



Field Modification FM24002

NAC124* Controller: Replacing the SSD and Upgrading to GV SW 6.0.1 or later

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FM24002: NAC124* Controller - Replacing the SSD and Upgrading to GV SW 6.0.1 or later

FIELD MODIFICATION

1 INTRODUCTION

This document provides instructions for Nautel customers or their appointed agents to replace the NAC124* Controller SSD with software prior to GV SW 6.0.1 and insert an SSD with GV SW 6.0.1 series software or later.

1.1 Reason for Modification

This modification streamlines the software process by providing an SSD with GV SW 6.0.1 or later preloaded for replacement in the Controller Module.

1.2 Equipment Affected

This procedure applies to all GV series transmitters which have the NAC124* Controller requiring a software upgrade to GV SW 6.0.1 or later. The Controller model # can be found on the rear of the unit. Contact Nautel with the serial number if unsure of Controller version.

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 assemblies.

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.

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 to complete.

1.6 Special Tools/Test Equipment

- Laptop with Nautel legacy App installed (available at Nautel's FTP site: http://www3.nautel.com/pub/Legacy_AUI_Access/1.02/)
- LAN cable
- #2 and #1 Phillips screwdriver
- M4 Socket screwdriver
- Information Sheet IS18005* (contact Nautel at support@nautel.com or Nautel's FTP site: http://www3.nautel.com/pub/GV_Series/GV_SW_6.0.1/)
- USB Keyboard if IS18005* is required
- Anti-static mat & wrist strap (recommended)



1.7 Materials

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

Table 1: Field Modification Kit, GV Series – GV SW 6.0.1 SSD Upgrade Option
(Nautel Part 219-5340)

Item	Qty	Component	Description
2	1	FM24002	Field Modification Document
3	1	219-2131	SSD Mod, Programmed

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 “**FM24002**”, on the rear, near the nameplate/serial number label.

1.9 Publications Affected

This modification affects technical documentation. Please obtain new technical documents from the Nautel FTP site (http://www3.nautel.com/pub/GV_Series/GV_SW_6.0.1).

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 replace the SSD. Nautel recommends that you record these settings and logged data, as desired, before removing your SSD so that you may re-enter them after inserting the new SSD. The following AUI pages apply (refer to the GV Operations and Maintenance Manual, if necessary, to navigate to these pages):

While Audio Player functionality is not present in GV SW 6.0.1, Nautel recommends recording all Audio Player related preset settings so that they can be restored when that functionality is added.

NOTE

Recording the following settings, can be by either manual note taking or using the laptop/Nautel Legacy App and LAN cable to connect to the transmitter to create screen images.

- Logs
- User Accounts
- Network Setup
- Email Configuration
- Notifications
- Engine Settings
- NTP Servers
- SNMP Configuration

3 REMOVING THE SSD

NOTE

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

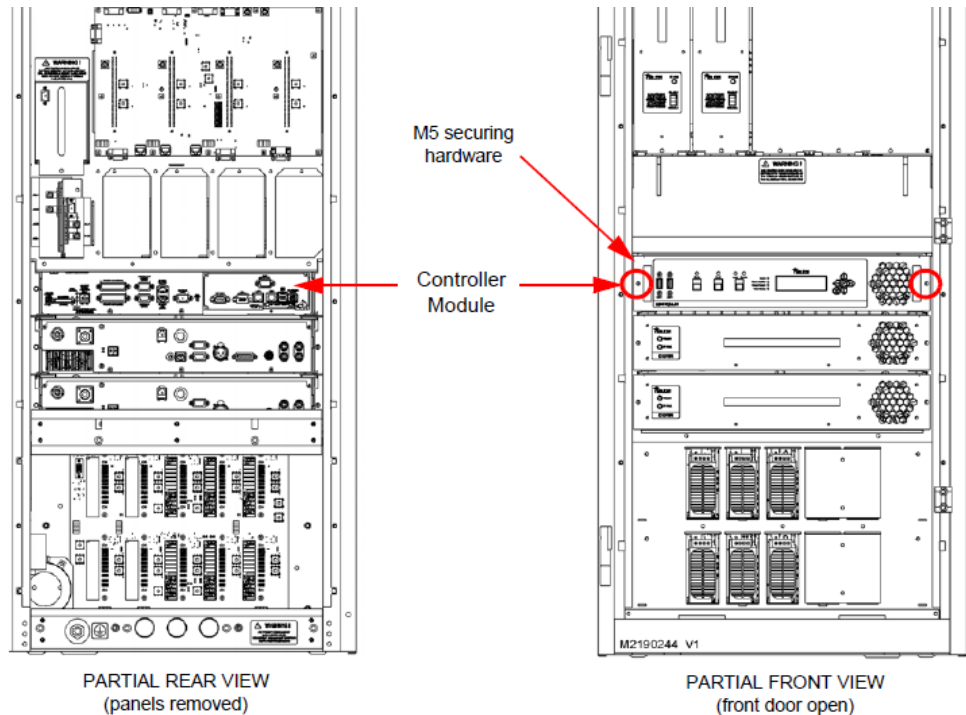


Figure 1: Front and rear view of the transmitter (GV5 shown as reference)

- (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 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 (2) M5 Phillips head screws that secure the Controller Module to the transmitter (see Figure 1). Remove the module from the transmitter.
- (d) Place the NAC124* Controller Module on a suitable workbench.

NOTE

There are static sensitive components inside the NAC124. Use precautions when handling static sensitive devices. Nautel recommends using a properly grounded anti-static mat and wrist strap.*

- (e) Remove and retain the thirteen (13) M3 Phillips head screws, securing the top cover on the module.
- (f) Disconnect P1 (large black connector) from the SSD assembly (see Figure 2). **Do not** remove SATA1 or SATA_PWR1 connectors.



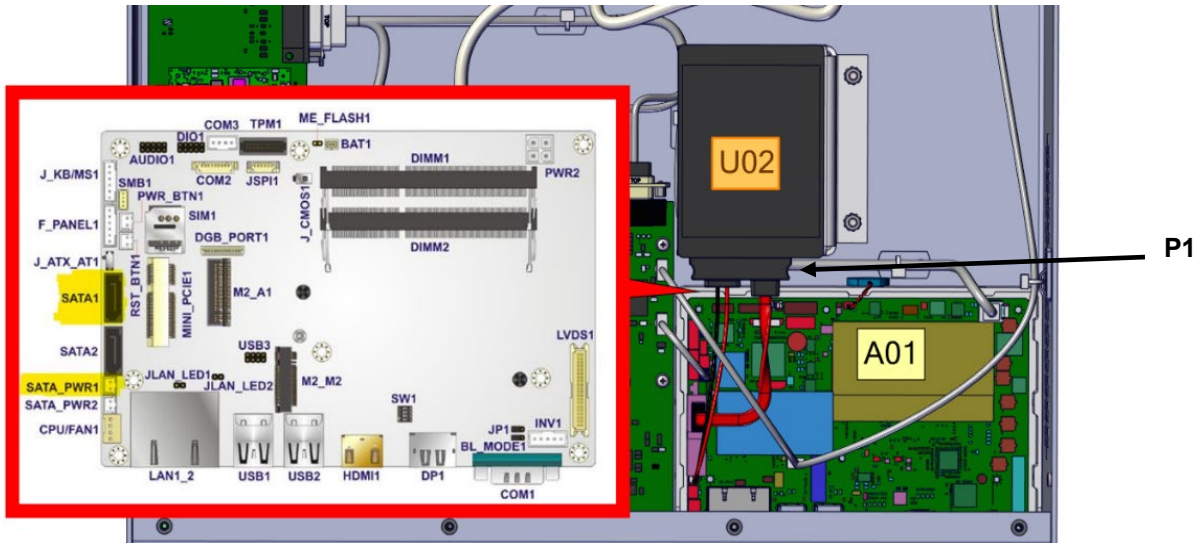


Figure 2: SSD Assembly Removal

- (g) Remove and retain the two (2) M4 lock nuts (Nautel part # HMN79) that secure the SSD Mounting Bracket to the chassis (see Figure 3). Remove the SSD Mounting Bracket and dismount the SSD from the SSD Mounting Bracket using a Phillips screwdriver. Retain Phillips hardware.

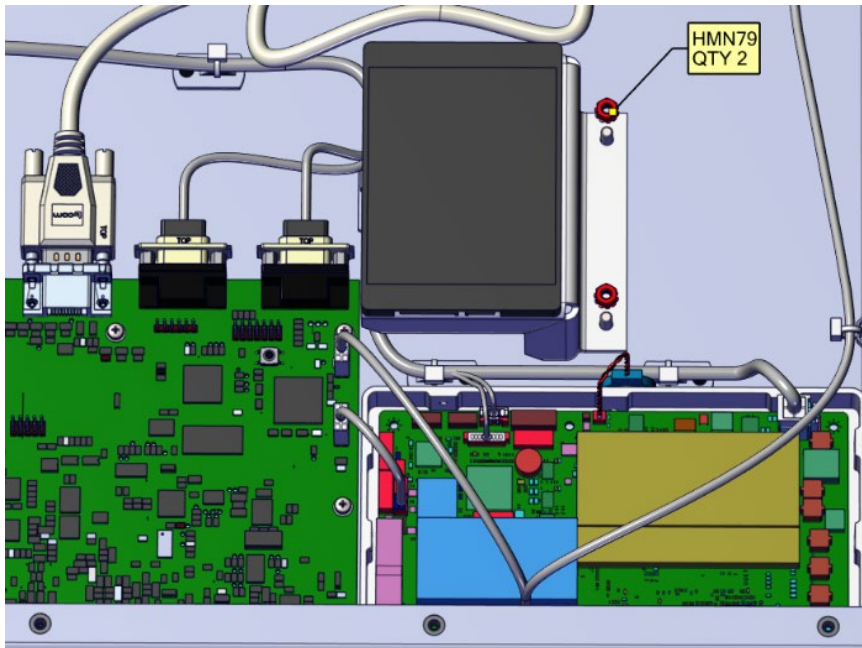


Figure3: SSD Mounting Bracket Removal

- (h) Retain the SSD Mounting Bracket.
- (i) Place the removed SSD into an anti-static bag for storage.

4 INSTALLING THE SSD

NOTE

Note the brand of SSD that is being removed and installed. If the SSD being installed is a different brand than what was originally installed, the BIOS boot options may need to be updated for the AUI to load. Plug in the USB keyboard and refer to IS18005 for further instructions.*

NOTE

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

- (a) Reversing step 3 (h) through 3 (e), using the retained hardware, install the SSD from the Field Mod kit and re-install the Controller's 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 and UPS power source (if installed), leaving RF OFF.
- (d) If IS18005* is required, perform now before proceeding.

NOTE

GV SW 6.0.1 will update firmware on initial reboot, then reboot the AUI for those firmware updates to take effect.

WARNING

DO NOT Ac cycle the transmitter until AUI login screen appears. The single board computer will reboot multiple times during this upgrade process.

- (e) The touchscreen monitor will turn on and a screen will appear prompting you to perform a Touchscreen Calibration. Perform the touchscreen calibration.
- (f) The transmitter is now entering initial firmware update.
- (g) Various power module lights will change from green to orange or not be illuminated. Various power supply LEDs will show "!" blinking.
- (h) After 5 minutes, [may take longer if more than two racks (one rack equals 4 power modules)] power module and power supply LEDs will return to normal.
- (i) The NAC124 Controller UI will display "**Updating DSP image Receiving flash, page x of 1024**".
- (j) Once complete, the NAC124 Controller UI will display "**Please wait while the transmitter reboots**".
- (k) After up to five (5) minutes, the AUI will reboot again.
- (l) After up to an additional five (5) minutes, the AUI page will appear on the touchscreen and prompt you to perform another touchscreen calibration.




- (m) Once the touchscreen calibration has been completed, login using the default username/password combination of **Admin/change_me**.
- (n) RF On can be pressed once you have logged in to the local AUI.
- (o) Once into the new AUI you can enable local auto AUI login through the following steps:
 - Press the top right menu button  and select Settings.
 - On the left-hand side Settings list, click Users.
 - Click the pen and paper icon for the Admin user
 - Click the Auto-Login toggle
 - Click save
 - The Admin user now will automatically log into the AUI after a reboot
- (p) Reconfigure the network settings in the **Network Setup** page (in **Settings ► Network**). Refer to Table 2 for menu structure changes.
- (q) Reconfigure settings recorded as part of step 2 using the appropriate settings in **Menu ► Settings**. Refer to Table 2 for menu structure changes.

Table 2: 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

- (r) Install rear filter panel.

5 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 [ftp://www3.nautel.com/Utilities/putty/putty.exe](http://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 **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 safe keeping. If you would like Nautel to track your password for support purposes, please email support@nautel.com with your new information.
- (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 safe keeping. 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 with your new information.

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

