

TECHNICAL BULLETIN

PRODUCT: m908

ISSUE: *Provide Bass Management to rear speakers with dedicated subwoofer*

Date: 5/1/2024

Questions? service@gracedesign.com 303-823-8100 x 105

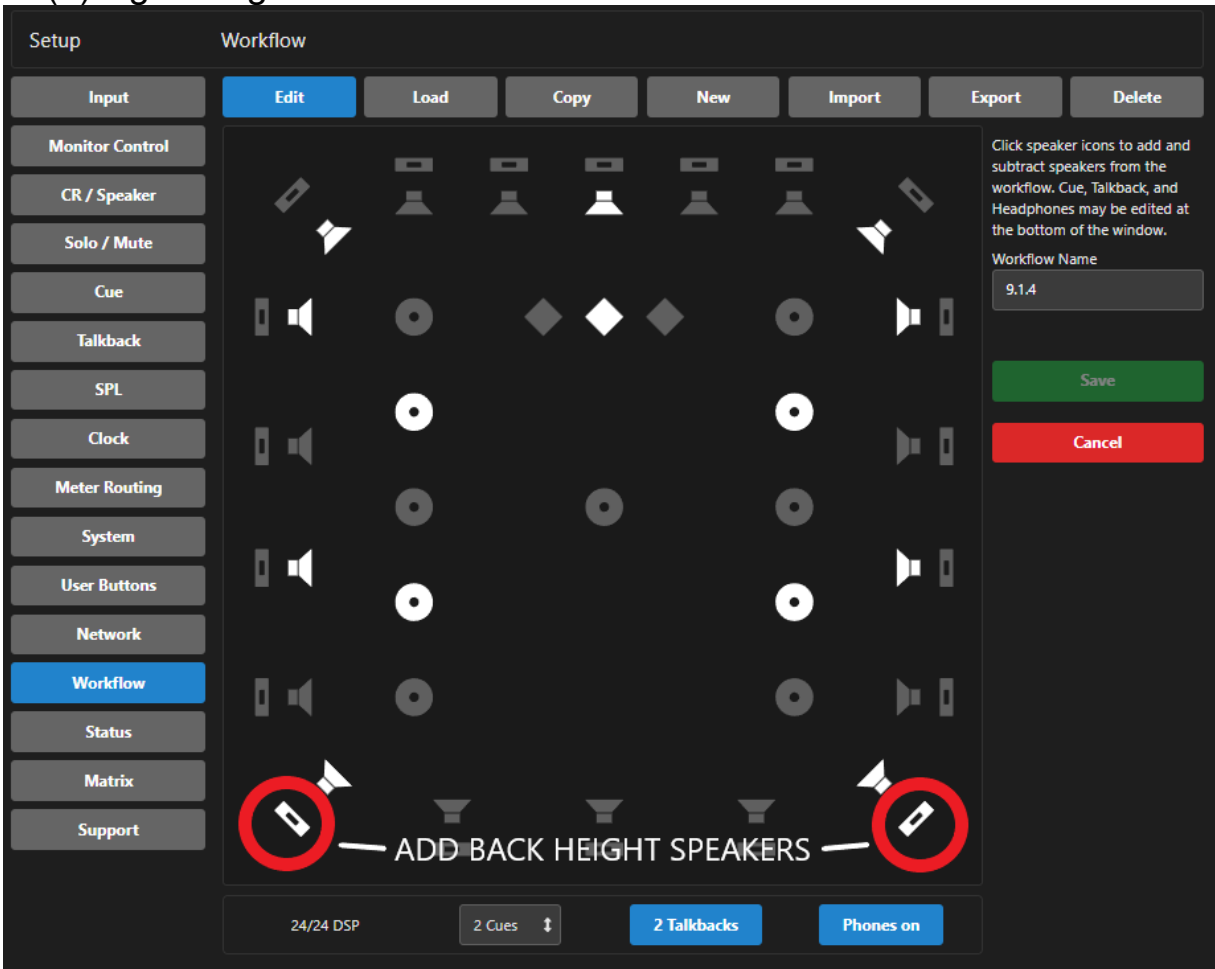
The m908 contains a powerful bass management system but it is unable to route Low Pass signals to additional arbitrary subwoofers. However, for immersive studios using an m908 that need a separate bass management system just for the Back speakers, the method described in this document can now be used.

The limitations of this method are:

- There is one Low Pass output from each speaker that will need to be summed together. This can't be done in the m908, so an external summing method is required.
- The Low Pass outputs will remain active when the m908 Bass Management system is turned off. However, they can be muted with the solo/mute system.

Setup Workflow:

1. Make a backup copy of your current workflow
2. Go to Setup > Workflow. Edit the workflow to add the following speakers
 - (1) Left Height Back
 - (2) Right Height Back



3. If there are no available DSP channels then remove one CUE to free up 2 channels.
4. Save the workflow.

Setup Input Routing

5. Go to Setup > Inputs. Edit any input that uses the Left Back and Right Back speakers by adding an additional route from the input Connector and Channel being used to the Left Height Back and Right Height Back respectively.

The screenshot shows the 'Input' setup screen in the Grace Design software. On the left is a navigation menu with options like 'Input', 'Monitor Control', 'CR / Speaker', 'Solo / Mute', 'Cue', 'Talkback', 'SPL', 'Clock', 'Meter Routing', 'System', 'User Buttons', 'Network', 'Workflow', 'Status', 'Matrix', and 'Support'. The main area is titled 'Input' and features a 'Sync Delay' slider set to 0.00 ms. Below this is the 'Channels' section, which displays a speaker layout. A red circle highlights the 'Left Height Back' speaker icon. A text box with the instruction 'USE SAME INPUT CHANNEL FOR LEFT HEIGHT BACK AND LEFT BACK' points to this icon. To the right of the speaker layout, there is a panel for the 'Left Height Back' speaker, showing 'Source' set to 'AES 1' and 'Channel' set to '7'. A note below these settings says 'Select a speaker to the left to choose its input source connector and channel'.

Setup Speakers

6. Go to Setup > CR / Speaker. Select the Speaker system that uses the Back speakers.
 - (1) Click on the Left Back speaker and set the LPF Slope to “none” and the HPF Slope to the desired crossover slope. Set the crossover to the desired frequency.
 - (2) Click on the Left Height Back speaker and set the LPF Slope to “none” and the HPF Slope to “bypass”

The screenshot displays the 'CR / Speaker' configuration page in the Grace Design software. On the left is a vertical sidebar with navigation buttons: Input, Monitor Control, CR / Speaker (highlighted), Solo / Mute, Cue, Talkback, SPL, Clock, Meter Routing, System, User Buttons, Network, Workflow, Status, Matrix, and Support.

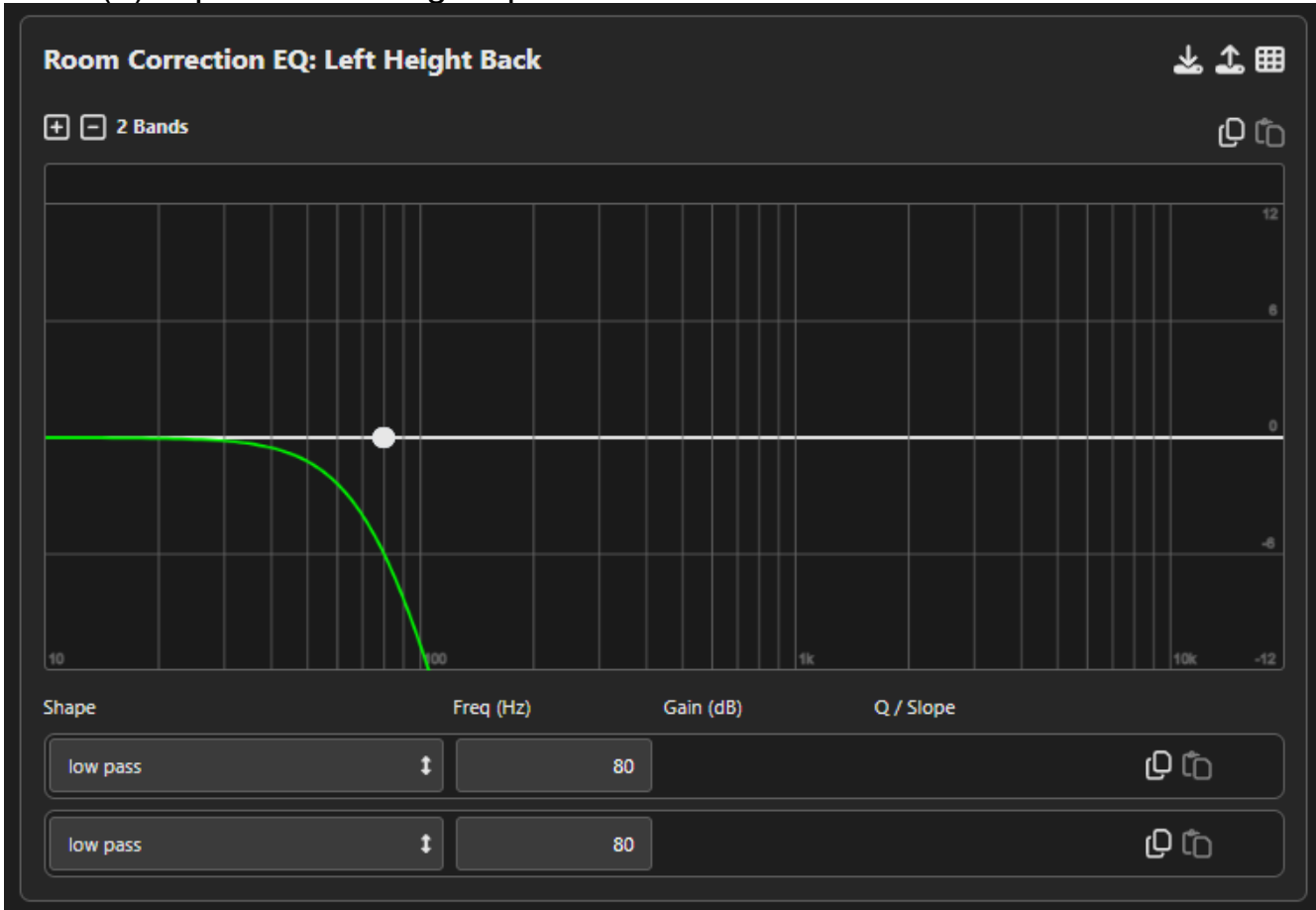
The main area is divided into three sections:

- Room Settings:** Includes a 'Name' field with '9.1.4' and a 'Level Offset' slider ranging from -20 to 20 dB, currently set at 0.0 dB.
- Channels:** A central diagram shows a speaker layout with various icons. A blue box highlights the 'Left Height Back' speaker icon.
- Left Height Back Configuration Panel:** Located on the right, it includes:
 - Output:** A dropdown menu set to 'AES 3'.
 - Channel:** A dropdown menu set to '1'.
 - Level Offset:** A slider from -20 to 20 dB, set at 0.0 dB.
 - Delay:** A slider from 0 to 250 ms, set at 0.00 ms.
 - Bass Management:** A section with a 'Crossover' slider from 25 to 150 Hz, set at 80 Hz. Below it, 'LPF Slope' is set to 'off' and 'LPF Offset' is a slider from -10 to 10 dB, set at 0.0 dB.
 - HPF Slope:** A dropdown menu set to 'bypass'.

At the bottom of the Channels section, a text prompt reads: 'Select a Speaker Icon and then select an output connector / channel for that speaker.'

(3) Set two room EQ bands to “low pass” and set the frequency to match the HPF speakers.

(4) Repeat for the Right speakers.



7. The outputs from the Height Low Pass speakers can then be connected to a sub-woofer. If the sub does not have Left and Right inputs then a passive summing network can be fitted inside and XLR connector to sum the left and right together.

Rev.	Description	Date	Initials
A	Initial release	5/1/2024	MBG