



DSi 2.0 SERIES

DEDICATED AMPLIFICATION
FOR JBL CINEMA SOLUTIONS

FEATURE UPDATE

INCLUDES:

DOLBY ATMOS CONNECT AES67 INTEROPERABILITY
CONTINUOUS LOAD MONITORING



MAY 2020

JBL DSi2.0 Firmware version 1.1.12.8 adds exciting features to the DSi2.0 Series Amplifier range. This update is part of *Audio Architect*.

As part of the update the below features are now enabled:

1. Continuous Load Monitoring
2. AES67 Interop with Dolby Atmos Connect

Additionally, there are a few other changes as listed below:

3. The Input PEQ now has an ON/OFF control for each Band. This allows for quick Bypass function to A/B EQ changes to the system.
4. The Amplifier Model Number is now displayed on the Front Panel screen under the IP Address.
5. The Processing Object icons are now highlighted on the Front Panel Display when they are enabled.
6. The Global Settings panel in Audio Architect now has a new 'Front Panel' section with additional controls for Display Timeout and Meters Timeout.
7. The SNMP MIB File is updated to include Load status and enable Traps for Load status change.

The required files are available within the software package 'DSi2_Update_4_24_20'

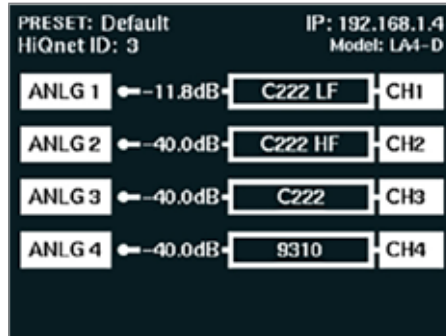
1. Audio Architect Beta version 2.45.0.54.
2. Dante Firmware Update Manager v3.10.6.2
3. DSi2Dante.dnt
4. JBL DSi2.mib

This Document only outlines the changes impacted by the new Feature Update and MUST be used in conjunction with the User Manual found at <https://jblpro.com/en-US/products/dsi-2-0-series#downloads>

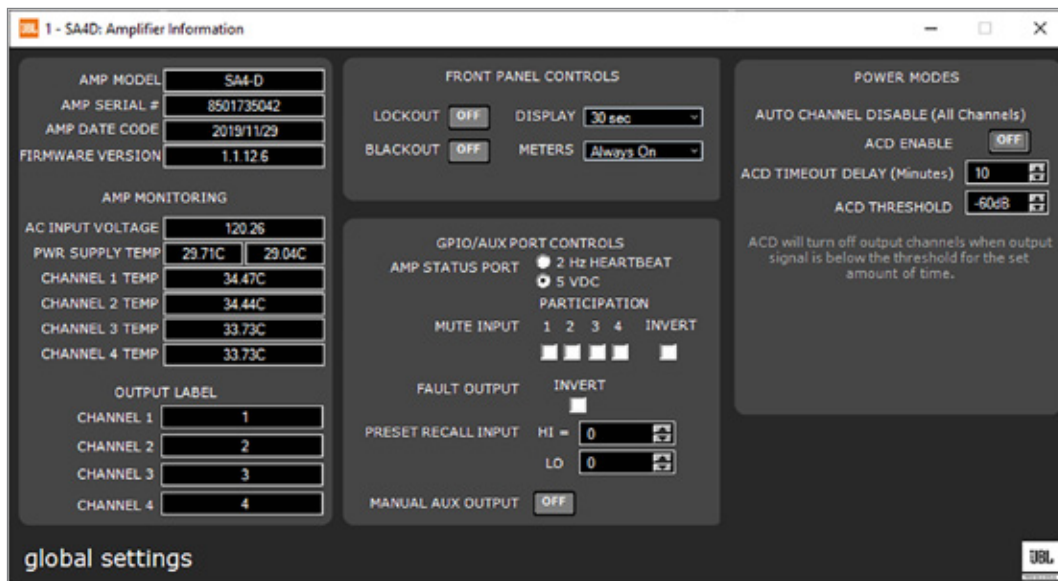
Amplifier firmware update instructions:

1. Unzip the contents of the 'DSi2_Update_4_24_20' package.
2. Install the new version of Audio Architect Beta version 2.45.0.54.
3. In Audio Architect, populate all Amplifiers and configure speaker tunings based on the installed system.
4. A pop up appears for a firmware update. Follow the instructions to update the firmware on the amplifiers and reboot the amplifiers once the update is completed.
5. Click 'Go Online' and Synchronize the system using 'S' for send to amplifiers or 'R' to receive settings from the amplifiers.

1. The **Amplifier Model Number** is now displayed on the Front Panel screen under the IP Address.



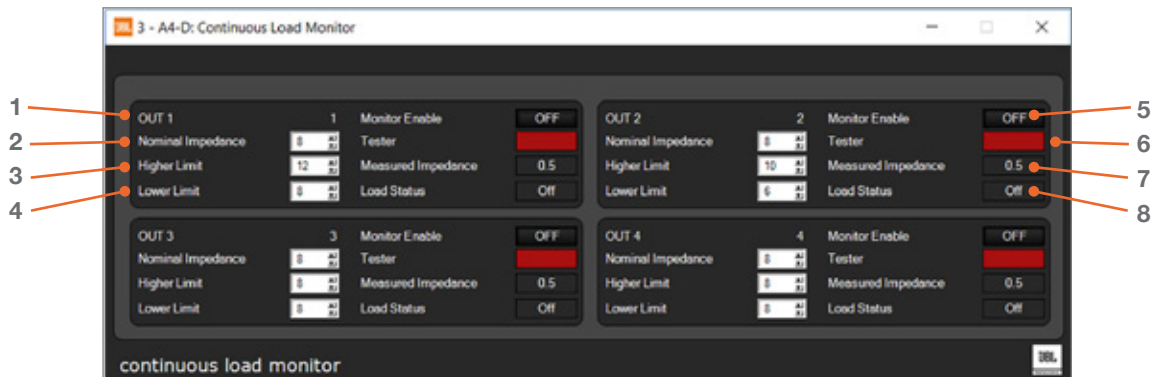
2. The **Global Settings** panel in *Audio Architect* now has a new 'Front Panel' section. In addition to the previously existing Front Panel LOCKOUT and Front Panel BLACKOUT controls, there are 2 new controls for DISPLAY and METERS.



- a. **DISPLAY** - A timeout can be selected from the dropdown list. The front panel display will blackout after this timeout. Options are: Always ON, 30s , 5m and 30m.
- b. **METERS** – A timeout can be selected from the dropdown list. The front panel meters will be active for the time selected. Options are: Always ON, 30s , 5m and 30m.

The 'DISPLAY' and 'METERS' controls on this tab can be changed via the front panel MENU>SYSTEM SETTINGS>LIGHTING/DISPLAY OPTIONS.

Continuous Load Monitoring has now been enabled on the DSi2.0 Amplifiers. This can be accessed by double clicking on the CLM PO's in the device panel within *Audio Architect*. Double-clicking on any channel PO will open the common page for all 4 channels.



1. **Output Name** – Read from the 'Label' tab.
2. **Nominal Impedance** – *User input field*. Enter the *Nominal Impedance* of the speaker load as provided by the manufacturer. When connecting multiple speakers to an amplifier output, enter the calculated load impedance.
3. **Higher Limit** – *User input field*. Enter the *Higher Limit* threshold for acceptable deviation of impedance. This value must be set higher than the *Nominal Impedance*.
4. **Lower Limit** – *User input field*. Enter the *Lower Limit* threshold for acceptable deviation of impedance. This values must be set lower than the *Nominal Impedance*.
5. **Monitor Enable** – The amplifier will measure impedance only when this button is toggled to ON position.
6. **Tester** – This indicator lights green when there is adequate signal present to get a valid measurement.
7. **Measured Impedance** – This box shows the impedance on the output channel as measured by the amplifier.
8. **Load Status** – This field shows the load status as:
 - a. **'Normal'** – When measured impedance range is between the *Higher Limit* and *Lower Limit* set by user.
 - b. **'High'** – When measured impedance range is above the *Higher Limit* and *Lower Limit* set by user.
 - c. **'Low'** – When measured impedance range is below the *Lower Limit* and *Higher Limit* set by user.

When setting *Higher Limit* and *Lower Limit*, it is good practice to run the system. Turn ON *Load Monitoring* and observe the actual measured impedance. The actual measured impedance can vary by quite an amount compared to the nominal impedance.

Note: If the amplifier is set to send out alerts to an SNMP Trap Host, an alert will be sent when there is a state change; e.g., Normal to Low/High or Low/High to Normal.

JBL's DSi 2.0 family of dedicated cinema amplifiers (-D versions) allow for a direct interface of RTP AES67 audio streams as input sources to the amplifier. This feature allows for Dolby devices that use the Dolby Atmos Connect AES67 protocol to be directly connected to DSi 2.0 amplifiers without any other interface units in between.

This document provides deeper knowledge on the configuration of the Dolby device and DSi 2.0 amplifiers and how to route individual channels from within a Dolby Atmos Connect stream to the DSi2 Amplifiers.

Note that it is advisable to use a managed Gigabit Ethernet switch with QoS active, IGMP snooping enabled and all 'Green' power save modes turned off. It is also good practice to use a DHCP server during configuration to ensure that all devices are on the same subnet.

The Equipment may be connected as below:



1. To prepare the amplifiers, follow the below steps:
 - a. Install 'DanteFirmwareUpdateManager-3.10.6.2_windows.exe' and open the utility.
 - b. Select the correct network interface that is connected to the amplifier AES67 network and click 'Next'.



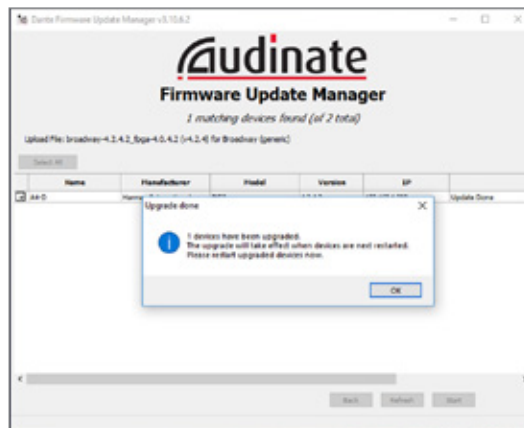
- c. Select 'Update Dante Firmware'. In the next window, browse to the folder of contents extracted from the 'DSi2_Update_4_24_20' package. Select 'DSi2Dante.dnt' and click 'Open' followed by 'Next'.



- d. In the next window, the program will scan for amplifiers on the network and populate them in the window. Select the amplifiers to be updated and click 'Start'.

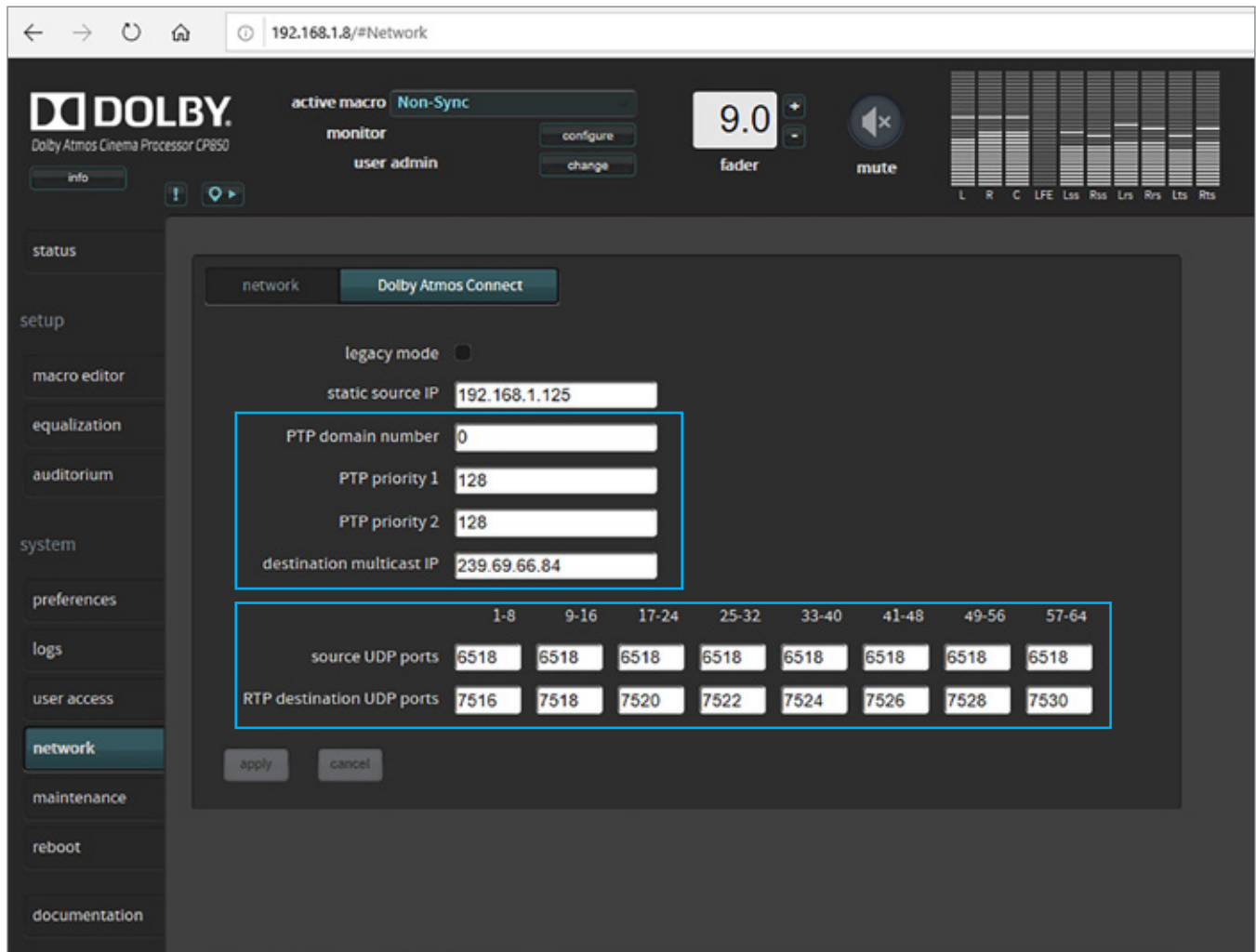


- e. Read the instructions in the next pop-up and follow carefully. Ensure that the devices are NOT turned off or lose power during the update process.



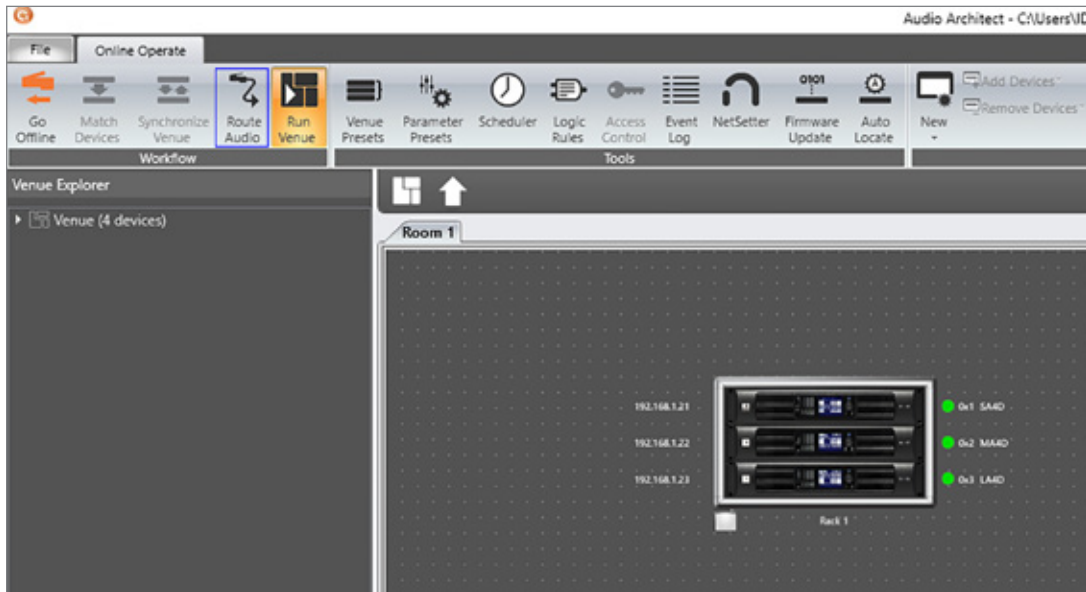
- f. Once the update is completed, a pop-up appears with the message 'Upgrade done'. Click 'Ok' and then 'Quit'.
 - g. Remember to reboot the amplifiers.
2. Log into the Dolby device and configure the Dolby Atmos Connect as below:
 - a. Set the 'Destination Multicast IP' as 239.69.xx.xx (the 239.69.xx.xx is the important part here).
 - b. Set the 'RTP Destination UDP Ports' as subsequent even numbers - e.g.: 7516, 7518, 7520.
 - c. Set 'PTP Domain Number' to 0.
 - d. Set 'PTP Priority 1' & 'PTP Priority 2' as 128.
 - e. Click 'Apply' and 'OK'.

- Shown below is a screen shot from the CP850 network configuration page. The process is similar for the CP950 and IMS 3000 except that the CP950 base version only allows 16 output channels in 2 streams.

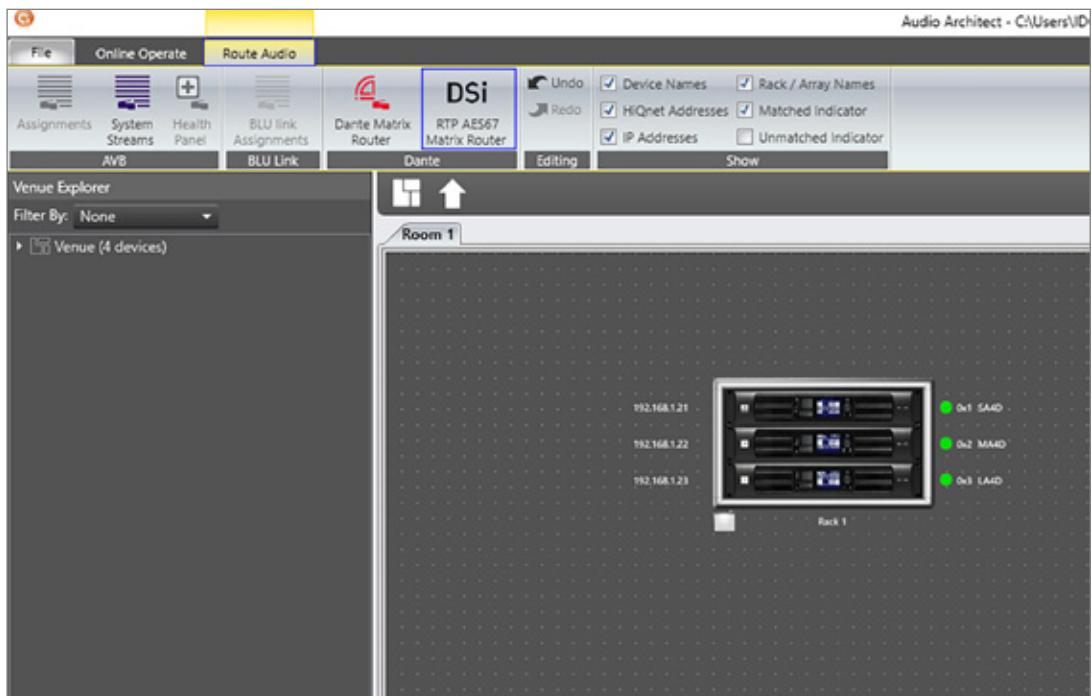


- In *Audio Architect*, populate all amplifiers and configure speaker tunings based on the installed system.
- Go online and synchronize the system using 'S' for send to amplifiers or 'R' to receive settings from the amplifiers.

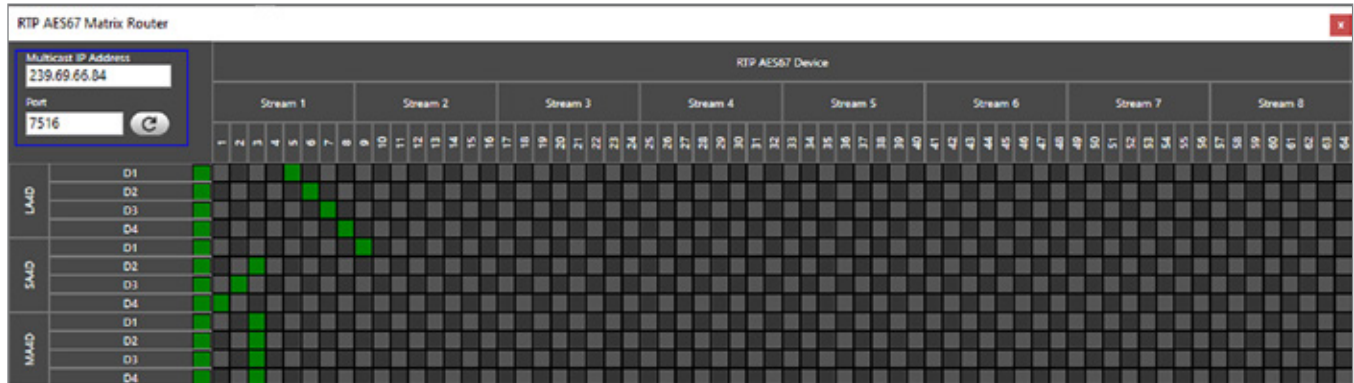
- Click 'Route Audio' under the 'Online Operate' tab. Then click the 'Route Audio' tab that appears next to 'Online Operate'.



- Click the 'DSi RTP AES67 Matrix Router' as shown below.



- The *Routing Matrix* window will open. Input the *Multicast IP Address* (assigned in Dolby network settings in 2a) and the number of the first port (assigned in Dolby network settings in 2b). The *Audio Architect* 'DSi RTP AES67 Multicast Router' assumes subsequent streams to use alternate port numbers. Hence, for the example below, stream 2 will use port number 7518, stream 3 will use port number 7520 and so on until port number 7530 for stream 8.



- To route a particular channel from the Dolby Stream to a channel on the amplifier, click on the grid that intersect the transmit (columns) and receive (rows). In the example above, channel 1 of the SA4D amplifier is subscribed (receiving audio) to Dolby channel 9 (stream 2, channel 1) and the LA4D is receiving Dolby channels 5, 6, 7, 8 (stream 1, channels 5, 6, 7, 8).
- When you click a grid, an hourglass icon appears while the receiver attempts to create a successful subscription. Once subscription is successful, the color in the grid will change to green.
- Once you have created the subscriptions to route audio, close the 'DSi RTP AES67 Router Matrix' window, go back to 'Online operate' > 'Run Venue'.
- If you need to change routing once you have closed the 'DSi RTP AES67 Router Matrix' window, open it by following steps 6, 7 & 8 and hit the refresh button to gather the subscription status. Once this is done, you may change routing as desired by repeating step 9.
- If you need to change routing at a later stage, you will need to know the Multicast IP address and the Port number for stream 1. Open 'DSi RTP AES67 Router Matrix' window, by following steps 6 & 7, enter the multicast IP address and port number as in step 8 and click the refresh button next to the port input field to gather the subscription status. Once this is done, you may change routing as desired by repeating step 9.
- Make sure that the amplifiers are set to have the network inputs as input sources. You may change input sources from the input PO within the amplifier device panel. Refer to *User Manual* section 'Configuring Inputs & Outputs in Audio Architect' for more details on this.