



Field Modification FM25010

NAC118* Controller: Replacing the CF or SSD and Upgrading from GV SW 5.x.y to GV SW 6.1.2 or later

Issue 1.0 08 April 2025

Nautel Limited

10089 Peggy's Cove Road,
Hackett's Cove, NS, Canada B3Z 3J4
T.877 6 nautel (628835) or +1.902.823.2233
F.+1.902.823.3183 info@nautel.com

U.S. customers please contact:

Nautel Inc.

201 Target Industrial Circle, Bangor ME 04401
T.877 6 nautel (628835) or +1.207.947.8200
F.+1.207.947.3693 info@nautel.com

e-mail: support@nautel.com

www.nautel.com

FM25010: NAC118* Controller: Replacing the CF or SSD and Upgrading from GV SW 5.x.y to GV SW 6.1.2 or later

FIELD MODIFICATION

1 INTRODUCTION

This document provides instructions for Nautel customers or their appointed agents to replace the NAC118* Controller Module's CF (compact flash) card or solid-state drive (SSD) with software GV SW 5.x.y and insert an SSD with GV SW 6.1.2 software or later.

1.1 Reason for Modification

This modification streamlines the software process by providing a pre-loaded SSD with GV SW 6.1.2 or later for replacement in the controller module.

IMPORTANT

Review the Software Release Notes for detailed information on the software version on the replacement SSD, particularly for features that may be unavailable. See the applicable Release Notes pdf in http://www3.nautel.com/pub/GV_Series/.

1.2 Equipment Affected

This procedure applies to all GV series transmitters - with controller module Nautel part number NAC118 through NAC118D - that require a software upgrade from GV SW 5.x.y (minimum GV SW 5.0) to GV SW 6.1.2 or later. The controller module part number (e.g., NAC118) can be found on the rear of the unit. The transmitter's advanced user interface (AUI) must be fully operational to perform this procedure.

1.3 Responsibility for Implementation of Procedure

This procedure should be carried out by qualified station maintenance personnel who are familiar with the GV series transmitter and its AUI.

1.4 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 and inserting the SSD from the Controller and remain off until it can be re-installed. Allow approximately 30 minutes to replace the SSD. You will also be required to perform a software update when first powering up the transmitter which will require approximately 60 minutes of "off-air" time. If paragraph 3 is required, you will need an additional 30 minutes of "off-air" time.

IMPORTANT

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

1.5 Manpower Requirements

Implementing these procedures requires knowledge of the GV series transmitters, specifically Controller Module replacement. Refer to the Troubleshooting manual. This entire modification requires approximately 90 minutes (120 minutes, if paragraph 3 is required) to complete.



1.6 Special Tools, Equipment, Download Requirements

- #1 and #2 Phillips screwdriver
- M4 Socket screwdriver
- 5-mm and 7-mm nut drivers
- Anti-static mat and wrist strap (recommended)
- Laptop with Nautel Legacy App installed; available at Nautel's FTP site:
http://www3.nautel.com/pub/Legacy_AUI_Access/1.02/
- LAN cable, straight-through or cross-over
- Information Sheet IS24005* PDF in
<http://www3.nautel.com/pub/Utilities/SystemHealthEligibilityEvaluationProgram/>
- ** Microchip Studio utility from <https://www.microchip.com/en-us/tools-resources/develop/microchip-studio>
- ** GV_Rack_V2.0.0.4.hex file from the GV_Rack directory of
http://www3.nautel.com/pub/GV_Series/GV_SW_6.1.2/
- Information Sheet IS18005* from http://www3.nautel.com/pub/GV_Series/GV_SW_6.1.2/
- USB keyboard, if IS18005* is required
- SSH program, e/g/. PuTTY from <http://www3.nautel.com/pub/Utilities/puTTY/>
- Replacement 'Operating the Transmitter' documentation from
http://www3.nautel.com/pub/GV_Series/GV_SW_6.1.2/Handbooks/
- GV SW 6.1.2 UB97 tgz file from
http://www3.nautel.com/pub/GV_Series/GV_SW_6.1.2/UB97%20Installation%20Files/

** items are only required if you received Field Modification Kit 219-5347 (see paragraph 1.7).

NOTE

Microchip Studio is licensed as freeware for PC or laptop with Windows 32 bit and 64-bit operating system. It is available as a free download.

1.7 Materials Provided

Table 1a through 1d lists the items in the Field Modification Kit to aid in completing this procedure.

NOTE

Depending on the hardware version of the NAC118 Controller and the outcome of performing the instructions in Information Sheet 'IS24005 - GV Series: Using the System Health Eligibility Evaluation Program (SHEEP)', also referenced in paragraph 2.1 (a), you will receive one of the four kits shown below. This document is valid for any kit and contains conditional steps/procedures as required.*

Table 1a: Field Modification Kit, NAC118* – SSD Upgrade with HTML5
(Nautel Part 219-5365)

Item	Qty	Component	Description
2	1	FM25010	Field Modification Document
3	1	219-2131	SSD Mod, Programmed

Table 1b: Field Modification Kit, NAC118* – Atmel Pod and SSD Upgrade with HTML5
(Nautel Part 219-5366)

Item	Qty	Component	Description
2	1	FM25010	Field Modification Document
3	1	UB103	Dongle, Programmer, ATMEL-ICE-BASIC
4	1	219-2131	SSD Mod, Programmed



Table 1c: Field Modification Kit, NAC118* – CF Card to SSD Upgrade with HTML5 (Nautel Part 219-5367)

Item	Qty	Component	Description
2	1	FM25010	Field Modification Document
3	1	219-2131	SSD Mod, Programmed
4	1	219-2126	SSD Mounting Bracket
5	1	219-2120-02	Personality Panel
6	1	UA312	Cable, SATA, 7 pin + 2-pin wafer, 2.0 mm (PH 2.0)
7	2	HMSP08F	Screw, Pan, Phil, M3x0.5x6Lg, SSC/W Split & Flat
8	1	HT77	Tyrap, .098 W x 3.9 lg, Black, Heat Stabilized, 115C

Table 1b: Field Modification Kit, NAC118* – Atmel Pod and CF Card to SSD Upgrade with HTML5 (Nautel Part 219-5368)

Item	Qty	Component	Description
2	1	FM25010	Field Modification Document
3	1	UB103	Dongle, Programmer, ATMEL-ICE-BASIC
4	1	219-2131	SSD Mod, Programmed
5	1	219-2126	SSD Mounting Bracket
6	1	219-2120-02	Personality Panel
7	1	UA312	Cable, SATA, 7 pin + 2-pin wafer, 2.0 mm (PH 2.0)
8	2	HMSP08F	Screw, Pan, Phil, M3x0.5x6Lg, SSC/W Split & Flat
9	1	HT77	Tyrap, .098 W x 3.9 lg, Black, Heat Stabilized, 115C

1.8 Identifying Modified Assemblies/Parts

Identifying modified assemblies informs future maintainers of the current configuration. Use indelible ink to mark the transmitter and Controller with “FM25010”, on the rear, near the nameplate/serial number label.

1.9 Publications Affected

This modification affects technical documentation, as it introduces a new AUI interface. Download a new ‘Operating the Transmitter’ document for your GV model from the Nautel FTP site (http://www3.nautel.com/pub/GV_Series/GV_SW_6.1.2/Handbooks/). This document provides full details on the new AUI and is intended to replace the ‘Operating the Transmitter’ chapter (3.2) in your *Operation and Maintenance Manual*.

This modification also affects Electrical Schematics and Mechanical Drawings.

- The attached NAC118* replacement electrical schematic should be incorporated in the GV Troubleshooting Manual and the old schematic discarded.
- The attached NAC118* replacement mechanical drawing should be incorporated in the GV Troubleshooting Manual and the old drawing discarded.



2 PRELIMINARY TASKS

2.1 Evaluating the Transmitter for Software Eligibility

Some GV series transmitters are unable to complete certain software upgrades due to issues related to entering and exiting bootloader mode at the rack level. Before receiving one of the four Field Modification Kits in Table 1a through Table 1d, you would have been prompted by Nautel to verify if the GV series transmitter is eligible for the software upgrade provided with this Field Modification document. This verification involves performing the procedure in Information Sheet document 'IS24005 - GV Series: Using the System Health Eligibility Evaluation Program (SHEEP)'.

- (a) Ensure that *IS24005 - GV Series: Using the System Health Eligibility Evaluation Program (SHEEP)* has been performed. If unsure, see paragraph 1.6 for location.
- If the evaluation was successful, continue to paragraphs 2.2 and 2.3, then complete paragraphs 4, 5 and 6. Skip paragraph 3.
 - If the evaluation was not successful, proceed directly to paragraph 3, 'Installing Rack Firmware'.

2.2 Recording Settings

NOTE

There are various settings and logged data that will not be saved in your transmitter when you replace the SSD. Before removing your SSD, Nautel recommends that you record these settings and logged data, so that you may re-enter them after inserting the new SSD.

- (a) With the transmitter on, record and retain the existing settings in the AUI pages listed below. Record settings manually or use the laptop/Nautel Legacy App and LAN cable to remotely connect to the transmitter to create screen images. Refer to your existing *GV Operations and Maintenance Manual*, if necessary, to navigate to these AUI pages.
- | | |
|-----------------------|----------------------|
| • Logs | • Notifications |
| • User Accounts | • Engine Settings |
| • Network Setup | • NTP Servers |
| • Email Configuration | • SNMP Configuration |
- (b) Review the presets in the AUI's Presets page. For any presets that show Audio Player as their Audio Source, change the Audio Source to something other than Audio Player.

NOTE

Audio Player functionality is not available in GV SW 6.1.2. Nautel recommends recording all Audio Player related preset settings so that they can be restored when that functionality is available.

2.3 Disabling the Watchdog Feature

- (a) From the controller UI, go to the **System Settings -> Host Watchdog** screen. Ensure that the setting is set to **OFF** (disabled).



3 INSTALLING RACK FIRMWARE (IF REQUIRED)

NOTE

Paragraphs 3.1 and 3.2 are only required if step (a) of paragraph 2.1 was unsuccessful. In this case, you have been provided Field Modification Kit 219-5366 or 219-5368. If you have Field Modification Kit 219-5365 or 219-5367, these paragraphs are not required.

3.1 Preliminary Tasks

- (a) Install Microchip Studio (see paragraph 1.6 for location) on the laptop.
- (b) Set the transmitter to its **RF Off** state. From the rear of the transmitter, remove the upper rear panel to gain access to the module control/interface PWB (see Figure 6 for reference), noting there is one PWB per rack in the transmitter.

3.2 Installing Firmware

Perform the following procedure for each module control/interface PWB in the transmitter that reported an error in step (a) of paragraph 2.1.

- (a) Download the GV_Rack_V2.0.0.4.hex file (see paragraph 1.6 for location) to the laptop.
- (b) Obtain the ATMEL-ICE programmer dongle (Nautel Part # UB103) from the Field Modification Kit.
- (c) Connect the USB cable that comes with the dongle between the dongle and the laptop. Wait for any final USB driver pairing to complete.
- (d) Connect the 6-pin programming cable that comes with the dongle between the dongle and the programming header J9 on the module control/interface PWB (see Figure 1). Ensure proper orientation, pin 1 is slightly highlighted with a white background on the board silkscreen

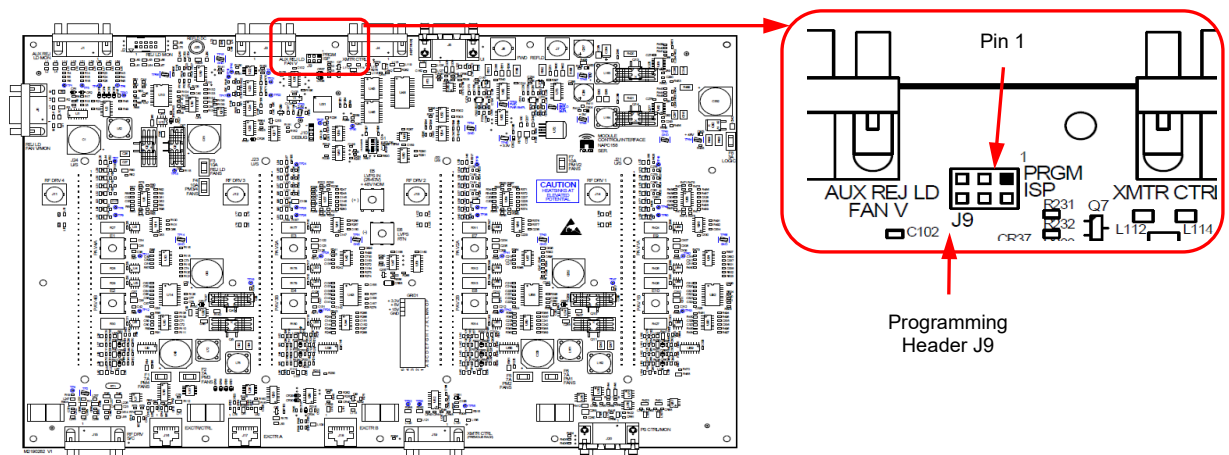


Figure 1: Location of Programming Header J9 on Module Control/Interface PWB

NOTE

Ensure pin 1 on the Atmel programming tool (the red wire on the Atmel programming tool's ribbon cable indicates pin 1) is connected to pin 1 on connector J9.



- (e) Launch the Microchip Studio utility on the laptop.
- (f) Click **Tools** from the Start Page bar (see Figure 2) and select Device Programming. The screen in Figure 3 will appear.

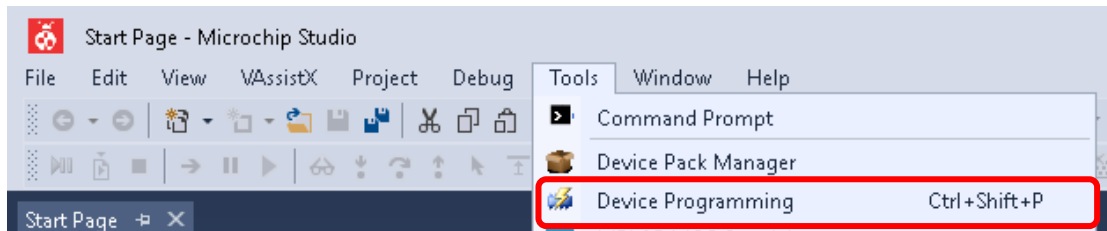


Figure 2: Atmel Device Programming Menu

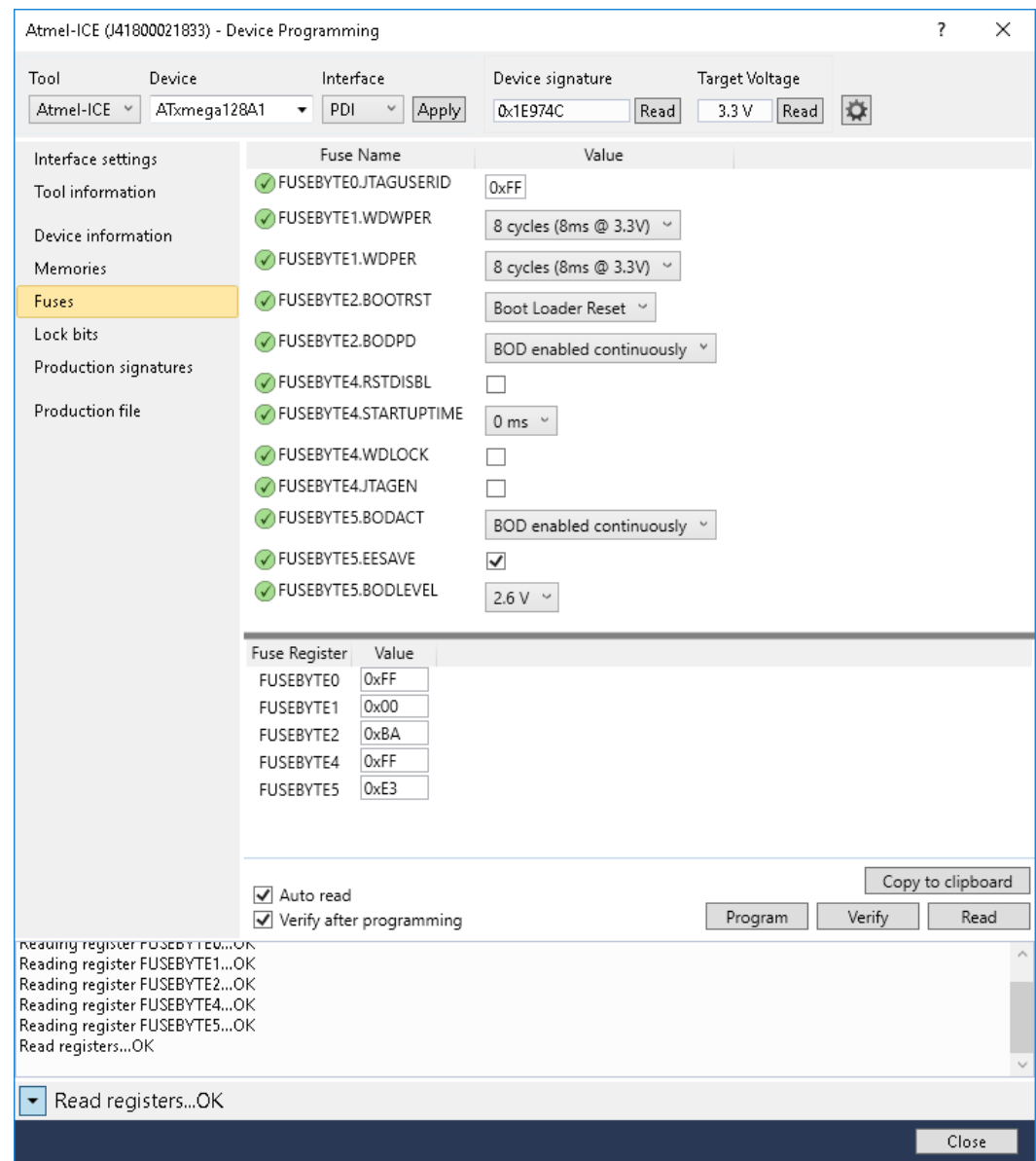


Figure 3: Atmel Device Programming Menu (Fuses tab shown)

- (g) In the Tool dropdown, select 'Atmel-ICE'.
- (h) In the Device dropdown, select 'ATxmega128A1'.
- (i) Click the **Apply** button.
- (j) Confirm connectivity: click the Device Signature **Read** button. If an error message appears, check the orientation of the 6-pin programming cable.
- (k) Select the Memories tab (see Figure 4). In the Flash section, browse to the hex file downloaded in step (a). Ensure the 'Erase Flash before programming' and 'Verify Flash after programming' checkboxes are selected as shown.

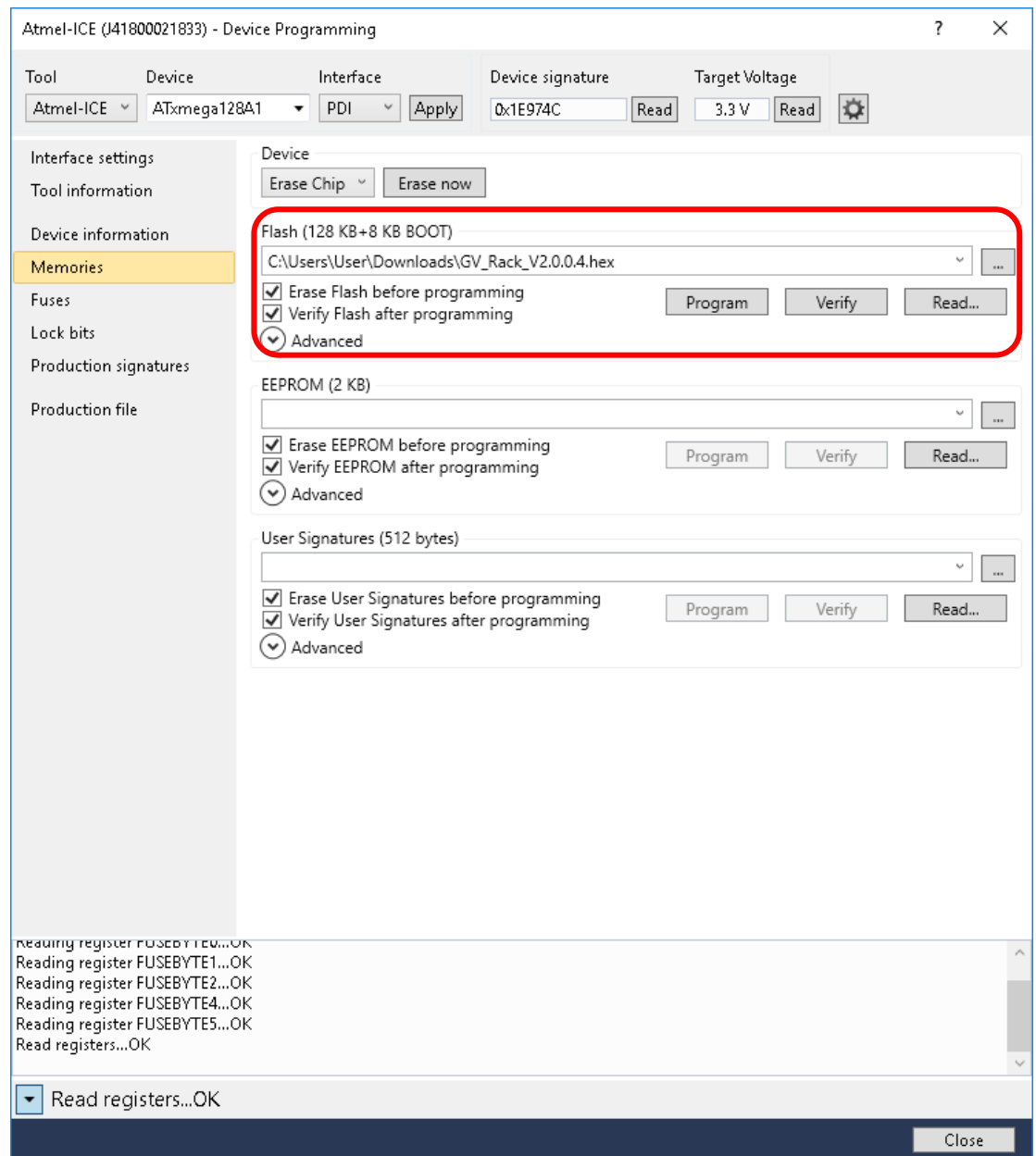


Figure 4: Atmel Device Programming Menu (Memories tab shown)

- (l) Select the Fuses tab (see Figure 3) and program the fuse Values as shown.
- (m) Select the Lock bits tab (see Figure 5) and program the lock bit Values as shown.

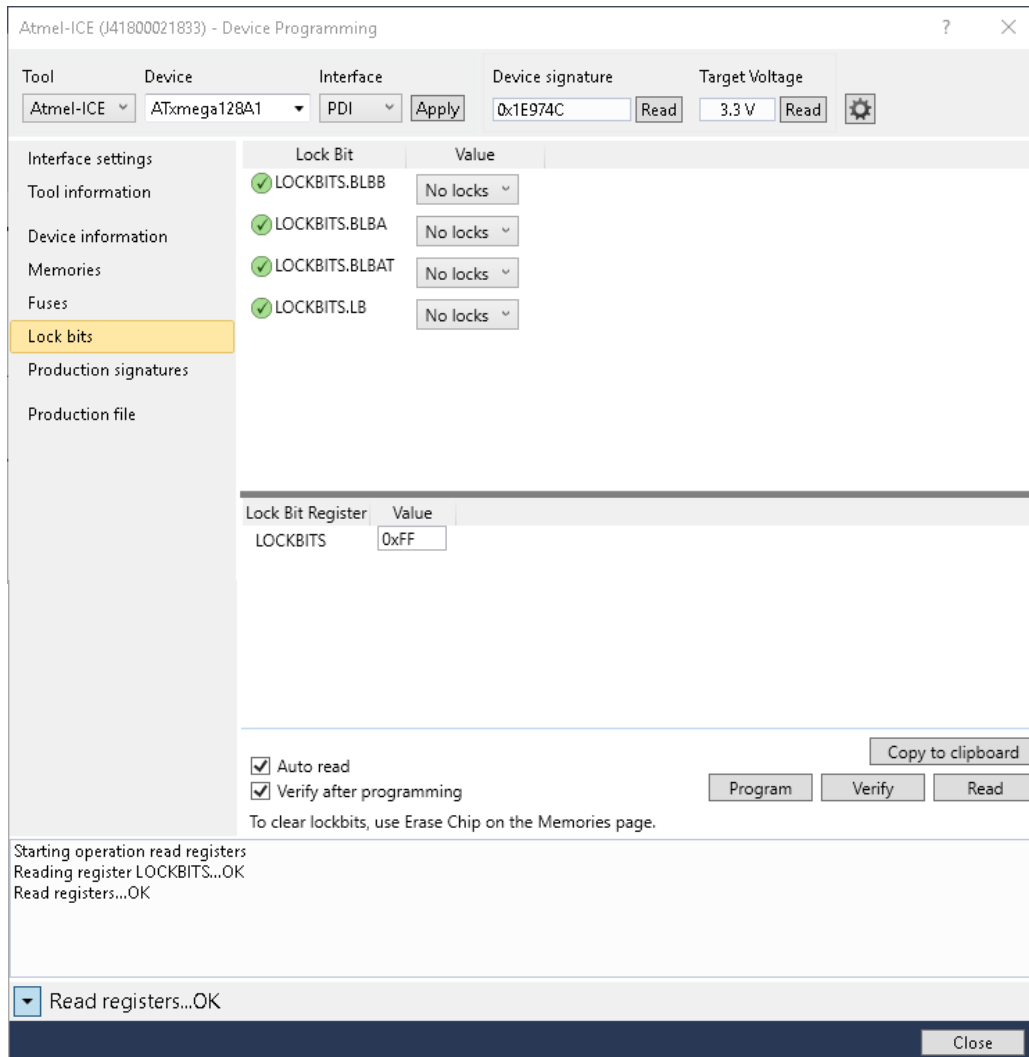


Figure 5: Atmel Device Programming Menu (Lock bits tab shown)

- (n) Select the Memories tab (see Figure 4). In the Flash section, click **Program**. Wait for confirmation that the programming is successful. If the programming is not successful, contact Nautel Customer Service (support@nautel.com).
- (o) Repeat steps (d) through (n) for each module control/interface PWB in the transmitter that reported an error in step (a) of paragraph 2.1.
- (p) Close the Microchip Studio utility on the laptop.
- (q) Disconnect the Atmel programming tool from the module control/interface PWB.
- (r) Repeat step (a) of paragraph 2.1 to verify a successful SHEEP evaluation.

4 REMOVING THE CONTROLLER FROM THE TRANSMITTER

- (a) Press **RF OFF**. Turn off and lock out the transmitter's main ac power.

NOTE

If installed, disconnect power cable at J1 of the UPS interface assembly, located in the bottom rear of the transmitter. Refer to the UPS interface power supply replacement procedure in the Troubleshooting manual for reference.

- (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 (A4), noting connections. If applicable, remove and retain any USB drives connected to the rear of the controller.
- (c) From the front of the transmitter, open the front door (left most for multi-door transmitters) and remove and retain the two (2) M5 Phillips head screws that secure the controller to the transmitter (see Figure 6). Remove the controller from the transmitter.
- (d) Place the controller module on a suitable workbench.

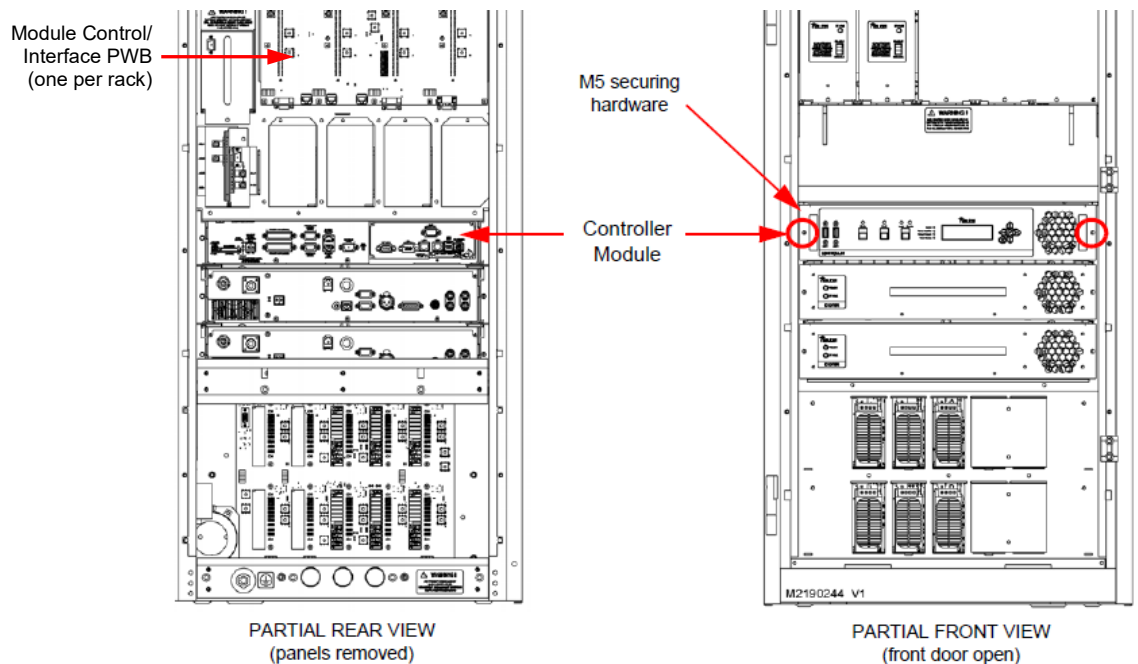


Figure 6: Front and rear view of the transmitter (GV5 shown as reference)

- (e) If your controller contains a CF card, visible from the rear of the controller, perform the instructions in paragraph 5B, then proceed to paragraph 6. If your controller does not contain a CF card, perform the instructions in paragraph 5A, then proceed to paragraph 6.



5A REPLACING THE EXISTING SSD

NOTE

Paragraph 5A is only required if your controller already contains an SSD, as in NAC118D variations or earlier NAC118* variations with DWA-110 or FM19006* incorporated. In this case, the SSD must be replaced with a new SSD using either Field Modification Kit 219-5365 or 219-5366. If you have Field Modification Kit 219-5367 or 219-5368, this paragraph is not required.

NOTE

There are static sensitive components inside the controller. Use precautions when handling static sensitive devices. Nautel recommends using a properly grounded anti-static mat and wrist strap.

- (a) Remove and retain the thirteen (13) M3 Phillips head screws, securing the top cover on the module.
- (b) Disconnect P1 (large black connector) from the SSD assembly (see Figure 7). **Do not** remove SATA1 or SATA_PWR1 connectors from P1.

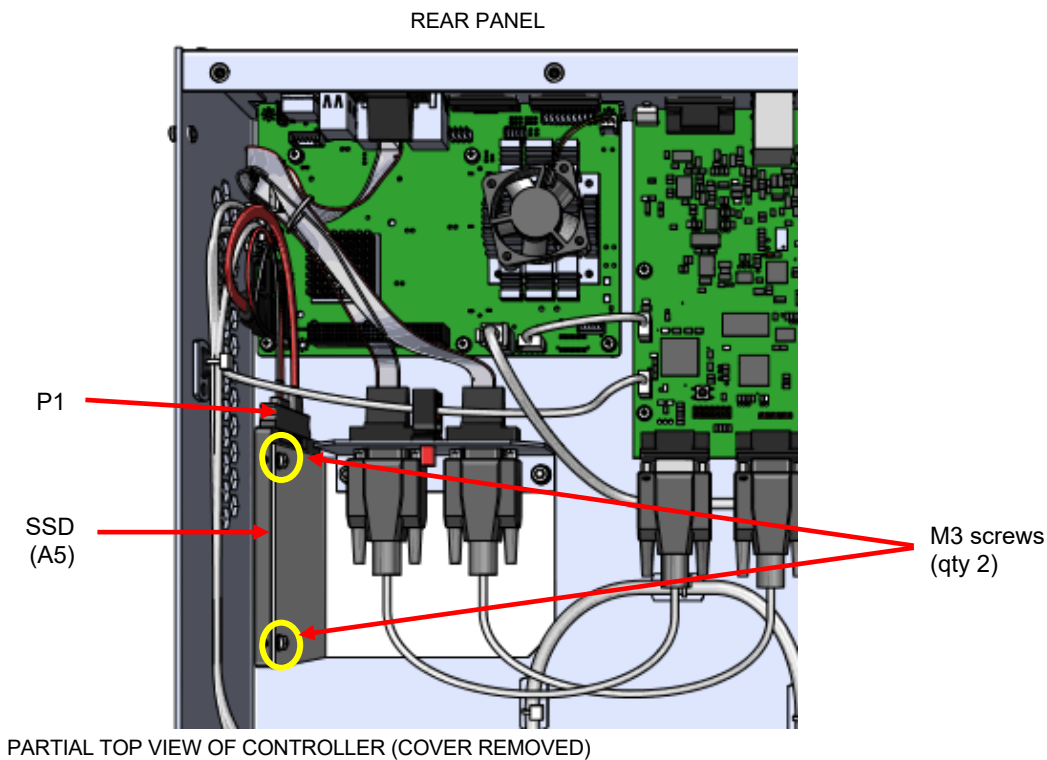


Figure 7: Removing the Existing SSD

- (c) Use a Phillips screwdriver to remove the two (2) M3 screws that secure the SSD to its mounting bracket (see Figure 7). Retain hardware. Remove the SSD from the controller.
- (d) Record the brand of the removed SSD (for use in paragraph 6) and place the SSD in an anti-static bag for storage.

- (e) Obtain the new SSD (Nautel Part # 219-2131) from the Field Modification Kit. Record the brand of the new SSD (for use in paragraph 6).
- (f) Use a Phillips screwdriver and two (2) M3 screws retained in step (c) to secure the new SSD to the mounting bracket (see Figure 7).
- (g) Connect P1 (large black connector) to the new SSD (see Figure 7).
- (h) Use a Phillips screwdriver and 13 M3 screws retained in step (a) to re-install the top cover on the controller.
- (i) Re-install the controller in the transmitter by reversing steps (b) and (c) of paragraph 4.

IMPORTANT!

Ensure the controller's connectors are properly mated. Improper connections may result in failure of the upgrade.

5B REPLACING THE CF CARD WITH THE NEW SSD

NOTE

Paragraph 5B is only required if your controller contains a compact flash (CF) card. In this case, the controller must be modified to support the use of an SSD, using either Field Modification Kit 219-5367 or 219-5368. If you have Field Modification Kit 219-5365 or 219-5366, this paragraph is not required.

NOTE

There are static sensitive components inside the controller. Use precautions when handling static sensitive devices. Nautel recommends using a properly grounded anti-static mat and wrist strap.

- (a) From the rear of the controller (see Figure 8), remove the CF card and discard it.
- (b) From the rear of the controller, remove the personality panel (see Figure 8). To do this, use a 5-mm nut driver to remove the hex screws from the D-sub connectors and use a Phillips screwdriver to remove the personality panel, noting it is secured to the controller chassis with four (4) M4 screws. Retain hardware.
- (c) Obtain the new personality panel (Nautel Part # 219-2120-02) from the Field Modification Kit, using retained hardware from step (b).

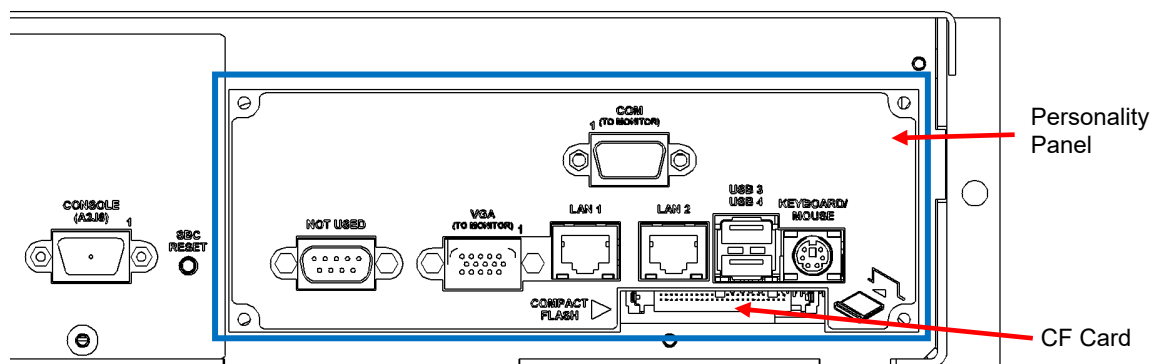


Figure 8: Replacing the Personality Panel (Partial Rear View of Controller)



- (d) Remove and retain the thirteen (13) M3 Phillips head screws, securing the top cover on the module.
- (e) Obtain the SSD (Nautel Part # 219-2131), SSD mounting bracket (Nautel Part # 219-2126), SATA cable (Nautel Part # UA312), and two (2) M3 screws (Nautel Part # HMSP08F) from the Field Modification Kit.
- (f) Use a Phillips screwdriver and two (2) M3 screws to install the SSD on the SSD mounting bracket (see Figure 9).

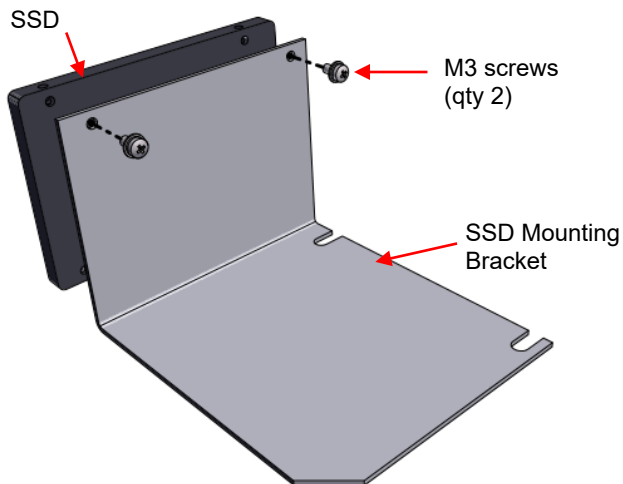


Figure 3: Mounting the SSD to the Mounting Bracket

NOTE

When loosening the two nuts in step (g), do not completely remove them. Bring them up to the top of the associated stud to allow installation of the SSD mounting bracket.

- (g) Inside the controller, use a 7-mm nut-driver to loosen the two (2) M4 nuts on the D-sub mounting bracket (see Figure 10). Slide the SSD mounting bracket with SSD underneath the D-sub mounting bracket, aligning the slots with the existing studs. Re-tighten the M4 nuts, securing both brackets in place.

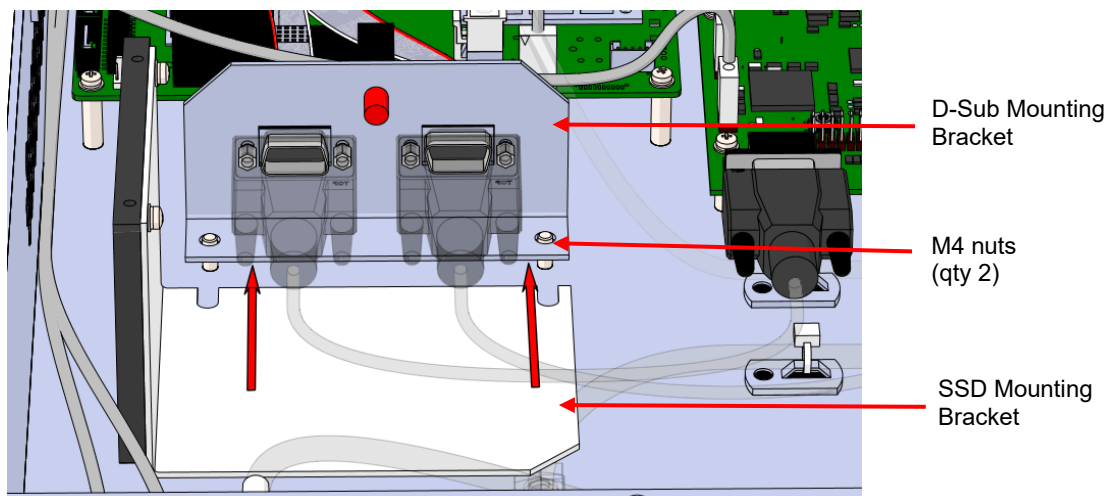


Figure 10: Installing the SSD Assembly

- (h) Connect the SATA cable between the SSD and the single-board computer (SBC) assembly as follows (see Figure 11):
- Connect the larger black connector of the SATA cable to the SSD.
 - Connect the other two cables of the SATA cable to the SATA1 and PWR1 connectors on the SBC.
 - Obtain a tyrap (Nautel Part # HT77) from the Field Modification kit and use it to secure the SATA cable to the existing cable harness.

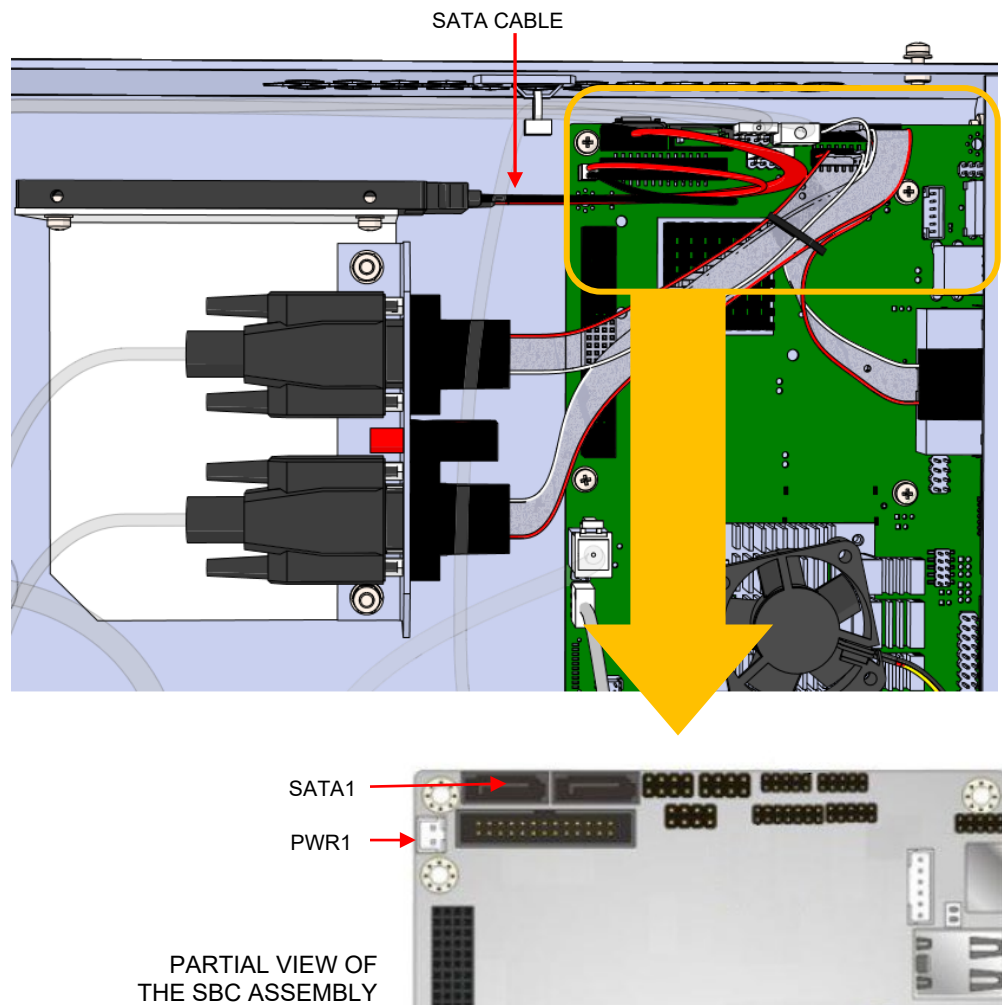


Figure 11: Connecting the SATA Cable

IMPORTANT!

Ensure the controller's connectors are properly mated. Improper connections may result in failure of the upgrade.

- (j) Use a Phillips screwdriver and 13 M3 screws retained in step (d) to re-install the top cover on the controller.
- (k) Re-install the controller in the transmitter by reversing steps (b) and (c) of paragraph 4.

6 INSTALLING NEW SOFTWARE

NOTE

Performing the instructions in this paragraph requires approximately 30 to 60 minutes of 'off-air' time while the transmitter installs the new software.

- (a) Determine if you must perform Information Sheet IS18005* in step (c), as follows:
- If you replaced the controller's SSD, as described in paragraph 5A, compare the SSD brands that were recorded in steps (d) and (e) of paragraph 5A. If the brands are different, you must include step (c) of this paragraph. If the SSD brands are the same, step (c) is not required.
 - If you replaced the controller's CF card with the new SSD, as described in paragraph 5B, you must include step (c) of this paragraph.
- (b) Turn on the transmitter's main ac power and UPS power (if installed). Leave RF off.
- (c) If you determined in step (a) that IS18005* is required, obtain it (see paragraph 1.6) and perform it now to update the BIOS boot options.

NOTE

GV SW 6.1.2 will update firmware on the initial boot, then reboot the AUI for the firmware updates to take effect.

IMPORTANT!

DO NOT turn off ac to the transmitter until the AUI login screen appears and the controller UI either displays 'Upgrade successful' (see Figure 13) or one of the failure screens shown in Figure 14. Turning off ac power to the transmitter prior to this point could result in the transmitter becoming inoperable.

NOTE

The single board computer will reboot multiple times during this upgrade process.

IMPORTANT!

If the upgrade of any component (exciter, rack, etc.) is initially unsuccessful, the system will automatically retry the update to that component and the controller UI will display messages indicating this. DO NOT interrupt this process or the transmitter may become inoperable. If all attempts fail, the controller UI will display one or more of the 'Unable to upgrade' screens shown in Figure 14 and the AUI will reboot. If one of these screens appears, proceed to step (m).

- (d) The touchscreen monitor will turn on and a screen will appear prompting you to perform a Touchscreen Calibration. Perform the touchscreen calibration. The transmitter is now entering the initial firmware update.

NOTE

The events in steps (d) and (e) occur almost simultaneously. In some cases, the screen in Figure 12 may take approximately one (1) minute to appear.

- (e) The controller UI will display the screen in Figure 12. This firmware update may take up to five (5) minutes.



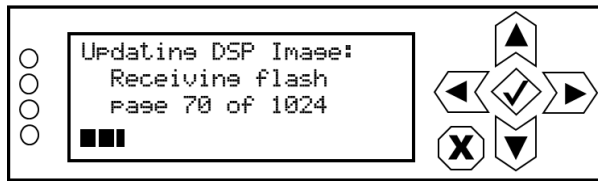


Figure 12: Controller UI – ‘Updating DSP Image’ screen

NOTE

During the firmware update, the AUI may display a screen stating, ‘this site can’t be reached’. This is normal and expected behavior until step (f) is completed (i.e., successful upgrade).

- (f) When the DSP image update is complete, the controller UI will display the screen in Figure 13. The reboot takes approximately two (2) minutes.

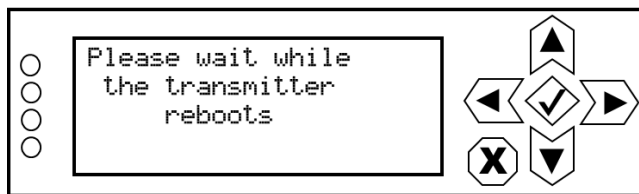


Figure 13: Controller UI – ‘Please wait while the transmitter reboots’ screen

- (g) When the reboot is complete, the controller UI will display the screen in Figure 14. This upgrade may take up to 15 minutes for each exciter (A and B, if applicable) in the transmitter.

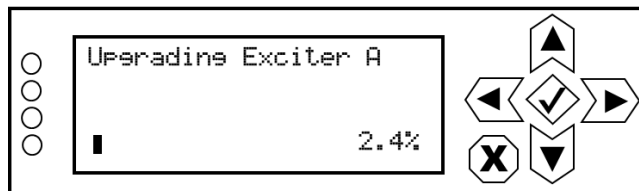


Figure 14: Controller UI – ‘Upgrading Exciter A/B’ screen(s)

- (h) When the exciter upgrade(s) is (are) complete, the controller UI will display the screen in Figure 15. This upgrade may take up to five (5) minutes for each rack (1 through 6, as applicable) in the transmitter. Note: one rack equals four (4) RF power modules; GV3.5 and GV5 transmitters only have two (2) RF power modules.

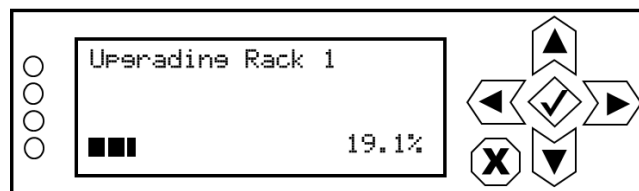


Figure 15: Controller UI – ‘Upgrading Rack’ screen(s)

NOTE

Throughout the upgrade, various RF power module LEDs will change from green to orange or will not be illuminated. Various power supply LEDs will show “!” blinking. When the rack upgrade(s) is (are) complete, RF power module and power supply LEDs will return to normal.



- (i) When upgrades are complete, the AUI will reboot again. The reboot takes approximately two (2) minutes.
- (j) If the upgrade was successful, the controller UI will display the screen in Figure 16. If the upgrade was not successful, the controller UI will display one of the screens in Figure 17. In either case, proceed to the next step.

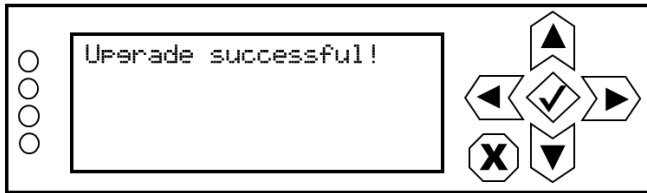


Figure 16: Controller UI – ‘Upgrade successful!’ screen

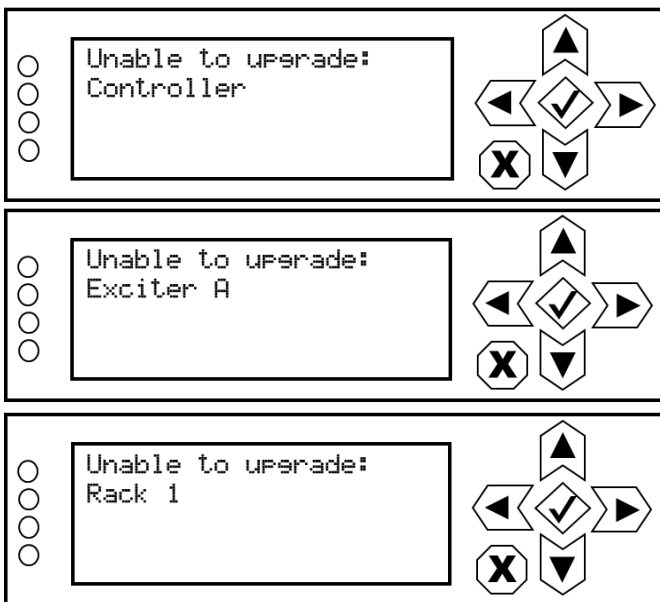


Figure 17: Controller UI – Examples of ‘Unable to upgrade’ screens

- (k) Login using the default username/password combination of **Admin/change_me**. The AUI will prompt for an optional Chrome-style password-saving function.

NOTE

If the AUI login screen does not appear, cycle the ac power (turn off, then on).

NOTE

The following steps reference the new AUI’s menu screens. Refer to the Operation and Maintenance Manual obtained in paragraph 1.9 (issue 6.0 or later) for assistance with navigating the new AUI menu.

- (l) When the AUI’s Dashboard appears, a popup will appear with a firmware upgrade message that matches the controller UI’s message. An Entered Firmware Upgrade alarm will also be triggered. Pressing the **OK** button will clear the popup on the AUI, the message on the controller’s UI, and will clear the Entered Firmware Upgrade alarm to allow for the RF state to be changed. If the AUI is refreshed, the popup may appear once more. Pressing the **OK** button will clear the popup and it will not appear again in that AUI’s session.




- (m) When the software upgrade is complete, navigate to the AUI's Software Versions page by selecting **Menu**  (top right AUI icon), then **Software -> Versions**. Compare the installed versions shown for Controller, Exciter and Rack to the minimum acceptable versions in Table 2.

Table 2: Minimum Expected Device Versions

Name	Minimum Version
controller	3.1.1.1
exciter	1.9.1.1
rack	2.0.0.4

NOTE

Depending on your transmitter's model and configuration (e.g., multiple rack numbers, dual A/B exciters, HD exciters, etc.), the device names displayed on the Versions page may differ from those in Table 2. Look for the key words 'controller', 'exciter' and 'rack' in the device names.

- If the versions displayed on the AUI meet the minimum versions in Table 2, proceed to step (p).
 - If the versions displayed on the AUI do not meet the minimum versions in Table 2, check for alarms (e.g., Exciter A Offline) by navigating the AUI to **Menu -> Alarms** and confirm that all controller and exciter cables are properly connected.
 - If the versions displayed on the AUI still do not meet the minimum versions in Table 2, perform a software upgrade as follows:
 - i. On the AUI, go to **Menu ->Software -> Upgrades** page.
 - ii. Obtain/upload the UB97 .tgz file for GV SW 6.1.2 from http://www3.nautel.com/pub/GV_Series/GV_SW_6.1.2/UB97%20Installation%20Files/
 - iii. Select **Start Upgrade**.
 - iv. When the upgrade is complete, recheck the AUI software versions versus the minimum versions in Table 2.
 - If the versions displayed on the AUI still do not meet the minimum versions in Table 2, contact Nautel Customer Service (support@nautel.com).
- (n) In the local AUI, you can enable local auto AUI login through the following steps:
- Select **Menu -> Settings**.
 - On the left-hand side of Settings list, select Users.
 - Select the pen and paper icon for the Admin user
 - Select the Auto-Login toggle
 - Select **Save**
 - The Admin user now will automatically log into the local AUI after a reboot
- (o) Reconfigure the network settings in the **Network Setup** page (in **Settings ► Network**). Refer to Table 3 for menu structure changes.
- (p) Reconfigure settings recorded as part of paragraph 2.2 using the appropriate settings in **Menu ► Settings**. Refer to Table 3 for menu structure changes.



Table 3: Old AUI versus new AUI menu structure changes

Old AUI Menu	New AUI Menu
User Accounts	Settings ► Users
User Settings ► Network Setup	Settings ► Network
User Settings ► Email Configuration	Settings ► Notifications
User Settings ► Notifications	Settings ► Notifications
User Settings ► Exgine Settings	Settings ► HD/DRM
User Settings ► NTP Servers	Settings ► Time
User Settings ► SNMP Configuration	Settings ► SNMP

- (q) Install the transmitter's rear filter panel.
- (r) From the controller UI, go to the **System Settings -> Host Watchdog** screen and set to **ON** (enabled).
- (s) Press RF On and resume normal operation.

6 CHANGING THE OS PASSWORD

IMPORTANT!

This software ships with default root and Nautel passwords. These passwords must be changed to ensure the security of the system. Failure to change the password exposes the transmitter to unauthorized access.

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 <http://www3.nautel.com/pub/Utilities/putTy/>; 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 **nautel** and password **nautel**.
- (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 safekeeping.
- (e) At the prompt, type **su** and press enter, then type **nautel** at the password prompt and press enter.
- (f) At the prompt, type the command **passwd**. This is the Linux command to change your root password. Record it in a secure location for safekeeping. 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 safekeeping.



- (g) Close the SSH client (e.g., PuTTY).
- (h) Return the transmitter to normal operation.

If you have any questions or require additional assistance, please contact Nautel's Customer Service Department at:

Telephone: 1-877-662-8835

Email: support@nautel.com



