

*User*  
**Manual**  
DVSe



**GE Security**



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# 1 Introduction

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## 1.1 Product Description

The DVSe is a rack mountable ethernet-ready high capacity digital video storage system. From 2 to 8 hard drives can be installed in each DVSe chassis. The unit may be purchased with or without hard drives installed. All hard drives must be installed in pairs and all drives must be of the same type, speed, and capacity.

## 1.2 Unpacking

Check the package and contents for visible damage. If any components are damaged or missing, do not attempt to use the unit. Contact the supplier immediately. If the unit must be returned, it must be shipped in the original packaging.

### Package Contents

- The DVSe.
- US & EU Power Cables.
- The GE Security DVSe Installation and Users Manual.
- The GE Security DVSe Release Note.
- The Archiving Addendum Manual.
- WaveReader Software and Manual.
- WaveWatch Software and Manual.
- IDE Hard Drive Power Connectors x 2. (If shipped without drives installed)
- IDE Hard Drive Connection Ribbon x 4. (If shipped without drives installed)
- Hard Drive Fastening Screws x 24. (If shipped without drives installed)
- SCSI Cable, 50 HD to 50 HD.
- IEEE 1394 Firewire Cable.

## 1.3 Installation Environment

**Power:** Ensure that the site's AC power is stable and within the rated voltage of the external power supply. Ensure that a reliable Earthing path is maintained. This unit is designed to be connected to earth ground. If the site's AC power is likely to have spikes or dips, use power line conditioning or an Uninterruptable Power Supply. Do not overload the circuit. Ensure that the Power Supply is set to the correct voltage (110/220v) for your area.

**Ventilation:** Ensure that the location is well ventilated. Do not obstruct the cooling vents or fans.

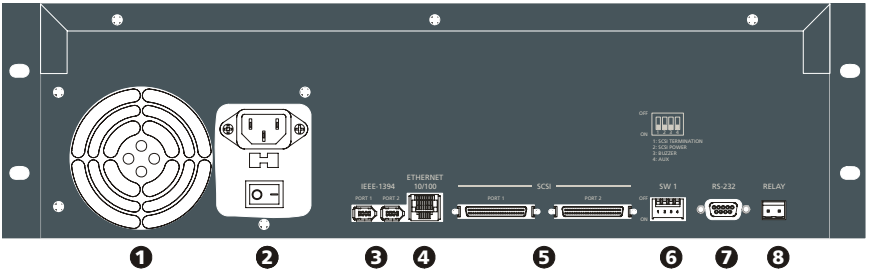
**Temperature:** Observe the unit's ambient temperature specifications when choosing a location for the unit. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail. Do not install this unit on top of other hot equipment.

**Moisture:** Do not expose the unit to rain or moisture. Moisture can damage internal components. Do not install this unit near sources of water.

**Rack Mounting:** Carefully load the rack so that it remains stable and unlikely to tip over. The unit is also suitable for desktop installation. When rack mounting the DVSe adhere to the following guidelines:

- **Elevated Operating Ambient** - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature.
- **Reduced Air Flow** - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- **Mechanical Loading** - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- **Circuit Overloading** - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- **Reliable Earthing** - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips)."

# 1.4 The Back Panel



## Back Panel Components

1. **Cooling Fan:** Do not obstruct.
2. **Power Connector, Voltage Selector and On/Off Switch.**
3. **IEEE-1394 Firewire Ports 1 and 2.**
4. **10/100 Ethernet Port.**
5. **SCSI Ports 1 and 2.**
6. **Dip Switches (SW1).**
7. **RS-232 Port.**
8. **Alarm Out Relay Connection (Future feature).**

# 1.5 Connections

## 10/100 Ethernet Port

The Ethernet port is used to connect the DVSe into a network environment.

**Wire Type:** Cat 5.  
**Connector Type:** RJ-45.  
**Cable Required:** Ethernet.

## SCSI Ports 1 and 2

Connect a SCSI device to one of the two SCSI ports. Set the dip switches (SW1) on the back panel. Set **SCSI Termination** and **SCSI Power** to **On** and use the Bus Select menu option to enable this feature.

**Connector:** 50 pin, high density SCSI-2.  
**Gender (on unit):** Female.  
**SCSI ID:** 0.

The unit does not currently support multiple SCSI device connections.



**Caution!** Ensure the power to DVSe is OFF BEFORE connecting any SCSI or 1394 devices. Do not attempt to use

the SCSI and 1394 ports simultaneously.

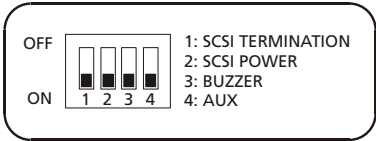
## 1394 Firewire Ports 1 and 2

Connect a 1394 Firewire device to one of the two 1394 ports. Use the Bus Select menu option to enable this feature.

**Cable:** 6 position IEEE 1394.  
**Connectors:** 6 position DIP.

## Dip Switches (SW1)

Set the Dip Switches to enable or disable the features listed on the illustration to the right. Switch position up to turn off (disable), down to turn on (enable).



## RS-232 Port

The RS-232 port can be used for Serial Debugging.

**Connector Type:** DB-9.  
**Gender (on unit):** Male.  
**Cable Required:** Null Modem.

## DB-9 Pin Configuration For RS-232 Port

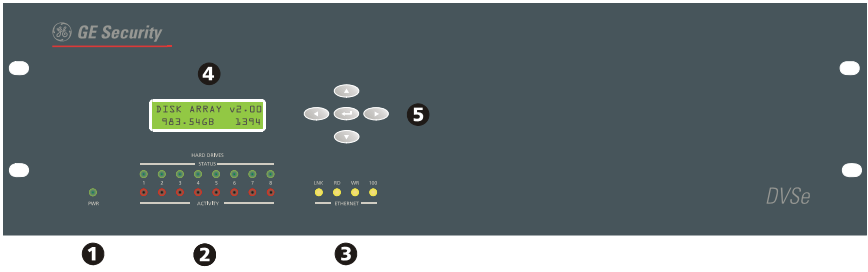
Pin	Use
1	DCD
2	RX
3	TX
4	Not Connected
5	Ground

Pin	Use
6	Not Connected
7	RTS
8	CTS
9	Not Connected



To receive serial debug data from the DVSe's RS-232 port, set up the receiving serial port at 57600 bps, No Parity, 8 data bits, and 1 stop bit.

# 1.6 Front Panel Indicators



1. **Power LED.**
2. **Hard Drive Status Indicators.**
3. **Ethernet Indicators.**
4. **LCD Display.**
5. **Key Pad buttons.**

## Hard Drive Status Indicators (Green LEDs)

**LED On:** Drive present and operating normally.

**LED Off:** No drive present, drive not detected, drive disabled due to error.

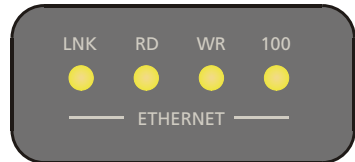
## Hard Drive Activity Indicators (Red LEDs)

The LED blinks when the drive is being accessed (read or write).

## Ethernet Indicators

The ethernet LEDs light to indicate the following:

- **LNK:** A detected ethernet connection.
- **RD:** Receiving Data.
- **WR:** Transmitting Data.
- **100:** 100 Mbps bandwidth



## LCD Display

Once power-up is complete, the LCD displays the total disk storage capacity of the unit. The LCD display also provides visual feedback for the menu settings. See **DVSe Menu Setup** for details.

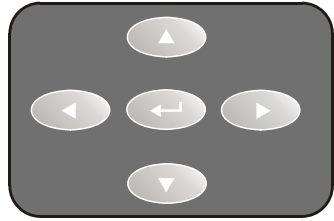




## Key Pad

The Key Pad buttons provide access and control of the Setup Menu.

- Up Arrow: Change field data (ascending).
- Left Arrow: Move field selection to left.
- Enter Button: Press to access setup menu. Toggles through menu screens.
- Right Arrow: Move field selection to right.
- Down Arrow: Change field data (descending).



# 2 Hard Drive Installation

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This section contains important information on adding or replacing the internal Disk Drives. Please read the entire section before performing any work.



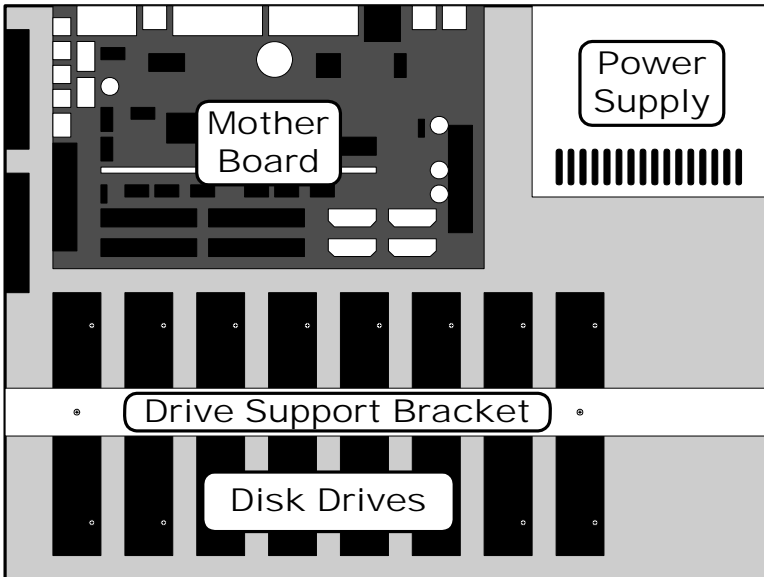
**Caution:** Do not allow any metal object to contact the motherboard. Do not allow loose screws to become lost inside the DVSe chassis. Wear an Electro Static Discharge protection device any time work is being performed inside the unit.

## 2.1 Opening The DVSe

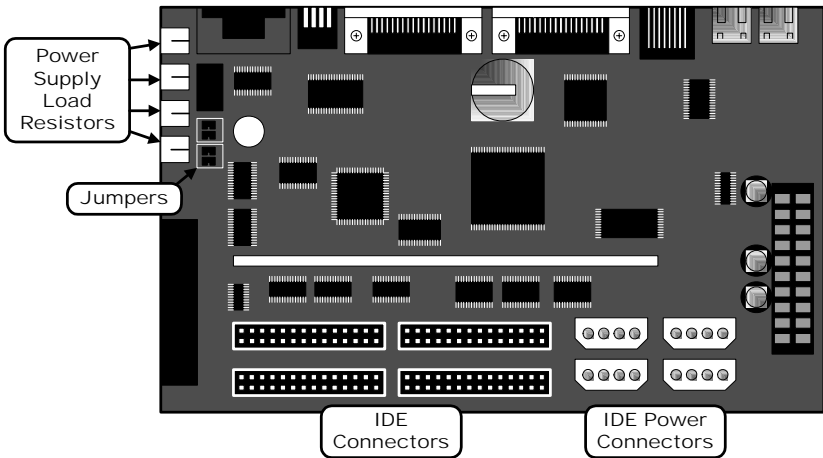
Before removing the cover, turn off the unit and unplug it. Using a Phillips-head screwdriver, carefully remove the twelve screws fastening the lid to the chassis. Save the screws and use them to refasten the lid when finished.

## 2.2 Identifying The Components

Complete Internal Overview



# Motherboard Overview



## 2.3 Compatible Hard Drives

The DVSe is designed to be compatible with Maxtor D540X and MaXLine II series of hard drives. Hard drives in this series up to 250 GB may be used. Refer to [www.maxtor.com](http://www.maxtor.com) for details.



Hard Drives must be added in pairs and must be of the same type, speed, and capacity.

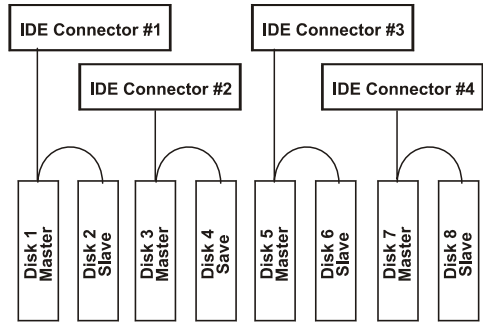


GE Security cannot provide technical support for DVSe units using hard drives other than those described above. Using drives other than those described above may result in failure or intermittent data errors.

**Please contact GE Security Technical Support regarding hard disk compatibility.**

## 2.4 Configuring the Hard Drives

Hard drives are connected in pairs to each of the four IDE connectors. Each pair of hard drives must be configured as a Master and a Slave. Configure the Master/Slave settings on each hard drive individually using the jumpers provided with the drive. Use the diagram located on the hard drive to determine the proper jumper configuration.



## 2.5 Mounting The Hard Drives

Remove the Hard Drive Support Bracket. This entails removing the screws at either end and one screw from each installed hard drive.

Orient the hard drive so that the IDE Power Connector is near the bottom of the chassis and facing the motherboard. Populate the drive array in order, starting from the left.

Fasten the drive in place using the supplied screws. Fasten each drive using two screws through the bottom of the chassis and one screw in the Hard Drive Support Bracket.

## 2.6 Connecting the Hard Drives

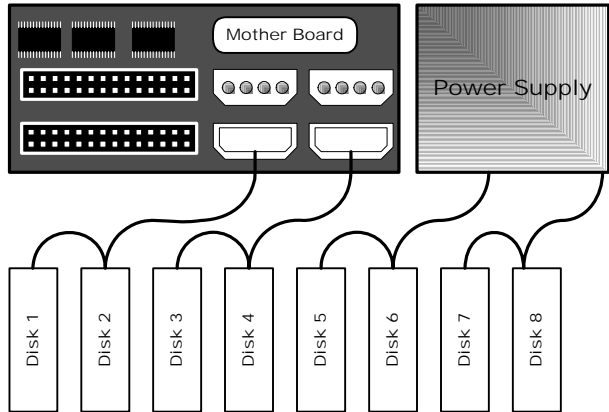
### Power Supply Cables



It is recommended, for ease of installation, that the IDE and power cables be first connected to the drives before the drive screws are tightened.

Connect the hard drives to the power supply connectors with power supply cables.

When connecting a single drive to a cable, attach the drive to the connector at the end of the power cable.



The diagram above shows a typical connection. The connections may vary according to the number of drives in the system and the power cable type.

## IDE Data Cables

Use an IDE cable to connect the drives as shown in the diagram in section 2.3. When attaching the IDE connector, make sure the connectors are oriented properly.

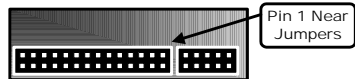
## Connecting To The Motherboard

The red stripe on the connection ribbon should connect nearest the Pin 1 indicator on the motherboard.



## Connecting To The Hard Drive

The red stripe on the connection ribbon should connect near the jumpers on the hard drive.

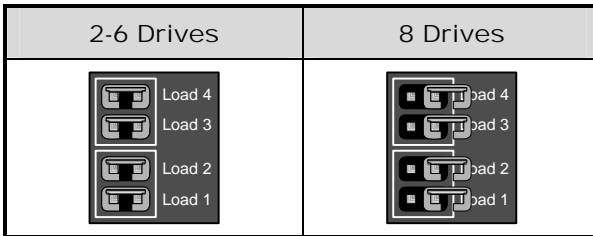


# 2.7 Jumper Settings

## Jumper Configuration

Configure the jumpers based on the number of hard drives installed in the unit. Do not throw away unused jumpers.

See section 2.2 to locate this block of jumpers.



After any drives are installed, replaced or removed, the **Reset Disk Failure** command must be run from the **Supervisor Menu** for the changes to be recognized by the DVSe.

# 3 DVSe Setup

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This section contains important information on setting up the DVSe for operation. Please read the entire section before performing any work.

## 3.1 Connecting by SCSI or 1394



**Caution!** The DVSe does NOT support the simultaneous use of the SCSI and 1394 ports. Only connect one type of device at a time.

### SCSI

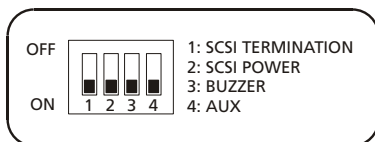
Connect a SCSI device to one of the two SCSI ports using the supplied SCSI cable. Set the dip switches (SW1) on the back panel. Set **SCSI Termination** and **SCSI Power** to **On**. Select **SCSI** as the type of Bus in the **Setup Menu** under **Bus Select**.



**Caution!** Power must be shut down before connecting SCSI cables between SCSI devices and the DVSe.

### Dip Switches (SW1)

Set the Dip Switches to enable or disable the features listed on the illustration to the right. Switch position up to turn off (disable), down to turn on (enable).



### 1394 Firewire

Connect a 1394 device to one of the two 1394 ports using the supplied 1394 cable. Set the dip switches (SW1) on the back panel. Set **SCSI Termination** and **SCSI Power** to **OFF**. Select **1394** as the type of Bus in the **Setup Menu** under **Bus Select**.



**Caution!** Power must be shut down to all devices before connecting 1394 cables between the 1394 device and the DVSe.

## 3.2 Power-Up

Select the correct voltage before supplying power to the unit. Use the voltage selector switch located on the back panel of the unit, between the power connector and the On/Off Switch.



**Caution!** Applying incorrect voltage will damage unit.

Once the correct voltage has been selected and all connections have been made, connect the power cable suited to your geographic location. Apply power to the unit.

## 3.3 Setup Menu

The Setup menu provides setup options for the following features:

- Ethernet enable/disable.
- Bus Select: SCSI/1394
- Auto Delete Mode.
- IP Address.
- Subnet Mask Address.
- Default Gateway Address.
- Date/Time Setup.



Menus will automatically be exited after 30 seconds of inactivity.



Access to menu is only allowed when the DVSe is Offline, i.e. the DVSe is not presently archiving or connected via ethernet.

Press the **Enter Button** to access the first menu.

### Ethernet Enable

Select ethernet enable, yes or no. Default setting is no.

```
Ethernet Enable
Yes      No
```

### Bus Select

Select from SCSI or 1394 to enable. Default setting is 1394.

```
Bus Select:
SCSI      1394
```



## Auto Delete Mode

Auto Delete Mode, select yes or no. Default setting is no. Auto Delete Mode automatically invalidates data that is over 30 days old.

```
Auto Delete Mode
Yes   No
```



Obtain the required network parameters from you Network Administrator.



The DVSe will automatically reboot if any of the Bus or Network parameters are changed.

## IP Address

Enter the assigned IP address by using the left/right arrows to select the field and the up/down arrows to change the values.

```
IP Address
xxx.xxx.xxx.xxx
```

## Subnet Mask

Enter the assigned Subnet Mask address by using the left/right arrows to select the field and the up/down arrows to change the values.

```
Subnet Mask
xxx.xxx.xxx.xxx
```

## Default Gateway

Enter the assigned Default Gateway address by using the left/right arrows to select the field and the up/down arrows to change the values.

```
Default Gateway
xxx.xxx.xxx.xxx
```

## Date/Time

Enter the current date and time by using the left/right arrows to select the field and the up/down arrows to change the values.

Required only when Auto Delete Mode is set to yes.

```
Date      Time
03/22/2002 09:04
```

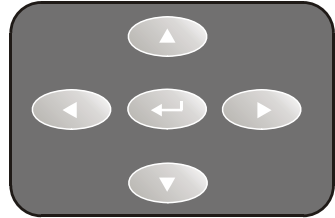
## 3.4 Supervisor Menus

The Supervisor menu provides advanced options for the following features:

- Disk Status.
- Reset Disk Failure.
- Serial Debug Output.

The Key Pad buttons provides access and control of the Supervisor Menus. To access the Supervisor menu press the left and right arrows simultaneously.

- Up Arrow: Quits the menu.
- Left Arrow: Move field selection to left.
- Enter Button: Press to access setup menu. **Toggles through menu screens.**
- Right Arrow: Move field selection to right.
- Down Arrow: Quits the menu.



### Disk Status

This menu indicates the current disk status. Disk status is viewable only on this display.

- N: Normal
- W: Error writing to Disk
- R: Error Reading Disk
- T: Timeout during disk initialization or disk absent
- E: Fails Disk Test



The letters on the Disk Status screen represent Disk 1 (left) thru Disk 8 (right).



Do not attempt to reset a disk with read/write errors (a **R** or **W** status). This could lead to more disk errors and data loss. Disks with read/write errors should be replaced.



Disks with a **T** status may be recovered, but the DVSe will attempt to start recording to this disk. A recovery should not be attempted until the preceding disk is filled up. Contact Technical Support for detailed instructions on replacing or recovering problem hard disks.



Be sure to confirm that the drives are connected according to the diagram in Section 2.3 before removing or replacing. The disk status display and LEDs represent the wiring and Master/Slave configuration, not the physical location of the drives.

## Reset Disk Failure

This command allows the DVSe to re-enable disks with timeout errors and reset the Disk Status. Changing this setting restart the unit. Any time that a disk is replaced, added, or removed this command must be executed.

```
Reset Disk Fail?  
Yes   No
```

## Serial Debug

Serial Debug output, select yes or no. Default setting is no. Enabling serial debug will output debug messages on the RS232 port at 57600 bps. Changing this setting will cause the unit to restart.

```
Serial Debug?  
Yes   No
```

# 3.5 Hard Disk Test

Two types of Hard Disk Test are accessible via the front panel:

- The Quick Disk Test: This test takes approximately 5 minutes.
- The Burn In Disk Test: This test can run **over 8 hours** depending on the size of the Hard Disks.

## The Quick Disk Test

The Quick Disk Test is accessible by simultaneously pressing the UP and Down Arrow buttons. This test performs random read and writes on all the disks. See the flow chart on the following page for detailed information.

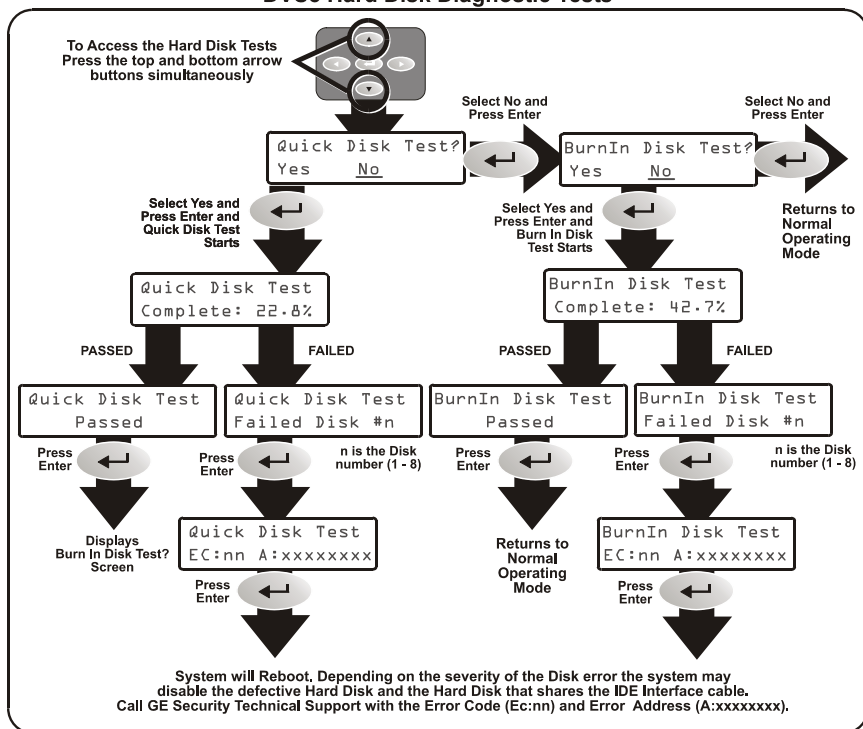
```
Quick Disk Test?  
Yes   No
```

## The Burn In Disk Test

The Burn In Disk Test is accessible by selecting No on the Quick Disk Test Screen and pressing the Enter button. This test performs sequential read and writes on all the disks and is a much more comprehensive. See the flow chart on the following page for detailed information.

```
BurnIn Disk Test?  
Yes   No
```

## DVSe Hard Disk Diagnostic Tests



Both Tests may be cancelled by depressing the UP Arrow Button until the test stops.



**Caution!** Do not run any SCSI, Ethernet, or Firewire Operation while performing either Disk Test. Permanent damage to the DVSe may occur.

## 3.6 Upgrading the DVSe

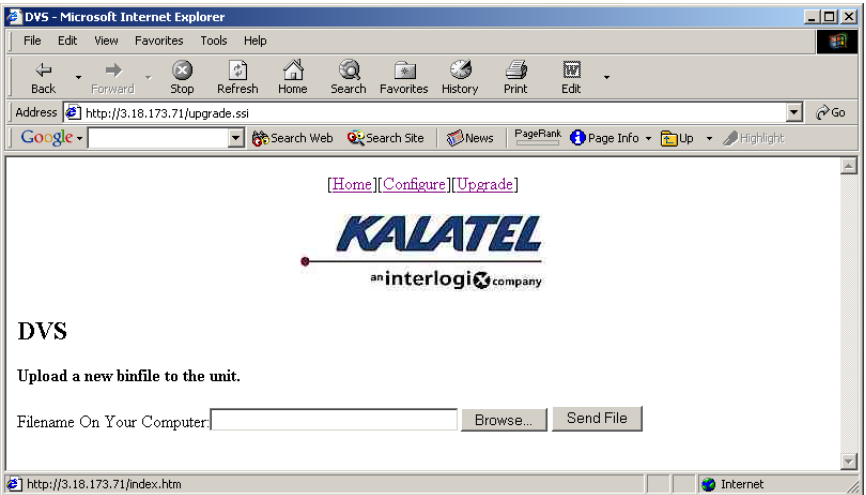
Upgrading the software for the DVSe is accomplished via the ethernet port and a PC/Laptop equipped with a web browser.

To properly upgrade the GE Security DVSe the following preconditions must exist:

1. The Flash upgrade file and path. This file is obtained by calling GE Security Technical Support at 1-800-469-1676. When calling, please have the following information available:
  - The model number of the product.
  - The serial number and revision of the product
  - The current firmware version.
  - The date purchased.
  - Symptoms of the unit that might require upgrade.
2. The DVSe unit connected to a PC equipped with Microsoft Internet Explorer version 5.5 or later via ethernet cable.
3. The IP address of the DVSe.
4. WaveReader software must NOT be connected to the DVSe. Please exit all non-essential software on the PC.
5. Ensure that the DVSe is not currently recording or archiving.

## Follow the steps below to Upgrade the DVSe:

- Step 1. Launch the Browser software (Microsoft Internet Explorer 5.5 or later).
- Step 2. Enter the IP address of the DVSe in the address field of the Browser followed by **/upgrade.ssi** and press enter. For example if the IP address is 3.18.173.71 type **3.18.173.71/upgrade.ssi**.
- Step 3. The Enter Network Password window should appear. Enter the correct Username and Password in their respective fields. (The default username is admin and the password is admin. It is recommended that the defaults be changed ASAP). Click the OK button. The DVSe upgrade page should appear.



- Step 4. Navigate to the upgrade file using the Browse button or type in the correct path and filename. Click on the Send File button.
- Step 5. Click on the Confirm Button. A progress bar will appear. PLEASE WAIT FOR THE PROGRESS BAR TO FINISH, **THEN WAIT FOR CONFIRMATION!**
- Step 6. Click on the Reboot button to restart the unit for changes to take effect. If unsuccessful, download the flash file again and retry the steps 1-6.

# 4 Warranty and Service

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## 4.1 Factory Service

If the unit requires factory service, contact the dealer who supplied the unit to you for the correct procedures on returning the unit to the factory or the nearest factory service center.

If the dealer is not available, contact the manufacturer of the unit as detailed below and request a Return Material Authorization number (RMA). The unit's serial number must be provided before an RMA number can be issued. Units returned to the factory for service must have freight and insurance prepaid, and must show the RMA number clearly on all shipping documents. The failure symptoms must be clearly described by the operator and enclosed with the unit together with a copy of the original supplier's invoice. Failure to comply with these instructions will delay service of the unit, and may result in the unit not being accepted by the Repair Center.

## 4.2 Factory Address

GE Security  
Attention: Repair Center  
3050 Red Hill Ave.  
Costa Mesa, CA 92626  
United States of America  
Telephone: 800-343-3358 (7:00 AM to 4:30 PM, Pacific Time)  
In Oregon: 541-754-9133  
Fax: 541-754-7162 (24 hours a day)

For warranty information, see the following page.

## 4.3 Warranty

GE Security warrants all of its equipment for three years from the date of purchase. This warranty covers any defects in materials and workmanship. Equipment failures that are due to improper installation, modification, abuse, or acts of nature will not be covered by this warranty. The repair department will evaluate all equipment returned for repair to determine warranty coverage. The Tech Support Manager will resolve any questions that may arise during evaluation to make a final determination.

Note: The three-year warranty does not apply to the following products:

MobileView<sup>®</sup> and the monitor CRT, which carry a 12-month warranty from the date of purchase.

The warranty specifically covers any defects in material and workmanship and does not cover equipment that has been abused, damaged, or modified.

**For all warranty repairs**, GE Security will cover all costs, including parts, labor, and shipping. Repaired equipment will be returned via the same method of

shipment in which it was received. If a customer requests a faster return shipment, the difference will be charged.

**For all non-warranty repairs**, the customer will be billed for parts, labor, and shipping. Labor will be billed in half-hour increments.

Note: Customers requesting an estimate prior to repair will be notified by phone. If they cannot be reached, they will be notified by fax. If we are unable to reach the contact person for repair authorization after one phone attempt and two fax attempts, the equipment will be returned without being repaired. We will hold equipment no longer than two weeks.

## Advance Replacement Policy

When an advance replacement is required, we will send the customer replacement equipment from our stock and receive the returned product in exchange. The received equipment will be evaluated and the repair department will determine whether it is a warranty replacement. If it is non-warranty, see our repair policy above for details. The following guidelines will be used for all advance replacements:

- Fewer than 45 days from purchase, GE Security will replace the product with new equipment.
- From 45 days to 1 year from purchase, GE Security will replace the product with refurbished equipment.
- From 1 year to 3 years from purchase, the product must be sent in for repair. Advance replacements will be sent for a fee of \$100.

If you have questions about this policy, please contact GE Security's RMA Department at 800-469-1676.