



Information Sheet  
IS19013

GV Series - Burning  
OS Files on SSD

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# IS19013: GV Series – Burning OS Files on SSD

## INFORMATION SHEET

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### 1 INTRODUCTION

Periodically, enhancements or improvements to the AUI are identified and made available through major release (i.e, SW 4.x.y to SW 5.y.z) software upgrades. This document describes how to burn the SSD (solid state drive) with a new OS IMAGE file for the GV Series of transmitters and also how to create a copy of the current IMAGE file for recovery purposes.

#### NOTE

*Minor software updates that are released within the same overall number (i.e, SW 5.x.y to SW 5.z.x) can be performed using the Upgrading Software procedure found in section 3.4 of the Operations and Maintenance manual.*

#### 1.1 Equipment Affected

This procedure applies to all GV series transmitters which have the NAC118D controller or an older version controller with DWA-110 or FM19006 applied.

#### 1.2 Responsibility for Implementation of Procedure

This procedure should be carried out by qualified station maintenance personnel who are familiar with GV series transmitters.

#### 1.3 Scheduling

This procedure should be completed at the earliest convenience of the transmitter maintenance personnel. The transmitter will need to be “off air” when removing the SSD from the controller and remain off until it can be re-installed. To minimize disruption of service, this procedure can be performed using a replacement SSD that can be immediately installed after the original is removed. You will also be required to perform a software update when first powering up the transmitter which will require approximately 30 minutes of “off air” time.

#### IMPORTANT

*Please read through the entire procedure to understand the requirements and plan accordingly.*

#### 1.4 Manpower Requirements

Implementing these instructions varies greatly based on download time of the IMAGE file.

#### NOTE

*The Image files are almost 4 GB in size; download times will vary greatly based on your internet speed and connection to host location. Plan the download for a convenient time when you can leave the downloading PC alone for hours.*



## 1.5 Special Tools/Test Equipment

- #2 and #1 Phillips screwdriver
- The existing SSD from the transmitter, or a compatible replacement (equivalent to Nautel supplied devices - Cactus KD8GF-245SM1 or KD8GFI-245SM1). Minimum recommended performance requirement for suitable replacement SSD is 300 MB/s – 8GB.
- PC or laptop with a SATA to USB adapter cable
- USB mouse for touch-screen calibration
- USB Keyboard along with IS18005\* (may be required for section 7 of this procedure - visit [ftp://www3.nautel.com/GV\\_Series](ftp://www3.nautel.com/GV_Series) to obtain this IS document).
- Imaging software such as “SelfImage” installed on your PC. Screen shots shown in this document will show SelfImage 1.2.1 build 92. SelfImage 1.2.1 is available online for free.
- New IMAGE file (CF-img) to burn to the SSD. Visit [ftp://www3.nautel.com/GV\\_Series](ftp://www3.nautel.com/GV_Series) and choose the most recent software release to obtain.
- Anti-static mat & wrist strap (recommended).

## 1.6 Publications Affected

This modification does not affect the GV series documentation.

## 2 RECORDING SETTINGS

### NOTE

*If the SSD currently installed is being replaced due to a failure of the AUI, these settings will not be available to record. Proceed to step 4 using the replacement SSD.*

There are various settings and logged data that will not be saved in your transmitter when you update the OS IMAGE file. Nautel recommends that you record these settings and logged data, as desired, before removing your SSD so that you may re-enter them after burning the new IMAGE file. The following AUI pages apply (refer to the GV Operations and Maintenance Manual, if necessary, to navigate to these pages):

- Logs
- User Accounts
- Network Setup
- Email Configuration
- Notifications
- Engine Settings
- NTP Servers
- Nautel Phone Home
- \*SNMP Configuration (MIB files are required to use SNMP; can be retrieved from the Nautel FTP site)  
(\* for applicable software versions)



### 3 REMOVING THE SSD

#### NOTE

*If using a replacement SSD, perform this step only when you have completed the burning process and are ready to install the replacement. Begin at step 4 to begin the burning process.*

The SSD is located inside the controller module (A4) which will need to be removed from the transmitter to access.

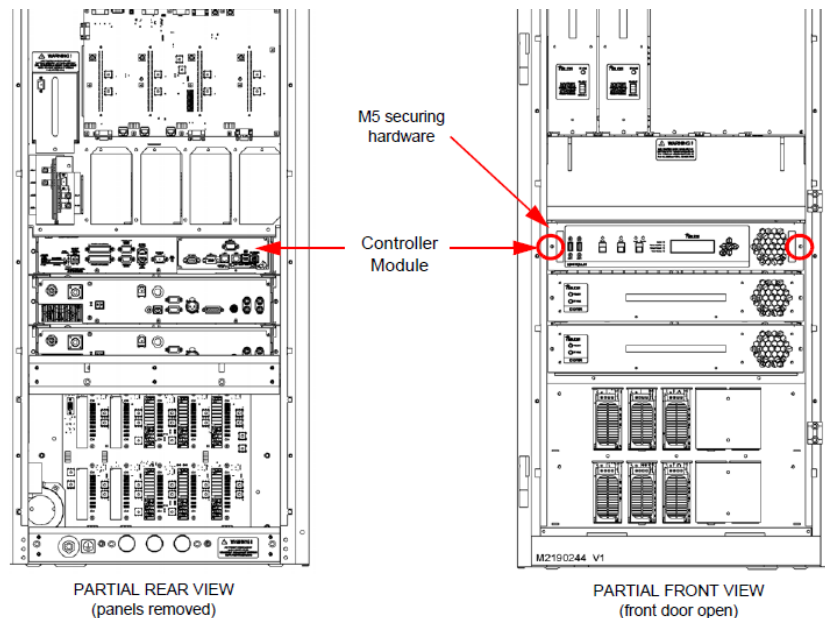


Figure 1: Front & Rear view of the transmitter (GV5 shown as reference)

- (a) Press RF OFF. Turn off and lock out the transmitter's main ac power.
- (b) From the rear of the transmitter, remove the upper rear panel (right most for multi-panel transmitters) and disconnect all mating connectors from the Controller Module (A4), noting connections.
- (c) From the front of the transmitter, open the front door (left most for multi-door transmitters) and remove and retain the two M5 Phillips head screws that secure the Controller Module to the transmitter (see Figure 1). Remove the module from the transmitter.
- (d) Place the NAC118\* Controller Module on a suitable workbench.

#### NOTE

*There are static sensitive components inside the NAC118\*, use precautions when handling static sensitive devices. Nautel recommends using a properly ground Anti-static mat and wrist strap.*

- (e) Remove and retain the thirteen M3 Phillips head screws, securing the top cover on the module.
- (f) Disconnect P1 (large black connector) to the SSD assembly (see Figure 2).





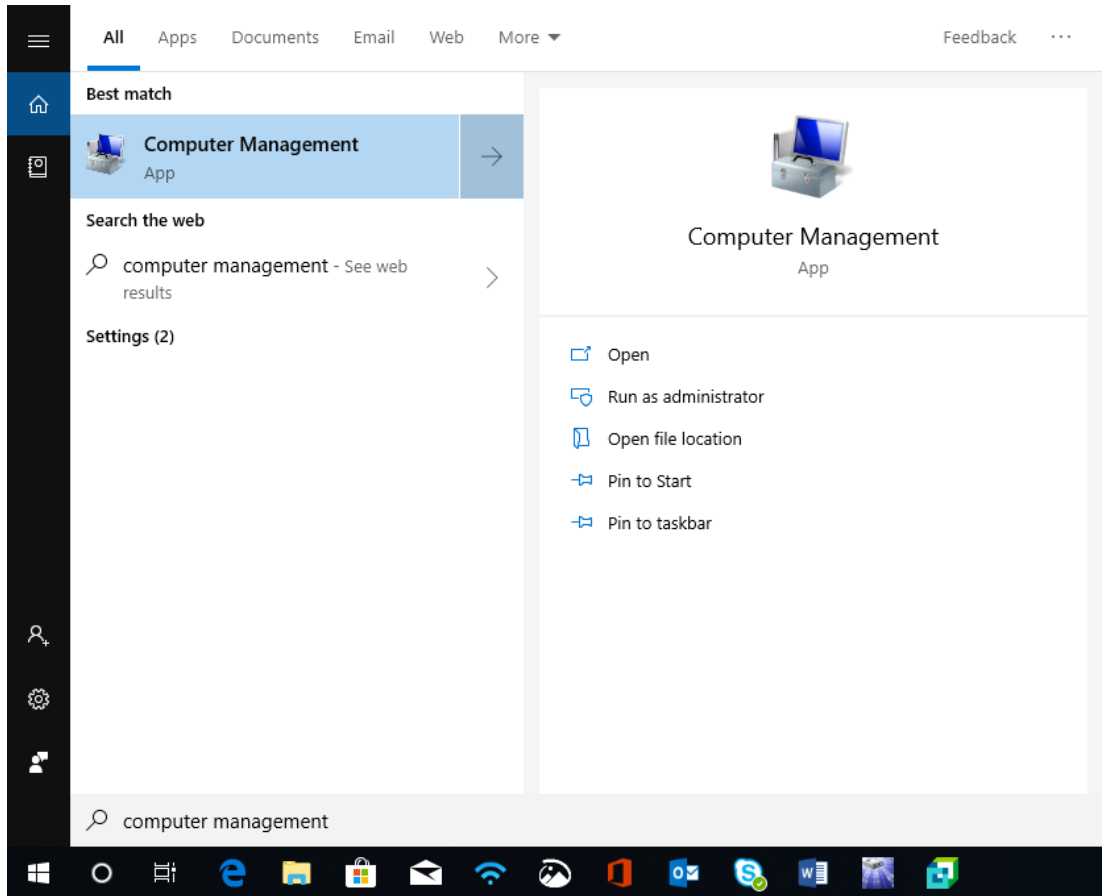


Figure 3: Windows 10

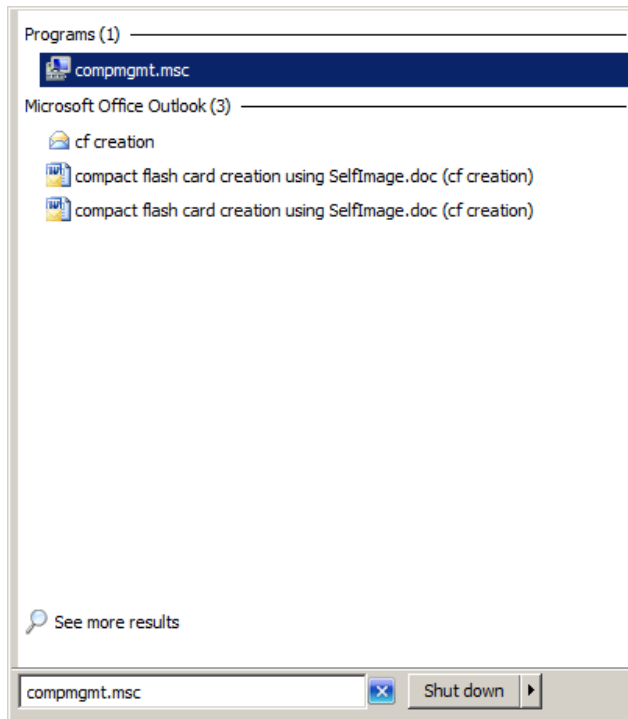


Figure 4: Windows 7

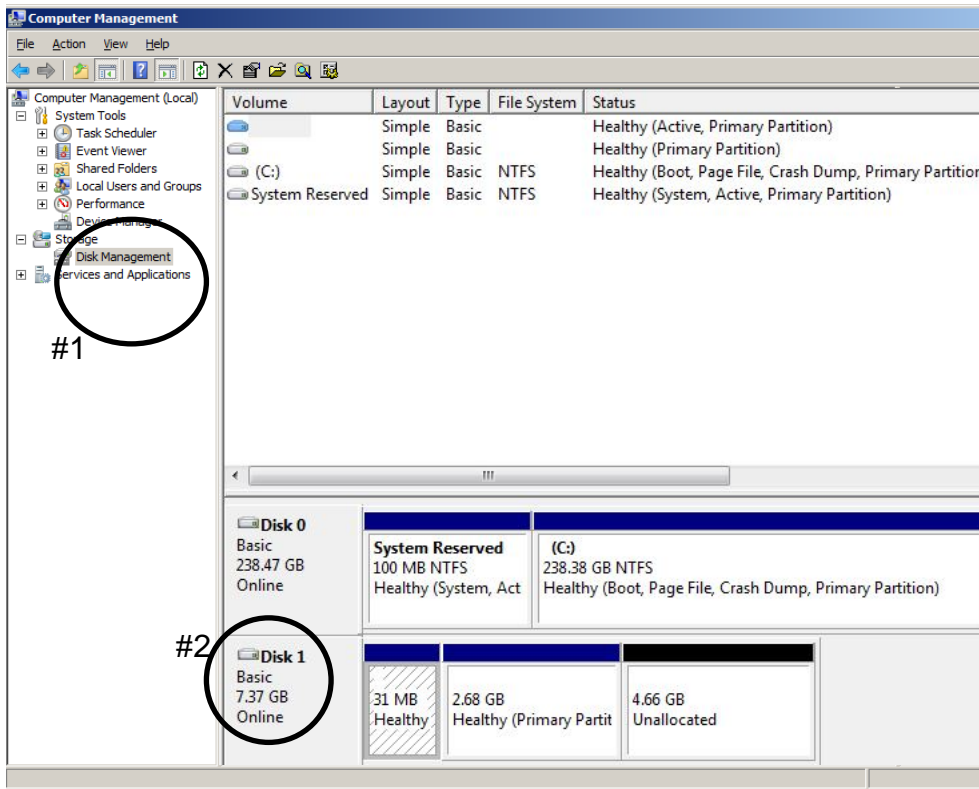


Figure 5: Computer Management window

- (c) The Computer Management window (see Figure 5) will open. Select “Disk Management” on the left (see Figure 5, #1).
- (d) Identify which “Disk” is your flash card (see Figure 5, #2). You may have to disconnect the SSD to confirm which “Disk” number disappears. Note this “Disk” Number for future reference.

## 5 SAVING A BACKUP OF THE EXISTING IMAGE FILE

When using your existing SSD instead of buying a replacement, Nautel recommends you make a copy of your current SSD Image to have for recovery purposes. This will save your touch screen calibration, network setup, email setup, user accounts, and notifications. In the event you experience difficulties after the OS upgrade, speak with a customer service technician for guidance before using the backup image file.

- (a) Connect the SSD to your PC or laptop using the SATA to USB cable and run SelfImage.  
**NOTE:** The SSD must be connected prior to running SelfImage.

Depending on your OS and administrative rights, you may have to right click on the SelfImage icon and select “Run as administrator” (see the Windows 7 example in Figure 6).





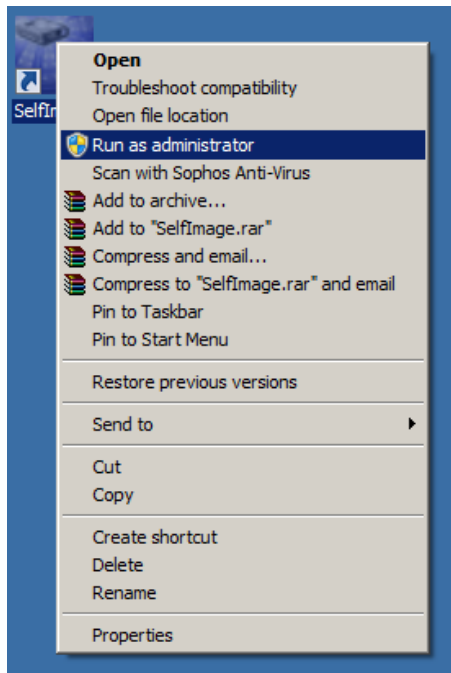


Figure 6: Windows 7 – Run As Administrator

- (b) In SelfImage select the “Input” as “Drive” and then use the drop down to select the drive (see Figure 7) noted in step 4 (d). It is important that you select “Entire Disk” version of the “Disk” number to ensure the proper imaging.

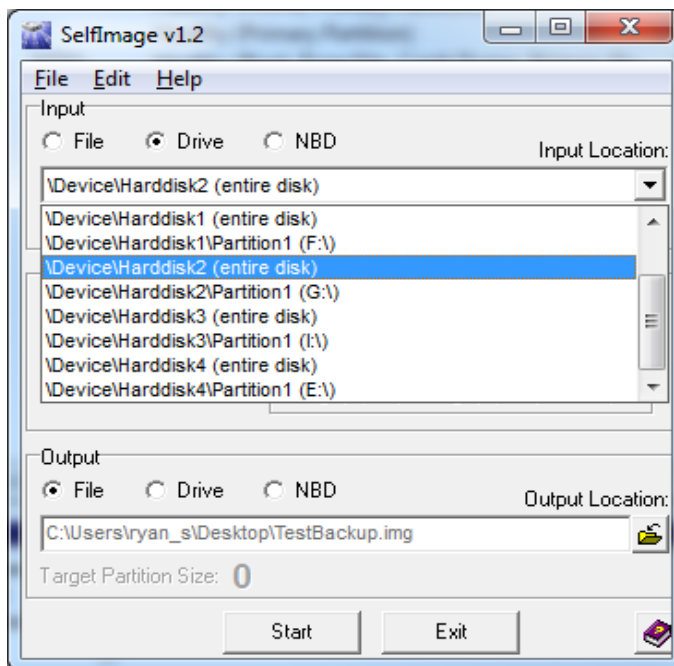


Figure 7 – SelfImage – Making an Image

- (c) Under “Processing”, select “None” (see Figure 8).
- (d) Under “Output”, select “File” and then choose a file location and assign a file name (see Figure 7). This file will be saved in the IMG format and will be approx 4 GB in size. The actual file size is shown as “Input Size” (see Figure 8).
- (e) Click **Start**. This process can take between 15 and 60 minutes depending on the speed of your computer. A progress window (see Figure 11) appears to indicate the progress. It reverts back to the original SelfImage window when complete.

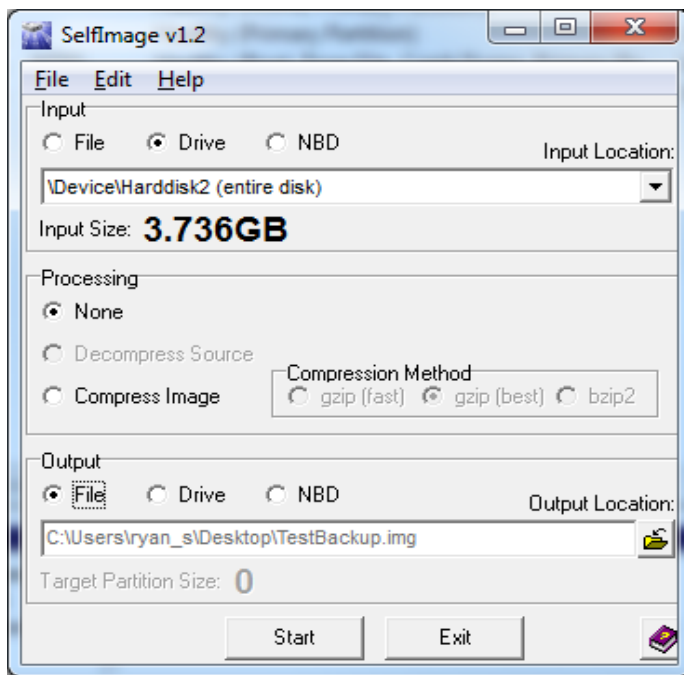


Figure 8: SelfImage

## 6 BURNING AN IMAGE TO THE SSD

### WARNING

*The following procedure will completely replace any existing data on the SSD.*

- (a) Connect the SSD to your PC or laptop using the SATA to USB cable and run SelfImage.  
**NOTE:** The SSD must be connected prior to running SelfImage.

Depending on your OS and administrative rights, you may have to right click on the SelfImage icon and select “Run as administrator” (see the Windows 7 example in Figure 6).

- (b) In SelfImage select the “Input” as “File” and then use the browsing window to locate and select the Nautel provided IMG file you are going to write to the SSD (see Figure 9).
- (c) Under “Processing”, select “None” (see Figure 9).
- (d) Under “Output”, select “Drive” and then choose your “Disk” number as determined in step 4 (d). It is important to ensure you select “Entire Disk” version of the “Disk” number to ensure proper imaging (see Figure 9).



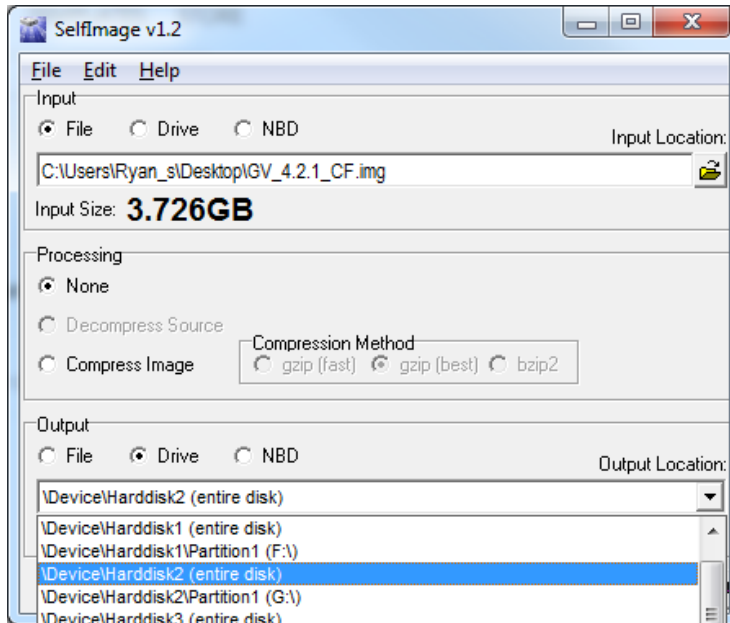


Figure 9: SelfImage

- (e) Click **Start**. This process can take between 15 and 60 minutes depending on the speed of your computer. A progress window (see Figure 11) appears to indicate the progress. It reverts back to the original SelfImage window when complete.

NOTE

When you click **Start**, if there is a size difference between the input image size and the target partition to which you are writing (see example in Figure 10), you may receive a warning message (see Figure 12) that asks you "Are you are SURE you want to continue?". Select **Yes**.

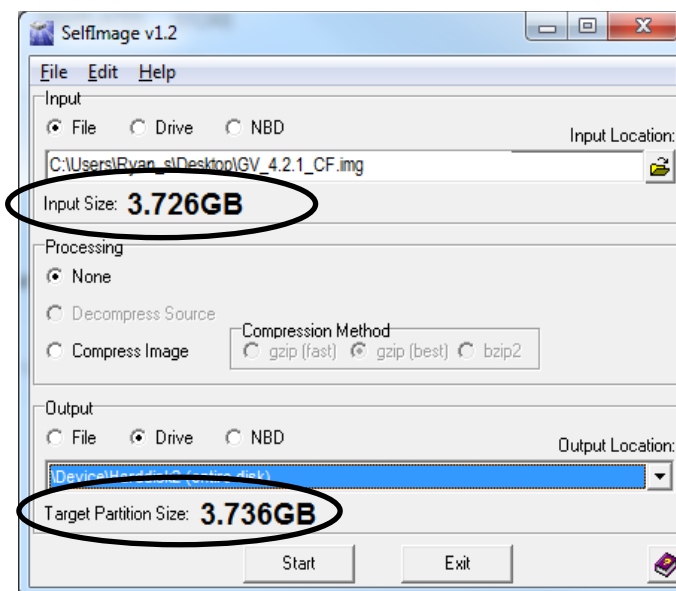


Figure 10: SelfImage (showing size difference between input and target partition)



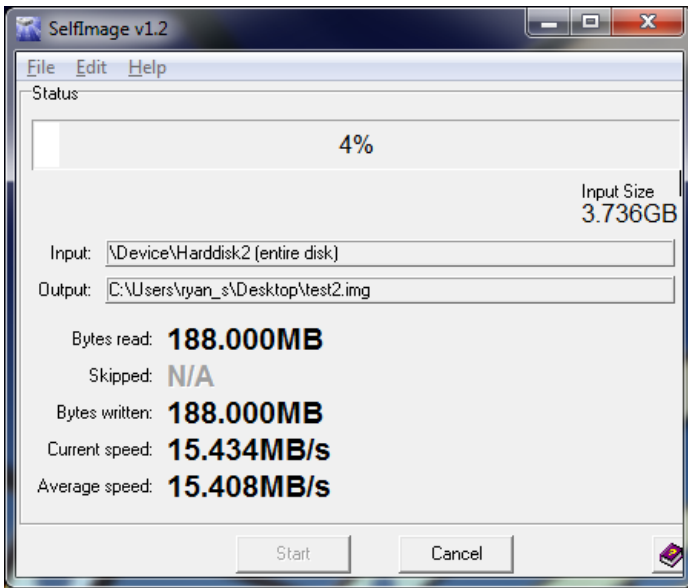


Figure 11: Progress Window

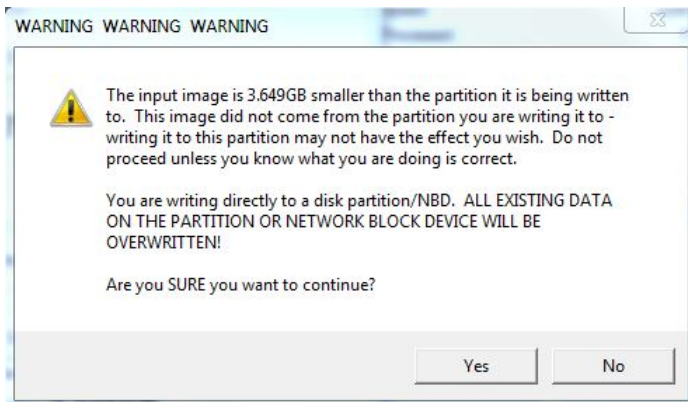


Figure 12: Warning Window

## 7 INSTALLING THE SSD

### NOTE

*If using a replacement SSD, follow instructions in Step 3 to remove the existing SSD prior to proceeding with the following steps. Take note of the SSD model being removed from the transmitter. If different than the replacement, the BIOS boot options may need to be updated when turning on the transmitter for the first time.*

### NOTE

*This section will require approximately 30 minutes of 'Off Air' time while the transmitter installs the new software.*



- (a) Reversing step 3 (g) through 3 (e), using the retained hardware re-install the SSD and controller top cover. Refer to Figure 2 if necessary.
- (b) Using retained hardware from step 3 (c), re-install the controller and reconnect the mating connectors. Refer to Figure 1 if necessary.
- (c) Turn on the transmitter's main ac power leaving RF OFF.

NOTE

*If the SSD being installed is a different brand than what was originally installed, you may need to update the BIOS boot options for the AUI to load. Plug in the USB keyboard and refer to IS18005\* for further instructions.*

- (d) The touchscreen monitor will turn on and a screen will appear prompting you to perform a software upgrade. The AUI will not navigate away from this page until it has been completed. Plug in the USB mouse and begin the upgrade. Refer to the Non-standard Maintenance section of the transmitter's Operations and Maintenance Manual if you require assistance with installing the new software.
- (e) When the software upgrade is complete you can turn RF ON.
- (f) Perform a touch screen calibration through the AUI (in **Menu**
- (g) **> System Settings > Screen Configuration**). Refer to the GV Operations and Maintenance Manual, if necessary. Use the USB mouse to navigate to the touch screen calibration page, and then use your finger to touch the targets.
- (h) Reconfigure the network settings in the **Network Setup** page (in **Menu > User Settings**).
- (i) Reconfigure the **User Accounts** settings (in **Menu > User Accounts**), **Email Configuration, Notifications, Engine Settings, NTP Servers, Nautel Phone Home** and **SNMP Configuration** settings (in **Menu > User Settings**).
- (j) Unplug USB mouse and replace rear filter panel.

## 8 CHANGING THE OS PASSWORD

The OS password must be changed for security purposes. To do this, you will need a way to remotely connect to a Linux computer using SSH. PuTTY is a common utility for Windows users (available at <ftp://www3.nautel.com/Utilities/putty/putty.exe>; if unable to open this link, use a search engine to find new URL), while Linux users can use 'ssh' from the command line. Change the password as follows:

- (a) Connect to the transmitter IP address using your selected SSH client.
- (b) Login with username **root** and password **gckTZbiMEq**.
- (c) At the prompt, type the command **passwd**. This is the Linux command to change your password.
- (d) Enter and confirm your new password. Consider using the last OS password as supplied by Nautel, provided with the original documentation for the transmitter or with a replacement SSD, for consistency. If not and you choose a new password, record it now in a secure location for safe keeping. If you would like Nautel to track your password for support purposes, please email [support@nautel.com](mailto:support@nautel.com) with your new information.

