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 into 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 helps 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 work 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 Subwoofers.

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 warning 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

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

- 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)](image1)
![New in PM 2.3](image2)
![Smaart 8](image3)

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 Architect™ 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 (installa)
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 copy-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 EQs
- New 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