



AE Series FIR Tuning Set for Crown DCI-N and DCI-DA Amplifiers

Instructions

Rev 20201216

FIR (Finite Impulse Response) tunings provide linear-phase filtering, which optimizes frequency response and phase response independently and to a finer degree of precision than is possible with standard IIR (Infinite Impulse Response) “parameter-based” filters. The result is overall enhanced loudspeaker sound quality and improvements in coverage pattern consistency.

FIR filters and limiters have been developed for many JBL AE Series loudspeakers. These tunings are specifically for use with the Crown DCI-N and DCI-DA amplifiers. Direct links to AE Series Speaker Tunings for any of the AE Series models listed below can be found on the applicable jblpro.com product page in the ‘Downloads’ > ‘Speaker Tunings’ section. Applying these tunings requires HARMAN’s free [Audio Architect](#) software.

MODELS & MODES

[AC Tuning Library 2020_09.DCi Series.SpeakerTuning](#)” file contains FIR tunings for the following models:

AC Models Passive:

AC15, AC16, AC18/95, AC18/26, AC25, AC26,
AC28/26H, AC28/26V, AC28/95H, AC28/95V

The [“AM5000-7000 Tuning Library.DCi Series.SpeakerTuning”](#) file contains FIR tunings for the following models and modes:

AM5000 Passive:

AM5212/64 Passive, AM5212/66 Passive, AM5212/95 Passive, AM5212/00 Passive,
AM5212/26 Passive, AM5215/64 Passive, AM5215/66 Passive, AM5212/95 Passive, and
AM5215/26 Passive

AM5000 Bi-Amp:

AM5212/64 Biamp LF, AM5212/64 Biamp HF, AM5212/66 Biamp LF, AM5212/66 Biamp HF, AM5212/00 Biamp LF, AM5212/00 Biamp HF, AM5212/26 Biamp LF, AM5212/26 Biamp HF, AM5215/64 Biamp LF, AM5215/64 Biamp HF, AM5215/66 LF, AM5215/66 HF, AM5215/95 Biamp LF, AM5215/95 Biamp HF, AM5215/00 Biamp LF, AM5215/00 Biamp HF, AM5215/26 Biamp LF, AM5215/26 Biamp HF.

AM7000 Passive:

AM7212/64 Passive, AM7212/66 Passive, AM7212/95 Passive, AM7212/00 Passive, AM7212/26 Passive, AM7215/64 Passive, AM7215/66 Passive, AM7212/95 Passive, and AM7215/26 Passive

AM7000 Bi-Amp:

AM7212/64 Biamp LF, AM7212/64 Biamp HF, AM7212/66 Biamp LF, AM7212/66 Biamp HF, AM7212/00 Biamp LF, AM7212/00 Biamp HF, AM7212/26 Biamp LF, AM7212/26 Biamp HF, AM7215/64 Biamp LF, AM7215/64 Biamp HF, AM7215/66 LF, AM7215/66 HF, AM7215/95 Biamp LF, AM7215/95 Biamp HF, AM7215/00 Biamp LF, AM7215/00 Biamp HF, AM7215/26 Biamp LF, AM7215/26 Biamp HF.

AM Subwoofers:

ASB6112, ASB6115, ASB6118, ASB6125, ASB6128, ASB7118, ASB7128

Notes about Subwoofer Tunings:

- a) Below 300 Hz, wavelengths are so long that FIR filters tend to add too much latency. Because of that, the FIR filter for the subwoofers is only being utilized for providing the subwoofer with a similar phase/delay profile to the other AE Series models. That way, any additional signal alignment delay can be set (or at least estimated to a close degree of accuracy) according to path-length differences, rather than having to always be set in the field via measurements. The rest of the settings within the tuning, such as low-pass filter and high-pass band limitation filters, are implemented in the tuning using standard parameter-based IIR filters.
- b) Implementing a subwoofer tuning does not add a high-pass filter to the full-range speaker(s). Depending on whether you want a symmetrical crossover, or a full-overlap (running the full-range speakers further down in frequency), or a hybrid of the two, adding the high-pass filter to the full-range speaker(s) needs to be determined and implemented manually on the full-range speaker's amplifier channel(s).

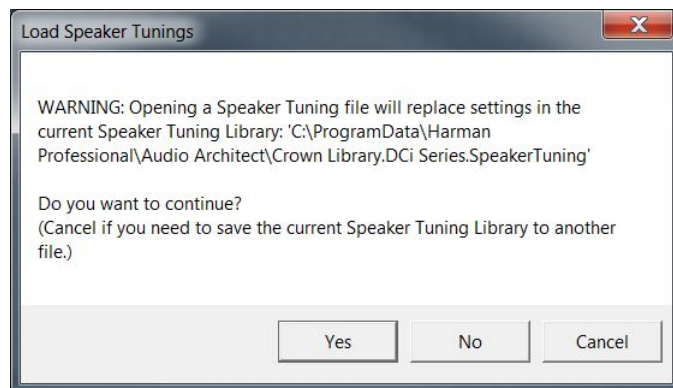
Locked and Unlocked Functions – These FIR Tunings are locked for Crossover Filter, Output EQ, and Driver Delay. Some other settings – such as limiter – contain settings but are not locked (although we highly recommend leaving them as-is). All the rest of the channel settings – Source Routing, Input Delay,

Input EQ, Output Limiter (although this is pre-set at the recommended value), and Channel Monitor Settings –are unlocked and user-adjustable.

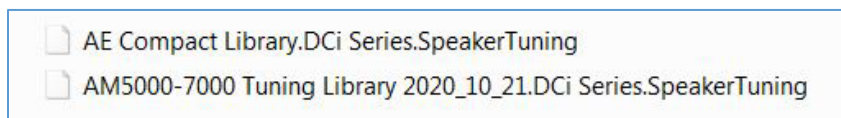
If Not FIR Tunings on All Amplifier Channels -- Implementing one of these FIR tunings on a DCi amplifier channel will lock these functions for all channels, whether they are set for a tuning or not. Therefore it's advisable to implement the desired settings for the other channels first, and then choose the FIR tuning for the desired channel last.

HOW TO LOAD THE AE SERIES TUNING

1. Download the 'AE Series' Speaker tuning file(s). Extract the files.
2. Place the extracted ".speakertuning" files in: **C:\ProgramData\Harman Professional\Audio Architect**. This is the default location that Audio Architect looks at for speaker tuning files.
3. In Audio Architect, pull a DCI-N or DCI-DA amplifier into the Room. Double click on that Amplifier icon.
4. On the Device panel, click File > Open > Speaker Tuning.
5. Click "Yes" when prompted with the following message.



6. Audio Architect opens the folder: **C:\ProgramData\Harman Professional\Audio Architect**. Highlight the AE Series speaker tuning file that has the speaker model you're using. Click 'Open'.



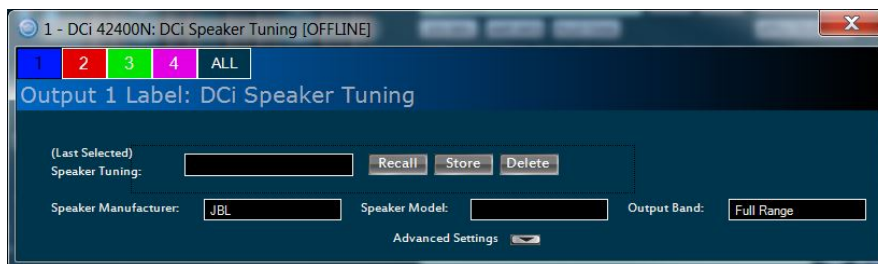
(Note: If you did not follow step 2, you may have to navigate to the location where the file was stored.)

The tuning is now loaded but has not yet been selected for a channel of the amplifier.

- To select this tuning for a channel of the amplifier, double-click on the 'SPKR' Processing Object on the Amplifier panel for that amplifier channel (highlighted in red, below).



- Click the 'Recall' button and choose the matching tuning for the loudspeaker that is connected to that particular amplifier channel and/or the mode. Click OK. Repeat this step for all channels connected to AE SERIES Loudspeakers.



Note that for multi-way modes (i.e., bi-amp) you need to select the tuning that lists the speaker and the frequency band that is connected to that amplifier channel.

- The preset will populate with the FIR filter as well as any additional settings for the limiter, crossover, and EQ settings that are part of that preset. The preset is now active for that channel of the power amplifier.

Important: Since it is an FIR filter, onscreen, you will not see any filters above 300Hz on the various screens, as they don't manifest themselves the same way an IIR filter does. However, the filter(s) will be engaged. In addition, you will have plenty of additional filters and delays for making suitable, on-site adjustments for the requirements of the listening space, acoustic boundary loading conditions, etc.