VX Series Software 6.4.0

General Remarks:

VX Series Software Version 6.4.0 is a Software update suitable for all Nautel VX Series transmitters.

For those who do not require any of the bug fixes/improvements identified below, are satisfied with current transmitter behaviour or require any of the unimplemented features, do not update to this release.

You can download VX Series Software Version 6.4.0 here.

Software Upgrade procedures can be found in IS23006, *VX Series – Software Upgrade Procedure*. Please be sure to review and understand the complete set of instructions prior to beginning your upgrade.

Installation Considerations:

This software update will take approximately 30 minutes, but you will only be OFF-AIR during the rebooting process for approximately 2 minutes. This Release is not recommended for use with SC4 based M/S or N+1 systems. Please revert to the latest compatible version from the applicable SC4 Release notes found in SC4 Releases.

Nautel does not recommend downgrading to previously released software.

Added:

- Added VSWR Shutdown Override functionality.
  - New SWR Shutdown Override Active alarm.
  - New options in the Thresholds menu:
    - VSWR Shutdown Override
    - VSWR Override Timeout Reset
  - The new options are also available in the Digital Inputs as Control/Source options.
  - When the VSWR Shutdown Override is enabled, all transmitter SWR protections will be bypassed and the transmitter will produce 1 % of its nameplate power for only 24 hours, at which point the transmitter will resume normal operation. During the override, the SWR Shutdown Override Active alarm will be triggered.
  - Selecting the VSWR Override Timeout Reset will reset the override's timeout back to 24 hours.
  - Performing an Alarm Reset will cancel the override and the transmitter will resume normal operation.
- Added High SWR Threshold option to the Thresholds menu to change the High SWR alarm's threshold.
  - The High SWR Threshold's range is 1.0:1 to 3.0:1 with the default being 1.4:1.
  - The High SWR alarm will now clear when the transmitter's SWR meter reports 0.05 less than the set High SWR Threshold for at least 5 seconds.
- Added PA Fail Foldback alarm functionality for VX1.5 and VX2 transmitters.
  - If one PA Failure alarm is triggered while RF is on, the transmitter's RF will foldback and the PA Fail Foldback alarm will be triggered.
- Added PA/PS Fail Shutdown alarm functionality for VX150 to VX2 transmitters.
  - If the transmitter's power supply is removed while RF is on, the transmitter's RF will be inhibited and the PA/PS Fail Shutdown alarm will be triggered.

Changed:

- Changed the PA High Power Dissipation alarm trigger threshold from 350 W for 30 seconds to 375 W for 45 seconds.

- New presets created through the First Time Startup or through the FPUI's Presets menu will now have the Audio Low Alarm options defaulted to Enabled.
- The transmitter will now reboot when a new license is applied using the FPUI.
- Each of the Spectrum Analyzer's measurement options will now have their own Resolution Bandwidth and Span values.
    - If Internal FM is set as the Measurement Option with specific Resolution Bandwidth and Span values and then MPX is set as the Measurement Option, the Resolution Bandwidth and Span values will change to the values set for MPX. Changing back to Internal FM will show Internal FM's values for Resolution Bandwidth and Span.
- Improved reliability for Remote Inputs to detect contact closures of 500 ms or greater.
- Improved transmitter operation with pre-emphasis and AGC Limiter to reduce distortion.
- VS-TC-HP-related meters in the FPUI now show N/A instead of their last-known value when the VS-TC-HP is disconnected.
- The FPUI will now specify the reason when a preset cannot be deleted such as the following:
    - When the preset is the Active Preset.
    - When the preset is in a Scheduler rule.
    - When the preset is a backup preset.
    - When the preset is a Channel/Source in Remote I/O.

Fixed:

- Having an Orban Audio Processor installed and enabled no longer causes the transmitter to reboot randomly.
- If an Orban Audio Processor is installed and enabled in a preset, the Orban now uses the preset-configured pre-emphasis. In this condition, the correct pre-emphasis is applied throughout the transmitter.
- The transmitter will now correctly foldback temporarily when there is a PA/PS inhibit status change. (VX3 to VX6)
- The IPA PS Fail alarm no longer triggers after the IPA Fail alarm is already triggered. (VX3 to VX6)
- The IPA PS Fail and Analog Audio PWB Voltage Fail alarms no longer trigger during a software update where the interface boards are updated.
- Non-preset Sources options have been restored for a Remote Input and Remote Output in the FPUI.
- The SWR Foldback alarm now clears when RF is turned off.
- If the Pilot Unsync alarm is triggered and the Pilot 1PPS Sync option is disabled for the Active Preset, the Pilot Unsync alarm will now clear.
- Setting the Mod Loss Timeout to greater than 24 minutes and 2.8 seconds no longer immediately triggers the Mod Loss Action.
- If the SWR Shutdown Threshold and SWR Foldback Threshold values are changed and then an Exciter/Controller reboot or ac cycle is performed, the threshold settings will still be set to their new values.
- If the Ramp-Up Speed value is changed and then an Exciter/Controller reboot or ac cycle is performed, the setting will still be set to the new value.
- If VS-TC-HP-related alarms are shown in the AUI (Advanced User Interface)/FPUI (Front Panel User Interface) and the VS-TC-HP is disconnected from the VX, the alarms are now cleared instead of continuing to be shown.
- If SIB/ECSIB/PSIB-related alarms are shown in the AUI/FPUI and the device is disconnected, the device's alarms are now cleared instead of continuing to be shown.
- The High Reject Shutback alarm no longer triggers when the exciter/controller section cannot communicate with the amplifier section. (VX3 to VX6)

- If a software update, Exciter/Controller reboot or ac cycle was performed, the AUI/FPUI will no longer show incorrect network information.
- Changing the preset's Main Audio Source would not update the Hard Limiter correctly.
- If the preset is using MPX and the Hard Limiter is enabled, the Pilot and RDS Injection Levels would incorrectly be added on top of the Hard Limiter value.

Known Issues:

User Experience

- Software Upgrades using USB may not be functional for all VX transmitters.
- RF can be turned off remotely via SNMP when transmitter is set to Local-only.
- The Pilot 1PPS Sync may momentarily go out of sync and the Pilot Unsync alarm will trigger during long-term synchronous operations approximately 1-2 times per day.
    - The transmitter will adjust itself back to the desired pilot phase within seconds and clear the alarm.
- If RDS is enabled with Data Source set to Internal RDS and Alternate Frequencies set to something other than 0, the Alternate Frequencies are not correctly outputted.
    - ASCII over IP and UECP over IP are not affected.
- If RDS is enabled with Data Source set to either ASCII over IP or UECP over IP and there's a telnet connection to the transmitter, changing the Data Source to another option (even the other "over IP" option) and saving causes the Preset menu to freeze in a loading state with an error.
    - Closing the telnet connection will allow the Preset menu to start working again.
- If the transmitter is outputting audio and the AGC Limiter is enabled with AGC Time Constant set to 10 ms or less, the modulation meter will go to >600 % and the audio will stop being outputted.
    - An Exciter/Controller reboot will fix the issue.
- Performing a software update via the AUI may not show the Reboot button when the update is completed.
    - Refreshing the page will fix the issue.
- Transmitter does not inhibit RF correctly during reboot from a software update using the AUI. While the transmitter does inhibit the RF during the reboot, it does not properly inhibit the RF before the reboot.
    - Turn off RF before performing a post-software update reboot using the AUI to mitigate any undesirable behaviour.
- While uploading a software installation file, the "Connection Lost" message will appear in the top banner and the meters, date and time will stop updating.
    - When the software installation file finishes uploading, the "Connection Lost" message will disappear and the meters, date and time will resume updating as normal.
- The Display Failure alarm may not trigger if the FPUI display suffers a partial or full failure.
- During a reboot, entering the FPUI's Network menu before the AUI is available resets the network settings to DHCP enabled.
    - Wait approximately 2 minutes before accessing the FPUI's Network menu after a reboot.
- Turning RF off and then rebooting/ac cycling the transmitter within 20-30 seconds will cause the RF to turn back on after startup.
    - Wait approximately 2 minutes before rebooting/ac cycling the transmitter after turning RF off.
- VS-TC-HP-related alarms are currently not logged in the AUI or FPUI.
- RDS ASCII Over Serial is currently not functional.
- RDS UECP Over Serial is currently not functional.
- The increment values for the Low Forward Power and Very Low Forward Power fields in the AUI are 0.5 % when they should be 0.1 % to match the FPUI.

- The 10 MHz Delta Meter in Exciter VCXO requires a page refresh to update the meter value.
- The VCXO 10 MHz Calibration Start button does not automatically change its state based on the external 10 MHz connection.
    - Refreshing the page will fix the issue.
- If the User logs into a transmitter within a minute of startup, the AUI's time will not appear in the banner or the Time menu.
    - Refreshing the page after a minute will show the time.
- Clearing the Transmitter Name/Call Sign, saving and rebooting the transmitter causes the Transmitter Name/Call Sign to go back to the previous value.
- Depending on the AUI's browser size, the Source for Software Upgrade files may not be shown.
    - Change the AUI's browser size until the Source appears.
- If the Spectrum Analyzer's Measurement Source is set to MPX and the Resolution Bandwidth is not set to a specific value, then the minimum, center and maximum frequencies show incorrect values. The Resolution Bandwidth values where this does not happen are 250 Hz, 500 Hz, 750 Hz, 1000 Hz, 2000 Hz and 2500 Hz.
- If the VCXO 10 MHz Calibration is started via the AUI, the FPUI shows the calibration and then changes to the Exciter VCXO instead of its original screen when the calibration is completed.
- After performing an Exciter/Controller reboot or ac cycle and accessing the FPUI's Network menu, the MAC Address shows all 0s.
    - Exiting and reentering the menu shows the correct MAC Address.
- Setting the High SWR Threshold to 1.000 will result in an error and will revert to 1.400.
    - Setting the High SWR Threshold to 1.001 will save the High SWR Threshold as 1.000.
- Hard Limiter may allow some modulation overshoot of around 1 % to 2 % in MPX Audio Sources.

Notifications

- If an email is being inputted into an email field and the local-part (contents on the left of the @) is made up of 32 or more characters and then the @ symbol is inputted, adding any character after the @ makes the AUI more and more unresponsive.
    - Enter the @ symbol and complete the domain name before entering the local-part to avoid this issue.
- If there's an apostrophe in an Email Server Configuration field, emails will not be sent and result in an error.
- Emails sent for Transfer Controller alarms do not include the device or alarm name in the subject.
- Emails sent for various alarms do not include the alarm name in the subject.

Orban Audio Processor

- A temporary "SP:" Orban preset is created when a new custom Orban preset is created.
    - It disappears after reloading the page.
    - This does not affect functionality.
- An Orban preset may hold onto an unsaved changed value in its settings instead of showing its saved value.
    - Reactivating the Orban preset will set the settings back to their saved values.
- Setting ST ENC NO LIM as the active Orban preset and reloading the Audio Processing page shows none of the Orban presets as active.

Presets

- Changing and saving a preset and then immediately attempting to delete the preset will result in an error and the preset will not be deleted.
    - Changing and saving another preset and attempting to delete the original preset will result in a successful deletion.

    - Making a new preset using cloning and attempting to delete the original preset will result in a successful deletion.
    - An Exciter/Controller reboot will fix the issue.
- If a preset is set as the Active Preset and is not attached to any scheduled rules, Remote I/O or Mod Loss Timeout and the Active Preset is changed to another preset, the original preset's Delete button does not activate. This also happens for a preset becoming the Active Preset where the Delete button does not deactivate.
    - An Exciter/Controller reboot will fix the issue.
- Switching back and forth between 2 presets with less than 5 second intervals can cause AUI instability.
- Repeatedly updating a preset's frequency can cause AUI instability.
    - Allow at least 5 seconds between saving preset frequency changes.
- Audio Delay units in the AUI's Presets do not match the units in the FPUI's Presets.
- If a new custom Orban preset is created, viewing the Orban Preset list in Presets will not show the new custom Orban preset. This also applies to deleting a custom Orban preset where the Orban Preset list will still show the deleted preset.
    - Refreshing the page will fix the issue.
- Quickly deleting two scheduled rules in their order of creation causes a Connection Lost and the AUI does not reconnect.
    - An Exciter/Controller reboot will fix the issue.
- Attempting to save a preset with the frequency less than 87.50 MHz will result in an error.
- If a new Preset is created, deleted or a Preset name is changed, viewing a Preset's Mod Loss Preset option will not show the new changes to the presets.
    - Refreshing the Remote AUI's page remedies this issue.

Remote I/O

- Unassigned is missing as a Control in Digital Inputs and Digital Outputs.
- The Unassigned channel in Digital Outputs has Active High and Active Low for options instead of Unassigned.
- If the Remote AUI is opened in a new browser tab and an Analog Output Sample Full Scale value is changed and saved, the AUI page refreshes. The Sample Full Scale value successfully saves.
- Changing Analog Output Sample Full Scale value and performing an Exciter/Controller reboot or ac cycle may revert the Sample Full Scale value back to its original value.

Reports

- Sorting by Meter Collection, Meter Name, Value or Units in Meters under Reports will "freeze" the AUI and the AUI cannot be changed from the Meters page under Reports and no actions can be made.
    - Refreshing the Remote AUI's page will fix the issue.
- When filtering options from the Audio section in Reports, Audio Delay from Other Settings is included when it should not be.
- Power and frequency changes are not currently logged in Event History.
- Sorting by Device in Event History does not sort correctly.
- Local/Remote events in a downloaded report file are not translated.

SNMP

- SNMP OIDs that are invalid for the transmitter type appear in an SNMP walk.

Users

- If a User is logged in with only RF Control permissions, the User cannot change the RF On/Off state.
- If a User is logged in with the Edit Presets permission disabled, the User cannot view the Active Preset page in Reports.
- If a User is logged in with the Administrator permission disabled, the User cannot download the Event History report.

Miscellaneous

- The transmitter is incorrectly pinging www.google.com while checking for network connectivity.
- Error handling for the VCXO 10 MHz DAC Value field is incorrect.
- DMPX AES1/2's DMPX Level maximum value is 0.1 dBFS when it should be 0 dBFS.
- Mod Loss Timeout Seconds' maximum value is shown as 59.95 s when it should be 59.9 s.
- Minute selection maximum in the FPUI's Time menu is 100 instead of 59.
- If entering an incorrect value into a field, the error message will appear without attempting to save the value.
- Settings in Network have an "*" next to their names to indicate that the fields require values. Since the page cannot be changed using the AUI, the "*" should not be there.
- Switching from DHCP IP addressing to Static IP addressing will not reset IP address to 0.0.0.0.
- Setting a Scheduler Rule Time's To value to 24:00 and saving fails to create the rule.