VERSION 3.1.0

NEW FEATURES:

UI Optimization:

- Application has been optimized to render the UI quicker between view changes in Online Modes. For example, switching between the Gain View in Tune Mode and the Meter View in Show Mode.
- In some cases, up to a 50% decrease in render time has been observed when switching between Views that were previously observed to be sluggish.

Improvements to Venue Synthesis Import and Update

- When imported System Groups are added to the Workspace, a new gray update icon will be displayed next to the system group in the Import Window. Click this update button at any time to restore the System Group parameters to match the Venue Synthesis file.
- Changes made and saved in Venue Synthesis to imported files are now automatically tracked to Performance Manager. System Groups that were imported into the Workspace and have parameters that no longer match the latest Venue Synthesis file will display a blue update icon. Select this icon to update the System Group in the Workspace to match the Venue Synthesis file.
- After selecting a gray or blue colored update icon for a single System Group, a new Parameter Update Scope will be displayed. Any parameter that is deselected by the user will not be updated with the latest Venue Synthesis data, instead it will retain the current parameter data.
- A new venue level update button can be selected to update all of the System Groups in the workspace simultaneously. Selecting the Venue Level Update button will not trigger the Parameter Update Scope.

Hidden Filter Cleanup Utility

- In some rare cases, EQ filters are active in an amplifier while not being accurately displayed on the EQ graph. In these cases the remaining filter count shown in the EQ window plus the filters visible in the various EQ windows adds up to a quantity less than 12 (total filters allowed) leaving filters unaccounted for in the system. This is often caused by improperly selecting Auto-Match and Receive while going Online when Auto-Match and Send would have been the appropriate selection.
- A new Synchronize EQ's option has been added to the Device Tools drop-down menu in the Tools section of the Modal Ribbon. When activated, this utility will analyze the EQ filters in each amplifier and add any filters present in an amplifier that are not displayed in the EQ window into a new User Group. The User Group will be named by the filter frequency and will contain every bandpass the hidden filter is present in. User's can then delete the User Groups to remove the filters or transfer them to other EQ groups.

GENERAL IMPROVEMENTS:

- VTX B15 and B18 subwoofers can now be added to Subwoofer Arrays in the Row Orientation.
- Calibration Filters are now imported from Venue Synthesis files into Systems Groups that use the Multi-Point Fill template.
- Duplicate array names are now allowed between Multi-Point Fill templates.
- New Firmware is available for iTech 2-Channel amplifiers. See the release notes in the Firmware Update Utility for more information.

BUG FIXES:

- Fixed a bug that was causing amplifiers to be set to different default inputs across bandpasses of a circuit.
- Repaired a memory leak that was causing the application to have high memory usage when left open for extended periods of time.
- Fixed an application crash that would occur if an amplifier Device Panel was opened while the AES Trims View was active.
- Fixed a bug that would cause speakers amplified across multiple 2-channel amplifiers to have a different input source for each bandpass.

- Fixed a bug that would cause speakers added to an existing Multi-Point Fill System Group to show the wrong orientation.
- Fixed a bug that was allowing users to update speaker presets who were denied preset permission in Access Control.
- Fixed a bug preventing users from selecting the Add Amps and DSP button after modifying custom circuits.
- Fixed a bug causing iTech amplifiers to display the wrong delay value in the Device Panel's speaker delay block.
- Fixed a bug causing Input Source Selection to reset to default values after updating an imported System Group and modifying its default orientation.
- Fixed a bug preventing Subwoofer System Group speaker presets from being updated to the latest values in the Venue Synthesis after triggering a System Group update.
- Fixed a bug preventing the crossover setting from being updated when updating a System Group imported from Venue Synthesis.
- Additional minor bug fixes and improvements to application stability.

VERSION 3.0.1

GENERAL IMPROVEMENTS:

- Improved the import architecture to allow for the import of additional speaker models from Venue Synthesis.
- Presets between arrays in a Distributed Subwoofer group are now linked based on the “Link Hardware Configuration” and array symmetry settings.
- Custom circuiting is now linked between all arrays in a Repeating Array group.
- Updated the AE Compact presets to the latest versions.

BUG FIXES:

- Fixed a bug preventing System Groups from being updated after restarting the application.
- AC15 speaker tunings have been added back into the software.
- Fixed a bug preventing VRX932LA speakers from being properly imported from Venue Synthesis.
- Fixed a bug that was causing amplifiers to report “Invalid SV” error messages to the application error log.
- Fixed a bug causing the application to crash on exiting when only a B28 suspended array was present in the file.
- Fixed a bug that was causing the application to crash when reducing the quantity of arrays in a Distributed Subwoofer group.
- Fixed a bug causing imported arrays to lose amplifier association when switching symmetry settings off and then back on.
- Fixed a graphical bug causing duplicate delay level controls to be displayed when switching between views in Tune Mode.
- Fixed a bug preventing custom circuiting form being retained when increasing the quantity of arrays in a group.
- Fixed a bug that was incorrectly setting the polarity of rear facing subwoofers when increasing the quantity of arrays in an existing Distributed Subwoofer group.
- Fixed a bug preventing users from being notified that making certain changes to existing arrays will result in DSP being reset to a default state.
- Fixed a bug that was causing DSP settings to be incorrectly tracked between symmetrically linked arrays when one of the arrays was not associated to any amplifiers.
- Fixed a bug that was causing custom User Groups to be deleted when updating system groups with new DSP settings from Venue Synthesis.
- Fixed a bug preventing users from populating empty Distributed Subwoofer arrays with speakers after changing the orientation and symmetry settings of the empty container.
- Fixed a bug that was Auto Amplifying Distributed Subwoofer groups by symmetry links instead of amplifying the whole group at the same time.
- Fixed a bug that was causing the VRX915S to display duplicate crossover settings in Select Presets Mode.
- Fixed a bug that was causing import source selection to be reset when updating a Distributed Fill group from Venue Synthesis.

VERSION 3.0.0

NEW FEATURES:

Add System Groups view in Design Mode:

- New simplified Array and Distributed Subwoofer Array System Groups replace the legacy template system and are used in creating new designs from scratch. The new System Group dialog boxes present simple controls for Array Type, Orientation, and Symmetry Linking. After being added to the Workspace, System Groups are populated with speakers in the Add Speakers View.
- Array Quantity, Orientation, and Symmetry settings can be modified after populating the System Groups with speakers by selecting the settings icon above an Array in the System Group while the Add System Groups View is active.
- This new System Group workflow and functionality brings Performance Manager array grouping into parody with the Venue Synthesis and Performance software workflows and acts as the basis for importing from Venue Synthesis (see below).
- Files created in older versions of Performance Manager using legacy templates are backwards compatible with Performance Manager version 3.0. Because of the new symmetry settings between arrays introduced in this version, older files using the Repeating Array Template will have template symmetry switched off when opening the file in version 3.0. All of the Legacy Templates have been moved to the new Legacy Templates category in the Add System Groups view.

Import Design View

- New view has been added to the Design Mode Ribbon and is used to import design files from Venue Synthesis and LAC-III.
- With the view active, select Venue Synthesis and LAC-III (v3.9) design files to load System Groups into the import window. Drag the System Groups into the Workspace to import the complete System Group including array type and quantity, symmetry settings, speaker model, circuiting, gain, delay, and calibration filters.
- Imported System Groups can be refreshed after a change has been made in the design software and saved. Refresh the imported file and then update the System Group by dragging it from the Import Window into the Workspace, imported parameters will be updated with the latest values from the design file, EQ and amplification will be maintained.

System Group Parameter Caching

- New caching system stores a copy of parameters such as Gain, Delay, Mute State, EQ, Calibration Filters, Polarity, Orientation, Input selection at the speaker level rather than only storing data in the connected amplifier. With the parameters cached, speaker bandpasses can now be disconnected from one amplifier and re-connected to another without losing data.

Removed Amplifier Restrictions

- Amplifier racks can now be added to the Workspace before speakers in the Add Amplifiers View.
- Existing amplifiers can now be associated to speaker bandpasses while in the Add Speakers View.
- Users can now go Online and connect with only amplifiers in the Workspace.
- Users can now view and recall presets saved to the memory of a connected amplifier that is not associated to a speaker bandpass.
- Amplifier Device Panel view controls can now be accessed while in Test, Input, and Show Modes.

GENERAL IMPROVEMENTS:

- Removed the legacy “Open for Design” and “Open for Control” menu options and replaced them with one “Open” option which can be used in all file recall situations.
- Redundant text from the Mode Ribbons has been removed.
- The maximum quantity of amplifiers allowed in a custom rack has been increased to (9).
- Array Frame / Ground Indicator Bar has been added to ground deployed Arrays for easy identification of deployment style.

- Array Frame / Ground Indicator Bar has been colorized for easy group identification.
- System Groups in the Grouping Panel now display a color indicator matching the indicator on the corresponding System Group in the workspace.
- Multi-selection of amplifier racks in the Connect Mode Discovered Devices Bar is now allowed using the Shift or CTRL keys.
- In Test Mode, double clicking the Signal Generator fader will now automatically set the level to -30 dB.
- Preset “Type” has been made visible for all preset selection dialog boxes.
- The predefined spacing between the arrays of empty System Groups and Legacy Templates has been reduced.
- Changing the orientation of a subwoofer associated to a 4ch Amplifier no longer removes the association.
- Fixed the dimensions of the Application Options window to prevent it from unnecessarily resizing based on the screen resolution.
- Renamed “Measurement” to “Enable Smaart Integration” within the Application Options window.
- VerTec DP Series products have been removed from the software and will not be supported in PM v3.0 and later.

BUG FIXES:

- Fixed a bug displaying the incorrect mute state of system components when going Online if “Leave Unchanged” was selected and Show Mode was immediately activated.
- Fixed a software crash that would occur after re-importing an LAC file into a legacy template after EQ filters had already been added to the Array.
- Fixed a software crash that would occur after adding 12 EQ filters to a System Group and then changing the speaker preset.
- Fixed a bug that was preventing NetSetter from opening on devices that have never had a version of Performance Manager older than version 2.9.0 installed.
- Fixed a bug that allowed operators to bypass access control restrictions and enter Tune Mode with the TAB key.
- Fixed a bug that would incorrectly display the current input priority level when in Show Mode with no amplifiers Online or connected.
- Fixed a bug that would circuit Mixed Arrays in different configurations based on which component was added to the Mixed Array first.
- Fixed a bug affecting legacy LAC subwoofer imports that would reset delay times after changing the circuit mode or amplification.
- Fixed a bug causing mouse hover tool-tips to be displayed on the left edge of the screen instead of near the cursor.
- Fixed a bug creating inconsistently sized divisions between custom amplifier racks in the Racks Tab of Add Amplifiers View.
- Fixed a bug affecting devices with high DPI screens displaying EQ filter information outside of the selection box at the bottom of the EQ graph.
- Fixed a bug that would cause DSP settings to be reset when opening files created on a device with a language setting different than the language setting of the device opening the file.
- Fixed a bug where the “Loaded Preset” popup under the mode ribbon would get stuck displaying the first bandpass selection in any Online mode and would not clear after deselecting the bandpass.
- Fixed a bug preventing a warning popup from being displayed when using special characters in the name of a custom speaker.
- Fixed a display issue causing the ground indicator for distributed column subwoofers to resize to the width of the controls in Tune Mode.
- Fixed a bug affecting M22 and M20 speakers in a design with S25 Subwoofers where the selectable preset was linked to the S25 crossover setting.
- Fixed a bug where the Vertical Alignment Tools in Design Mode were not performing their labeled function.
- General bug fixes and improvements.

VERSION 2.9.1

BUG FIXES:

- Fixed an issue related to G28 and S28 subwoofer presets not loading correctly.
- Fixed an issue with firewall permissions preventing Performance Manager from firmware updating iTech HD amplifiers.

VERSION 2.9.0

NEW FEATURES:

Added support for the following products:

- VTX A6, VTX B15

Full-screen Mode:

- A new full-screen mode is now available to improve usability on devices with small screens. Full-screen mode can be activated via the new button on the titlebar or via the keyboard shortcut keys (F11 or ctrl + shift + F).

Line Array Control Panel (LACP) improvements:

- The LACP filters are no longer applied to subwoofers when used in mixed arrays. For example, the Array Size Compensation filter will no longer attenuate the subwoofers.

Daylight Mode Improvements:

- Added option for Daylight Mode to be set manually or set to follow the theme of the operating system.

Repeating Array Template improvements:

- The array names under the System Groups panel are now the same as the array names in the venue. Changing one will change the other.
- Grouping options can now be changed after the arrays have been created. To change grouping options, navigate to Add Templates mode, highlight one of the arrays and click on the gear icon over the array.

GENERAL IMPROVEMENTS:

- Addressed an issue with the software installer where the C++ Runtime module failed to install.
- Updated the End User License Agreement.

BUG FIXES:

- Fixed a software crash when associating multiple amplifier channels at once.
- General bug fixes and improvements.

VERSION 2.8.0

NEW FEATURES:

Support for AE Compact Speakers:

- The AE Compat Series models have been added to Performance Manager. New speaker presets were developed for all models to match the sonic and phase signature of VTX products. The AE compact line includes products ranging from a single 5.25-inch point-and-shoot box to dual 8-inch loudspeaker systems designed for fill and main applications. For more information on the presets and options, refer to the I-Tech HD Preset Library summary sheets at www.jblpro.com.

Updated speaker presets for VTX S25:

- New presets have been developed for the VTX S25 dual 15-inch subwoofer. The new presets address a rare problem where under some very specific conditions, woofer damage could occur. The new presets include optimized LevelMax™ parameters to ensure safe operation under any conditions. The sound characteristics of the product, including MAX SPL, remain unchanged. To ensure that Performance Manager is using the latest presets, recreate your Performance Manager venue file in the latest version of the application (2.8.0). Alternatively, the “Reload Presets” function can be used under the “Select Presets” mode. This will refresh the venue preset library used. Presets for Audio Architect are available under the VTX S25 product page on www.jblpro.com.

GENERAL IMPROVEMENTS:

- The application title bar has been updated to follow Windows 10 UI guidelines. The window controls are now larger and easier to use on touch devices.
- Several stability improvements for Group EQ to ensure that deleting arrays from a group does not affect any of the group filters of the remaining arrays.
- Delay values generated in LAC 3.6.0 for suspended subwoofer arrays can now be imported into Performance Manager 2.8.0 (requires the latest version of LAC-3).
- Connect mode UI improvements. The Locate, Clear Rack, Rename Rack, and Rescan Network buttons have been moved to the ribbon.
- Independent preset selection for subwoofers and full-range products is now possible for mixed array configurations.
- Performance improvements for devices with limited memory and CPU resources. Addressed a memory leak problem where changing modes would increase memory usage.

BUG FIXES:

- The NetSetter link under Tools was accidentally removed in version 2.7.0 and it has now been restored.
- Addressed a UI problem where 10 pixels where missing around the application. The background or application behind Performance Manager was visible around the edges when the app was in maximized mode.

VERSION 2.7.0

NEW FEATURES:

New speaker support:

- Added preset support for the VTX B28.

New Navigation UI:

- The top ribbon interface has been redone to simplify navigation and mode switching.
- Mode switching has been moved and the ribbon now displays the functions available to the selected mode.
- Mute protection has been moved from the ribbon to the grouping toolbox and is available in all online modes.
- The Groups mode has been redone and the group editing buttons are now displayed on the ribbon.
- The ribbon can be minimized to improve space for smaller screens and tablets.

Speaker assignment improvements:

- Drag-and-drop for bandpass assignment is now also available for 2-channel Crown I-Tech HD amplifiers.
- Use Shift + Left click to select an array and drag-and-drop the array to the desired amplifier rack to connect speakers to amplifiers.

Container (rack) naming improvements:

- Rack names can now be reassigned in the Go Online mode and without having to clear and recreate the racks.
- Once in Go Online mode, select a rack and click the Rename button on the ribbon.

GENERAL IMPROVEMENTS:

- The application title bar has been updated to follow Windows 10 UI guidelines. The window controls are now larger and easier to use on touch devices.
- Custom racks can now be created without having to select bandpass labels. This significantly reduces the steps and time needed to create a custom rack. Amplifier channels are assigned the standard “none” channel label. Drag and drop a speaker to assign channel labels on the fly.
- Inside-out wiring can now be assigned to front fills without having to start from a template.
- Changing subwoofer circuit grouping no longer erases the EDS delay values.
- Factory and user groups can now be rearranged as needed. Click and drag to change the order of groups. Right-click and select rename to change a group name from any mode.
- The User Groups section is now collapsible like the Venue groups.
- The default channel label for V-Rack 12000HD is now SUB.
- The zoom position is now maintained when switching from mode to mode. When new devices are added to the venue, PM now zooms out to show all devices.
- The array and speaker positions never change when going from mode to mode and when the circuit jumpers are removed.
- EQ filter ON/OFF buttons now turn green when the filters are active.
- General Installer and Auto Update improvements.

BUG FIXES:

- Addressed a problem related to the “Clean Filter” warning on the I-Tech 4x3500HD LCD displays. The warning will no longer be displayed for no reason.
- Addressed several problem related to keyboard usage on touch devices. In some cases, the Windows 10 and the Performance Manager keyboards were active. Now, only the PM keyboard is shown, improving usability on Windows 10 touch devices.

- Addressed a problem that EQ filters could get corrupted when the HiQnet addresses of amplifiers where changed.
- Fixed a problem where devices would not associate to offline devices the first time a drag-and-drop was used in Go Online mode.
- Addressed a problem where the Input Priority button was always showing medium priority.
- The noise-generator in test system mode can now take values in Hz also.

VERSION 2.6.5

NEW FEATURES:

- Support for LAC-3.4.0

BUG FIXES:

- Addressed several bugs related to LAC import of A12/A12W ground stack arrays.
- In some cases, LACP filters for ground stack arrays were applied in the reverse order when imported from LAC.

VERSION 2.6.4

NEW FEATURES:

- Support for LAC-3.3.1

IMPROVEMENTS:

- Performance improvements when opening venue files.
- VTX A12W can now be placed above or below VTX A12.
- LACP filters from LAC-2 files are now imported correctly.
- Smaart measurement traces are now positioned in front of the EQ traces for better visibility.
- Subwoofer delay values are retained after changing the amplification mode (Parallel / Discrete).
- Cardioid orientation restrictions have been removed, and any subwoofer can be set to cardioid.

BUG FIXES:

- Addressed several bugs related to EQ copy/paste functionality in the Group EQ and LACP panels.
- In some cases, the “Filters Remaining” count in Group EQ was not showing the correct value.
- Fixed System Health warning states in Run Show Mode. In some cases, the button was red without errors.
- Removed the LAC import icon from individual subwoofer containers.
- Addressed a bug related to FL presets and Fill templates.
- Improved B18 import functionality. In some cases, the orientation was not transferred correctly.
- Fixed several bugs related to LAC-3 import functionality and LACP filters.
- In some cases, the “ALL ON” button in Group EQ was not working correctly.
- The polarity for B18 subwoofers was not shown when importing arrays from LAC-3.

VERSION 2.6.3

NOVEMBER 2018

NEW FEATURES

Support for the new VTX A8:

- The new VTX A8 has been added to Performance Manager 2.6.3
- Preset support includes standard array presets for full-range and 80Hz modes along with full-range and 80Hz fill presets
- For more information on the VTX A8 presets, refer to the VTX A8 User Manual and Preset Library Sheets
- VTX A8 presets for Audio Architect are available for download at www.jblpro.com

Support for the new VTX B18:

- The new VTX B18 has been added to Performance Manager 2.6.3
- Preset support includes standard 60 and 80Hz modes along with 60 and 80Hz presets for cardioid configurations
- For more information on the VTX B18 presets, refer to the VTX B18 Preset Library Sheets
- VTX B18 presets for Audio Architect are available for download at www.jblpro.com

Support for LAC-3.2.0:

- Added import support for the latest version of the Line Array Calculator
- VTX A8 and B18 arrays created in LAC-3.2 can now be imported in Performance Manager V2.6.3

IMPROVEMENTS

- Add Speakers Mode: VTX Subwoofers are now separated in to their own section

Version 2.6.1 / 2.6.2

February 2018

Bug Fixes

- Addressed an issue related to F-Series presets and 2-channel amplifiers.
- CPU optimization for Run Show mode. Run Show mode now takes significantly less CPU power.
- Addressed an issue related to VTX G28 and VTX S28 presets when used with VTX V20. The subwoofer presets were not loaded correctly when the subwoofer preset was set to 60Hz.

Version 2.6.0

December 2017

NEW FEATURES

Support for the new VTX A12W:

The new VTX A12W (wider 120° coverage) has been added to Performance Manager 2.6.0. The VTX A12W can be used in stand-alone arrays or in combination arrays with the 90° VTX A12. A slightly different color is used for the A12W speaker icon for easier identification.



Updated VTX V25-II speaker presets:

Performance Manager 2.6 is now using the latest VTX V25-II speaker presets (Release 2.1). Improvements include:

- Improved HF limiter settings for 2-channel amplifiers to prevent amplifier clipping
- Improved HF tonal balance above 8kHz

Devices files and the detailed change log for the new V25-II R2.1 presets can be downloaded from the JBL Pro website.

LAC import support for VTX A12W:

VTX A12W created in LAC version 3.1 can be imported into performance manager.

LAC import support for VTX V20 BA (Bi-Amp):

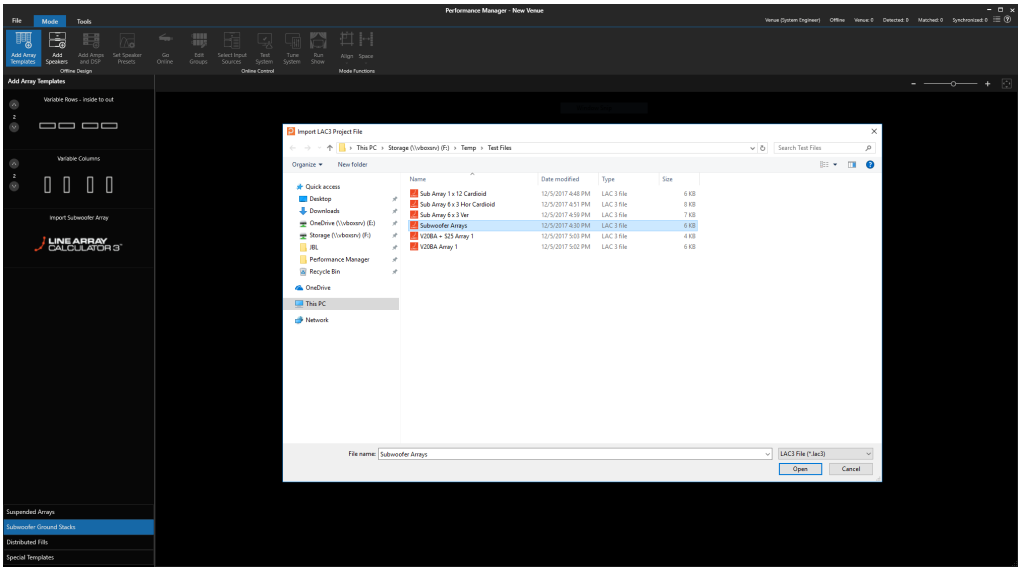
The VTX V20 BA (Bi-Amp) speaker type has been added to LAC version 3.1. V20 Bi-Amp arrays created in LAC-3.1 can be imported into Performance Manager version 2.6. V20 speaker come into LAC in Bi-Amp mode with the correct circuiting.

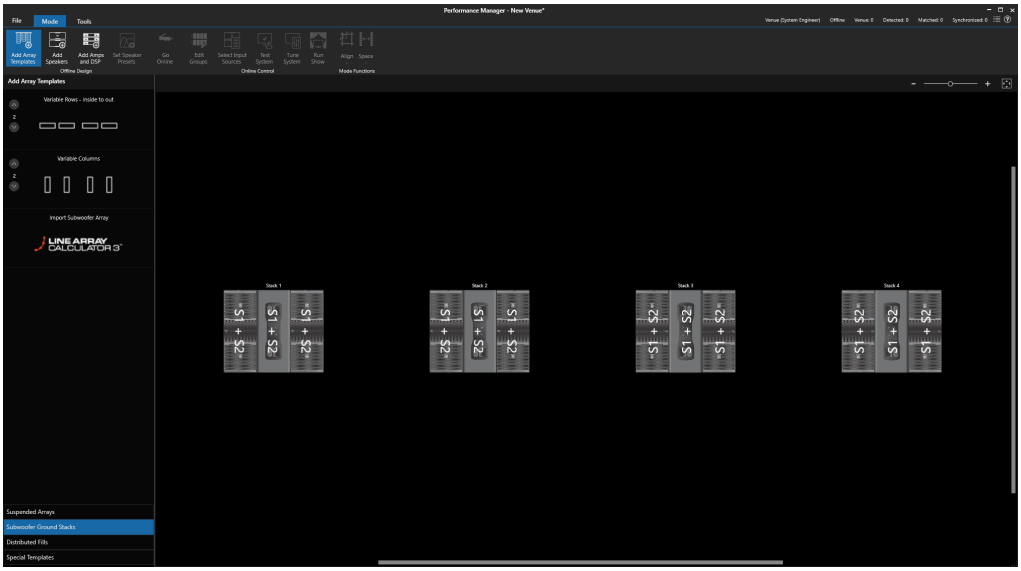
LAC import support for distributed subwoofer arrays:

Ground stacked distributed subwoofer array can now be imported into Performance Manager version 2.6. Subwoofer stacking layout, grouping and delay settings transfer from the LAC file to Performance Manager.

How to import a subwoofer array:

- Navigate to the “Add Array Templates” and then “Subwoofer Ground Stacks”
- Drag-and-drop the LAC-3 logo to the venue space
- Select the LAC-3 file to import and then Clicp open
- The subwoofer array is placed in the venue





Bug Fixes

- Improved synchronization handling for when I-Tech HD devices drop off the network due to unexpected connectivity loss. When connection is restored, Performance Manager is now sending all the latest parameters from the computer to the amplifiers.
- Improvements to the EQ-Analysis tool introduced in Performance Manager version 2.5.1. The EQ-Analysis tool is used to detect potential Group EQ consistency issues that could cause some EQ filters to disappear from the Group EQ panel.
- Several reliability updates to the EQ copy/paste function
- Addressed an issue were subwoofer polarity preference would be lost when sending parameters

Version 2.5.2

November 2017

Bug Fixes

- Addressed an issue related to preset labels on V20 and 2-channel amplifiers.
- Addressed several EQ copy-all/paste-all issues. In some cases copy-all/paste-all could corrupt the Group EQ filters.
- Addresses an issue causing Performance Manager to crash when deleting a speaker that was not assigned to an amplifier

Version 2.5.1

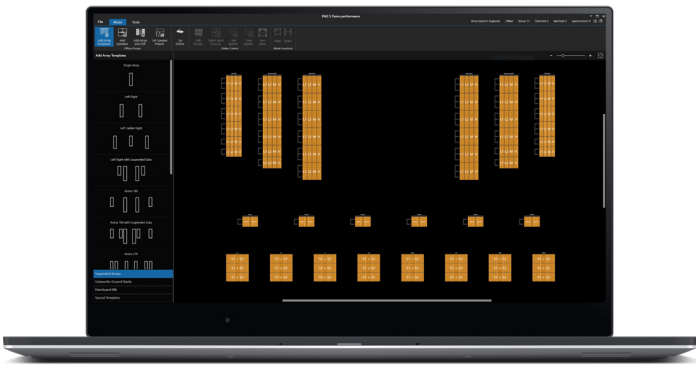
September 2017

NEW FEATURES

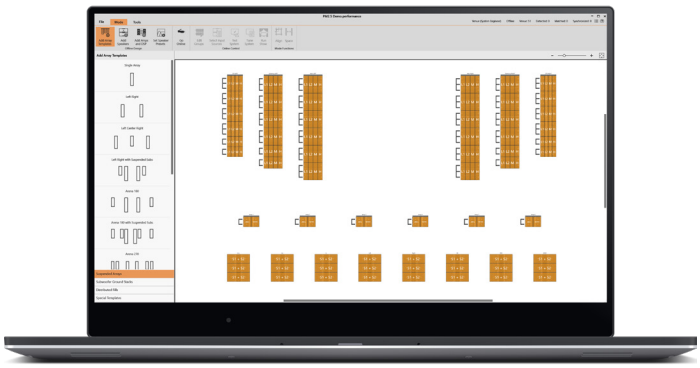
New Daylight mode:

Performance Manager Version 2.5.0 includes a new user interface mode that is more suitable for use outside. Daylight mode uses a brighter color scheme to increase contrast. The new mode can be activated and deactivated at any time from the Application Options panel.

NORMAL - DARK

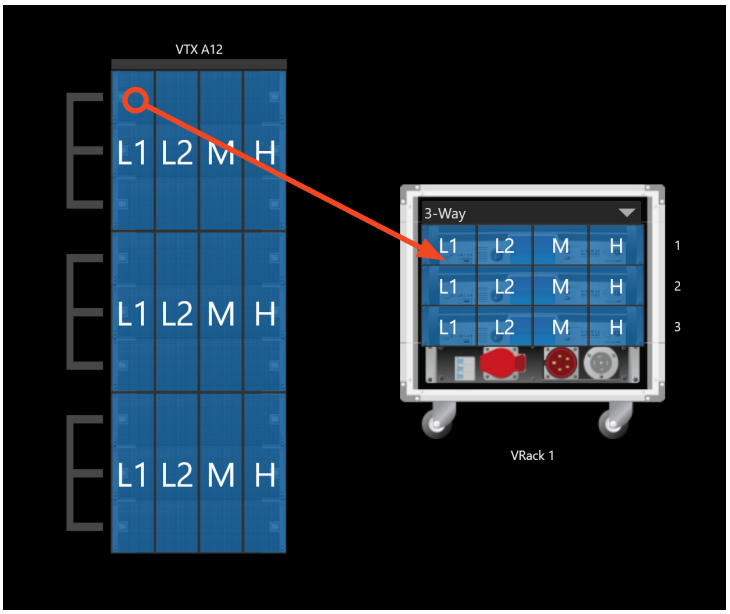


DAYLIGHT MODE - LIGHT



Shift-click to select multiple objects:

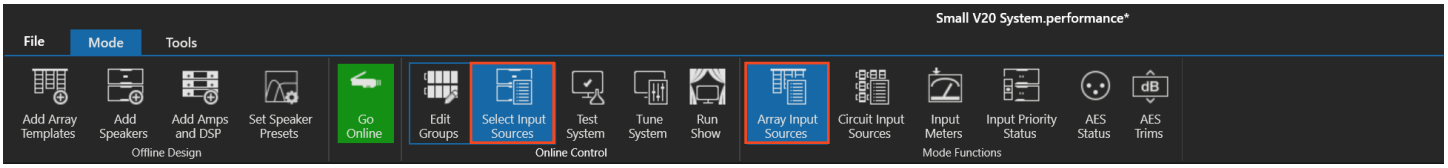
- Use Shift + mouse click to select multiple band-passes.
- Select the top left corner of an array and then shift + click the lower right corner to select the entire array.
- Drag-and-drop the entire array to an amplifier rack to quickly amplify an array.
- Shift + Click can also be used when creating users groups to speed up the process.



Circuit based Input Source Selection:

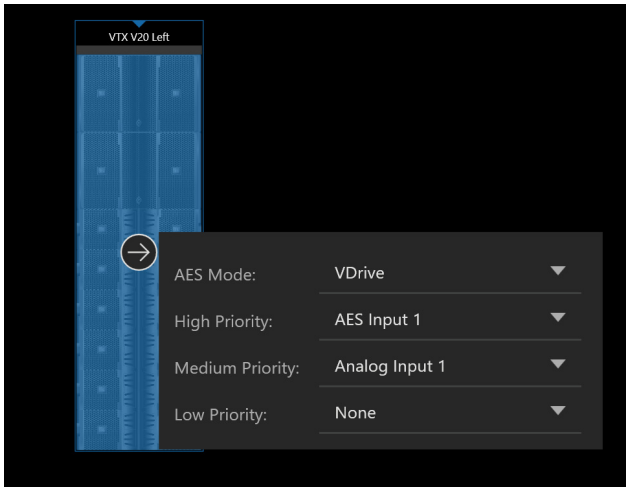
Input selection is now possible on a circuit by circuit level. In previous versions of Performance Manager, input source selection was done on the array level, meaning the same input was selected to feed the entire array. In some situations, it is desirable to set part of an array to a different input than the rest. A good example of this is when mixed arrays (Subwoofers + Main speakers) are created and the subwoofers are fed from a different input. Performance Manager 2.5 now allows for selecting inputs for each circuit.

A new button has been added to the Select Input Sources page to switch between Array Input Source selection and Circuit Input Source selection.

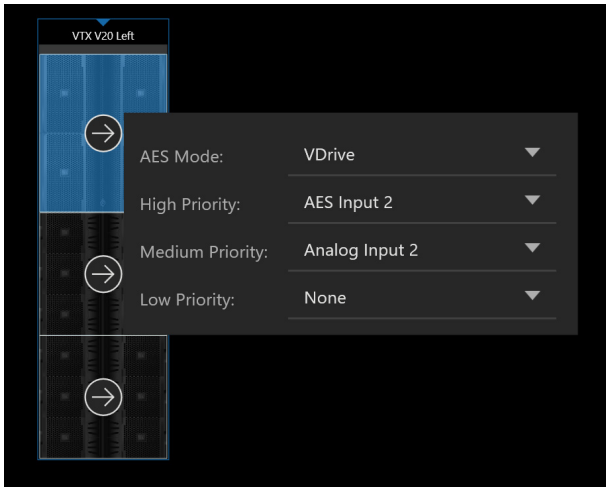


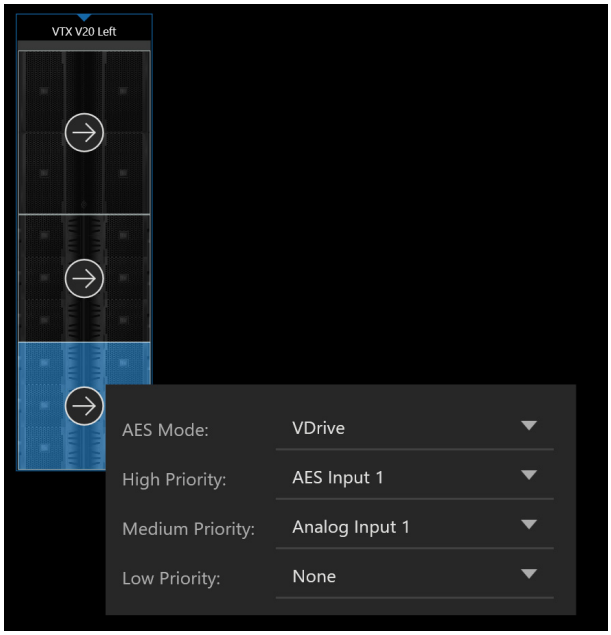
When Array Input Sources is selected, Performance Manager behaves like versions before where a single input can be selected for the entire array. When Circuit Input Sources is selected, a different input can be set for each circuit of an array.

ARRAY INPUT SOURCES



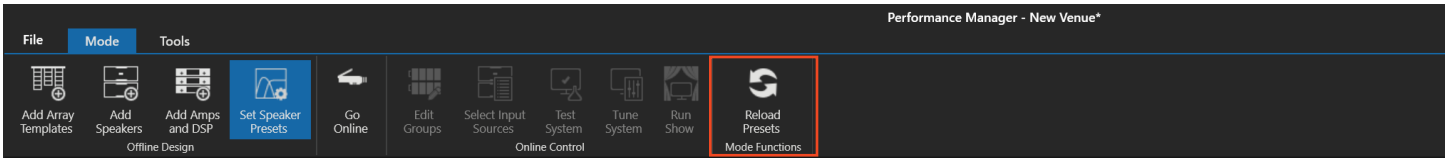
CIRCUIT INPUT SOURCES



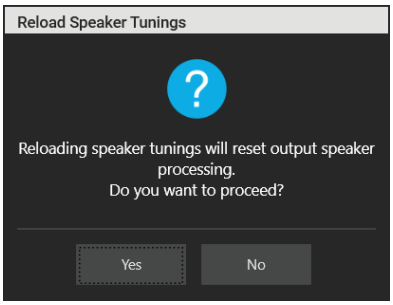


Reload Speaker Presets:

Factory speaker presets are always stored within the Performance Manager venue file. This ensures that regardless of what Performance Manager version is used, a sound system will always sound the same as the time of the original setup. Factory Speaker Presets are sometimes updated to introduce improvements and performance upgrades. For example, recently, most VTX speaker presets were updated in Performance Manager Version 2.3 (Release 2). If a venue file that was created in a version prior to 2.3 was reused, the older versions of the presets would have been used. Because of that we often ask users to re-write the venue files when new Factory Speaker Presets are available to ensue that the latest Speaker Presets are used.



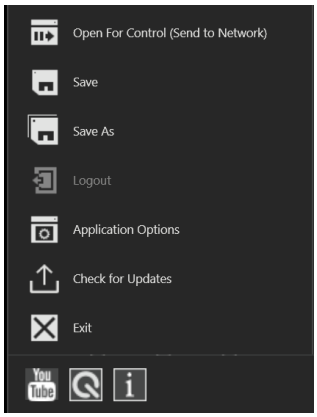
With Performance Manager version 2.5, we are introducing a new feature that refreshes the speaker preset library without having to re-write the venue file. A new button is now available in Set Speaker Presets mode called Reload Presets. Once selected, Performance Manager will ask for permission to refresh the presets.

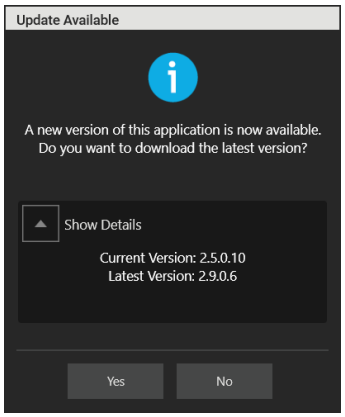


Once confirmed, Performance Manager will reload all speaker presets. Note that during this process, all user related adjustments like Group EQ, Source Selection and Array Calibration, remain intact. The only thing changing is the factory speaker presets. Make sure to select “Auto Match and Send” when going online.

Auto-updater:

An auto-update function is now built-in to Performance Manager 2.5. The updater checks online for the latest version of PM every time the application starts. If a new version is available, an option is presented to download and update the application. A manual check can be performed from within the File menu (File > Check for Updates).

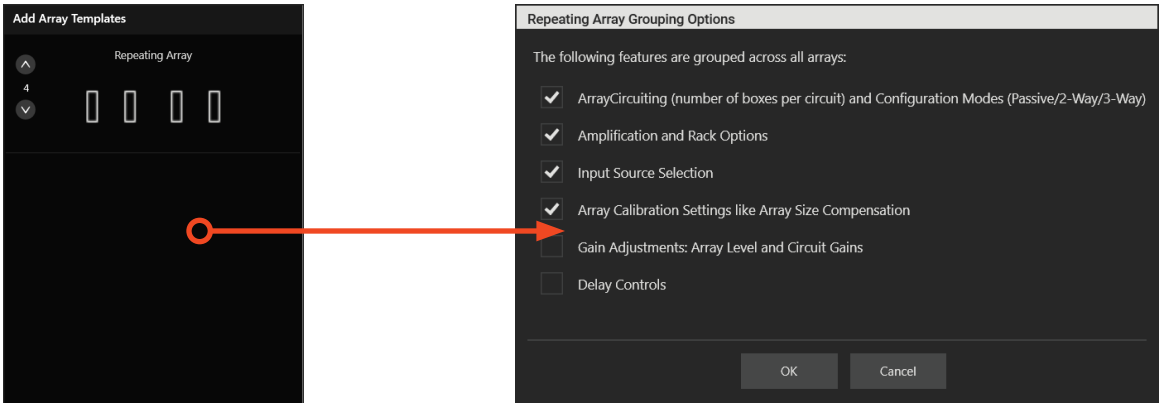




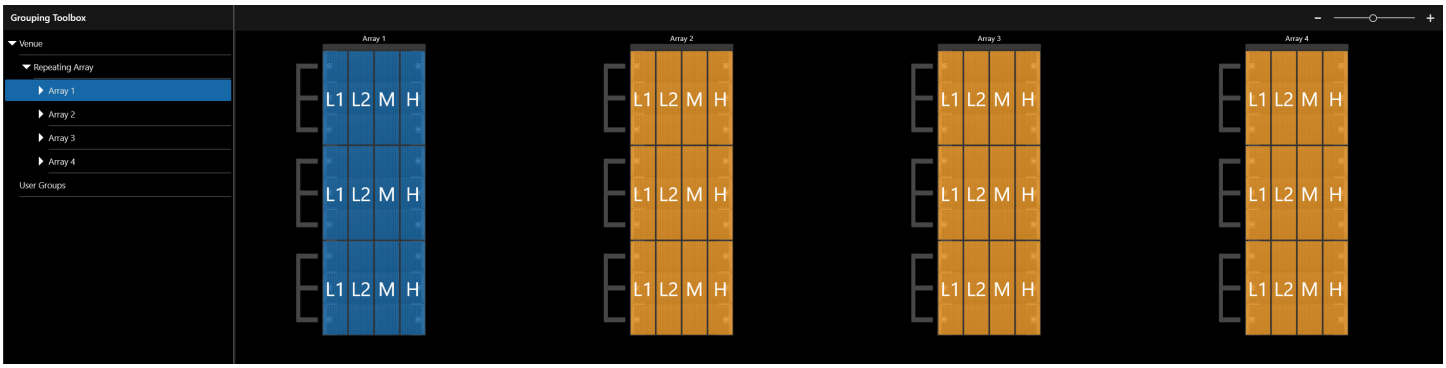
Repeating Array Template:

Performance Manager version 2.5 includes a new Array Template called the "Repeating Array Template". The new template can be found under the new "Special Templates" group and includes some unique grouping and repeating functions that can significantly speed up the system design process especially when a design includes many identical or nearly identical arrays (like delay arrays or distributed systems).

When dropped into a venue, the new template asks for confirmation as to which functions should be repeated/mirrored across all the arrays. In the example below, 4 arrays are selected and the checked parameters will be grouped across all 4 arrays. Parameters not checked remain independent and can be adjusted on a per array basis.



Groups are automatically created to speed up the process. One "Master" group is available along with individual groups for each array within the repeating group. Additional User Groups can be quickly created if necessary.



This new template is not limited to main arrays, and it can also be used for smaller front fill systems or subwoofer arrays. Multiple repeating templates can be used in a single venue to accommodate any scenario.

This new template could potentially replace all other existing templates with functionality that is much close to what the application or the user requires.

Bug Fixes

- Addressed an issue regarding user groups where a system would remain associated with a group even after it was removed from that group
- Addressed an issue where the automatic zoom function was incorrectly triggered when creating manual speaker to amplifier connections.
- Addressed several HiDPI scaling issues on Windows 10 computers with high resolution displays.
- Addressed an issue related to polarity and cardioid subwoofer arrays. In some rare cases the polarity for the rear facing subwoofer was not reversed.
- Addressed an issue where in some cases, Crown I-Tech HD amplifiers would reboot during a venue synchronization.

Version 2.4.2

August 2017

Bug Fixes

- Addressed an issue regarding loading VTX F35 presets in to 2-channel I-Tech HD amplifiers.

Version 2.4.1

July 2017

Bug Fixes

- F-Series Preset Library update:
  - Updated the F Series preset library to the latest version (Release 2.1)
  - Addressed several F Series preset loading issues
  - For more information on the F-Series presets refer to the F Series Preset Library Sheets

- VTX V20 Preset Library update:
  - Updated the VTX V20 preset library to the latest version (Release 2.1)
  - The update addresses a bandpass gain issue related to the Bi-Amp presets
  - For more information on the VTX V20 presets refer to the VTX V20 Preset Library Sheets

- Addressed an issue regarding AES Trims.

- Addressed several LAC import errors

- PM Version 2.4.1 is now compatible with LAC-III Beta 2

VERSION 2.4.0

May 2017

NEW FEATURES

New Speaker Preset Support for VTX A12

- Full preset support for the new VTX A12 system.
- Refer to the VTX A12 User Manual and Preset Library sheets for more information on the available presets.

Default AES Mode for V-Rack 4x3500HD

- Arrays powered by Crown Audio V-Rack 4x3500HD use V-Drive by default as the AES Mode.

Inputs Selection Improvements

- User Input selection preferences remain unchanged after a speaker preset change.
- Example: When switching from VTX V25-II 60 to VTX V25-II 80, input selection settings like type and priority remain the same.

Go Online Mode Improvements

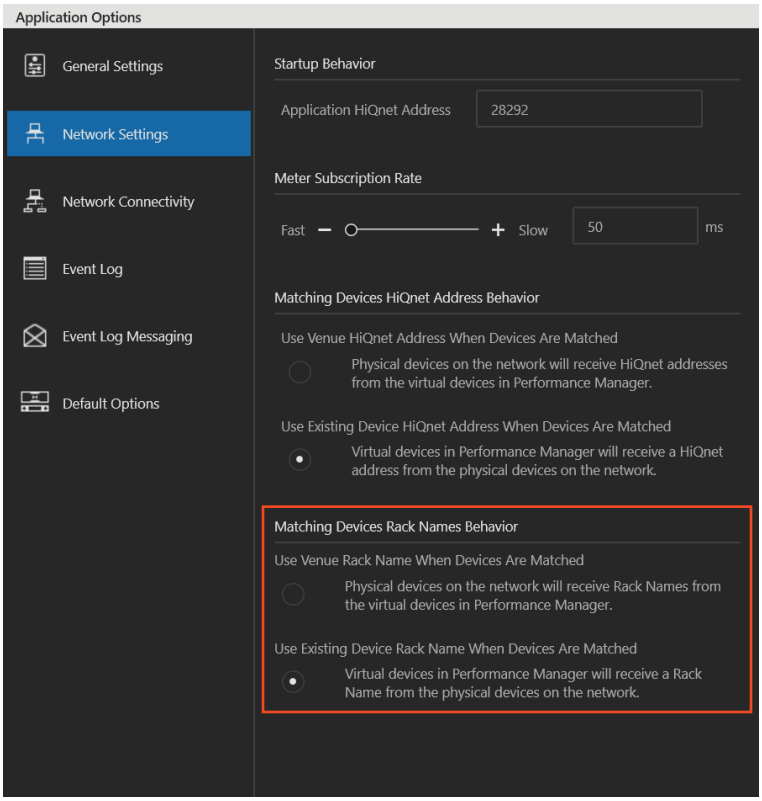
- Discovered Devices and Online Devices are now presented in an alphanumerical order (for real this time).

Group EQ

- Added one more filter to Group EQ for a new total of 12 user filters.

New Network Settings Options

- There is now a new option in Network settings to retain rack/container names when matching devices. In previous versions of Performance Manager, software names always overwrote network names. A new option is available to always retain (never overwrite) network names.



New Array Size compensation filter

- A new array size compensation filter was developed to easily manage the LF response of VTX line array systems. The new Array Size Compensation filter is available in the Calibrate Arrays mode and works in conjunction with new VTX presets released in Performance Manager 2.3.X.

Background:

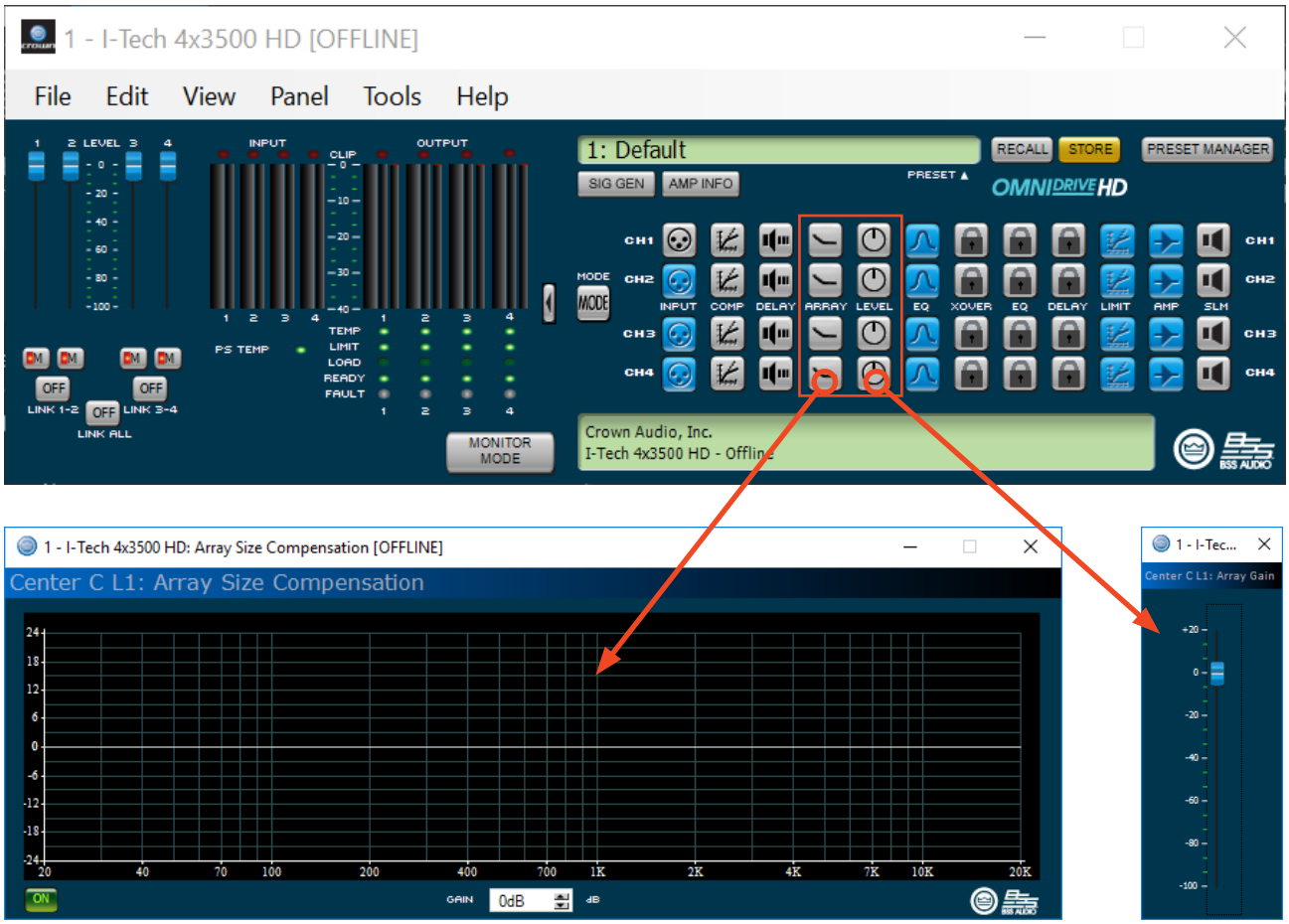
The frequency response of a line array is determined by many factors, including the array size (number of boxes), array curvature (box-to-box angles), and the listening distance. JBL factory presets are designed to create a well-balanced tonal starting point for given array conditions. For example, the standard array presets are designed to work optimally with array sizes between 8 - 12 cabinets and equal impact spacing for a flat listening plane. An array with these parameters will generate a flat frequency response in the HF region with a gradual rise in LF energy. The frequency point where the response starts rising depends on the array parameters mentioned above. A relatively short array will start rising lower in frequency, and a longer array will start rising higher in frequency. The Array Size Compensation Filter was specifically designed to shape the LF response of an array with a single, adjustable parameter. Gain is the only user adjustable parameter with all other parameters optimized in the background. The gain adjustments can take positive or negative values to best suit each application. To remove LF for long arrays apply negative gain, and to add LF to short arrays apply positive gain values.



- The new Array Size Compensation is a hardware supported feature and requires the latest firmware update for the Crown Audio I-Tech HD amplifiers.
- The results of the new filter can be predicted in the new version (Version 3) of the JBL Line Array Calculator.

New firmware for Crown Audio I-Tech HD Series amplifiers

- Added support for the new JBL Array Size Compensation filter with a new dedicated block
- UI improvements to expose the Array Level control to the main amplifier UI
- The new firmware is available for both 2-channel and 4-channel amplifiers
- The new firmware and device panel UI is common across Performance Manager and Audio Architect (requires the latest update for Audio Architect).



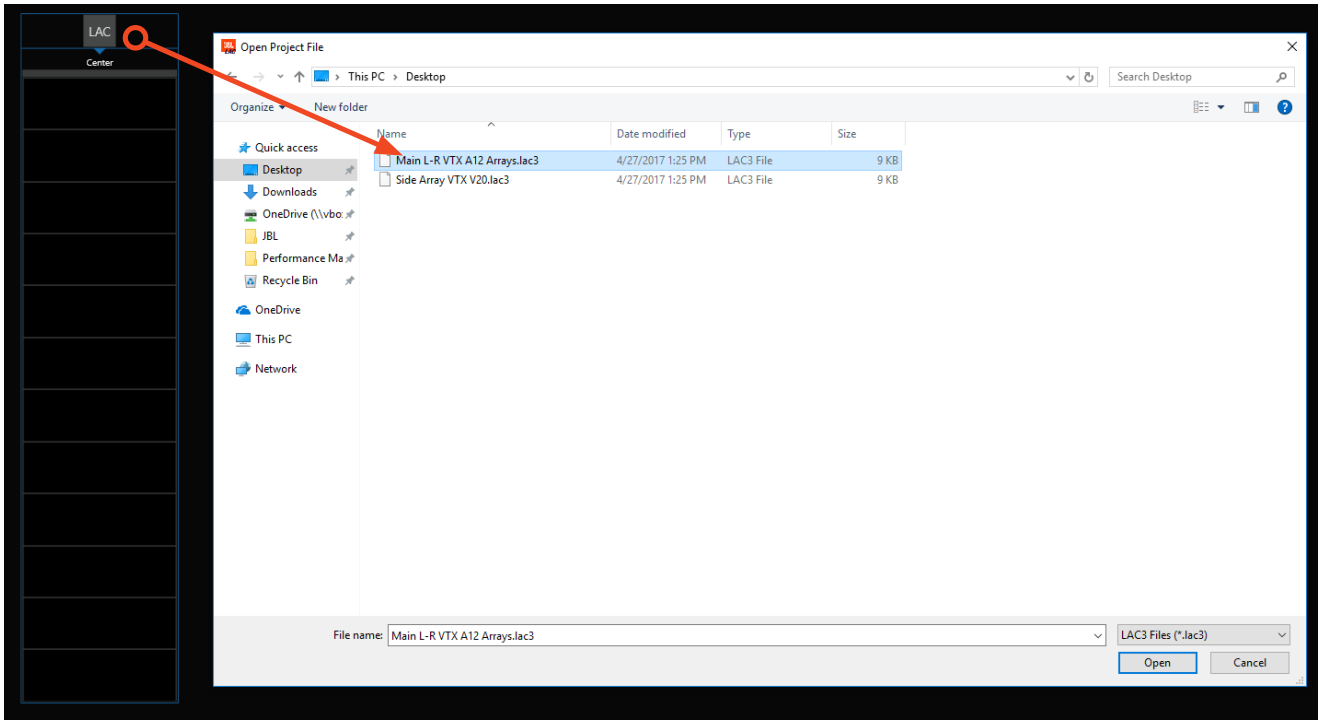
Import multiple amplifier racks

- There is now a number selection control next to amplifier racks that allows from importing multiple amplifier racks in to a venue. This is true for both Crown Audio V-Racks and custom racks

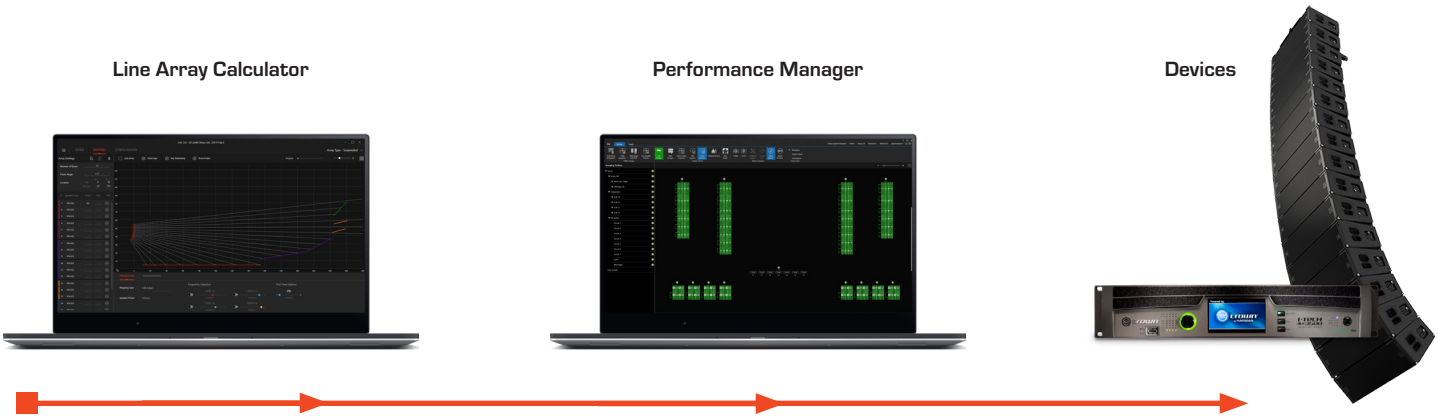


Support for LAC-3 import

- With the release of LAC-3 comes support for LAC-3 venue file import.
- Since there are now two versions of LAC (LAC2 for Vertec and LAC3 for VTX including A12), the LAC software has been separated from Performance Manager and going forward will be treated as an independent platform. This will allow JBL to better develop future more advanced features for the prediction software platform.
- Arrays designed in LAC2 or LAC3 can be imported into Performance Manager and all related parameters including, circuit groups, gain shading and DSP adjustments carry over to Performance Manager like before.

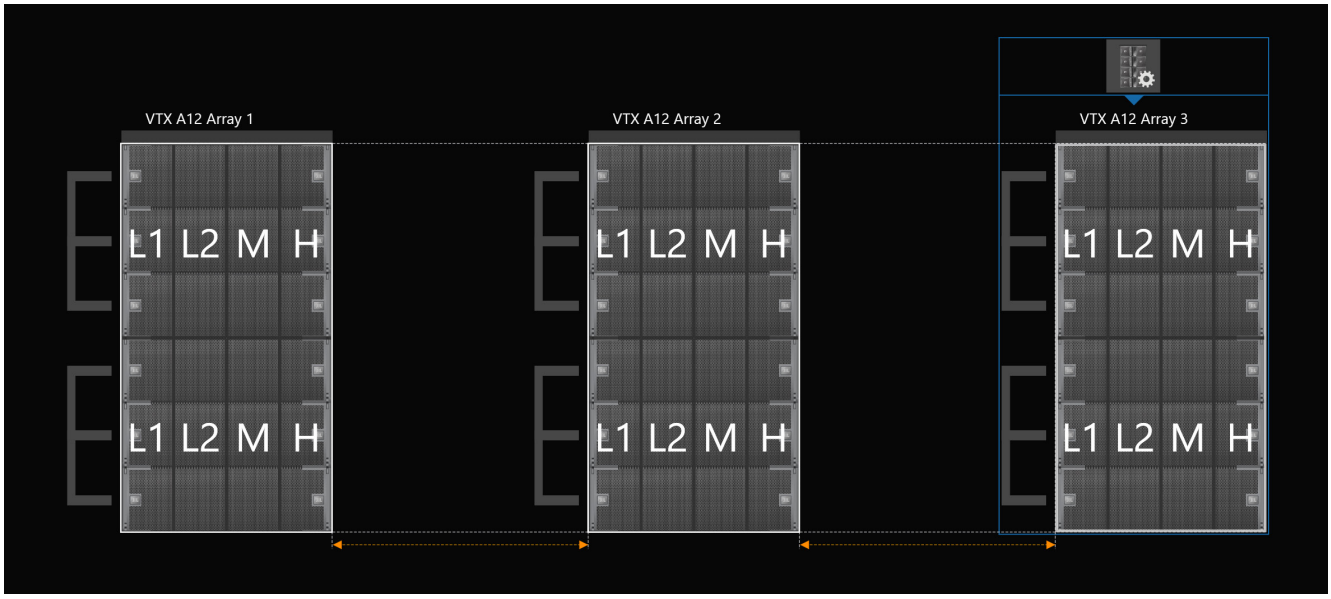


- **The work-flow goes as follow:** design the system in LAC3 (or LAC2), import the arrays in Performance Manager, send the settings to the devices.



New snapping and object alignment features

- Performance Manager now includes an advanced object alignment feature that help align items and keep venue files looking organized.
- When an object is selected and moved within the venue, snapping assist lines are presented to align the moving object with other elements within the venue

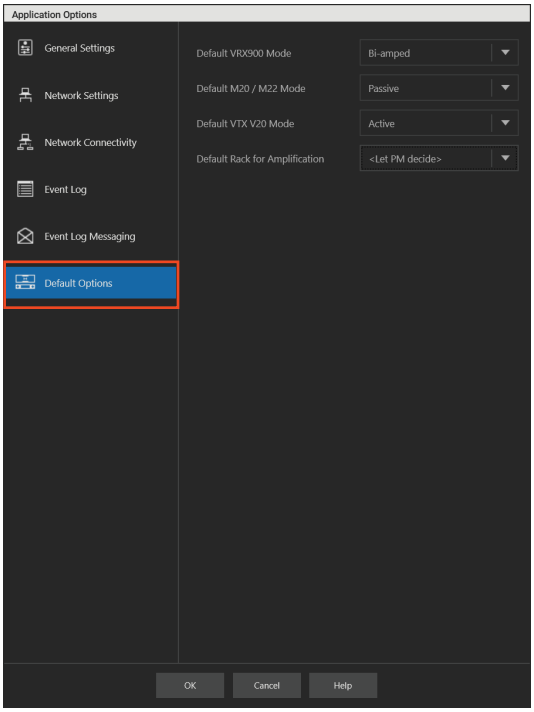


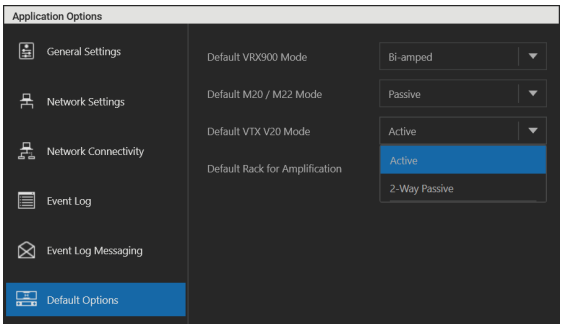
- Performance Manager can also calculate the equal distance points between objects and present the orange “Equal Distance” arrow lines
- The new snapping features works across speakers and amplifiers

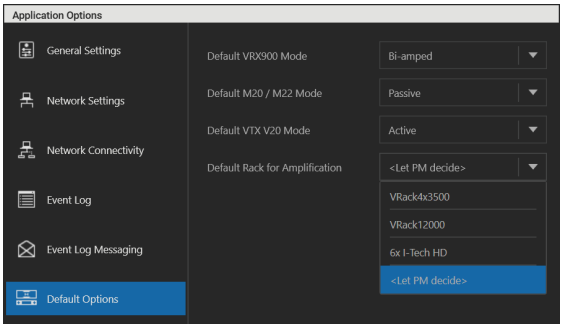


New Default Settings menu in Applications Options

- The Default Options menu allows for selecting the default mode for speakers and amplifiers racks
- Performance Manager sets all speakers to the active 3-way or active 2-way modes by default. If a system is always used in passive mode, PM can be set to set that by default This eliminates several steps during the design stages
- The same can be selected for amplifier racks. Crown Audio V-Racks are used by default. A custom rack created by the user can be set as the default amplification option
- When "Let PM decide" is selected, Performance Manager uses Crown Audio V-Rack 4 for TOP cabinets and V-Rack 2 for Sub-woofers.







New EQ Analysis Function

- A new EQ analysis function has been implemented in Performance Manager 2.4. The new function is triggered when entering Tune System mode and it checks the EQ filters found in the online devices against the filters found in the Performance Manager venue file. If there are discrepancies between the device filters and Performance Manager a worning is presented with the option to sync the two together.

New Firmware update UI

- The firmware update UI has been updated to match the Performance Manager 2.0 styling
- The new UI is also compatible with Retina like displays and adheres to Windows DPI scaling factors (requires Windows 10)

BUG FIXES

- Addressed an issue preventing users from navigating from Group EQ to Calibrate Arrays
- Increased the size the MUTE icons under the Grouping section
- Updated all the MUTE icons to high resolution images to remain sharp even at 100% zoom
- General performance improvements
- Updates to the ribbon color notifications in Run Show mode

Version 2.3.3

April 2017

Bug Fixes

- Speaker presets: addressed a preset loading issue with VTX F Series
- Go Online Mode: addressed an issue causing the Go Online Mode to freeze under some situations

Version 2.3.1 & 2.3.2

March 2017

Bug Fixes

- Speaker presets: addressed a preset loading issue with non-standard amplifier channel configurations
- Speaker presets: addressed a preset loading issue with VTX V20 in Bi-Amp mode

Version 2.3.0

February 2017

New Features

New Speaker presets for all VTX Line Array systems

- New speaker presets for VTX V20, VTX V25-II and VTX Subwoofers
- VTX V20 Release 2.0 presets:
  - Improved phase response for Bi-Amp and active presets. All VTX speakers have the same phase response
  - Improved LF to MF/HF tonal balance for average sized arrays (reduced energy in the 300Hz area)
  - Simplified Preset selection options with one array preset available (eliminated ST, LT and XLT)
  - Simplified preset naming convention
  - New FL (FILL) presets for use in fill applications. Distributed Fill templates automatically select the FL presets
- VTX V25-II Release 2.0 presets:
  - Improved HF tonal balance
  - Reduced LF energy below 100Hz on full range presets for better tonal balance
  - Simplified Preset selection options with one array preset available (eliminated ST, LT and XLT)
  - New preset naming convention
  - New FL (FILL) presets for use in fill applications. Distributed Fill templates automatically select the FL presets
- VTX Subwoofer presets are now universal and can be used with any VTX system
  - Example: The same VTX S28 80 preset is compatible with both the VTX V20 80, VTX V25-II 80 and any other VTX product

Notes:

- For more information on the new VTX presets refer to the Preset Library sheets
- VTX V25-II R2.0 Preset Library: Link
- VTX V20 R2.0 Preset Library: Link
- **Performance Manager venue files must be rebuilt to take advantage of the latest VTX presets**

New Delete options

- Delete now possible via the right-click context menu
- Press and hold to activate right-click context menu on touch devices

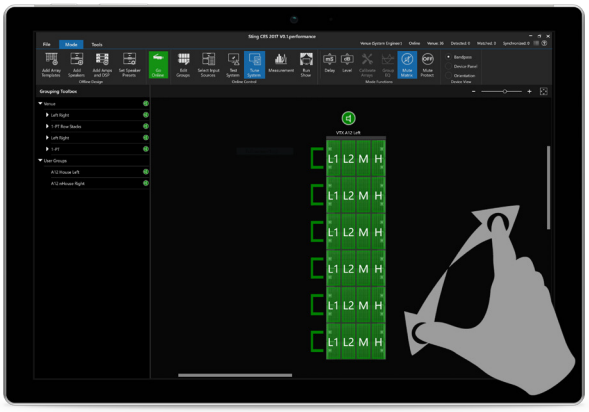
New Keyboard shortcuts for Test System mode

- G = Generator ON/OFF
- + / - = Controls the generator level in 5dB steps

New multi-touch gestures

February 2017

- Support for multi-touch input on Windows 10 devices with touch displays
- Multi-touch gestures can be used to navigate the venue



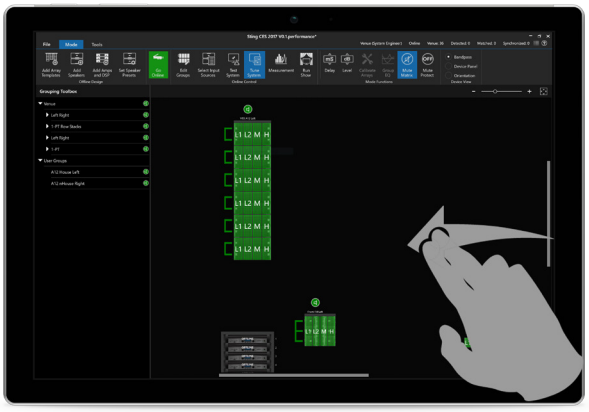
Pinch to Zoom

Use the Pinch gestures to zoom in and out



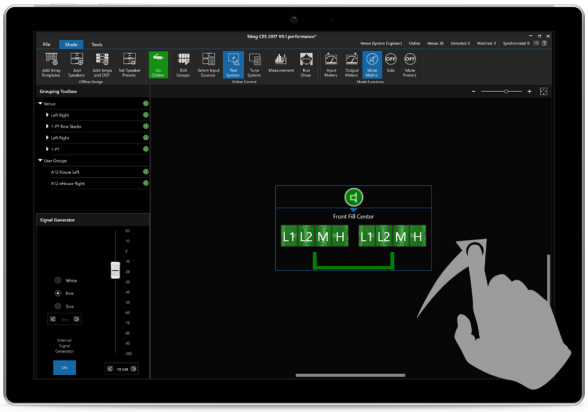
Double-tap

Use double-tap to quickly zoom out to the home location



2-Finger Drag

Use the 2-finger drag gesture to move around the venue

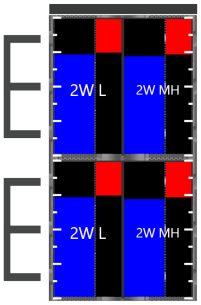


1-Finger Drag

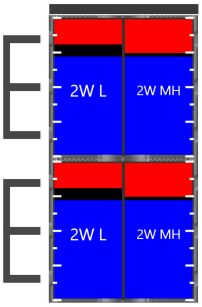
Use the 1-finger drag to select or highlight items

New meters in Run Show mode

- Gain reduction meters are now combined into the same meter container as the output meters
- Output meters move from the bottom up where the gain reduction meters activate from the top down
- When the meters overlap, the gain reduction meters are displayed at the top



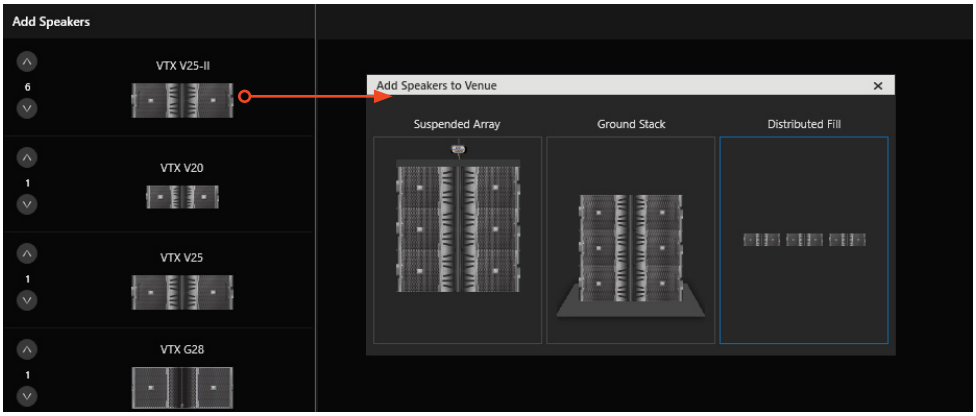
Before (2.2.1)



After (2.3.0)

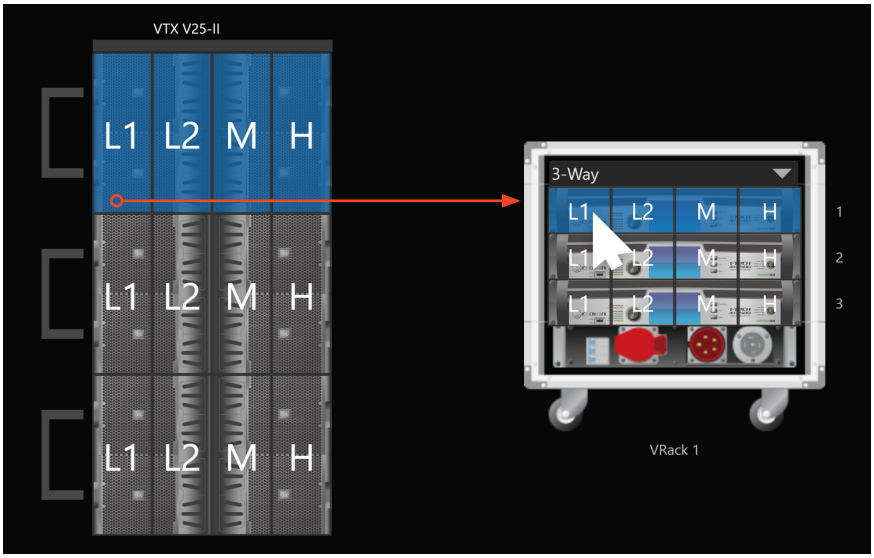
Improved UI for Add Speakers dialogs

- When a speaker is dragged and dropped directly into the venue, a selection dialog box presents the user with the possible configuration options for that specific system (example: Suspended Array, Ground Stack or Distributed Fill)
- The User Interface for this dialog box has been reworked to show the exact configuration for that system with the correct speaker images



New speaker to amplifier association options

- Press-and-hold the Control key to select multiple bandpasses (i.e. L1, L2, M, H)
- Drag-and-drop the selected bandpasses to an amplifier
- All 4 connections are completed with one drag-and-drop



Updates to Measurement Integration

- Added Delay Tracking command for the Smaart API
- Delay Tracking can be switched ON/OFF within Performance Manager for each channel independently
- Activating Delay Tracking in Performance Manager will activate Delay Tracking in Smaart



Old (2.2.X)



New in PM 2.3



Smaart 8

Bug Fixes

- Addressed some issues with the dbx DriveRack 4800 processor
- Addressed issues regarding JBL DP-DA powered line array products
- Addressed a Windows Firewall issue that was preventing Performance Manager from firmware updating Crown Audio I-Tech HD series amplifiers without bypassing the Firewall.
- The Firmware Update panel is now HiDPI enabled and can work with Windows display scaling on high resolution displays
- Fixed a UI issue with Input Priority page in Run Show mode. The ribbon button would sometimes change to RED without an input switch
- Addressed issues related to the Access control feature
- Fixed broken help file links

Version 2.2.0

New Features

Array size can be adjusted without having to reconnect speakers to amplifiers

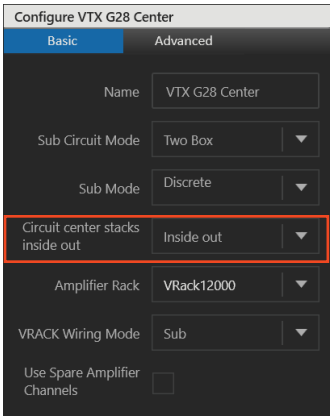
- Example: A 16x element array can be resized to a 12x element array using LAC-II. Speaker to amplifier connections remain intact

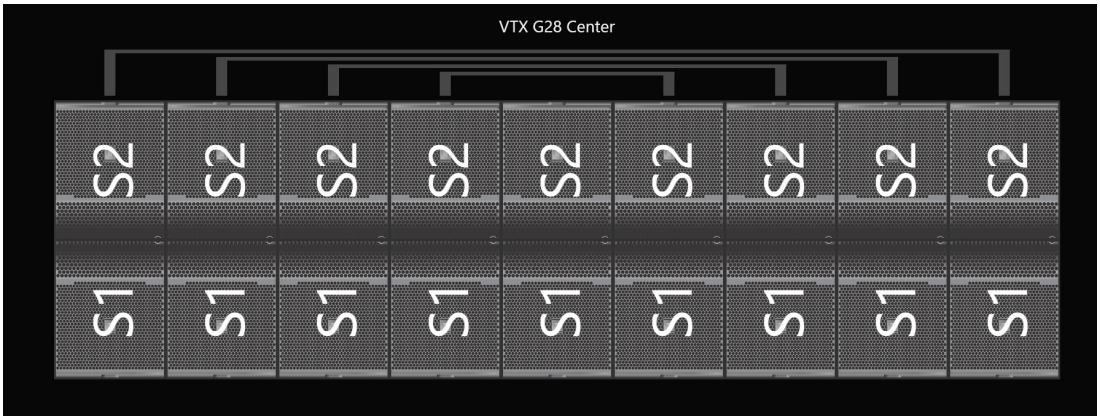
Performance Manager™ and Audio ArchitectTM can now run on the same computer

- Note: PM and AA should address a different set of devices
- Example: Audio Architect is controlling BSS London devices and Performance Manager is controlling Crown I-Tech HD amplifiers

New inside-to-out wiring mode for subwoofer and distributed fill arrays

- New drop down menu in Configuration panel for selecting Inside out wiring
- Delay and level adjustments are performed symmetrically





New Zoom keyboard shortcut

- Use spacebar to Zoom to selected areas

Performance Improvements

Group EQ improvements

- EQ dragging is significantly faster for large systems
- Opening time for the Group EQ panel has been reduced

Venue Zoom Improvements:

- New Zoom animations for smoother transitions
- Improved frame rate performance on lower-end computers

Navigation speed improvements:

- Mode to mode switching is now faster

- Going in and out of “Set Speaker Presets” is significantly faster
- Group Selection is now faster
- Going in and out of “Run Show” is faster

Muting/Unmuting for large systems is now instantaneous

Memory usage improvements

Updates to Measurement Integration

- Improved display for RTA bars
- Capture trace functionality improvements
- New Reset Averages command (new keyboard shortcut: V)

Bug Fixes

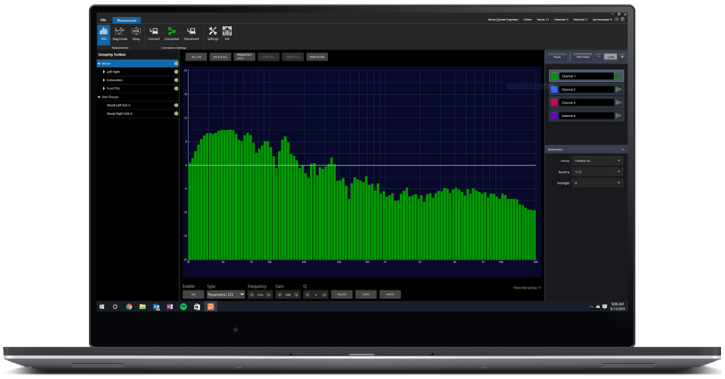
- Addressed a Zoom-in bug where PM would zoom too far
- Deleting a speaker no longer deletes the entire user-group
- Deleting speakers/circuits does not remove all circuits
- Fixed issues with Device Locate functionality in Go Online mode
- Discovered devices in Go Online mode are now displayed in alphanumerical order
- Performance Manager firmware update functionality improvements. No need to re-enable bypassing the firewall after each new PM version update

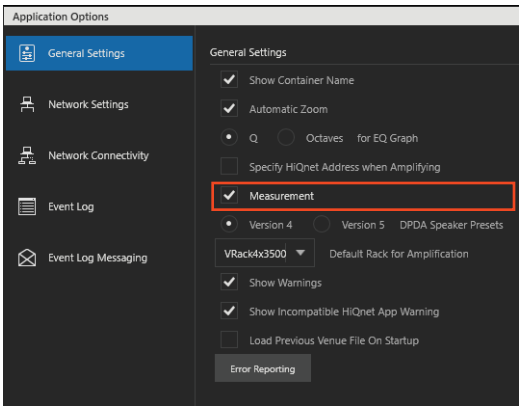
Version 2.1.0

New Features

Measurement integration with Rational Acoustics SMAART 7/8

- New measurement mode created for directly interfacing with SMAART and taking advantage of a wide variety of key features
- Wireless access in PM to real-time measurement data is possible via Wi-Fi connection to SMAART host computer
- The new mode can be switched on via the application options





Go-online mode Improvements

- Built-in NetSetter functionality including Clear Containers and Rescan Network commands
- New side-by-side layout for more intuitive operation
- Optimized rack and device organization for easier online device management
- Improved “Locate Device” functionality with a dedicated ON/OFF button
- The computer network adapter can now be selected from the Go Online page

New Select Input Sources mode functionality

- Added Input Meters page
- Added AES Trim page for gain matching digital audio signals to analog backups
- Added Input Priority Status page to monitor current amplifier input source
- Added AES Status page for real-time monitoring of PLL

User Group improvements

- User groups no longer follow template symmetry
- This enables creation of more specific user groups for controlling key areas of array coverage

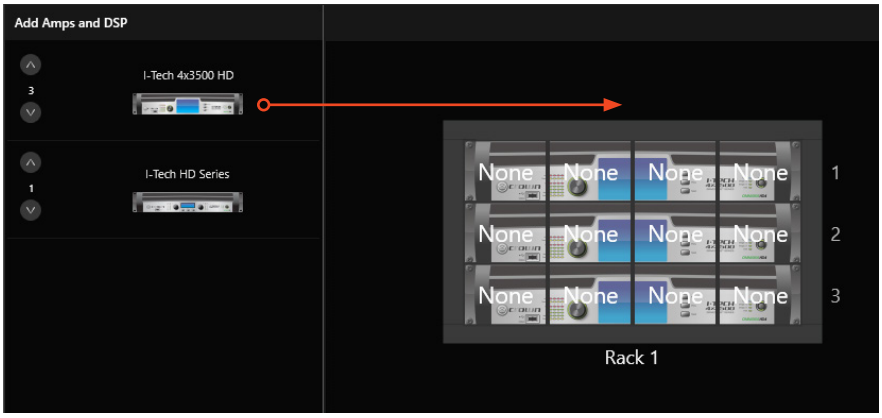
Line Array Control Panel updates (Array Calibration)

- Filters are now grouped in Array-level and Circuit-level Filters
- Default frequency values updated to reflect more optimal starting frequencies and filter types and improve consistency across VTX systems world-wide
- Updated filter type options



Custom Rack improvements

- Custom amplifier racks can now be created “on the fly” similar to Audio Architect with a simple drag-and-drop operation in order to address last-minute add-ons or similar situations
- Amplifiers can be added to custom racks “on the fly”
- It’s now possible to create custom rack layouts with more than 8x amplifiers (installs)



Add Speakers Mode improvements

- Speaker dialog graphics updated
- Better support for M Series (no containers needed)
- Improved F-series support (proper monitor mode now available)

New Run Show Mode Functionality

- Added Input Priority Status page showing the active input
- Added AES Status (sync) page
- Added real-time Impedance readings to Load page
- The ribbon UI is now interactive and some icons will change colors to indicate status

Line Array Calculator updates

- Support for LAC Version 1.3
- Improved import support – array circuiting now follows LAC

Error reporting tool

- New build-in error reporting functionality
- Sends anonymous usage and error data back to the development team
- Users must opt-in

New Speaker Preset updates

- New R3 V20/S25 presets with improved S25 protection
- New R1.1 M Series presets with improved Bi-Amp performance
- All speakers now get high-pass option

New Speaker Support

- Preset support for CSX/VTX F35

Performance Improvements

- Going in and out of Set Speaker Presets mode is now faster
- Performance and Memory use optimizations
- Improved compatibility with Windows DPI settings
- Added one more filter to Group EQ (total of 11)

Bug Fixes

- High CPU usage when meters were running
- Group EQ filters set to 1kHz getting lost

- BW to Q conversion issues fixed in Group EQ graphs
- Fixed opening file issue caused by Windows Localization settings
- Fixed circuit level issue when combining 4-channel and 2-channel amplifiers in the same circuit

Version 2.0.1

Bug Fixes

- Localization issues preventing reading venue files
- Access violations to PresetDatabase.sdf when going online
- Generic speakers not properly working with ITech 4x3500HD

Version 2.0.0

New Features

Performance Manager is now free of charge

- No need for a key or online activation

New User Interface with a modern look and feel

- Contemporary flat look with consistent color palette

New simplified modes / Ribbon reorganized

- Merged Calibrate Array and Tune System modes
- Merged Add Amplifiers, Amplify Manually and Add Processors modes

Full support for Pen input on Windows 10 devices

- All Performance Manager UI elements can now be operated via Pen input on Windows devices that support pen

Infinite Venue Canvas

- Racks and arrays can be moved in any direction as far as you want
- The zoom tool will track updates
- The navigator button and window have been removed

New drag and drop feature for Speaker Presets

- In the new and simplified Add Amps and DSP mode, speaker and amplifier channels can now be associated even if they are initially generated with mismatched types/labels
- Drag and drop any speaker to any amplifier channel to create a connection

Greatly Simplified LAC Integration

- LAC is now a single step operation
- The single step import function now includes all circuiting and DSP information
- LAC within PM is now high DPi aware and works better on high resolution displays

EQ Improvements

- Group EQ: Individual filters or groups of EQ filters can now be transferred from one array to another using the new EQ co-py-paste feature
- Calibrate Arrays: Individual filters or groups of EQ filters can now be transferred from one array to another using the new EQ copy-paste feature
- EQ adjustment handles are present only on selected/active EQsNew anti-slip function to prevent EQ filters from moving on accidental touch

Networking improvements

- Device discovery immediately starts when the software starts – this will expedite the matching operation
- Networking options updated – PM now allows for selecting the specific Network adapter used for the system

Simplified Circuiting

- The unpredictable high performance/nominal/economy circuiting specifications are gone
- Now simply specify the number of cabinets in a circuit
- New "3-way + Sub Parallel" wiring mode for VRack 4x3500

Array volume control

- New master array level control allows for adjusting the level of an entire array and can take values from -100 to +20dB
- **Crown I-Tech HD firmware update is required for this feature to work**

New delay scheme for Subwoofer Arrays

- New delay grouping for improved Electronic Delay Steering for Subwoofers arrays
- Two independent delay adjustments are now possible - one for circuit-level EDS and one for the entire array
- New master/EDS delay ON/OFF switches for easy control

System Meter Improvements

- Integrated gain reduction - the meters in Run Show mode now show both Output and Limiter Gain Reduction at the same time
- Optimizations - Meters now run in a separate thread improving performance

New and improved system Grouping

- The system grouping tree has been reworked to better group arrays based on the selected system template

New venue Layout tools

- New object alignment options in design mode
- Object location can now be adjusted in all design modes

Default rack selection

- In the options you can specify what amplifier rack Performance Manager show use as the default option
- Users can now set custom racks (non V-Racks) as the default rack

New Keyboard Shortcuts

- Ctrl + 0 – zoom to home
- Ctrl + +/- – zoom in out
- Spacebar – zoom to selected
- Shift-mouse drag – constrained drag
- Tab – next mode
- Shift-Tab – previous mode

- F2 – rename (where applicable)
- Ctrl + up/down/left/right arrow – align edges
- Ctrl + A – select all
- Ctrl + S – Save
- Ctrl + Shift + S – save as
- Ctrl + O – open

New Speaker Support

- Full support for JBL VTX M Series

New Device Firmware

- New Crown Audio I-Tech 1200HD firmware (ITHD-1143.bnd)
- New Crown Audio I-Tech 4x3500HD firmware (ITHD4-10515.bnd)

Removed Items

- PM-2.0 is NOT backwards compatible with previous versions
- Removed bandpass gains
- Removed Limiter Adjustment
- Removed original Crown I-Tech and MAi amplifiers
- Removed STX series speakers
- Removed various versions of array and stack templates in favor of simplified parameterized versions