

# **IMPORTANT**

## **NOTE**

THE ENCLOSED INFORMATION SHEET WILL NOT APPLY TO NAUTEL NX SERIES TRANSMITTERS THAT ARE INCLUDED AS PART OF A COMBINED SYSTEM CONFIGURATION.

PLEASE CONTACT NAUTEL FOR FURTHER ASSISTANCE SHOULD YOUR NX SERIES TRANSMITTER BE PART OF A COMBINED SYSTEM CONFIGURATION.





# **NX15 to NX400 - Software Upgrade to NX SW 5.1.1 or later (CF Card)**

**IS19003A**

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# IS19003A - NX15 to NX400 - Software Upgrade to NX SW 5.1.1 or later (CF Card)

## INFORMATION SHEET

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### 1 INTRODUCTION

The NX series AM transmitter is a microprocessor-controlled unit. Periodically, enhancements or improvements to the operating system are identified and made available. This document describes how to update transmitter software from NX SW 4.4 (or higher) to NX SW 5.1.1 or later.

#### NOTE

*Minor software updates that are released within the same overall number (i.e, SW 5.x.y to SW 5.y.z) can be performed using the Upgrading Software procedure found in section 4 of the Operations and Maintenance manual.*

#### 1.1 Equipment Affected

This procedure applies to NX15 to NX400 transmitters running NX SW 4.4 or later.

If the transmitter is running a version of software older than NX SW 4.4, refer to IS13005\*.

This procedure only applies to NX15 to NX400 transmitters with CF cards installed. If the transmitter has an SSD installed, refer to IS22009\* for instruction to re-image the SSD with NX SW 5.1.1 or later.

#### 1.2 Responsibility for Implementation of Procedure

This procedure should be carried out by qualified station maintenance personnel who are familiar with the NX series AM transmitter.

#### 1.3 Scheduling

This procedure should be performed only when the initial software upgrade from 4.4 (or higher) to 5.1.1 or later is desired at the convenience of station maintenance personnel. Review the applicable software release notes to determine the urgency of the update. The transmitter will need to be “off air” during this procedure.

#### 1.4 Manpower Requirements

It is estimated that implementing this modification will require 30 minutes to complete.

#### 1.5 Special Tools/Test Equipment

Along with standard hand tools (screwdriver, nut driver, etc.), the following items may be required. Review the procedure to determine which items apply. To obtain the IS documents mentioned in this section, visit [http://www3.nautel.com/pub/NX\\_Series/](http://www3.nautel.com/pub/NX_Series/) and choose the NX SW 5.1.1 or later software folder available.

- Compact flash card containing 5.1.1 or later software image file. This can be purchased from Nautel or you can also re-image your existing card as detailed in IS13004\*.
- USB mouse
- USB keyboard along with IS18005\* (may be required for section 3 of this procedure)



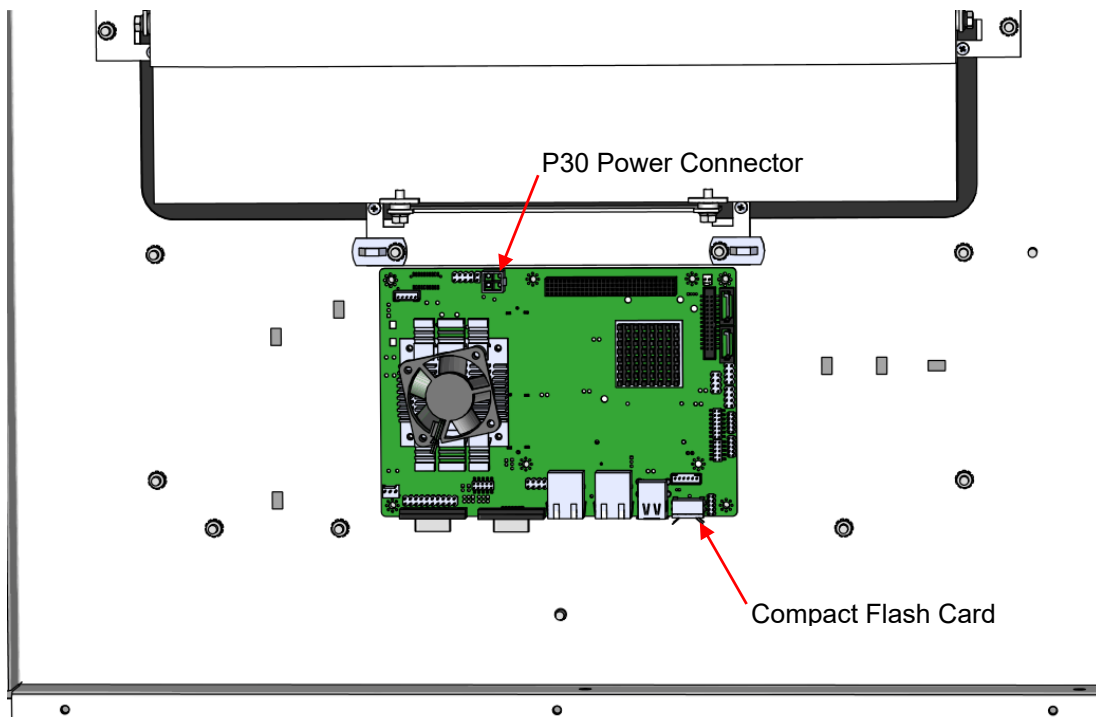
## 2 RECORDING SETTINGS BEFORE REMOVING FLASH CARD

There are various settings and logged data that will not be saved in your transmitter when you replace your flash card. Nautel recommends that you record these settings and logged data, as desired, before removing your flash card so that you may re-enter them after installing a new flash card. Logs cannot be restored to the transmitter. The following AUI pages apply (refer to the NX Operations and Maintenance Manual, if necessary, to navigate to these pages):

- Logs
- User Accounts
- Network Setup
- Email Configuration
- Audio Input Level
- Notifications
- SNMP Configuration
- Scheduler

## 3 REPLACING THE FLASH CARD

- Turn the transmitter to its RF Off state and open the front door to gain access to the SBC.
- Remove the SBC cover located on the back of the transmitter's front door just below the touch screen using a 7-mm nut-driver. Retain the M4 hardware.
- Unplug the single board computer (SBC) 4-pin power connector (P30). See Figure 1.



**Figure 1: SBC Power Connector and Compact Flash Card Locations**

- Remove the current compact flash card – bottom edge of SBC. Note orientation of card.

- (e) Install new card (noting orientation) and plug in SBC power connector P30.
- (f) The touchscreen monitor will turn on and a screen will appear prompting you to perform a software upgrade.

**NOTE**

*If the compact flash card 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 the USB keyboard into the USB port on the SBC and refer to IS18005 for further instructions.*

- (g) Using the touchscreen, flash the transmitter by selecting “Start Upgrade”. If unable to use the touchscreen, plug the USB mouse into the USB port on the SBC to navigate.
- (h) If the upgrade progress stalls for more than five minutes, cycle the main ac breaker and repeat the previous step.

**CAUTION**

*Note the red warning text at the top of the AUI screen – do not leave this page until after the flash process is complete.*

- (i) Once the upgrade has completed, the AUI will automatically reboot.
- (j) Re-install the SBC cover removed in step 3 (b).

#### **4 VERIFY COMPONENT SOFTWARE**

- (a) At the AUI login screen, enter “Nautel” as the User and leave the Password blank. These are the current default settings.
- (b) Navigate to Menu > System Settings > Upgrade Software and select the .tgz file in the “Select Upgrade File” window so that it is highlighted. Click Details.
- (c) The Software Versions window will open to compare the installed version of each component against the version that is contained in the .tgz file. It may take a few minutes for the Selected Upgrade information to load.
- (d) Confirm the Installed Version matches the Selected Upgrade for every component. If there are discrepancies, the row will highlight in red indicating the software upgrade was not completely successful. Close the window and choose Start Upgrade to run the upgrade again. Repeat step 4 (a) through 4 (d) until there are no discrepancies.

#### **5 RETURNING TRANSMITTER TO SERVICE**

- (a) Perform a Touchscreen Calibration if necessary, by navigating to Menu > System Settings > Screen Configuration using the USB mouse and select Touchscreen Calibration. This will initiate the calibration screen where you will be prompted to sequentially touch three targets from a position of normal use. Touch each target. After the third target, the calibration is complete, and the screen display returns to the Screen Configuration page.
- (b) Restore all User Settings that were recorded in Step 2 and return transmitter to operation. The upgrade procedure is complete.



## 6 CHANGING THE OS PASSWORD

If a replacement compact flash card was purchased from Nautel, the OS password information will be sent with the card. You may change the password using the instructions below, but it is not necessary as it will be unique to your transmitter. Keep the OS document in a safe place for future reference.

If the compact flash card used for this procedure was programmed using the CF Image files obtained from [http://www3.nautel.com/pub/NX\\_Series/](http://www3.nautel.com/pub/NX_Series/), 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 and PuTTY. 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.
- (e) Record your new password on the Proof of Performance document provided with the transmitter.
- (f) Close the console window.

### **NOTE**

*Make sure to clear the cache of every web browser used to remotely connect to the transmitter's AUI to ensure that the remote AUI displays correctly after the software upgrade.*