front door.
2. Use a T15 security bit to remove the screw centered underneath the door hinge.
3. Push the lid to the rear and lift it up to remove it.



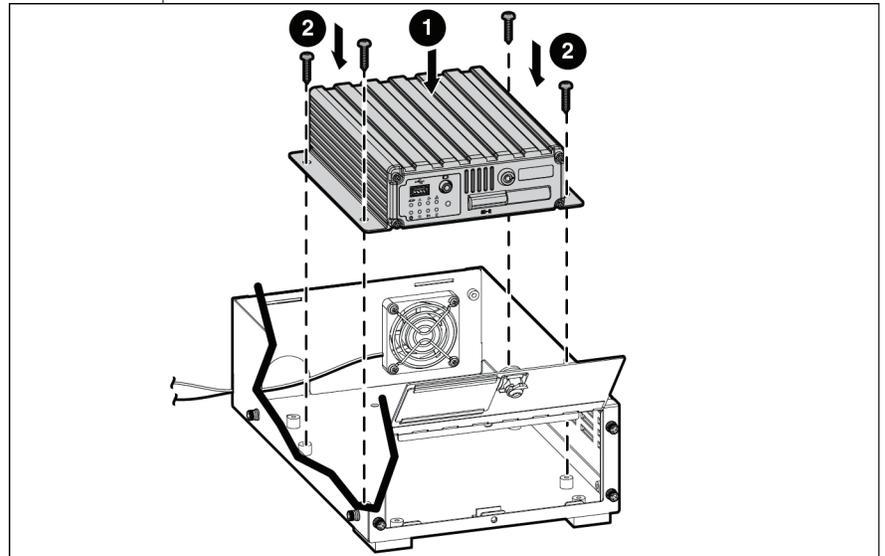
4. Mount the lock box to a flat surface using secure mounting hardware through the six open holes in the bottom of the lock box (three near the front, three near the rear).
5. Ensure the power and ground leads for the auxiliary fan are threaded through the cable passage in the rear.



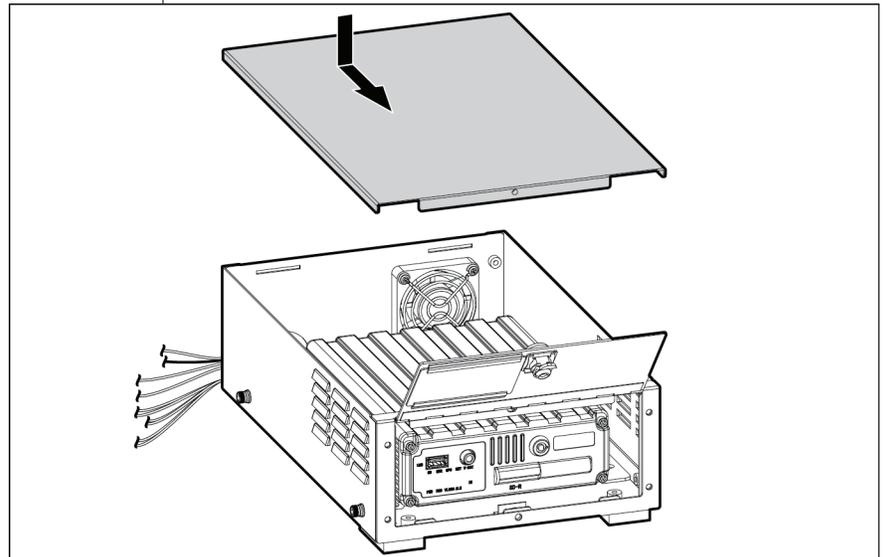
6. Attach the power and ground leads to the +12V and GND terminals respectively on the Observer 4100 terminal block. (The terminal block remains on the outside of the lock box.)
7. Thread all cables that will be connected to the Observer 4100 through the cable passage and connect them to the Observer 4100.

*It is easier to attach cables to the back of the Observer 4100 before it is secured in the lock box.*

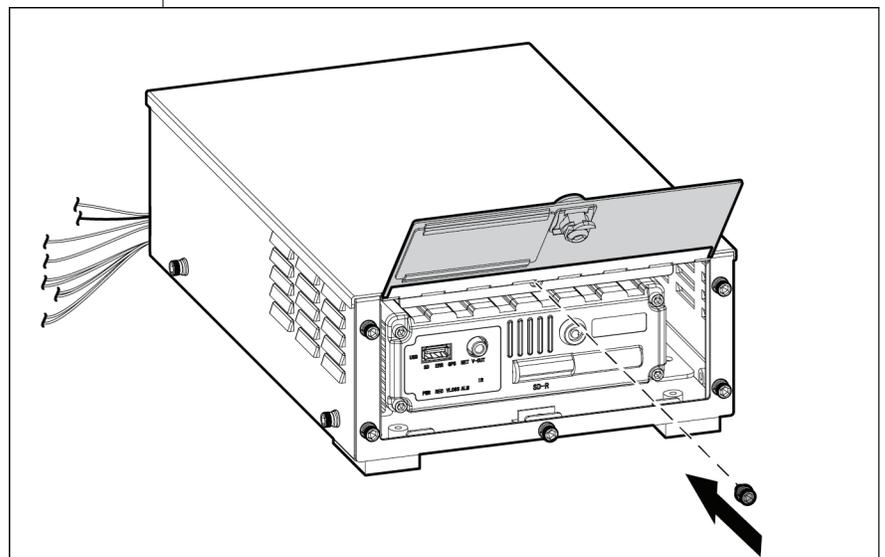
8. Place the Observer 4100 in the lock box over the raised screw holes and secure it using the included screws.

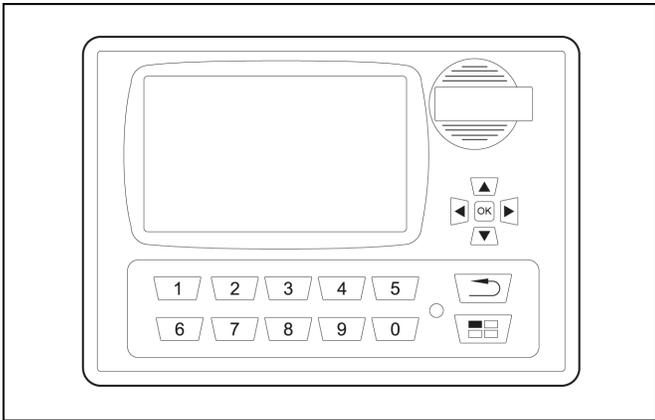
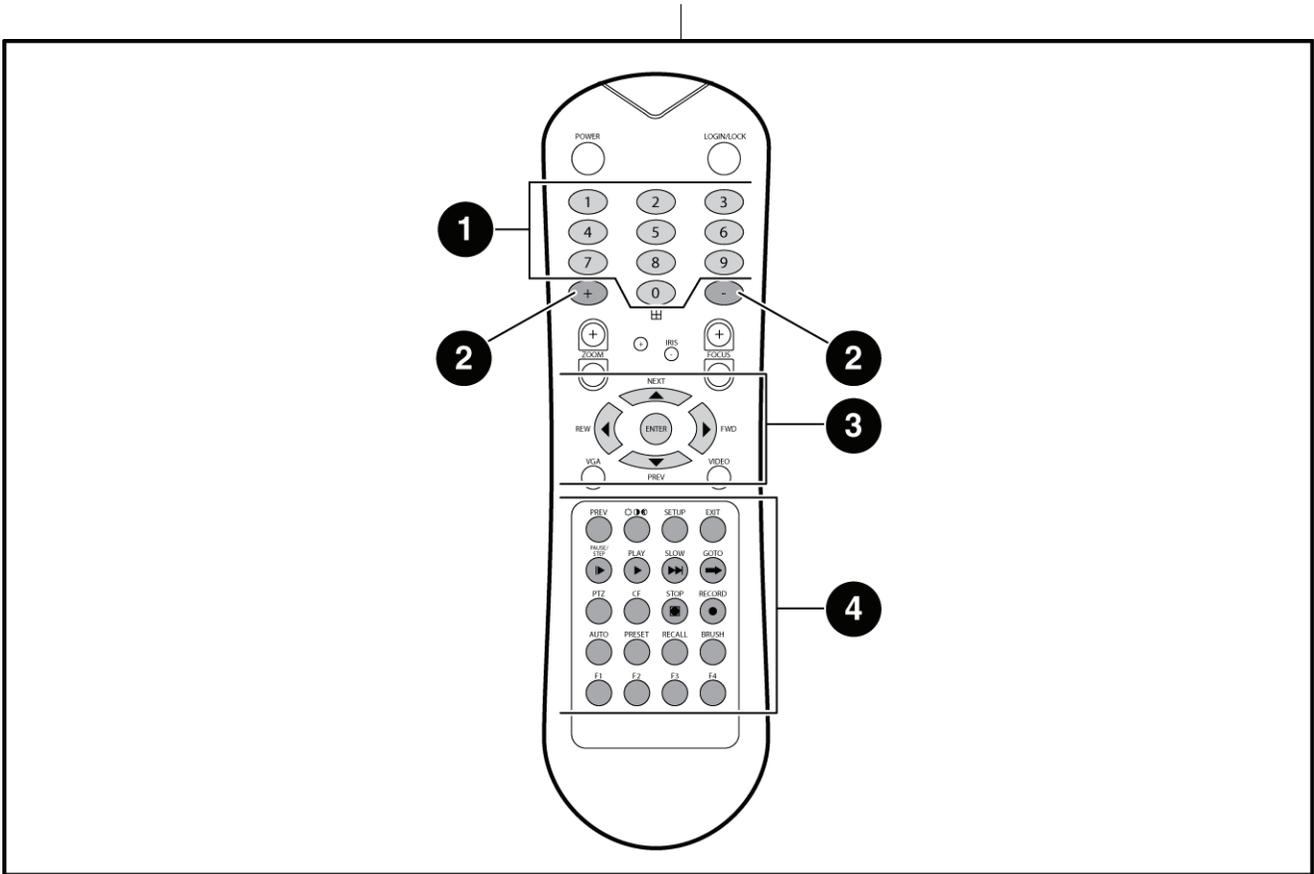


9. Replace the lid and push it firmly forwards, ensure the tabs in the rear engage the back of the lock box.

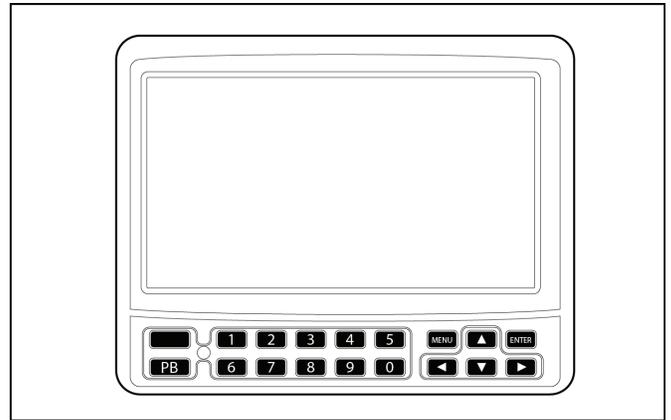


10. Use a T15 security bit to replace the central screw under the hinge.





CP3 Monitor



CP4 Monitor

## Remote Control

The Observer 4100 remote control is used to navigate through the configuration menus or to control video playback on an external monitor. Point the remote control at the IR receiver on the front panel of the Observer 4100 to make selections.

**Power** - Use this key to power the Observer 4100 on or off.

**Login/Lock** - Quickly access the login screen or secure the unit when already logged in. Login values can be set in the configuration menu.

**1 - Numeric Keypad** - Use the numeric keypad to input numerical values when configuring the system. Additionally, you can use the 1, 2, 3, and 4 keys to display that numbered video channel during video playback. Press the 0 key to switch between displaying individual channels and a quad view.

**2 - + and - Keys** - Use the + and - keys to increase or decrease values by one.

**3 - Navigation Buttons** - Use the four arrow keys to navigate between input fields or menu selections when configuring the system. Use the Enter key in the center of the arrow keys to make selections. During video playback the left and right arrow keys can be used to rewind or fast-forward.

### 4 - Additional Remote Control Keys

**VGA** - Switch the output mode of the external monitor to VGA1, VGA2, or VGA3.

**Video** - Switch between VGA output and the front composite external monitor output.

**Brightness, Contrast, and Color** - Press this key repeatedly to toggle between brightness, contrast, and color options for each individual channel. Use the + and - keys to adjust each value.

**Setup** - Quickly access the configuration menu. Login may be required.

**Exit** - Quickly return to the previous menu while viewing configuration menus. Pressing this key on the main configuration menu returns to the live view.

**Play** - Press this key to resume regular speed video playback when video is paused or stopped.

**Slow** - Press this key to slow down video playback.

**GoTo** - Press this key to quickly access video recorded at a certain time. When playing back video, press this key and input the desired time. Press Play to begin video playback.

**Stop** - Press this key to manually stop video recording.

**Record** - Press this key to manually begin recording again once it has stopped.

**F1** - Press this key, at the bottom left of the remote, to automatically export all recorded marked events to a USB flash drive inserted into the front panel USB port. (This feature must be first enabled in the Settings > System > General menu.)

All additional buttons are unused at this time.

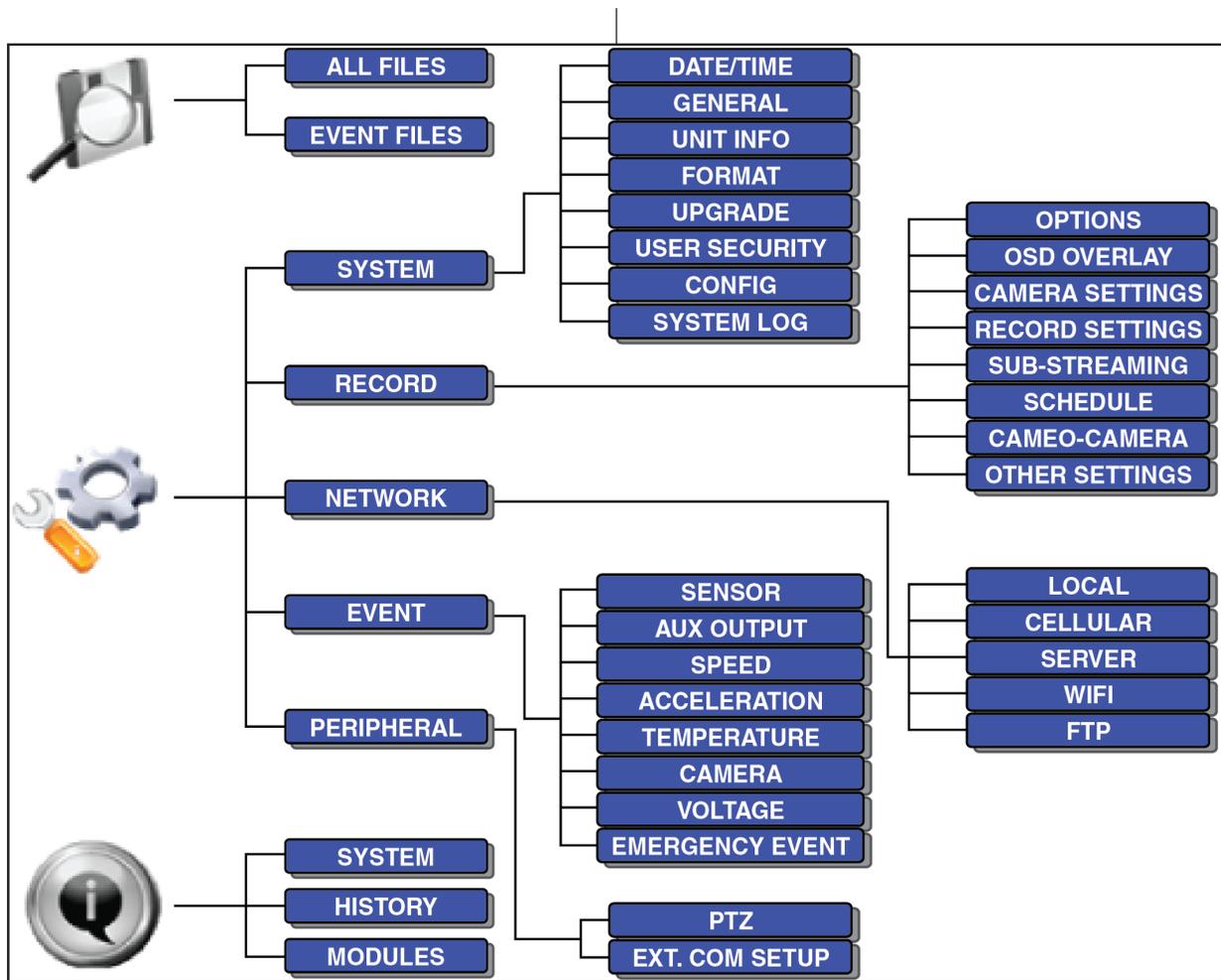
## CP3 and CP4 Monitors

The available CP3 and CP4 monitors integrate an external monitor and the functionality of a remote control. Buttons on the monitor are functionally the same as the remote control buttons described above.

CP3 and CP4 also provide an IR receiver for the remote control. When using the remote control, ensure it is pointed at either the IR receiver on the monitor or the IR receiver on the front of the DVR.

### CP4

Additionally, the CP4 monitor provides two additional buttons on the left side of the control panel. The blank black button toggles between dim and bright monitor brightnesses for day or night. The red PB button provides Panic Button functionality.



For more information on setting the device password, refer to the *Configuration* chapter.

## Live View

Attach an external monitor to the front RCA port (or install a permanent external monitor as shown in the Installation diagram) while the Observer 4100 is on to view the Live View.

## Menu Navigation

Press the Setup or Login/Lock keys on the remote control while an external monitor is connected to access the Observer 4100 menu.

You must login with a password using the number keys on the remote if one has been set in the configuration menu.

Use the up and down arrow navigational keys to switch between the Video Playback, Configuration, and Information icons and display their associated menus.

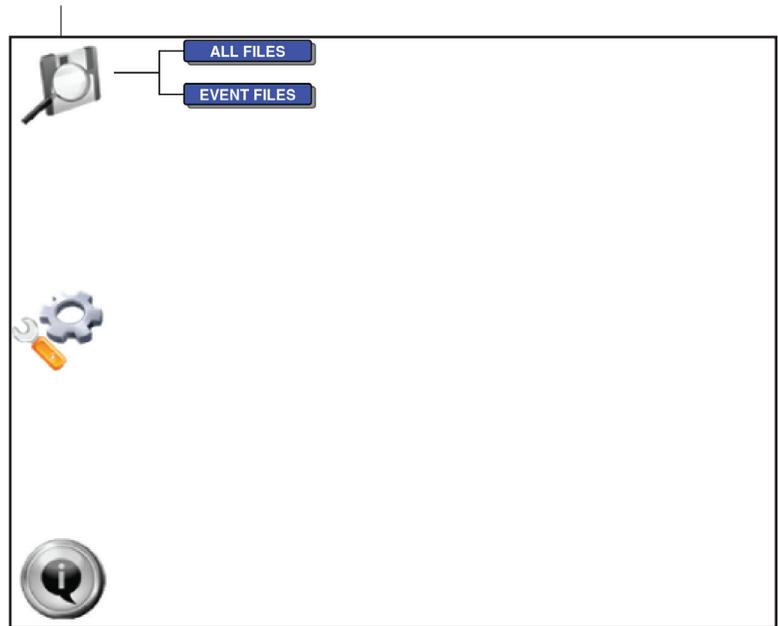
Use the right arrow key to select and expand successive menu options. Use the left arrow key to return to collapse the current menu option and return to the previous menu option.

## Video Playback

To view recorded video with an attached external monitor, use the remote to access the menu, then select the first icon. The All Files and Event Files options appear.

Select the **All Files** option to review all recorded video stored.

Select the **Event Files** option to review only video marked as events.



The **File/Event Search** screen appears. Use the arrow keys on the remote control to select a specific day on the calendar, or use the provided fields to narrow your search and select the **Search** button at the bottom of the screen.

### All Files

**FILE SOURCE:** Select the source to search (SD).

**FILE TYPE:** Select a specific type of event to search for.

**CHANNEL:** Select a specific channel that was recording.

**DATE:** Select a specific date when the video started recording.

**START/END TIME:** Select a specific time when the video started recording.

The Observer 4100 searches the hour following the time entered in this field. For example, enter "14:00:00" searches for video from 2:00 pm to 3:00 pm.

### Event Files

**EVENT TYPE:** Search only for one type of event.

**DATE:** Select a specific date when the video started recording.

### FILE SEARCH

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	

**FILE SOURCE:** SD ▼

**FILE TYPE:** ALL ▼

**CHANNEL:** ALL ▼

**DATE:** 01/16/2011

**START TIME:** 02.29.04

**END TIME:** 02.14.14

## FILE LIST

SEL	LOCK	TYPE	CH	RES	FR	TIME	SIZE
<input type="checkbox"/>	U	T	1	HD1	01	16:07-16:37	11.1M
<input type="checkbox"/>	U	T	2	HD1	01	16:07-16:37	11.1M
<input type="checkbox"/>	U	T	3	HD1	01	16:07-16:37	11.1M
<input type="checkbox"/>	U	T	4	HD1	01	16:07-16:37	11.1M
<input type="checkbox"/>	U	T	1	D1	01	16:40-17:20	30.5M
<input type="checkbox"/>	U	T	2	D1	01	16:40-17:36	30.5M

FIRST

PGUP

PGDW

LAST

REV.

UNLOCK

EXPORT

BACK

## File List

After selecting criteria from the File Search menu, the File List menu appears. The following fields are displayed:

*All Files*

**SEL:** Use the arrow and Enter keys on the remote control to select or unselect each file. Selected files can then be exported. Multiple files can be selected at one time.

**LOCK:** A locked file is indicated with an "L". Locked files cannot be overwritten. Unlocked files can be overwritten, and are indicated with a "U".

**TYPE:** Indicates the type of video.

**RES:** Indicates the resolution the video was recorded at.

**FR:** Indicates the frame rate in FPS (frames per second) the video was recorded at.

**TIME:** Displays the time the video recording started and stopped.

**SIZE:** Displays the size of the file, in MB (megabits).

**FIRST, PGUP, PGDW, LAST:** Use the arrow and Enter keys to select these options to scroll through screens of the displayed files (if there are more files than can be displayed on one screen).

## EVENT LIST

SEL	EVENT NAME	DATE	TIME
<input type="checkbox"/>	VL	2009-04-14	09:35:20
<input type="checkbox"/>	Over Speed	2009-04-15	10:20:39

FIRST

PGUP

PGDW

LAST

REV.

EX LOG

EXPORT

BACK

*Event Files*

**SEL:** Use the arrow and Enter keys on the remote control to select or unselect each file. Selected files can then be exported. Multiple files can be selected at one time.

**EVENT NAME:** Displays the type of event that triggered the video recording.

**DATE:** Displays the date on which the video was recorded.

**TIME:** Displays the time the video recording started.

**FIRST, PGUP, PGDW, LAST:** Use the arrow and Enter keys to select these options to scroll through screens of the displayed files (if there are more files than can be displayed on one screen).

## Exporting Video Files

Video files can be exported to a USB thumb drive inserted into the USB port on the front of the Observer 4100.

To manually export video files, use the following procedure:

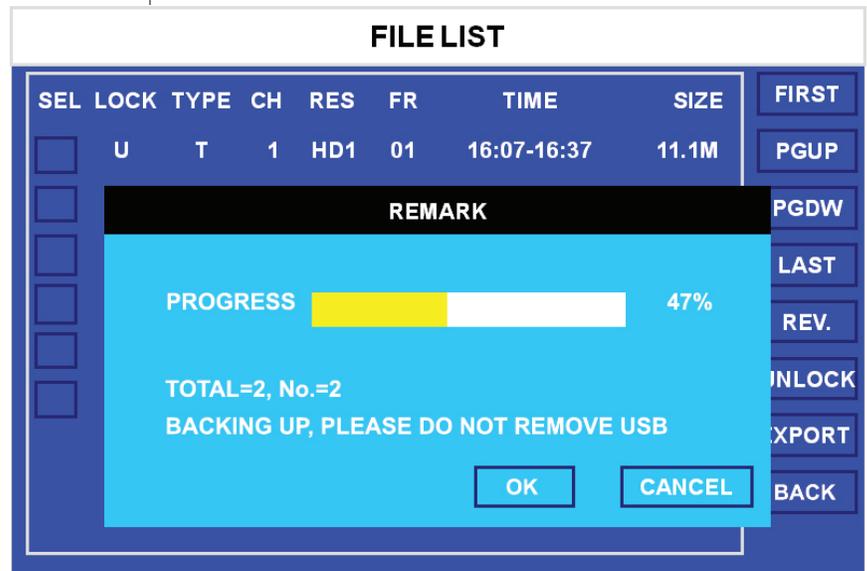
1. Select each file you want to export in the SEL column.
2. Insert a USB thumb drive into the USB port on the front panel of the Observer 4100.
3. Select the Export option on the right side of the screen.  
*A Remark window appears.*
4. Select Sure.  
*A progress bar appears, as well as the total number of files being exported.*
5. When the "Backup Successful" message appears, select Sure.
6. Remove the USB thumb drive.

To automatically export alarm video files recorded the same day as the present, use the following procedure:

1. Ensure **ON** is selected in the **EVENT FILES AUTO-EXPORT (USB)** field in the General menu (see page 15).
2. Insert a USB thumb drive into the USB port on the front panel of the Observer 4100.
3. Press the **F1** key on the remote control.  
*A message appears to indicate video is automatically exporting to the USB drive. If no alarm video files are present, a message will appear.*  
*For video to be marked as alarm, the recording must be initiated by a sensor configured as an alarm. For more information about configuring a sensor as an alarm, see page 33.*
4. When the "Backup Successful" message appears, select Sure.
5. Remove the USB thumb drive.

*If the amount of video being downloaded exceeds the capacity of the USB thumb drive being used, a prompt appears requesting that an additional thumb drive be inserted to conclude the export.*

*Exported files are saved on the root directory of the USB thumb drive. Files are titled first by Unit ID, then Alarm Log, then the date recorded.*



**Note - The maximum size USB flash drive the DVR supports is 30 GB.**

### DATE/TIME

FORMAT:  TUESDAY  
 FORMAT:

TIME SYNC SOURCE:   
 TIME ZONE:

DST:    
 2AM ON SECOND SUNDAY IN MARCH  
 2AM ON FIRST SUNDAY IN NOVEMBER

*The Observer 4100 must have a clear GPS signal to synchronize its time via GPS, or it must have network access to synchronize by NTP.*

## Configuration

Select the Configuration icon to display the System, Record, Network, and Event menus.

These menu options allow you to configure how the MDVR operates, in addition to setting passwords and updating the firmware.

### System Menu

#### Date/Time

The Date/Time menu determines the system time that appears on recorded video.

**Date:** Use the number keys on the remote to set the current date manually.

**FORMAT:** Select from middle endian (MM/DD/YYYY), little endian (DD/MM/YYYY), or big endian (YYYY-MM-DD) date formats.

**Time:** Use the number keys on the remote to set the current time manually.

**FORMAT:** Select from 12 hour (12H) or 24 hour (24H) time formats.

**TIME SYNC SOURCE:** Select Global Positioning System (GPS), Network Time Protocol (NTP), or manual (NONE).

**TIME ZONE:** Select how many hours the local time zone is deviated from GMT. (In the United States, Eastern is "-5", Central is "-6", Mountain is "-7", and Pacific is "-8".)

**SYNC TIME:** Use the number keys on the remote to manually enter the time at which the Observer 4100 synchronizes the time by NTP.

**NTP SERVER IP:** Use the number keys on the remote control to manually enter the IP address of the server by which the Observer 4100 synchronizes time by NTP.

**DST:** Turn Daylight Savings Time adjustments on (ON) or off (OFF).

**DST MODE:** Only available when DST is set to ON. Select AUTO to adjust the time automatically at 2:00 AM on the second Sunday in March and the first Sunday in November, or select CUSTOM to select which Sundays in which months.

## General

The General menu determines the behavior of the Observer 4100 upon start up and shutdown, in addition to other controls.

**ON/OFF TYPE:** Select **TIMER** to display the **START UP TIME**, **SHUT DOWN TIME**, and **BOOT UP IN RECORDING TIME** fields. This option automatically starts and shuts down the MDVR at the specified time. Select the **IGNITION** option to power the MDVR only when the vehicle starts. This displays the **SHUT DOWN DELAY MIN** field. Select **TIMER OR IGNITION** to include both types of start up and shutdown parameters.

### (ON/OFF TYPE: TIMER)

**START UP TIME:** Use the number keys on the remote control to manually enter the time the Observer 4100 starts up each day.

**SHUT DOWN TIME:** Use the number keys on the remote control to manually enter the time the Observer 4100 shuts down each day.

**START UP IN RECORDING TIME:** Select ON to begin recording automatically upon start up. Select OFF to require recording be manually triggered.

### (ON/OFF TYPE: IGNITION)

**SHUT DOWN DELAY MIN:** Use the number keys on the remote control to manually enter the time (in minutes) that the Observer 4100 continues to record after the vehicle has been powered down.

**BUZZER:** Turn an audible buzzer on (ON) or off (OFF) when an event occurs.

**IDLE TIME SEC:** Use the number keys on the remote control to enter the time (in seconds) that the configuration menus display without input before automatically exiting to the live view.

**EVENT FILES TO AUTO-EXPORT (USB):** Select ON to enable the ability to automatically download all recorded events to a USB flash drive inserted into the front panel of the DVR.

**ASPECT MODE:** Select **4:3** or **16:9** to match the aspect ratio of the external monitor.

**TRANSPARANCY:** Select the level of transparency of the on-screen menus.

### GENERAL

**ON/OFF TYPE:** IGNITION ▼

**START UP TIME:** 06:00:00

**SHUT DOWN TIME:** 18:00:00

**AUTO START UP ON SCHEDULE:** OFF/ON ▼

**SHUT DOWN DELAY (1-300) MIN:** 005

**BUZZER:** OFF ▼

**IDLE TIME (30-300) SEC:** 300

**EVENT FILES AUTO-EXPORT (USB):** ON ▼

**ASPECT MODE:** 4:3 ▼      **TRANSPARANCY:** 25% ▼

SAVE
BACK

*When the ON/OFF TIME field is set to TIMER, the MDVR automatically shuts down after five minutes when it is turned on outside of the time specified. To turn this feature off, enter this menu and select IGNITION in the ON/OFF TYPE field.*

**REGISTER INFO**

UNIT S/N: 00640000CB  
 UNIT ID (00000-99999): 00001  
 COMPANY NAME: SV  
VEHICLE NO.: 100  
DRIVER/ROUTE NAME: ABCD  
VEHICLE S/N FOR CMS: 100

SAVE

BACK

**Register Info**

The Register menu includes the assorted serial numbers and names unique to the Observer 4100 for identification.

**UNIT S/N:** The Observer 4100's serial number.

This number is unique and cannot be changed.

**UNIT ID:** The Observer 4100's identifying number.

Use the number keys on the remote control to input a unique number ranging from "00000" to "99999".

**COMPANY NO.:** Use the arrow keys on the remote control to enter the name of the agency to which the Observer 4100 belongs.

**VEHICLE ID:** Use the number keys on the remote control to enter the number of the vehicle in which the Observer 4100 is installed.

**DRIVER/ROUTE NAME:** Use the arrow keys on the remote control to enter the driver's name and/or their route name, up to 5 characters.

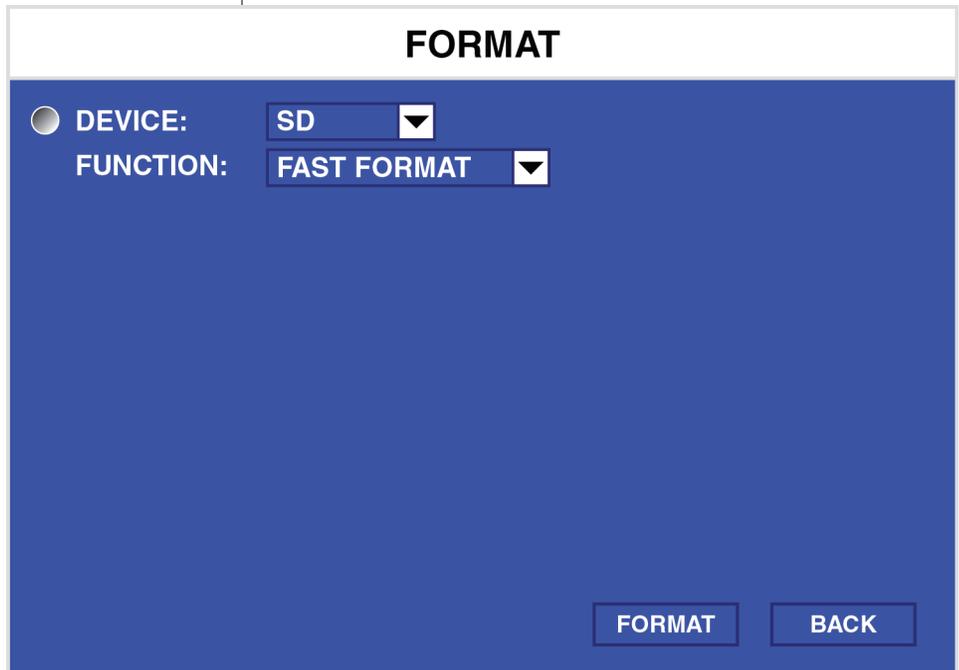
**VEHICLE S/N FOR CMS:** Enter a 7 digit facility-defined serial number that identifies this specific Observer 4100 in the Observer Management System (OMS).

## Format

Formatting a device erases all existing data, including recorded video.

Use the following procedure to format a device:

1. Use the arrow keys on the remote control to select a device from the drop-down menu.  
*Available devices include SD (inserted SD card), or USB (inserted USB flash drive).*
2. In the **FUNCTION** field, select **FAST FORMAT** (to format normally) or **SLOW FORMAT** (to search for bad storage sectors before formatting)
3. Select **FORMAT**.  
*A Warning message appears.*
4. Select **OK**.
5. The format process begins.  
*When finished, the Observer 4100 restarts automatically.*



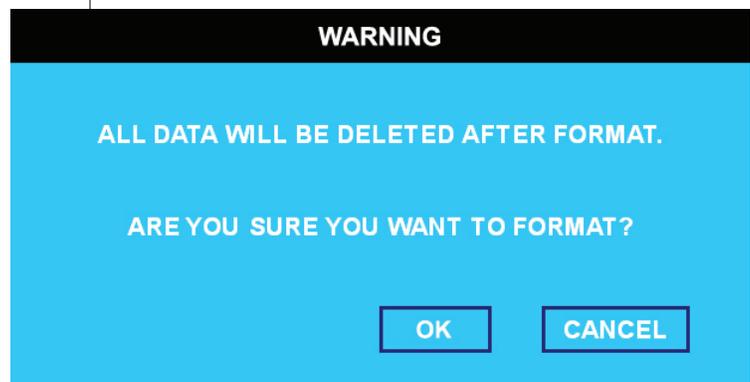
**FORMAT**

● **DEVICE:** SD ▼

**FUNCTION:** FAST FORMAT ▼

**FORMAT** **BACK**

*Formatting a device erases all data, including recorded video. Use with caution.*

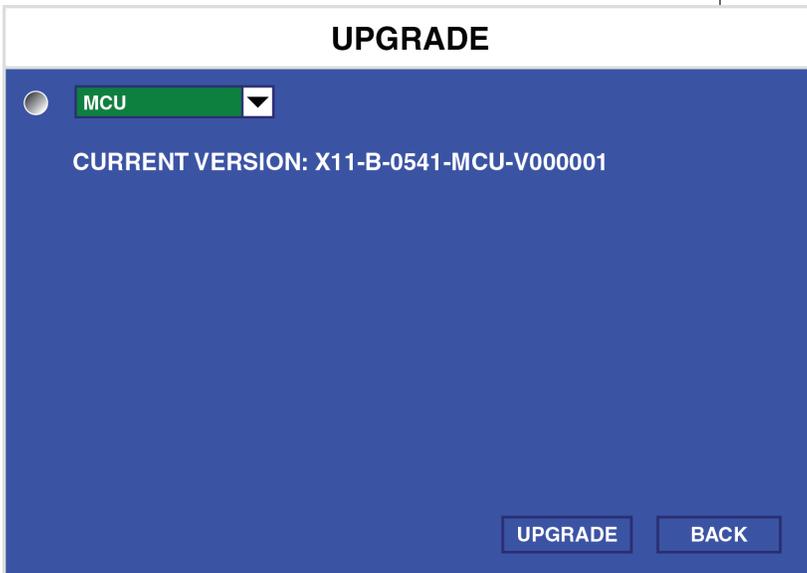


**WARNING**

**ALL DATA WILL BE DELETED AFTER FORMAT.**

**ARE YOU SURE YOU WANT TO FORMAT?**

**OK** **CANCEL**



### Upgrade

Periodically Safety Vision releases new firmware updates for the Observer 4100 to increase functionality and features.

Use the following procedure to update the Observer 4100 firmware:

1. Obtain the firmware update file from Safety Vision Technical Support.
2. In the root directory of a USB flash drive create a folder titled **dvrupgrade**.
3. Place the firmware update file in the dvrupgrade folder.
4. Insert the USB flash drive in the front USB port of the Observer 4100.
5. Access the Upgrade menu.
6. Ensure FIRMWARE is selected in the drop-down menu to update the MDVR's firmware. Additionally, select MCU, LOGO Update, or CP4 to update those devices, respectively.
7. Select UPGRADE.

*The update process begins.*

*The Observer 4100 first checks for an appropriate upgrade file. If one is detected, it automatically restarts.*

*Upon restarting, the Observer 4100 displays "System Updating..." on the external monitor while it installs the upgrade.*

*When complete, "System Initializing..." is displayed, and the Observer 4100 starts as normal.*

*The firmware update has been successfully installed and it is safe to remove the USB flash drive.*



*The firmware can only be updated to a version more current than the firmware currently installed.*

## User Security

The User Security menu controls the password needed to access the Observer 4100 menus.

**PASSWORD ENABLE:** Select ON to require a password to access the Observer 4100's menus; select OFF to disable this feature and allow free access.

**SELECT USER:** Select a user level to set a password for:

- ADMINISTRATOR: has full access rights, including ability to change passwords, format storage media, and export or delete the system log
- POWER USER: same as ADMINISTRATOR rights, but cannot change passwords, format storage media, or export or delete the system log
- USER: may only view video and video logs (cannot access configuration menus)

**PASSWORD:** Enter an eight-digit password with the number keys on the remote control for the selected user level.

**CONFIRM:** Enter the same eight-digit password as you did in the above field to confirm it is the password you want to set. If the password is different, an error message appears.

When ON is selected in the PASSWORD ENABLE field, the User Login screen appears when attempting to enter the Observer 4100 menus. Enter "0" in the ID field, then enter the assigned password.

### USER SECURITY

**PASSWORD ENABLE:**  ▼

**SELECT USER:**  ▼

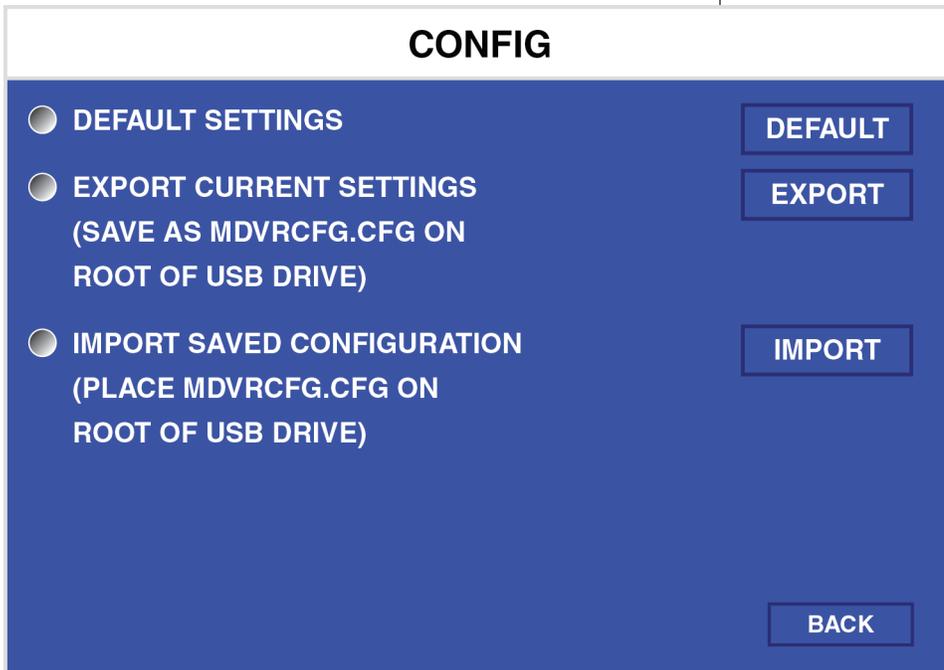
**PASSWORD:**

**CONFIRM:**

### LOGIN

**ID:**  (0)

**PASSWORD:**



### Config

The Config menu allows you to export to or import from a USB drive all of the Observer 4100's settings, which is useful when configuring multiple units in the same manner or creating a backup.

**DEFAULT SETTINGS:** Select RESTORE to revert all settings to the factory defaults.

**EXPORT CURRENT SETTINGS:** To export all of the current settings to a USB flash drive, insert one in the front USB port and select EXPORT. The settings are automatically saved as mdvrcfg.cfg on the root directory of the USB flash drive.

**IMPORT SAVED CONFIGURATION:**

To import a settings file, ensure the mdvrcfg.cfg file is on the root directory of a USB flash drive, insert it into the front USB port, and select IMPORT.

## System Log

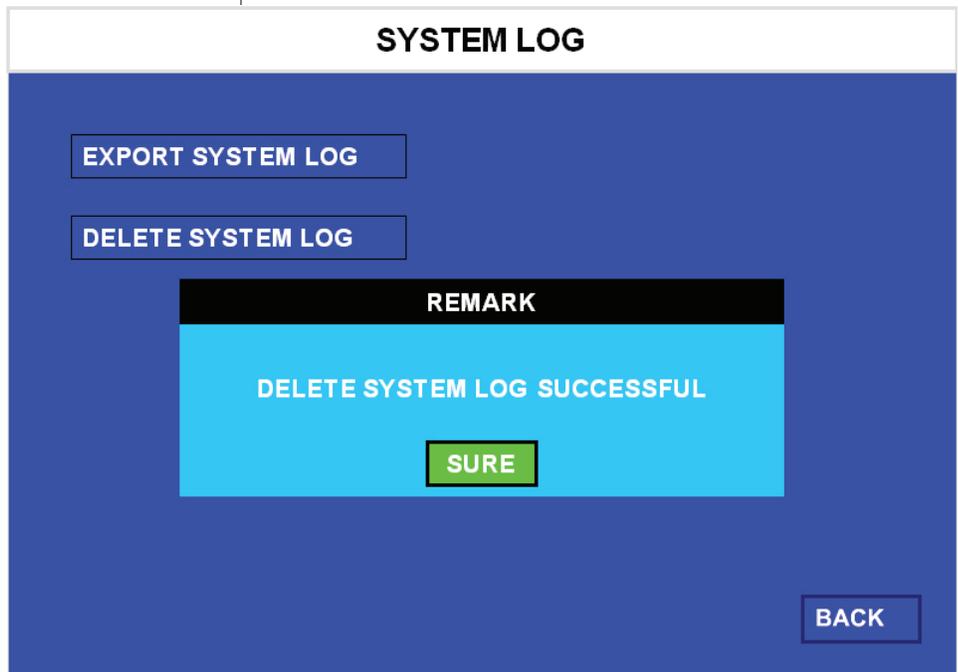
The System Log menu allows the system log to be exported or deleted. The system log contains information about the DVR that may assist Safety Vision Technical Support in troubleshooting potential issues.

To export the system log file:

1. Insert a USB flash drive into the front USB port.
2. Select **EXPORT SYSTEM LOG**.  
*The system log is automatically exported to the USB flash drive.*

To delete the system log:

1. Select **DELETE SYSTEM LOG**.  
*A remark window appears.*
2. Select **OK/SURE**.  
*The system log is deleted.*



## OPTION 1

VIDEO TYPE	NTSC ▼
RECORD MODE	TIMER ▼
NORMAL REC RATE	1 FRAME ▼
ALARM PRE-REC TIME (0-15) MIN	15
ALARM DURATION (3-30) SEC	10
ALARM POST REC (0-1800) SEC	0300
BUZZER TIME (SEC)	10 ▼

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*If an event is trigger while another event is being recorded it will be considered one event. The event will end after the second trigger and the time specified in the ALARM DURATION field.*

## Record Menu

The Record Menu contains parameters that control how video is recorded.

## Options (Page 1)

The Options menu contains most of the parameters that control how long and when the Observer 4100 records video.

**VIDEO TYPE:** Select NTSC or PAL.

**RECORD MODE:** Select GENERAL to began full-time recording automatically when the Observer 4100 is powered on. Select TIMER to begin recording as defined in the Time Record menu. Select EVENT to record only when an event is triggered.

**NORMAL RECORD RATE:** Select NORMAL to record video at the quality specified in the Record Setting menu at all times. Select 1 FRAME to normally record only 1 frame per second, until an event is triggered, when recording will automatically switch to the quality specified in the Record Setting menu. This option is useful to conserve storage space.

**ALARM PRE-REC TIME:** Select the amount of time, up to 15 minutes, to be recorded prior to triggering an event.

**ALARM DURATION:** Select the amount of time, from 3 to 30 seconds, to be recorded and marked as an event.

**ALARM POST REC TIME:** Select the amount of time, up to 1800 seconds, to be recorded after triggering an event.

**BUZZER TIME:** Select the duration of time (15, 30, 45, or 60 seconds) that an audible buzzer sounds, or select ALWAYS to keep the buzzer on until the unit is turned off.

**Options (Page 2)**

**METADATA CAPTURE:** Select ON to record meta-data with recorded video. Select OFF to record video only.

**RECORD FILE TIME:** Select 15, 30, 45 or 60 minute file packing sizes (optional)

**SD OVERWRITE:** Select ON to overwrite the oldest video existent on the storage media when storage space is near capacity. Select OFF to stop all recording video after the storage media is full (necessitating manual file deletion).

**LOCKED FILE RETENTION:** Select the number of days locked files remain locked, before they become unlocked (and able to be overwritten). Select 7, 10, 15, 20, 30, or 45 days.

**IGNITION RECORD DELAY:** Select between 0 and 30 minutes. The MDVR continues to record for the set amount of time after the vehicle's ignition has been turned off.

**OPTION 2**

<b>METADATA CAPTURE</b>	OFF ▼
<b>RECORD FILE TIME (MIN)</b>	15 ▼
<b>SD OVERWRITE</b>	ON ▼
<b>LOCKED FILE RETENTION (DAY)</b>	7 ▼
<b>IGNITION RECORD DELAY (0-30 MIN)</b>	05

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*See the Event List section for more information on locked and unlocked files.*

## REGISTER INFO

ITEMS	LIVE VIEW	RECORD
DATE/TIME	OFF ▼	OFF ▼
ALARM	OFF ▼	
ACCELERATION DATA	OFF ▼	
TEMPERATURE	OFF ▼	
FIRMWARE VERSION	OFF ▼	
GPS INFO.	OFF ▼	
CAMERA NAME		OFF ▼
VEHICLE NO.		OFF ▼

SAVE

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03/27/2010 17:30:29

ALARM:

GPS: ACQUIRING SIGNAL

SPEED: 067 MPH

DIRECTION: NW

ACCELERATION: INVALID

PB

VEHICLE No.: 02009

MCU: X3-4-0541-MCU-T033101

FIRMWARE: X3-4-V000028

IGNITION: ON

VOLTAGE: 12.5V

SIM CARD: OFF

SERVER: NO SERVER

DIAL UP: UNKNOWN

SIGNAL: 0

CENTER SERVER 1 NET STATUS: UNKNOWN

CENTER SERVER 2 NET STATUS: UNKNOWN

## OSD Overlay

The OSD Overlay menu selects what elements appear on the on-screen display.

Select **OFF** or **ON** from the **LIVE VIEW** column to display the associated element when you press the **Enter** key on the remote control when the Observer 4100 is in Live View.

Select **OFF** or **ON** from the **RECORD** column to make this information available when reviewing recorded video.

The following information is available to be displayed:

**DATE/TIME:** The date and time of the recording.

**ALARM:** The trigger that initiated the recording (if active)

**MODULE STATUS:** The status of networking modules.

**ACCELERATION:** The acceleration of the vehicle as determined by the internal accelerometers.

**TEMPERATURE:** The internal temperature of the Observer 4100.

**FIRMWARE VERSION:** The current firmware version installed on the Observer 4100.

**GPS INFO:** The direction the vehicle is traveling as determined by the optional GPS module

**CAMERA NAME:** The name of the camera displayed

**VEHICLE NO.:** The vehicle number as entered in the Register Info menu

## Camera Settings

The Camera Setting menu controls which cameras are recorded and displayed in the live view.

Select the following for each camera:

**ENABLE:** Select **ON** to enable recording of this camera.

**NAME:** Enter an optional alphanumeric name for each specific camera.

**AUDIO:** Select **ON** to enable audio recording for this camera.

**LIVE:** Select **ON** to display this camera in the live view.

**SEQUENCE:** Select **ON** to display the cameras in a loop (the cameras display in succession in full screen mode).

**SEQUENCE INT.:** Enter the amount of time (between 5 and 300 seconds) to display each camera before advancing to the next one.

### CAMERA SETTINGS

CAMERA	ENABLE	NAME	AUDIO	LIVE
CH1	OFF ▼	<input style="width: 80px;" type="text"/>	OFF ▼	OFF ▼
CH2	OFF ▼	<input style="width: 80px;" type="text"/>	OFF ▼	OFF ▼
CH3	OFF ▼	<input style="width: 80px;" type="text"/>	OFF ▼	OFF ▼
CH4	OFF ▼	<input style="width: 80px;" type="text"/>	OFF ▼	ON ▼
<b>SEQUENCE:</b>		OFF ▼		
<b>SEQUENCE INT.:</b>		<input style="width: 40px;" type="text" value="120"/> (5-300 SEC)		
<input style="border: 1px solid white; padding: 5px 15px;" type="button" value="SAVE"/>			<input style="border: 1px solid white; padding: 5px 15px;" type="button" value="BACK"/>	

## RECORD SETTINGS

CAMERA	RES	FR	STD REC. QUALITY	EVENT REC. QUALITY
CH1	CIF ▼	30 ▼	4 ▼	1 ▼
CH2	D1 ▼	30 ▼	4 ▼	1 ▼
CH3	HD1 ▼	30 ▼	4 ▼	1 ▼
CH4	CIF ▼	30 ▼	4 ▼	1 ▼

### Record Setting

The Record Setting menu controls the framerate and resolution of recorded video. Each camera's parameters can be set independently.

Select the following for each channel:

**RES:** Select the resolution of this camera. Select from **D1** (704×576), **HD1** (704×288), or **CIF** (354×288). The DVR supports 15 FPS if all four channels are set to D1. HD1 and CIF support 30 FPS on all four channels.

**FR:** Select the frame rate in seconds of this camera. Select from **1** to **30** FPS.

**STD REC. QUALITY:** Select the quality of recording during normal recording, with **1** being the best (for optimal images) and **8** being the lowest (for optimized recording time).

**EVENT REC. QUALITY:** Select the quality of recording during an event, with **1** being the best (for optimal images) and **8** being the lowest (for optimized recording time).

## Sub-Streaming

The Sub-Streaming menu is similar to the Record Setting menu, except it controls the quality of video when networked with a central management system (CMS).

**MODE SET:** Select **MODE1** or **MODE2** and then select **SURE**. **MODE1** refers to LAN or WiFi networks. **MODE2** refers to other wireless networks.

Select the following for each channel:

**ENABLE:** Select **ON** to enable this camera for sub-streaming. Select **OFF** to disable it.

**RES:** Select the resolution for this camera when sub-streaming. Select from **CIF** or **QCIF**.

**FR:** Select the frame rate in seconds of this camera when sub-streaming. Select from **1** to **30** FPS.

**QUALITY (MODE1 only):** Select the quality of recording when substreaming, with **1** being the best and **8** being the lowest.

**Kbps (MODE1 only):** Select a bit-rate (in Kbps) consistent with your agency's wireless hardware.

**SUB-STREAM MODE (MODE2 only):** Select **ADAPT** or **FIX**. Selecting **ADAPT** allows the Observer 4100 to automatically select the optimal bit-rate; selecting **FIX** sets the bit-rate to the entry in the BIT field.

**SUB-STREAMING**

**MODE SET** MODE1/MODE2 ▼

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OK
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**SUB-STREAMING**

CAMERA	ENABLE	RES	FR	QUALITY	Kbps
CH1	ON ▼	CIF ▼	30 ▼	1 ▼	0128 ▼
CH2	OFF ▼	CIF ▼	30 ▼	1 ▼	0128 ▼
CH3	OFF ▼	QCIF ▼	30 ▼	1 ▼	0128 ▼
CH4	OFF ▼	QCIF ▼	30 ▼	1 ▼	0128 ▼

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*Adjust these settings to achieve the optimal data transfer rate to image quality ratio.*

SCHEDULE				
DATE	SCHEDULE 1	TYPE	SCHEDULE 2	TYPE
EVERY ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼
***** ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼
***** ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼
***** ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼
***** ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼
***** ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼
***** ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼
***** ▼	00:00:00-00:00:00	CON ▼	00:00:00-00:00:00	CON ▼

WORK WEEK FROM MON. ▼ TO SUN. ▼

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*Scheduled recording times starting before midnight (23:59:59 and before) that end the next day (00:00:00 and afterwards) continue recording without interruption.*

## Schedule

The Schedule menu allows to the Observer 4100 to begin and end recording automatically based on a timed schedule.

In the **DATE** column to select from **EVERY** (every day), **WEEKDAY** (Monday thru Friday) or individual days. Asterisks (\*\*\*\*\*) disable automatic recording during the selected times on that line.

**SCHEDULE 1** and **SCHEDULE 2** allow two different recording times during the same day, for example, if the vehicle operates during two different shifts.

Enter automatic recording times using the number keys on the remote control in the HH:MM:SS-HH:MM:SS format, where the first time is when recording will begin and the second time is when recording will stop. All times are in the 24-hour format.

For each scheduled time, select **CON** (for continuous recording) or **ALARM** (for event-based recording) in the **TYPE** field.

Select the duration of your agency-specific work week in the **WORKDAY FROM** fields. This indicates the days scheduled recordings occur when set to **WEEKDAY**.

## Cameo

The Cameo menu controls the cameo feature. The cameo feature allows one camera channel to record only during an event. During normal continuous recording, the cameo camera is turned off while the three other camera channels record as normal. When an event is triggered, the cameo camera turns on automatically and all four cameras record. The cameo camera turns off again after the post-event. This feature is useful when dealing with privacy concerns.

Select **ON** in the **ENABLE** column to designate a camera as the cameo camera. Only one camera channel can use the cameo feature at one time.

## Cameo-Camera Settings

The Cameo-Camera Settings menu controls the cameo camera feature.

Select ON in a channel's respective ENABLE field to turn on the cameo functionality. The selected channel's camera is then turned off during normal operation, and only turns on when an alarm is triggered.

Only one camera can be enabled with the cameo functionality at once, and pre-event recording is disabled for that camera.

## CAMEO-CAMERA SETTINGS

### MOTION DETECT SETTING:

CHANNEL ID	ENABLE
CH 1	OFF ▼
CH 2	OFF ▼
CH 3	OFF ▼
CH 4	OFF ▼

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### OTHER SETTINGS

WATERMARK: OFF ▼

SD USED ALARM: 80 %

EXPORT MINIPLAYER

SAVE BACK

### Other Settings

The Other Settings menu controls if a special Safety Vision watermark appears on recorded video files. This watermark improves the validity of recorded video as evidence since it is not as easily tampered with.

**WATERMARK:** Select **ON** to insert a watermark on all recorded video. Select **OFF** to record video without a watermark.

**SD USED ALARM:** Enter the percentage of storage capacity on the SD card is reached before an alarm is displayed. Configure the alarm in the **Sensor Alarm Output** menu.

## Network Menu

The Network Menu contains parameters that define how the Observer 4100 interacts with computers and wireless central management systems.

### Local

The Local menu controls network information for the Observer 4100 unit when configuring networks.

Use the number keys on the remote control to enter the following:

**IP:** Static internet protocol (IP) address of the Observer 4100.

**SUB:** Subnet mask.

**GATE:** Default gateway.

**CLIENT/WEB PORT:** Enter alternative port numbers if necessary.

**MAC ADDRESS:** The MAC address is unique and cannot be changed.

### LOCAL NETWORK

**IP:**

**SUB:**

**GATE:**

**CLIENT PORT:**

**WEB PORT:**

**MAC ADDRESS: 00-18-25-37-01-06**

**CELLULAR**

IP:

PORT:

PHONENUMBER:

PACKET TRANSMIT:  ▼

**Cellular**

The Cellular screen controls how the Observer 4100 interfaces with a cellular network for the Observer Management System (OMS). Enter the cellular network credentials given in the appropriate fields.

## Server Network

The Server Network screen controls central management system (CMS) server addresses that the Observer 4100 networks with (in development at this time).

### SERVER 1

CENTER SERVER 1:

NETWORK OPTION:  ▼

MESSAGE SERVER:  ▼

PORT:

MEDIA SERVER:  ▼

PORT:

**WiFi**

**WiFi ENABLE:**  ▼     **GET IP TYPE:**  ▼

**IP:**

**SUB:**

**GATE:**

**ESSID:**

**PASSWORD ENABLE:**  ▼

**PASSWORD (0-63):**

**WiFi**

The WiFi menu controls settings of the wireless access point the Observer 4100 communicates with.

Select **ON** in the **WiFi ENABLE** field and use the number keys on the remote control to enter the following:

**GET IP TYPE:** Select **STATIC IP** for WiFi networks requiring a static IP address. Select **AUTO IP** for DHCP-enabled WiFi networks.

**IP:** Static IP address of the access point.

**SUB:** Subnet mask of the access point.

**GATE:** Default gateway of the access point.

**ESSID:** AP of the server to which the Observer 4100 is connecting.

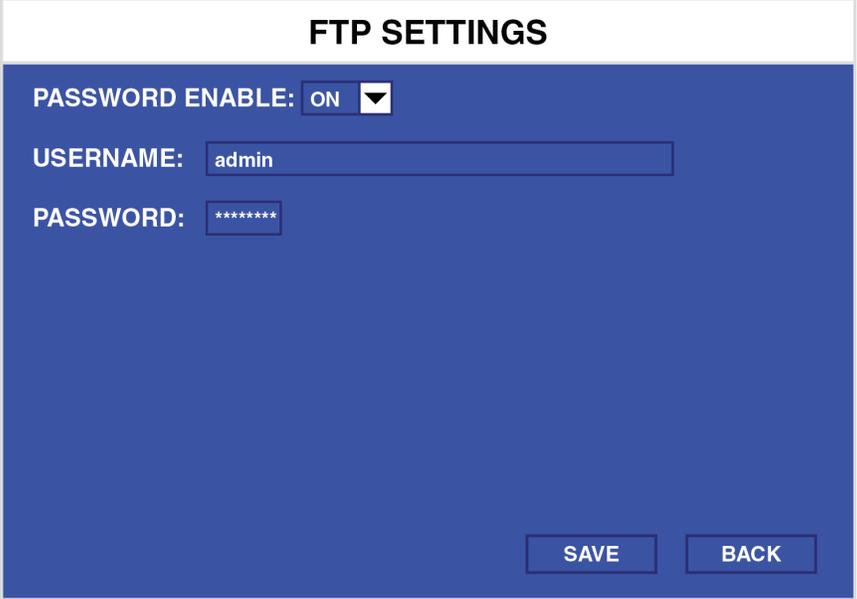
**PASSWORD ENABLE:** Select **ON** if security is enabled for this access point to display the **PASSWORD** field.

**PASSWORD:** Use the remote control to enter a numeric password up to 63 characters.

### FTP Settings

The FTP Settings screen controls the user name and password of an optional FTP server to remotely access video files and transfer data to a host server.

For more information regarding FTP server, contact Safety Vision Technical Support.



**FTP SETTINGS**

PASSWORD ENABLE: ON ▼

USERNAME: admin

PASSWORD: \*\*\*\*\*

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SENSOR						
	ENABLE	NAME	OSD	SET	ALARM	LOCK
S1	ON ▼	PANIC	PB	LOW ▼	ON ▼	OFF ▼
S2	OFF ▼	F-DOOR	FD	LOW ▼	OFF ▼	OFF ▼
S3	OFF ▼	R-DOOR	RD	LOW ▼	OFF ▼	OFF ▼
S4	OFF ▼	BRAKE	BK	LOW ▼	OFF ▼	OFF ▼
S5	ON ▼	LEFT	LT	LOW ▼	OFF ▼	OFF ▼
S6	OFF ▼	RIGHT	RT	LOW ▼	OFF ▼	OFF ▼
S7	OFF ▼	RED WA	RW	LOW ▼	OFF ▼	OFF ▼
S8	OFF ▼	YEL WA	YW	LOW ▼	OFF ▼	OFF ▼

*A sensor must be installed and wired properly to the Observer 4100 in order for it to function properly. For more information see the Installation section.*

## Event Menu

The Event Menu contains parameters that control connected sensor inputs and how events are recorded.

### Sensor

The Sensor menu controls each sensor input that triggers events. The Observer 4100 supports up to eight inputs and can configure each one individually.

Use the remote control to configure the following for each individual input:

**ENABLE:** Select **ON** to enable this sensor for input. Select **OFF** to disable it.

**NAME:** Press Enter on the remote control to display an on-screen keyboard and enter the name for this sensor here.

**OSD:** Press Enter on the remote control to display an on-screen keyboard and enter an abbreviated or truncated name of the sensor here. This name appears in the OSD while viewing the Live View, or when searching for or reviewing recorded events.

**SET:** Select **LOW** for low to high (normally closed, NC), or select **HIGH** for high to low (normally open, NO).

**ALARM:** Select **ON** to enable the ALM LED on the front of the Observer 4100 when a sensor is triggered and marks video as "R" so that it can be automatically downloaded (see page 13). This LED continues to flash after an event is triggered until the configuration menus are accessed.

**LOG:** Select **YES** to enter events triggered by this sensor into the log file (a file that cannot be deleted) and all this event to be searched for when reviewing videos.

**LOCK:** Select **ON** to lock the video of the event recorded when this sensor is triggered (not allowing it to be overwritten).

### Sensor Trigger Action

Select **NEXT PAGE** on the **Sensor** menu to access this menu.

The **Sensor Trigger** menu allows a channel to be displayed in fullscreen while using Live View when an event is triggered.

For each sensor, select a channel to displayed in the **FULL SCREEN** field.

SENSOR TRIGGER ACTION		
NUM	NAME	FULL SCREEN
S1		CH1 ▼
S2		CH1 ▼
S3		CH1 ▼
S4		CH1 ▼
S5		CH2 ▼
S6		NONE ▼
S7		CH3 ▼
S8		CH4 ▼

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## AUX OUTPUT

ALARM TYPE	OUT 1	OUT 2	OUT 3	OUT 4
S1	OFF ▼	OFF ▼	OFF ▼	OFF ▼
S2	OFF ▼	OFF ▼	OFF ▼	OFF ▼
S3	OFF ▼	OFF ▼	OFF ▼	OFF ▼
S4	OFF ▼	OFF ▼	OFF ▼	OFF ▼
S5	OFF ▼	OFF ▼	OFF ▼	OFF ▼
S6	OFF ▼	OFF ▼	OFF ▼	OFF ▼
S7	OFF ▼	OFF ▼	OFF ▼	OFF ▼
S8	OFF ▼	OFF ▼	OFF ▼	OFF ▼

## Aux Output

The Aux Output menus select which outputs are active when certain alarms are triggered.

For each alarm type, select **ON** or **OFF** for outputs 1 through 4 (OUT1 to OUT4).

OVER SPEED, LOW SPEED, HIGH TEMP., LOW TEMP., and ACCERATION type alarms are controlled by settings in the Speed, Temperature, and Accerlation menus, respectively.

An ERROR type alarm occurs when the Observer 4100 or its storage media require service.

A STORAGE type alarm occurs when the percentage entered in the **SD STORAGE ALARM** field in the **Other Settings** menu is achieved.

## AUX OUTPUT

ALARM TYPE	OUT 1	OUT 2	OUT 3	OUT 4
OVER SPEED	OFF ▼	OFF ▼	OFF ▼	OFF ▼
LOW SPEED	OFF ▼	OFF ▼	OFF ▼	OFF ▼
HIGH TEMP.	OFF ▼	OFF ▼	OFF ▼	OFF ▼
LOW TEMP.	OFF ▼	OFF ▼	OFF ▼	OFF ▼
ACCERATION	OFF ▼	OFF ▼	OFF ▼	OFF ▼
VIDEO LOSS	OFF ▼	OFF ▼	OFF ▼	OFF ▼
ERROR	OFF ▼	OFF ▼	OFF ▼	OFF ▼
STORAGE	OFF ▼	OFF ▼	OFF ▼	OFF ▼

## Speed

The Speed menu controls the speed type (SPDL and SPDO) events.

Use the remote control to configure the following options:

**SPEED SOURCE:** Select **VEHICLE** to obtain vehicle speed data from the vehicle's own speedometer, or **GPS** to obtain this data from the GPS signal.

**SPEED UNIT:** Select **MPH** to use miles per hour or **KPH** to use kilometers per hour.

**ALARM SETTING:** Select the following options for **LOWSPEED** and **OVERSPEED**:

**ENABLE:** Select **ON** to enable this SPEED event. Select **OFF** to disable it.

**THRESHOLD:** Use the number keys on the remote control to enter the speed at which the event is triggered.

**ALARM:** Select **ON** to enable the ALM LED on the front of the Observer 4100 when the THRESHOLD speed is reached and an event is triggered. This LED continues to flash after an event is triggered until the configuration menus are accessed.

**LOCK:** Select **ON** to lock the video of the recorded event when the THRESHOLD speed is reached (not allowing it to be overwritten).

### SPEED

**SPEED SOURCE:** GPS ▼

**SPEED UNIT:** MPH ▼

**ALARM SETTING:**

NAME	OSD	ENABLE	THRESHOLD	ALARM	LOCK
LOW SPEED	SPDL	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">010</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>
OVER SPEED	SPDO	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">100</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>

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*For more information about connecting the Observer 4100 to a vehicle speedometer, please contact Safety Vision Technical Support.*

ACCELERATION					
NAME	OSD	ENAB	THRESHOLD	ALARM	LOCK
OVERSHOCK	SHK	ON ▼	X: 1.5 G Y: 1.5 G Z: 5.5 G	ON ▼	OFF ▼
X: (+)01.356	Y: (+)01.042	Z: (+)01.106	CALIBRATE		
			SAVE	BACK	

*For more information about connecting the Observer 4100 to an accelerometer unit, please contact Safety Vision Technical Support.*

## Acceleration

The Acceleration menu controls the thresholds of the Observer 4100's accelerometers that trigger an overshock (SHK) event. 3 Axis (SV-4CSDIS) and 6 Axis (41-6AXIS-ACC) accelerometers are available.

Use the remote control to configure the following options:

**EN:** Select **ON** to enable the SHK event. Select **OFF** to disable it.

**THRESHOLD:** Use the number keys on the remote control to enter the amount of force (in Gs) for each axis (**X**, **Y**, and **Z**) at which the event is triggered.

**ALARM:** Select **ON** to enable the ALM LED on the front of the Observer 4100 when the THRESHOLD force is reached and an event is triggered. This LED continues to flash after an event is triggered until the configuration menus are accessed.

**LOCK:** Select **ON** to lock the video of the event recorded when the THRESHOLD force is reached (not allowing it to be overwritten).

## Temperature

The Temperature menu controls the thresholds of a temperature event. A 3 Axis Accelerometer (SV-4CSDIS) is required to trigger temperature events.

Use the remote control to configure the following options:

**TEMPERATURE UNIT:** Select **F** for Fahrenheit. Select **C** for Celsius.

**ENAB:** Select **ON** to enable this alarm.

**THRESHOLD:** Use the number keys on the remote control to enter the maximum or minimum temperature at which an event is triggered.

**ALARM:** Select **ON** to enable the ALM LED on the front of the Observer 4100 when the THRESHOLD temperature is reached and an event is triggered. This LED continues to flash after an event is triggered until the configuration menus are accessed.

**LOCK:** Select **ON** to lock the video of the event recorded when the THRESHOLD force is reached (not allowing it to be overwritten).

### TEMPERATURE

● **TEMPERATURE UNIT:** F ▼

● **ALARM SETTING:**

NAME	OSD	ENAB	THRESHOLD	ALARM	LOCK
HIGH TEMP.	HT	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">+104</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>
LOW TEMP.	LT	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">-40</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>	<span style="border: 1px solid black; padding: 2px;">OFF ▼</span>

SAVE
BACK

### CAMERA

**MOTION DETECT SETTINGS:**

CH ID	M.D.SENSITIVE	M.D.AREA	B.D.SENSITIVE
1 ▼	1 ▼	<input type="button" value="SETUP"/>	1 ▼

**ALARM SETTINGS**

NAME	OSD	EN	ALARM	LOCK
BLIND	BD	OFF ▼	OFF ▼	OFF ▼
MOTION	MD	OFF ▼	OFF ▼	OFF ▼
VIDEO LOSS	VL	ON ▼	OFF ▼	

## Camera

The Camera menu controls camera motion detection settings and associated events.

Use the remote control to configure the following options:

### MOTION DETECT SETTINGS

**CH ID:** Select the channel to configure the following settings.

**M.D. SENSITIVE:** Select the sensitivity of the motion detection feature, with 3 being the most sensitive. The more sensitive the motion detection, the smaller the movements can be that trigger events.

**M.D.AREA:** Select **Setup** to enter the motion detection setup screen. Use the cross keys on the remote control to shade in red the area of view that is

monitored for motion. Use the Enter key to switch between shading and not shading. This is useful when the camera's angle of view covers both areas with frequent motion and monitored areas.

**B.D.SENSITIVE:** The blind detection feature senses when a camera's view may be purposely blocked. Select the sensitivity of the blind detection feature, with 3 being the most sensitive. The more sensitive the blind detection, the smaller the movements can be that trigger events.

### ALARM SETTINGS

For each type of alarm (BLIND, MOTION, and VIDEO LOSS), select ON or OFF for the following:

**EN:** Select **ON** to enable the event. Select **OFF** to disable it.

**ALARM:** Select **ON** to enable the ALM LED on the front of the Observer 4100 when the event is triggered. This LED continues to flash after an event is triggered until the configuration menus are accessed.

**LOCK:** Select **ON** to lock the video of the recorded event.

## Low Voltage Protection

The Low Voltage Protection menu controls the voltage threshold before the Observer 4100 shuts down automatically to protect itself.

Use the remote control to configure the following:

**ENABLE:** Select **ON** to enable voltage protection.

**LOW VOLTAGE:** Enter the minimum voltage, in volts, that the Observer 4100 can receive before it automatically disconnects from the CMS or shuts down.

**VOLTAGE OF START:** Enter the voltage, in volts, that the vehicle typically drops to during startup (the ignition key is turned).

**INTERNAL TIME FOR CMS:** Select the time, in minutes, that the Observer 4100 can continue to receive the voltage indicated in the **VOLTAGE** field before disconnecting from the CMS. **SHUT DOWN**

**DELAY:** Select the time, in minutes, that the Observer 4100 can continue to receive the voltage indicated in the **LOW VOLTAGE** field before automatically shutting down.

### LOW VOLTAGE PROTECTION

ENABLE:	<input type="text" value="ON"/>
LOW VOLTAGE:	<input type="text" value="0.90"/> v
VOLTAGE OF START:	<input type="text" value="11.0"/> v
INTERNAL TIME FOR CMS:	<input type="text" value="5"/> MIN
SHUT DOWN DELAY:	<input type="text" value="10"/> MIN

**EMERGENCY EVENT**

● CONFIG OF PANIC BUTTON

NAME	EN	ALARM	LOCK
PB	OFF ▼	OFF ▼	OFF ▼

### Emergency Event

The Emergency Event menu controls events relating to the panic button module.

Use the remote control to configure the following:

**EN:** Select **ON** to enable the panic button module. Select **OFF** to disable it.

**ALARM:** Select **ON** to enable the ALM status LED when the event is triggered. This LED continues to flash after an event is triggered until the configuration menus are accessed.

**LOCK:** Select **ON** to lock the video of the recorded event.

## Peripheral Menu

The Peripheral Menu contains parameters that control optional connected peripheral accessories.

### PTZ

The PTZ Setup menu provides configuration options for advanced optional cameras. Consult with the camera manufacturer for the following information:

Protocol  
Baud Rate  
Data Bit  
Stop Bit  
Verify  
Address

## PTZ SETUP

CHANNEL	CH1	CH2	CH3	CH4
PROTOCOL	PELCO-D ▼	PELCO-D ▼	PELCO-D ▼	PELCO-D ▼
BAUD RATE	2400 ▼	2400 ▼	2400 ▼	2400 ▼
DATA BIT	5 ▼	5 ▼	5 ▼	5 ▼
STOP BIT	1 ▼	1 ▼	1 ▼	1 ▼
VERIFY	NONE ▼	NONE ▼	NONE ▼	NONE ▼
ADDRESS	001	001	001	001
		PG DOWN	SAVE	EXIT

**EXT. COM. SETUP**

COM1: NONE ▼  
COM2: NONE ▼  
COM3: PANIC BUTTON ▼  
COM4: ACCELERATION ▼

SAVE

BACK

**Ext. Com. Setup**

The Ext. Com. Setup menu enables optional connections to a control panel, acceleration sensor, or panic button.

Use the remote control to configure the following for each individual input:

**COM1:** Select the device connected to the 232RXD-1 and 232TXD-1 terminals. Select NONE if nothing is connected to these terminals.

**COM2:** Select the device connected to the 232RXD-2 and 232TXD-2 terminals. Select NONE if nothing is connected to these terminals.

**COM3:** Select the device connected to the 485A-1 and 485B-1 terminals. Select NONE if nothing is connected to these terminals.

**COM4:** Select the device connected to the 485A-2 and 485B-2 terminals. Select NONE if nothing is connected to these terminals.

## System Information

Select the System Information icon to display the System, History, Modules, and Authorized menus.

These menu options display unique information and history about the Observer 4100 unit.

### System

The System menu displays the firmware version and information on the SD card.

**FIRMWARE VERSION:** The version of firmware currently installed.

**MCU VERSION:** The MCU feature is not active at this time.

**DEVICE NAME:** Displays the name of the storage unit.

**CAPACITY:** Displays the overall capacity of the storage unit, in gigabytes (GB).

**FREE SPACE:** Displays the remaining storage capacity of the storage unit, in gigabytes (GB).

**RECORD CAPACITY:** Displays the overall recording capacity of the storage device (in hours), based on the capacity and setting made in the configuration menus.

### SYSTEM INFO

**FIRMWARE VERSION: X13-4-V000028**

**MCU VERSION: X3-B01-0541-MCU-V000009**

**SD INFORMATION:**

DEVICE NAME	CAPACITY (GB)	FREE SPACE (GB)	RECORD CAPACITY (HR)
SD	32G	12.0G	9

*If information about a storage device is displayed in this menu, it is operating as normal.*

### HISTORY

**HIGHEST SPEED IN HISTORY:** CLEAR

75 MPH    2012.01.16    07:57:43

**MILEGAGE HISTORY:** CLEAR

429 MILES

NEXT PAGE    BACK

### HISTORY

**HIGHEST SHOCK IN HISTORY:** CLEAR

X: (+) 00.000G    2009.04.13    15:58:32

Y: (+) 00.000G    2009.04.13    15:58:32

Z: (+) 00.000G    2009.04.13    15:58:32

**LOWEST VOLTAGE IN HISTORY** CLEAR

7.85V    2000.01.01    23:00:43

**HIGHEST VOLTAGE IN HISTORY**

31.0V    2017.01.01    23:00:43

NEXT PAGE    FRONT PAGE    BACK

### HISTORY

**LOWEST TEMP IN HISTORY** CLEAR

+66°F    2012.01.24    23:00:43

**HIGHEST TEMP IN HISTORY**

+118.5°F    2011.12.14    02:29:04

FRONT PAGE    BACK

## History Info

The History Info menu consists of three pages. Select **CLEAR** next to any record to reset it.

**HIGHEST SPEED IN HISTORY:** Displays the highest obtained speed, including the date and time it was recorded (assuming speed data is collected).

**MILEAGE HISTORY:** Displays the total amount of miles (or kilometers) driven.

**HIGHEST SHOCK IN HISTORY:** Displays the highest recorded force (in Gs) experienced by the optional accelerometer along each axis (X, Y, and Z).

**LOWEST VOLTAGE IN HISTORY:** Displays the lowest received voltage, including the date and time it was recorded.

**HIGHEST VOLTAGE IN HISTORY:** Displays the highest received voltage, including the date and time it was recorded.

**LOWEST TEMP IN HISTORY:** Displays the lowest internal temperature, including the date and time it was recorded.

**HIGHEST TEMP IN HISTORY:** Displays the highest internal temperature, including the date and time it was recorded.

## Modules

The Modules menu displays the status of optional installed modules.

**GPS MODULE:** Displays NORMAL if a GPS module is installed; NONE if one is not.

**GPS SIGNAL:** Displays if the GPS signal received is valid.

**WIFI MODULE:** Displays NORMAL if a Wi-Fi module is installed; NONE if one is not.

**WIFI SIGNAL:** Displays the strength of the Wi-Fi signal (in decibels) if a Wi-Fi module is installed

## MODULES STATUS

- **GPS MODULE: ON**  
**GPS: SIGNAL: INVALID**
- **WIFI MODULE: ON**  
**WIFI SIGNAL: -95dB**

OK

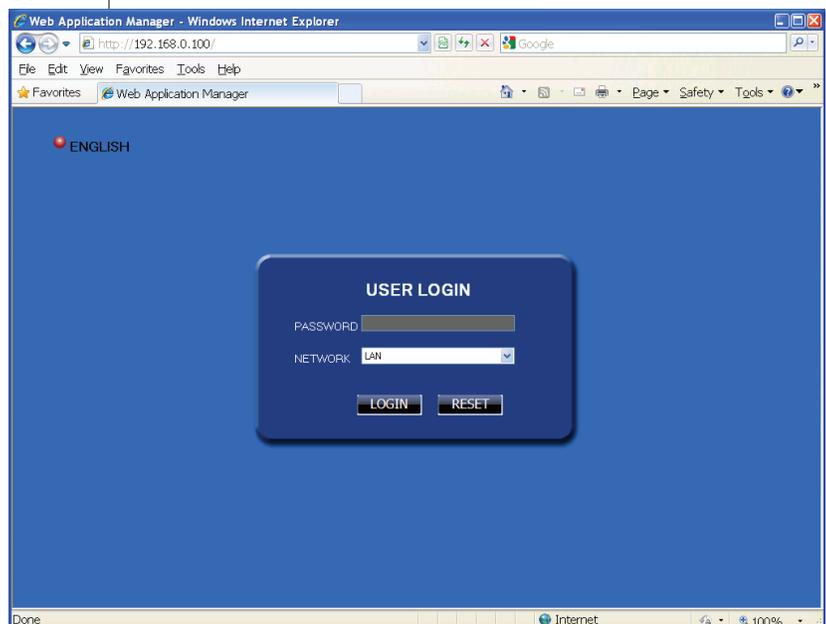
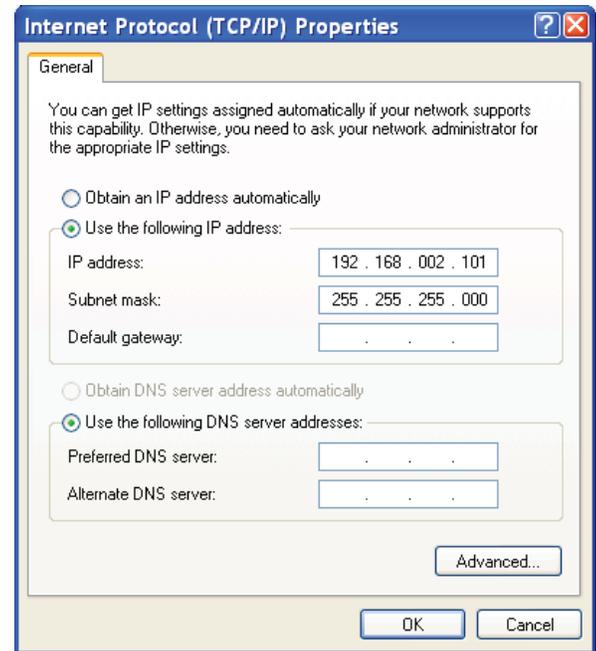


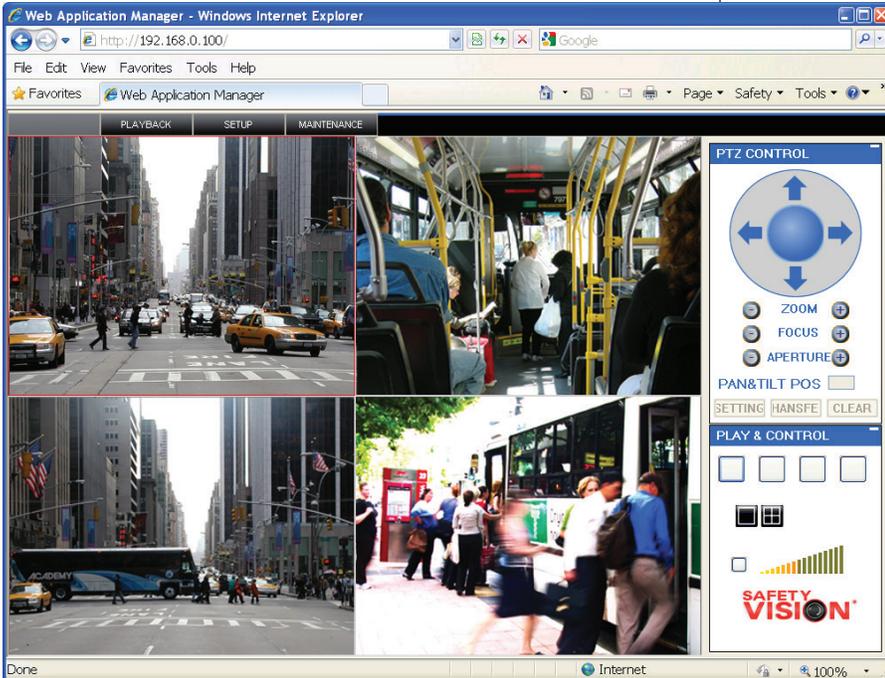
## Appendix A: Web Application Manager

The Observer 4100 includes a web server, called the Web Application Manager, that can be accessed with a Windows based PC and browser. The Web Application Manager includes Live View, Playback, Setup (Configuration) and Maintenance menus. It provides much of the same functionality as an external monitor and remote control when these accessories are not available or practical.

Use the following procedure to access the Web Application Manager:

- Determine the IP Address of the Observer 4100 on the Local Network menu.**  
*This can be accomplished beforehand with an external monitor and remote control. The default IP address is 192.168.002.100.*
- Connect the PC to the DVR's RJ-45 port with a standard Ethernet cable.**
- Ensure the DVR is receiving power and has started up.**
- Set a sequential static IP address for the LAN connection connected to the DVR.**  
*For example, if the DVR's IP address is 192.168.002.100, set a static IP address of 192.168.002.101.*  
*In Windows, this can be accomplished in the Internet Protocol (TCP/IP) Properties window, accessed through the properties of the Local Area Connection.*
- On a web browser, navigate to the DVR's IP address.**
- Run any Active X controls, such as MDvrOcx. ocx and SVT MDVR Web, if and when prompted by your web browser.**  
*The Login screen appears.*
- If the DVR's password is enabled, enter it in the PASSWORD field and click LOGIN. (If the password is not enabled, simply click LOGIN.)**  
*The Web Application Manager launches.*





## Live

The Live tab displays the current camera's views similar to the Live View on an external monitor, with the added features of the **Play & Control** menu in the lower right corner of the screen:

**OPEN WINDOW:** Refreshes camera feeds when configuring camera views.

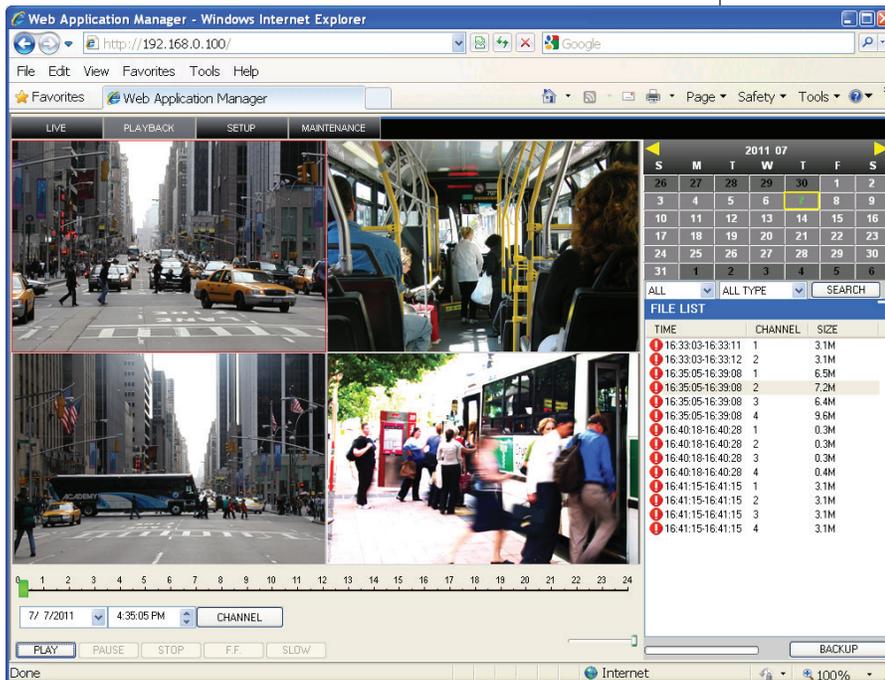
**SNAP:** Select an available camera channel by clicking on it, then click the **SNAP** icon to save a snapshot. A prompt appears directing you to the location which it was saved in.

**RECORD:** Click the **RECORD** icon to start or stop recording.

**TALK:** Click the **TALK** icon to maximize volume output.

Additionally, you can double click any camera channel to display it in full screen.

PTZ Controls are not applicable at this time.



## Playback

The Playback tab allows you to search for and playback video similar to the File and Event Search functions when using an external monitor.

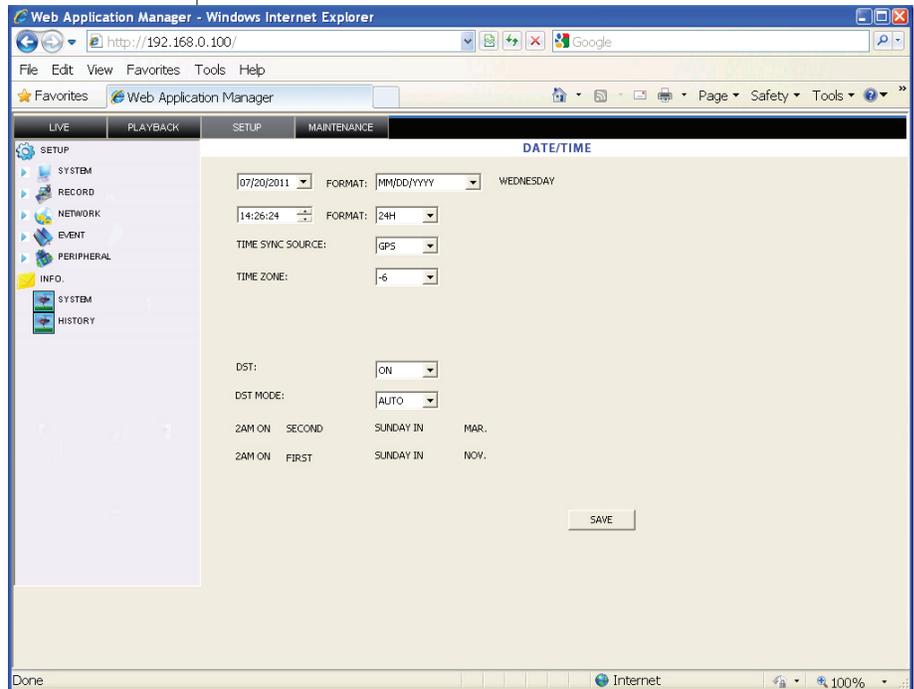
Use the calendar on the right to find days with recorded video (highlighted in green). Click on a day to display a list of video files. Double click on a file to begin playback. Playback can be controlled with the function buttons along the bottom of the screen.

Click **BACKUP** at the bottom right of the screen to export a video file to the PC.

## Setup

The Setup tab contains all of the configuration parameters available in the menus.

Use the tree control on the left of the screen to navigate menus. See the corresponding menu description for information regarding inputs and controls. Remember to click **SAVE** to complete parameter changes.

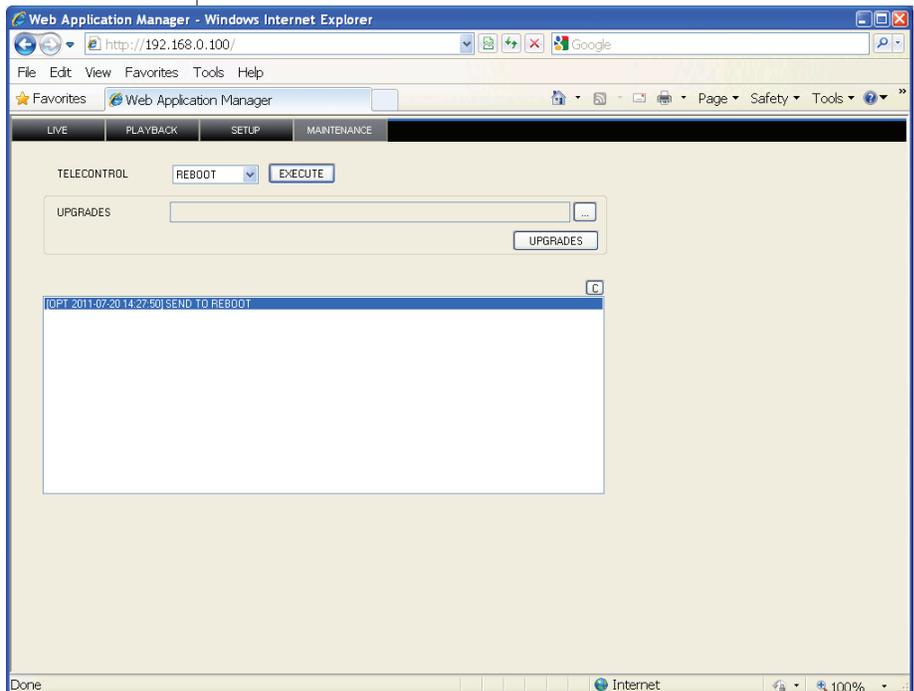


## Maintenance

The Maintenance tab allows you to reboot or shut down the connected Observer 4100, in addition to upgrading the firmware. Actions performed appear in a log displayed in the center of the screen (which can be cleared by clicking C).

**TELECONTROL:** Select **REBOOT** or **SHUT DOWN** and then click **EXECUTE** to perform the desired action.

**UPGRADES:** Navigate to the firmware upgrade file located on the connected PC and select **UPGRADES** to upgrade the firmware.



*When upgrading firmware, follow all precautions described in the Upgrade menu. For more information about the Maintenance menu, contact Safety Vision Technical Support.*

## Appendix B: Specifications

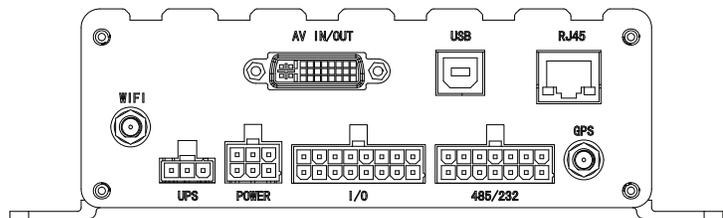
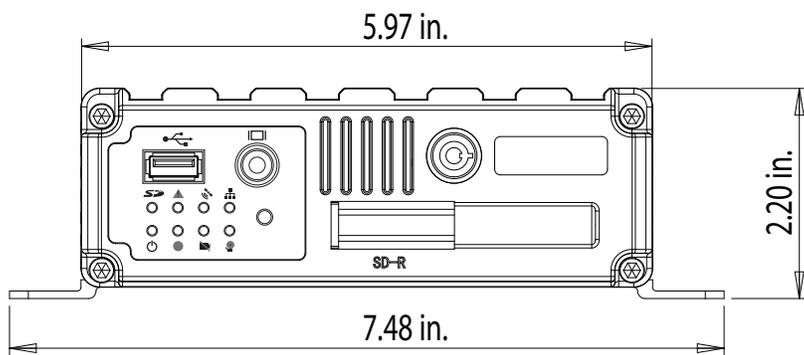
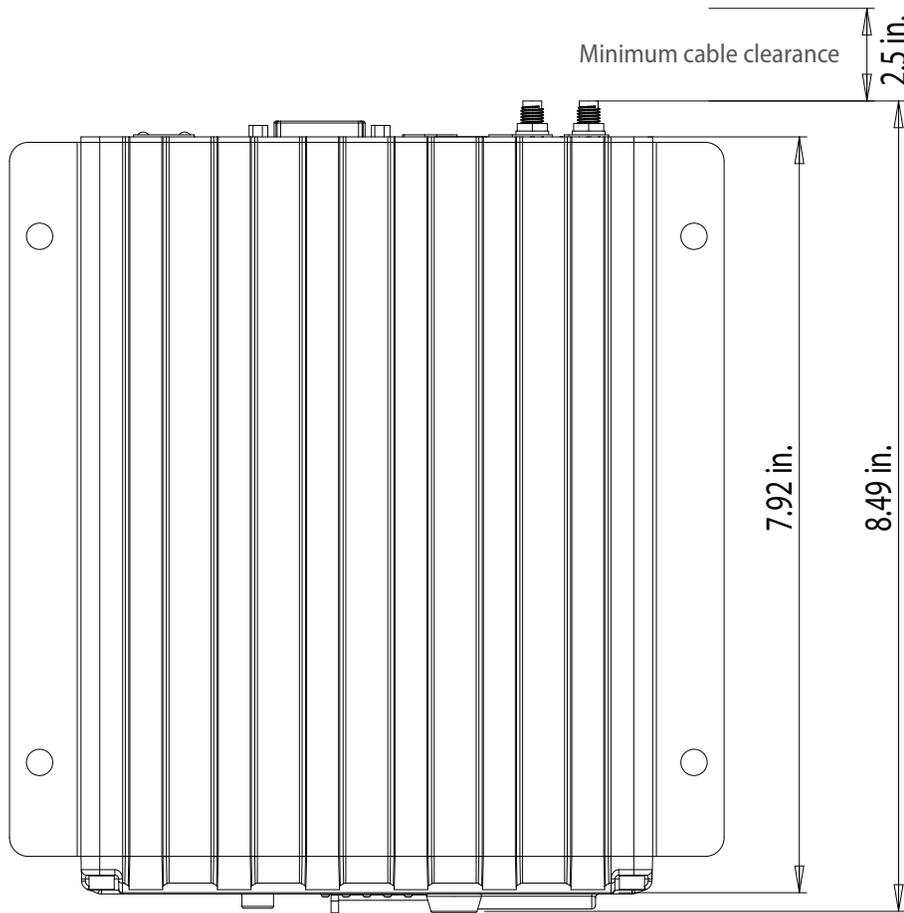
SPECIFICATIONS	
OS	Embedded Real Time Linux
Configuration	IR remote (included); web browser via Ethernet port
Video Standard	NTSC / PAL selectable
Audio/Video Inputs	4 channels
Audio/Video Output	1 channel, RCA in front of unit, BNC on AV cable harness
Audio/Video Compression	H.264
Resolution*	D1, HD1, CIF
Frame Rate*	60FPS - D1; 120FPS - HD1 & CIF (all channels, all resolutions)
Image Quality*	8 levels (1 is best)
Recording	Continuous, scheduled, event only
Bump on Alarm Recording*	Supported on all channels (resolution, frame rate & image quality)
Pre-Event Recording	Configurable up to 15 minutes
Post-Event Recording	Configurable up to 30 minutes
Substreaming	2 Configurable Modes for reduced bandwidth streaming applications
Ethernet	10/100 RJ-45 port
Wi-Fi	802.11 b/g, WPA
GPS	Synchronized location, speed and time with AV recordings
Storage	1 × Class 10 32 GB SD card; standard (up to 256 GB max; optional)
USB	USB 2.0 on front panel for video downloads & firmware upgrades
RS-232	2 ports, screw terminal
RS-485	2 ports, screw terminal
Sensor Inputs	8 Sensor inputs + ignition
Auxiliary Outputs	4 Aux Outputs; configurable activation by any sensor
Power Input	8 - 32V DC with built-in power conditioner
Power Output	4 camera power outputs + 12V at 2A, 5V at 2A
Power Consumption	~12W depending on cameras and accessories connected
Dimensions	7.48 in. x 2.2 in. x 8.5 in. (190mm x 56mm x 215.6mm)
Weight	2.8 lbs. (1.27 kg.)
Operating Temperature	-4°F ~ 131°F (-20°C ~ 55°C)
Relative Humidity	10% - 90%

\*configurable per channel and event

## Appendix C: Recording Time Calculator

HDD CAPACITY CALCULATIONS				
Resolution	Quality	Cameras	FPS	Hours of Recording
CIF	4 - Medium	4	5	243
CIF	4 - Medium	4	10	121
CIF	4 - Medium	4	15	81
CIF	4 - Medium	4	30	40
Half D1	4 - Medium	4	5	152
Half D1	4 - Medium	4	10	76
Half D1	4 - Medium	4	15	51
Half D1	4 - Medium	4	30	26
D1	4 - Medium	2	5	190
D1	4 - Medium	2	10	95
D1	4 - Medium	2	15	63
D1	4 - Medium	2	30	32

# Appendix D: Dimensions



### Limited 3-Year New Product Warranty

Safety Vision, LLC ("SV") makes the following limited warranty, which is effective at the time of the original end-user purchase.

*Note: Optional warranty products are available for all SV products and may be purchased at the time of the original end-user purchase or any time during the original Limited 3-Year New Product Warranty period.*

SV warrants this product against defects in materials for a period of 3 years after the date of purchase. During this period, SV will repair or replace a defective product or part without charge to the customer. The customer must send the defective product or part to SV or an authorized SV dealer. The customer must pay for all transportation and insurance charges for sending the unit to be repaired. SV's total liability is limited to the original product cost.

### User Guide

The customer should thoroughly read this guide before operating this product.

### Customer's Responsibility

The above warranty is subject to the following conditions:

- Customer must notify SV within 10 days of discovering the defective product or part and provide a description of the defect and complete information about the manner of its discovery.
- All warranty servicing of this product must be performed by SV or an authorized servicing agent.
- Warranty extends only to defects in materials as limited above. Warranty does not extend to any product or part that has been lost or discarded by the customer; to damage to products or parts caused by misuse, accident, improper installation, improper maintenance, or use in violation of instructions furnished with the product; to units that have been altered or modified without authorization of SV; to damage to products or parts thereof that have had the serial number removed, altered, defaced, or rendered illegible; or to any failure of the product to function caused by burglary, fire, flood, war, riot, civil commotion, Acts of God, or any other condition beyond the control of SV.

### Obtaining Warranty Service

To obtain warranty service, the customer must contact the SV Service and Warranty Manager at 713.896.6600 or 800.880.8855 to report a defective product. (The customer must report the model number and serial number if available.) The Service and Warranty Manager will assist in troubleshooting the problem and, if necessary, issue a return material authorization (RMA) number. The customer must include this number on the outside of each package shipped to SV.

### Important Packing and Shipping Instructions

When a product requires service, only the affected component must be returned. If returning the RouteRecorder 4C SD SS unit, please include the SD card that was in use at the time the issue occurred. The customer must use proper packing material to ensure against damage during shipping. Any shipping damage caused by improper packing is not covered under this warranty. In addition, the customer must include a return material authorization (RMA) number on the outside of each package shipped to SV and a letter explaining the defect with the product.

## FCC Compliance Statement

### NOTE

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

### CAUTION

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



**CORPORATE HEADQUARTERS**

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