

## NX Series Software 5.1.0

### General Remarks:

NX Series Software Version 5.1.0 is a Software update suitable for NX3 through NX100 Nautel NX-Series transmitters.

**NOTE: This software is not compatible for use with NX200 through NX400 transmitters. For NX200-NX400 please continue to use NX SW 4.9.1.**

This release is considered **NECESSARY** for those who require any of the improvements/bug fixes listed below. Nautel recommends you upgrade at your earliest convenience, **during your next scheduled site visit.**

In the event you require support from Nautel Customer Service, they may require you to upgrade to the latest software release to resolve your issues if deemed necessary.

You can download NX Series Software Version 5.1.0 [here](#).

Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

**NOTE: If you purchased an NX3 through NX100 transmitter starting from May 2019 to July 2021 please follow IS21007 “NX Series - Upgrading Controller Firmware (for NX SW 5.0 users)” before beginning the upgrade procedure.**

Software upgrade procedures can be found in “Upgrading Software” in the transmitter’s Operation & Maintenance Manual. Based on your transmitter configuration, select the appropriate IS below:

- If going from pre-5.Y.Z to 5.Y.Z, for NX15 through NX100, follow IS13004\* “*NV and NX Series – Burning Compact Flash Card*”.
- If going from 5.0.0 to 5.1.0 follow IS16009A for NX3/5/10 or IS19003 for NX15 through NX100 in-order to upgrade your transmitter software.

**WARNING: This release is only for NX transmitters NX15 through NX100 with the UB97 (NANO-PV-D5251-R10) or UB66 (NANO-8522G-R13) SBC (identified by the PS/2 port and CF card port). DO NOT install a TGZ that has a “+UB118” reference as this will cause the AUI to not connect and will cause system reboots. Resolving this issue will require a re-imaging of the transmitter’s CF card/SSD.**

### New Features:

- Added AMC Long Attack as a Dynamic Carrier Control mode.
- Added nxControllerSetPower OID to the NX MIB.

### Improvements / Enhancements:

- The Spectrum Mask for the IBOC MA3 mode was set to NRSC-2-C.

### Bug Fixes:

- Fixed an issue with the NX Controller Set Point Power.
- Fixed an issue where the MER values for IBOC MA1/MA3 were negative.

### Known Issues:

- When running a software update, an internal software reset could occur and cause the upgrade process to halt. The AUI will reboot and transmitter functionality will be unaffected. See Workaround (1).

- If you have an active preset with the first created stream as the Audio Source and another preset with the first created playlist as the Audio Source and switch to the second preset, the stream will continue to modulate due to both the playlist and stream having the same order value. See Workaround (2).
- If a popup appears after a button is pressed in Changeover and that button is pressed again, the popup buttons will not work, and the popup will stay on the screen. This affects both the local and remote AUI. See Workaround (3).
- When changing the User via the local AUI and pressing the “Ok” button, the Active Exciter in the top-right of the screen gets set to “N/A”. See Workaround (4).
- Opening the Change User window, then opening the Main Menu and selecting Menu option will show the Change User window only during the page transition.
  - Pressing the Change User button again will not reveal/show the Change User Window. See Workaround (4).
- If the Standby Exciter is changed from No to Yes (or Yes to No), the relevant Exciter alarms (e.g. External Mute) are not shown. See Workaround (4).
- If several settings for a preset are changed and the preset is saved, some settings may not be saved successfully and will require another attempt to change and save the preset.
- Changing from an AM Overall Mode to a non-AM Overall Mode in the active preset, the L+R Modulation meter will freeze on the last reported value instead of setting the values to “0”. Changing from a non-AM Overall Mode to an AM Overall Mode will start correctly reporting the L+R Modulation. This does not affect the transmitter’s functions.

## Workarounds:

1. Wait approximately 30 seconds and re-run the upgrade.
2. Create another stream that has a different order value than the desired playlist and then switch to that stream from the current stream and then switch back to the desired playlist. The same goes for switching from a playlist to a stream.
3. Pressing the Nautel logo in the top-left of the AUI will reload the AUI to the login screen and the popups will go away.
4. Reloading the local AUI by pressing the Nautel logo in the top-left of the screen or performing a Host/AUI reboot will resolve the issue.

## Installation Considerations:

This software update will take approximately 30 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process.

## NX Series Software 5.0

### General Remarks:

NX Series Software Version 5.0 is a Software update suitable for NX3 through NX100 Nautel NX-Series transmitters. It is not fully compatible with NX200 through NX400 transmitters, as the software upgrade process may fail if attempted.

This release is considered **CRITICAL** for those who are experiencing issues with network/system stability, are using a streaming service for audio content (such as Shoutcast) or require any of the bug fixes/improvements identified below. Nautel recommends you upgrade at your earliest convenience, **during your next scheduled site visit**.

For those who do not require any of the bug fixes/improvements identified below or are satisfied with current transmitter behaviour, this release is considered **NON-CRITICAL** and Nautel typically does not recommend you upgrade under these circumstances. If you choose to upgrade, Nautel recommends you perform the upgrade **during a regularly scheduled site inspection**. In the event you require support from Nautel Customer Service, they may require you to perform an upgrade to the latest software release in order to resolve your issue if deemed necessary.

You can download NX Series Software Version 5.0 [here](#).

Software Upgrade procedures can be found in IS13004\*, *NV and NX Series – Burning Compact Flash Card*, IS16009A, *NX3/NX5/NX10 – Updating to 5.x Software and OS Recovery* and IS19003, *NX15 – NX100 – Updating to 5.x Software*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

### New Features:

- Added ability to configure Analog Output Sample Voltage Scaling.
  - Analog Outputs now show up under the Remote I/O page.
  - The following fixed meters are now configurable Analog Outputs with a Sample Full Scale Range of 1-10V:
    - Forward Power
    - Reflected Power
    - B+ Voltage
    - Total B+ DC Current

### Improvements / Enhancements:

- Improved system stability and network stability/connectivity.
- Improved stability for streaming audio and audio files.
- Increased the Watchdog timeout from 30 seconds to 1 minute to account for the stability health check system.
- Increased the precision of Reflected Power meters in the AUI from 3 to 4 digits (e.g. when the Reflected Power is 200W, the meter now shows 0.200 kW instead of 0.20 kW).
- Disabled Phone Home logging for NX3, NX5 and NX10s due to the transmitter remote AUI crashing because of large log file sizes.

### Bug Fixes:

- Fixed a bug that disallowed the Audio Player to play audio streams or MP3s on High Power NXs (NX15 – NX400).
- Fixed a bug that disallowed the User from adding a new Scheduler event using the Local AUI on High Power NXs (NX15 – NX400).



# Nautel NX Series Software Release Notes

## Known Issues:

- Software upgrade process for multi-rack NX transmitters (NX200 through NX400) is not reliable, typically failing while attempting to upgrade the individual racks. Repeat attempts to upgrade may be required if software upgrade process is initiated, with no guarantee of successful completion.
- If you have an active preset with the first created stream as the Audio Source and another preset with the first created playlist as the Audio Source and switch to the second preset, the stream will continue to modulate due to both the playlist and stream having the same order value. See (1).

## Workarounds:

1. Create another stream that has a different order value than the desired playlist and then switch to that stream from the current stream and then switch back to the desired playlist. The same goes for switching from a playlist to a stream.

## Installation Considerations:

This software update will take approximately 30 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process. If you experience LAN-related alarms soon after an OS recovery/CF card reimage, another OS recovery/CF card reimage may be needed.



## NX Series Software 4.9.2

### General Remarks:

NX Series Software Version 4.9.2 is a Software update suitable for all Nautel NX-Series transmitters. This release is considered **NON-CRITICAL** as it involves minor bug fixes or features and Nautel does not recommend you upgrade unless elements of the release address your specific needs. If you choose to upgrade, Nautel recommends you perform the upgrade **during a regularly scheduled site inspection**. In the event you require support from Nautel Customer Service, they may require you perform an upgrade to the latest software release to resolve your issue if deemed necessary.

You can download NX Series Software Version 4.9.2 [here](#).

Software Upgrade procedures can be found in IS13005\*, *NX Series AM Transmitters Software Upgrade*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

### Improvements / Enhancements:

- Added the ability for NX Transmitter sub-devices to be interrogated by external Nautel combiners.

### Bug Fixes:

- Fixed a bug that did not allow the NX3 and NX15 to properly support Phone Home.

### Known Issues:

- The Audio Player is not able to play audio streams or MP3s on High Power NXs (NX15 – NX400). Other audio sources are not affected by this.
  - The Audio Player on Low Power NXs (NX3 – NX10) is not affected.
- Cannot add new Scheduler event using the Local AUI on High Power NXs (NX15 – NX400). Remote AUI can still add a new Scheduler event.

### Workarounds:

None at this time.

### Installation Considerations:

This software update will take approximately 30 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process.

## NX Series Software 4.9.1

### General Remarks:

NX Series Software Version 4.9.1 is a Software update suitable for all Nautel NX-Series transmitters. We recommend upgrading your transmitter(s) to this latest release DURING NEXT REGULARLY SCHEDULED SITE INSPECTION.

You can download NX Series Software Version 4.9.1 [here](#).

Software Upgrade procedures can be found in IS13005, *NX Series AM Transmitters Software Upgrade*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

### New Features:

- Improved SNMP compliance. New NX and Nautel Base MIBs are available. To ensure SNMP functionality following upgrade to 4.9.1 the new MIBs must be installed.

### Removed / Retired Features:

- As part of SNMP v2c compliance, write-only OIDs may no longer be used. Nautel' write-only channels which are exposed via SNMP OID's remain functionally write-only but are listed as read-write and will return a 0 when queried.

### Bug Fixes:

- Improved operating system logging to reduce memory consumption.
- Nautel's MIBs have been modified to meet stricter criteria of SNMP v2c compliance.
- The syntax of traps listed in the MIBs has been changed to conform to the notification syntax expected by SNMP v2c.
  - Traps OIDs now explicitly contain a '0' node prior to the trap node number, a requirement for SNMP v2c.
  - Any customer who had previously worked around the omission of the node should no longer do so to maintain function.
- Nautel has overhauled the OID groups to be both SNMP v2c compliant and to better reflect the current state of the OIDs and their logical groupings.

### Known Issues:

- The Audio Player is not able to play audio streams or MP3s on High Power NXs (NX15 – NX400). Other audio sources are not affected by this.
  - The Audio Player on Low Power NXs (NX3 – NX10) is not affected.
- Cannot add new Scheduler event using the Local AUI on High Power NXs (NX15 – NX400). Remote AUI can still add a new Scheduler event.

### Workarounds:

None at this time.

### Installation Considerations:

This software update will take approximately 20 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process.



## NX Series Software 4.9

### General Remarks:

NX Series Software Version 4.9 is a Software update suitable for all Nautel NX-Series transmitters. We recommend upgrading your transmitter(s) to this latest release DURING NEXT REGULARLY SCHEDULED SITE INSPECTION.

You can download NX Series Software Version 4.9 [here](#).

Software Upgrade procedures can be found in IS13005, *NX Series AM Transmitters Software Upgrade*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

### Improvements / Enhancements:

- In combined systems, the recovery process after a prolonged open interlock has been sped up by keeping power supplies turned on.
- Improved the accuracy of the pretty meters.

### Bug Fixes:

- Restored proper function to the brick wall low pass filter on AES 2.
- SNMP Set requests while in local-only mode no longer cause the SNMP subsystem to hang.
- Restored some missing utility files. This resolves some previously unrecovered network connection drops.
- Eliminated excessive Audio Player logging.
- Older system logs are now being purged during upgrades, as they provide little value and potentially occupy a lot of space.
- Fixed a number of typos in the AUI.

### Installation Considerations:

This software update will take approximately 20 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process.

## NX Series Software 4.8

### General Remarks:

NX Series Software Version 4.8 is a **MINOR** Software update suitable for all Nautel NX-Series transmitters. We recommend upgrading your transmitter(s) to this latest release DURING NEXT REGULARLY SCHEDULED SITE INSPECTION.

You can download NX Series Software Version 4.8 [here](#).

Software Upgrade procedures can be found in IS13005, *NX Series AM Transmitters Software Upgrade*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

For any customers using the SNMP OIDs nxControllerStandbyExciterInstalled or nxControllerAutoExciterChangeoverEnabled, please be advised that their values have been corrected so that 1 means true and 0 means false.

### Improvements / Enhancements:

- Restored SNMP access to NX power module alarms.
- All NX summary alarms that are available via remote I/O are now available as SNMP traps.

### Bug Fixes:

- The SNMP system log is now cleared during the upgrade procedure.
- Corrected values of SNMP OIDs nxControllerStandbyExciterInstalled or nxControllerAutoExciterChangeoverEnabled so that 1 means true and 0 means false.
- SNMP traffic will no longer write excessive logs. This prevents filling up hard drive space, which can result in bizarre system behaviour.

### Installation Considerations:

This Software update will take approximately 20 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process.





## NX Series Software 4.7

### General Remarks:

NX Series Software Version 4.7 is a **SIGNIFICANT** Software update suitable for all Nautel NX-Series transmitters. We recommend upgrading your transmitter(s) to this latest release DURING NEXT REGULARLY SCHEDULED SITE INSPECTION.

You can download NX Series Software Version 4.7 [here](#).

Software Upgrade procedures can be found in IS13005, *NX Series AM Transmitters Software Upgrade*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

### New Features:

This release introduces support for the new NX3 and NX15 members of the NX family.

The cutback routine has been changed significantly to minimize the amount of time an NX transmitter will spend at very low power levels after a significant number of shutback events. With this update, the transmitter's output power will not be reduced further than approximately 25% of rated power, and the recovery time has been reduced to a maximum of 3 minutes.

When replacing a control/interface PWB on a NX200 or NX300, a new procedure is required to register the rack interface PWBs with the control/interface PWBs. See the new NX200 or NX300 troubleshooting manual for the updated procedure.

### Improvements / Enhancements:

- Resolved an issue that caused intermittent Exciter Not Responding alarms that would cause an undesired exciter changeover if automatic changeovers were enabled.

### Bug Fixes:

- Resolved an issue where USB devices would not mount reliably.
- Minor cleanup of MIB data.
- Resolved an issue causing intermittent Engine Not Responding alarms in transmitters configured for IBOC operation.

### Installation Considerations:

This Software update will take approximately 20 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process.

## NX Series Software 4.6

### General Remarks:

NX Series Software Version 4.6 is a **SIGNIFICANT** Software update suitable for all Nautel NX-Series transmitters. We recommend upgrading your transmitter(s) to this latest release DURING NEXT REGULARLY SCHEDULED SITE INSPECTION.

You can download NX Series Software Version 4.6 [here](#).

Software Upgrade procedures can be found in the *Non-Standard Maintenance* section of your *Operations and Maintenance Manual*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

General areas of improvement include: significant SNMP improvements and a newly revamped B+ control algorithm. Further details are below.

### New Features:

This release introduces a new SNMP agent, one which adheres correctly to the SNMP standard. Issues surrounding invalid GETs, the inability to walk the OID tree, and including multiple commands in a single packet have been resolved. Some SNMP reliability and connection issues have also been resolved.

As well B+ power supply's control algorithm has been overhauled. This is a significant change that provides numerous improvements including minimizing the occurrence of B+ related events, providing B+ power supply stability under all operating conditions, and decreasing the power ramp up time of the transmitter.

### Improvements / Enhancements:

- Eliminated a number of nuisance alarms, primarily B+ related.
- Users can now make scheduler rules that start or end in January.

### Removed / Retired Features:

- The ability to individually enable or disable SNMP traps has been removed. It is still possible to enable or disable traps as a whole.
- "Transmitter RF Off" has been removed from the Notifications alarm list. It is not technically feasible with the current software topography.

### Bug Fixes:

- Resolved an issue where the transmitter's output power could be reduced to near-zero if a High B+ Shutback occurred during an SWR Shutback event. When this occurred, the transmitter would take a significant amount of time to recover to the power setpoint.
- Upper and lower sideband adjustments now operate independently, rather than the upper sideband control affecting both.
- The B+ Limit will now reset to 430V on every power cycle.
- Low B+ shutdown no longer occurs on exciter changeovers.
- Improved reliability of High B+ Shutback alarm logging.
- Cleaned up some Phone Home connect/disconnect issues.
- Several NX meters that were not being logged correctly are now being logged correctly.
- The Host Not Responding alarm now displays correctly in the AUI logs on arm-based systems.
- Fixed an issue with incorrect scrolling in the Alert box.
- Only the top-most error message on any given AUI page will now be shown at the bottom of the page.



# Nautel NX Series Software Release Notes

- Resolved a number of issues around creating/editing Configurations and local vs remote-enabled modes on NX.
- Corrected Heatsink Temperature meter upper limit.
- Minor UI consistency changes.
- Fixed a typo in Critical Parameters "Settings" output.

## Installation Considerations:

This Software update will take approximately 20 minutes and may require multiple reboots. You will be OFF AIR during the upgrade process.