Software Newsletter
October 2016

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ArrayCalc V9
The d&b ArrayCalc simulation software is the prediction tool for d&b line arrays, column loudspeakers, and a selection of point source loudspeakers and subwoofers. ArrayCalc accurately models the exact performance of the system in a given space defined by the user.

The optional ArrayProcessing function with ArrayCalc optimizes the level and tonal balance of a d&b line array in the vertical plane over the entire audience listening area. A reference point can be defined for the NoizCalc emission modelling software, which uses data from ArrayCalc to predict the effects of the sound reinforcement system on neighbouring areas in the far field.

Overview of new features in ArrayCalc V9
- New user interface with adaptive screen resolution.
- Implementation of 24S, 24S-D and 21S-SUB loudspeakers
- The T-Series can be optimized with ArrayProcessing. More details are provided later in this document.
- The AP settings for subwoofers positioned at the top of an array have been improved to provide a higher amount of LF energy
- The overall level normalization of ArrayProcessing settings have been modified in level to reduce perceived level differences in comparison to unprocessed results.
- Additional positions within a Point Source group.
- Updated example projects including ArrayProcessing settings are now directly accessible from home screen.
- ‘Bypass’ mode can be used to compare the results with ArrayProcessing to a standard setup.
- As each loudspeaker must be driven individually for ArrayProcessing, the amplifier channel requirements will be different from a standard setup.
- The latency and time alignment must be adjusted when deploying a system without ArrayProcessing.
- Temperature and humidity settings should always be updated when using ArrayProcessing.
- Real world projects will also be added in future for further reference.
- New Global Mute / Unmute button for all sources.
- The Mute / Unmute buttons now also affect the visibility of the individual source dispersion, providing a better overview and a more detailed view of the aiming of sources.
- The sensitivity of Realizer within the ArrayProcessing dialog window has been adjusted for large coverage areas with a very small level drop over distance above approximately 100 m (300 ft).

This latest version of the ArrayCalc simulation software will be compatible with all dbac2 file types. Video tutorials will be available on www.dbaudio.com and https://www.youtube.com/user/dbaudiotechnik.

Redesign of graphical user interface in ArrayCalc V9
This latest version of ArrayCalc will introduce a completely new user interface. While the basic operation remains the same, ArrayCalc V9 includes an improved graphic user interface, handling and workflow, and is adaptive to various screen resolutions. The overall design will be recognized by d&b software users as it shares the same design layout as the R1 Remote control software V2, which was introduced with the D80 amplifier at the end of 2013. The basic functionality of the various editing pages remains the same as before, albeit with some small tweaks to harmonize the workflow.

In addition to a consistent appearance between the ArrayCalc, R1 and NoizCalc software programs, this new platform will also improve the implementation of future features.
Selection of views from ArrayCalc V9

Home view

Project menu including new, open, save, print options. These functions are also directly accessible from the Home view.
Help menu

Sources view

Alignment view
3D plot view

Amplifiers view
T-Series ArrayProcessing
The optional ArrayProcessing function optimizes the level and tonal balance of dB line array systems, while also applying a target frequency response to each loudspeaker column. When ArrayProcessing was launched in April 2015, it could be applied to the dB J, V and Y-Series. Now, due to popular demand, dB will launch ArrayProcessing for the compact dB T-Series line array.

dB T-Series arrays are often used in theatres with large balcony sections which demand a spectral and spatial balance, and corporate events such as conventions or presentations, where intelligibility is a necessity and flexible level drop characteristics may be required. With ArrayProcessing, the T10 and Ti10L line array systems will be more consistent across the entire audience listening area in the vertical plane.

Due to the compact cabinet size and typical length of a T10 or Ti10L line array, the ArrayProcessing optimization will not be as effective in the low-mid region as the larger J, V and Y-Series arrays. Additionally, the typical frequency response (particularly in the vocal range) of a T-Series system does not fully correspond with the current dB target frequency response within ArrayProcessing. This means it was necessary to develop a specific target frequency response for the T-Series for optimization with ArrayProcessing.

The graph below shows T-Series target frequency response in comparison to the standard J-, V- and Y-Series response. This means the familiar T-Series voicing is still achieved in combination with the additional advantages of ArrayProcessing.

To optimize the T-Series with ArrayProcessing, each loudspeaker must be driven individually using either the D80, D20, 30D or 10D amplifiers and a minimum cabinet count of 6 x T10/Ti10L loudspeakers is required.

Due to the differing target frequency responses, a T-Series array with ArrayProcessing does not necessarily have the same sonic characteristics to a neighbouring Y or V-Series Array.
**R1 Remote control software V2.18**

The R1 Remote control software provides a flexible workplace for the d&b user from anywhere in the network. All features, functions and controls that are accessible via the front panel and web remote interface of d&b amplifiers, can also be remotely controlled and/or monitored using R1 Remote control software. It allows each channel of the amplifier to be controlled and enables the creation of groups of loudspeakers. The V2.18 version of the R1 Remote control software includes a number of new features, as described below.

**Improved Remote view navigation**

R1 V2.18 includes two new ways to switch between Remote views with just one click: a new Navigation bar and Switch controls.

**Navigation bar**

The new tab-like navigation bar shows all open views at the top of the workspace.

Tabs will be added for each view that is opened by the user. They can be sorted via drag and drop.
Switch controls
Remote views can now be assigned to switch controls. This way, shortcuts can be placed in a remote view to switch into other views:

In order to make use of this feature, just add a Switch control to a remote view, and choose "View" as Target type. All available views will be shown under "Target" for selection.

Zoom
With R1 V2.18 the zoom level for each remote view can be set. The configured zoom level will be stored for each view independently, and written to the project when saved, so that it remains the same after reopening the project.

The zoom level can be set from the Remote view Properties widget, via keyboard shortcuts or via "Pinch to zoom" on touch displays. The keyboard shortcuts are:
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<table>
<thead>
<tr>
<th></th>
<th>Windows</th>
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<tr>
<td>Zoom in</td>
<td>Ctrl + ‘+’ or Ctrl + Mouse wheel</td>
<td>Cmd + ‘+’ or Cmd + Mouse wheel</td>
</tr>
<tr>
<td>Zoom out</td>
<td>Ctrl + ‘-’ or Ctrl + Mouse wheel</td>
<td>Cmd + ‘-’ or Cmd + Mouse wheel</td>
</tr>
<tr>
<td>Zoom reset</td>
<td>Ctrl + ‘0’</td>
<td>Cmd + ‘0’</td>
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![Zoom in diagram](image)

**Zoom 85%**
**System check impedance value visualization**
A new “Z” impedance button has been added to the System check view, which can be used to switch between a graphical visualization and numerical impedance values in the System check view:

![System check visualisation](image)

**High DPI support**
The compatibility with high DPI displays has been improved, greatly enhancing the usability of R1 with new monitors and touchscreen devices.
Amplifier firmware V2.06 (D80/D20/10D/30D)
The V2.06 firmware for the 4 channel amplifiers introduces new functionality. Among many other features, the Digital input sync status display has been improved and the web remote interface can now be protected with a password.

Improved Sync status display
- New Digital input sync states have been added to show the status of the corresponding digital input.
  - In sync: Input is synced
  - Sync warning: input is synced, but not in phase with the master sync source
  - Sync error: input is not synced with the master sync source
  - Off: the input is set to analog or the amp is in standby mode
  - Not locked: no digital input signal detected
  - Use SRC: digital input signal sample rate not supported (e.g. 44.1 kHz)
  - Syncing: locking to input
  - SRC: Sample Rate Converter active

These digital input states are also shown in R1.

Password protection for web remote
The web remote interface on all amplifiers can now be protected with a password. When the lock function is activated, the same password is used for the front panel display (for amplifiers with a display) and the web interface.
DS10 firmware V1.4
The DS10 firmware V1.4 introduces the Device Lock feature from Audinate. Dante Controller V3.10 or higher is required for using this feature.

Device Lock
Device Lock allows you to lock and unlock supported Dante devices using a 4-digit PIN (Personal Identification Number).

When a device is locked, audio will continue to flow according to its existing subscriptions, and it can be monitored, but it cannot be controlled or configured – its subscriptions and configuration settings become read-only.

To configure a locked device, first it must be unlocked using the PIN number with which it was locked.

Locked devices can be identified by:

- A small gray padlock icon against the device name in the Network View > Routing tab
- A red background highlight when the mouse cursor is positioned over the device in the Network View > Routing tab
- A check (tick) in the Device Lock column in the Network View > Device Info tab
- A red padlock icon in the Device View toolbar

Locking a Dante device
To lock a Dante device:

Using the Device View

Open the device in Device View (Ctrl + D, or Cmd + D) and click the padlock icon.

1. In the Lock Device panel, enter a 4-digit PIN in the PIN field.
2. Enter the same PIN in the Confirm PIN field.
3. Click ‘Lock’.

The padlock icon will change to red indicating that the device is now locked.

From the Device Info Tab

1. In Network View, select the Device Info tab.
2. Click the Device Lock checkbox for the device.
3. Follow steps 2-3 above.

Unlocking a Dante Device
To unlock a Dante device:

Using Device View

Open the device in Device View (Ctrl + D, or Cmd + D) and click the padlock icon.

1. In the Unlock Device panel, enter the 4-digit PIN in the PIN field.
2. Click Unlock.
3. The padlock icon will change to blue indicating that the device is now unlocked.

From the Device Info Tab

1. In Network View, select the Device Info tab.
2. Click the Device Lock checkbox for the device.
3. Follow steps 2-3 above.
Unlocking a Device when you have forgotten the PIN
If you have forgotten the PIN for a locked device, you can reset the PIN. To reset the PIN for a locked device:
1. Isolate the device from the rest of the Dante network.
2. Disconnect and reconnect the device.
3. Wait for at least 2 minutes.
4. Use the ‘Forgot PIN’ option in the Unlock Device panel.

How to Isolate a Device from the Rest of the Dante Network
There are 3 ways to isolate a device from the rest of the network.

Option 1: Remove all other Dante devices from the Dante network
You can isolate a device by physically disconnecting all other Dante devices from the network switch, or by completely powering down all other devices other than the locked device and the computer running Dante Controller.

Note: Dante Virtual Soundcard and Dante Via are considered to be Dante devices – all running instances of those applications must be fully stopped, even if they are on the same computer on which you are running Dante Controller.

Option 2: Connect your device to a computer running Dante Controller
Physically remove the device from the main Dante network switch, before connecting it directly to your Dante Controller computer (using a normal Ethernet cable). Alternatively, the device and computer could be connected to a separate network switch (with no other Dante devices connected).

Option 3: Use a VLAN
Set up a Virtual Local Area Network with the locked device, and the Dante Controller computer only.

Resetting the PIN for a Locked, Isolated Device
Once you have isolated the locked device, disconnected and reconnected it, and then waited for at least 2 minutes:
1. Click the ‘Forgot PIN’ option.
2. Click Reset.
   The device is now unlocked, and can be re-locked using a new PIN if required.

Subscriptions from Unlocked Devices to Locked Devices
If there are existing subscriptions to a device when it is locked, those subscriptions will continue to function as normal. They can also be removed, and replaced (assuming the subscribing device is unlocked).

No new subscriptions can be made to a locked transmitter.
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NoizCalc
Since the launch in April 2016, d&b NoizCalc has been downloaded over 2000 times by more than 1500 registered users across the world. NoizCalc was designed to assist system designers in the assist in the system planning and design process, enabling users to achieve the ideal results at any outdoor event; by delighting the audience while respecting the neighbours. All registered users are informed about updates, problems or relevant information in a d&b NoizLetter - a personal d&b email to registered users.

The launch is just the start.
For d&b, the launch of NoizCalc is the start of a movement to deliver and establish more awareness of noise immission issues, as well as a way to gather and share real world experience. Please share any opinions and experiences with us, as this information will help d&b to improve NoizCalc. We hope to collect a reasonable amount of practical experience throughout the summer season. d&b are verifying simulations at selected events. Currently there are no planned changes to NoizCalc other than bug fixes.

For all questions and queries, please contact support@dbaudio.com

For more information about NoizCalc, please watch the tutorial videos, and read the technical White Paper and TI document, all of which are available at www.dbaudio.com