

## Introduction

This technical bulletin provides recommendations on how to use LA Network Manager, in particular:

- Taking advantage of the latest improvements by [Using the latest presets](#) (p.1) in existing Sessions
- [Optimizing headroom](#) (p.3) for safe and balanced system resource management
- [Monitoring the limiters](#) (p.4) to make sure the system is not overdriven

## Using the latest presets

### Preset libraries

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L-Acoustics preset libraries are regularly updated so that users can take advantage of the latest acoustic and technical improvements.

Preset libraries are embedded in LA Network Manager and the firmware packages, which are released in each **Amplified Controllers Release Pack** in the Download Center section on [www.l-acoustics.com](http://www.l-acoustics.com).

The preset libraries are automatically installed on the computer with LA Network Manager, and uploaded to the physical Units with the firmware.

### Session files

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Session files are complete snapshots of the user settings. They contain the selected preset, group and Unit parameters (such as input mode or coordinates on the Workspace) at the time of the Session save.

#### With 4-output amplified controllers

When a Session is designed with a particular version of LA Network Manager using presets from its embedded preset library, each Unit of the Session is loaded with a preset of this version. Loading the Session with a more recent version of LA Network Manager does **not** update the used presets.

To take advantage of the latest preset improvements included in the more recent version of LA Network Manager, L-Acoustics recommends updating the preset of each Unit in the Session file.

#### With 16-output amplified controllers

The presets loaded in the preset layout of the amplified controllers automatically benefit from updated settings through to the firmware update.

## How to check the preset version number

### Procedure

1. Install the latest version of LA Network Manager from the L-Acoustics website.  
Refer to the **LA NWM Installation** technical bulletin for detailed instructions.
2. Open LA Network Manager.  
When no Unit are selected, the Unit Control bar displays the preset version of the embedded preset library.
3. Load the Session file.
4. Set the Unit View slider on **Preset Version**.
5. Compare the version displayed on the Units and the version displayed in the Unit Control bar.



### Results

If some Units have a different version number than the Unit Control bar, update the Unit preset to the version of the embedded preset library.

## How to update to the latest preset version

This procedure is only necessary for 4-output amplified controllers. The presets loaded in the preset layout of the 16-output amplified controllers automatically benefit from updated settings through to the firmware update.

### Procedure

1. Select all Units on the Workspace that are loaded with the same preset.
2. In the Unit Control bar, click the preset name to open the **Preset Selector**.
3. Select the same preset as the preset currently loaded on the Unit(s).  
The **Keep User Parameters?** dialog box is displayed.
4. Click **Yes** to retain user parameters (gain, delay, polarity, routing and mute) while updating.
5. Repeat with all Units in the Session.

## How to update Custom presets

This procedure is only applicable to 4-output amplified controllers.

### Procedure

Rebuild the Custom presets in the **Custom Preset Builder** using the embedded preset library of the latest LA Network Manager.

Refer to the **Custom Preset Builder** help for the step by step tutorial on how to build a Custom preset.

## Optimizing headroom

### Gain structure

The gains of all L-Acoustics factory presets are calibrated with a reference pink noise signal, representative of most demanding musical programs. The reference input level is **0 dBu** (with analog audio source) or **-22 dBFS** (with digital audio source).

When feeding L-Acoustics amplified controllers at this input level, L-Acoustics loudspeaker enclosures provide the sound engineer with 8 dB of headroom, except for smaller formats calibrated for 4 dB of headroom (MTD108A, X4i, 5XT, X8, 8XT, Kiva, Kilo, and SB10i).

This gain structure helps managing power resources of L-Acoustics systems when using different enclosures of the same format. With default output gain settings (0 dB), all enclosures reach their limits for the same program level. Apply a gain adjustment of -4 dB for smaller format enclosures when used along with bigger format L-Acoustics enclosures.



#### Headroom for SB15m

SB15m presets [SB15\_100] and [SB15\_100\_C] have 8 dB of headroom from preset library version 5.6(.5).

[SB15\_100\_Cx] has 8 dB of headroom.

4 dB of headroom are provided when using presets from earlier versions and preset [KIVA\_SB15].

#### Headroom for K1-SB, KS28, SB28, SB18, SB218 and SB118

To provide 8 dB of headroom, the output gain of some subwoofer presets is adjusted in preset library 6.0 compared to previous versions.

This update aligns the L-DRIVE activity between subwoofers and full range loudspeakers for the same reference pink noise signal.

When updating presets in Session files using older versions of the preset library, adjust gains as follows to keep the same gain chain:

[SB28\_60], [SB218\_60]: + 4 dB

[KS28\_60], [SB28\_100], [SB18\_60], [SB18\_100], [SB218\_100], [SB118\_60], [SB118\_100]: + 3 dB

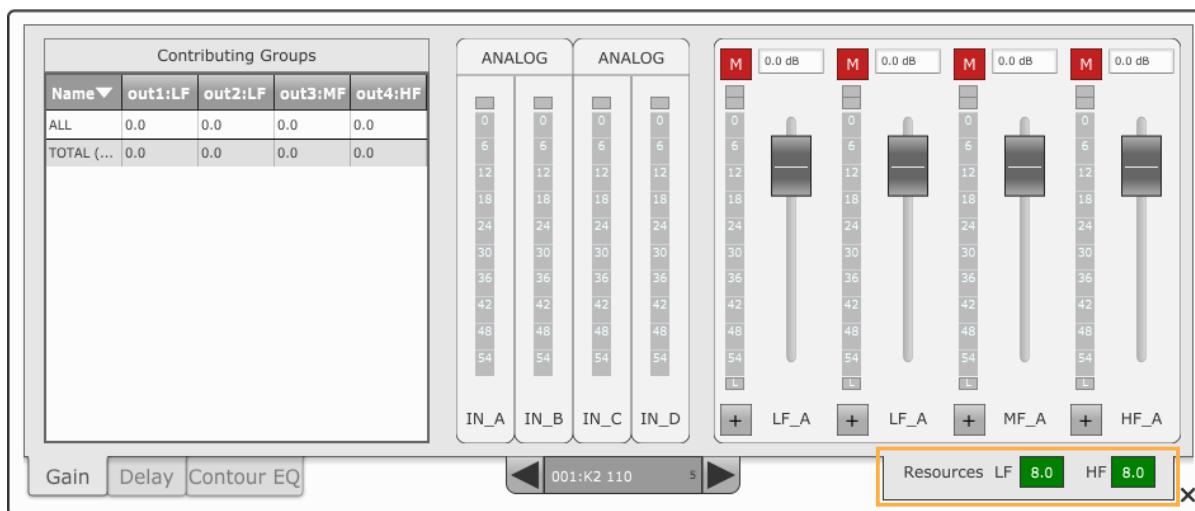
[KS28\_100]: + 2 dB

[K1SB\_60]: + 1 dB

## Resources

Gain or EQ settings configured from LA Network Manager or from the unit front panel have a consequence on headroom.

LA Network Manager provides two resources indicators to represent available headroom, one for LF and one for HF, in the Amp control panel for the selected Unit(s) and in the Group control panel for the selected group. Resources take into account both the Unit and the group settings.



Resources LF 8.0 HF 8.0

preset [K2 110] with default parameters

resources available for the LF and the HF loudspeakers are 8.0 dB each, in comparison to the reference pink noise signal

Resources LF 10.0 HF 10.0

preset [K2 110] with -3dB of group gain and +1dB in each output gain

resources available for the LF and the HF loudspeakers are 10.0 dB each

Resources LF 8.0 HF 0.6

preset [K2 110] with high gain in groups FIR1, FIR2 and AIR COMP filters

resources available for the LF loudspeaker are 8.0 dB, but resources available for the HF loudspeaker are compromised with only 0.6 dB

## Recommendations

To run a system with optimized activity, make sure resources are:

- close to the 8 dB or 4 dB nominal value
- similar in all sections of the system (ideally)
- never below 2 dB — unless the source connected to the amplified controllers has a very low output level, such as a consumer-grade mixing desk

## Monitoring the limiters

### LEDs

On their front panels, the amplified controllers have a LIMIT/CLIP LED: orange for limit, red for clip (LA4/LA8 only have a CLIP LED).

Clip indicates signal distortion.

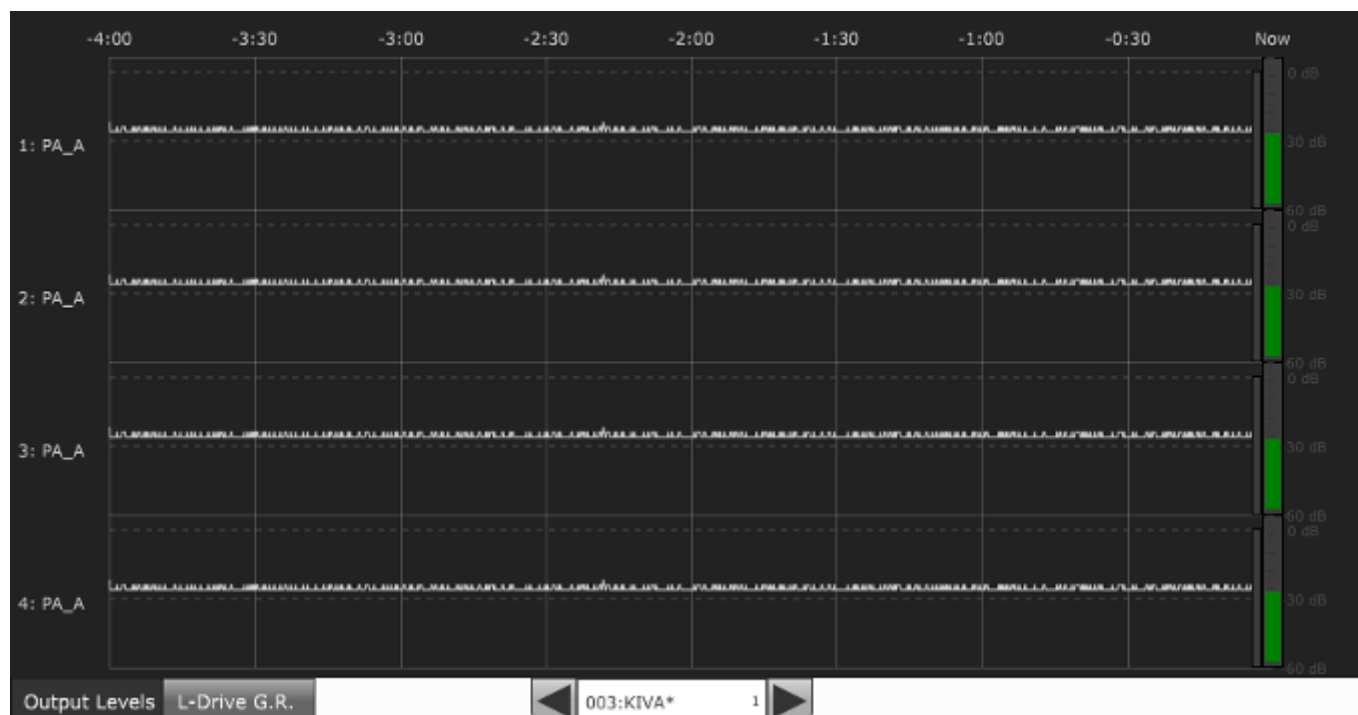
Limit indicates a gain reduction of at least 3 dB is applied to protect the loudspeaker section.

Limit and clip are also reported in LA Network Manager.

## Unit Level History panel

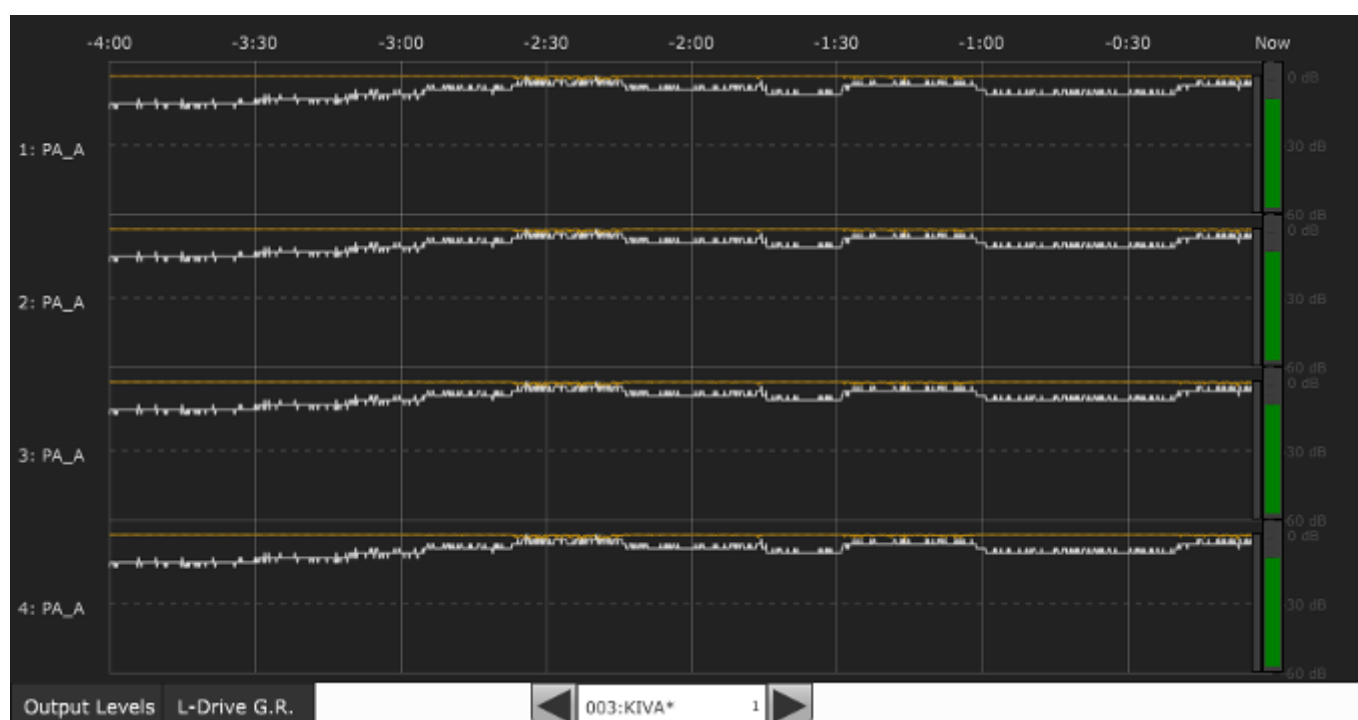
Monitor how the system is being driven in LA Network Manager **Live** page: click a Unit to open the Unit Level History panel. Use the tabs to show output levels and L-Drive gain reduction.

### moderate use of the system:

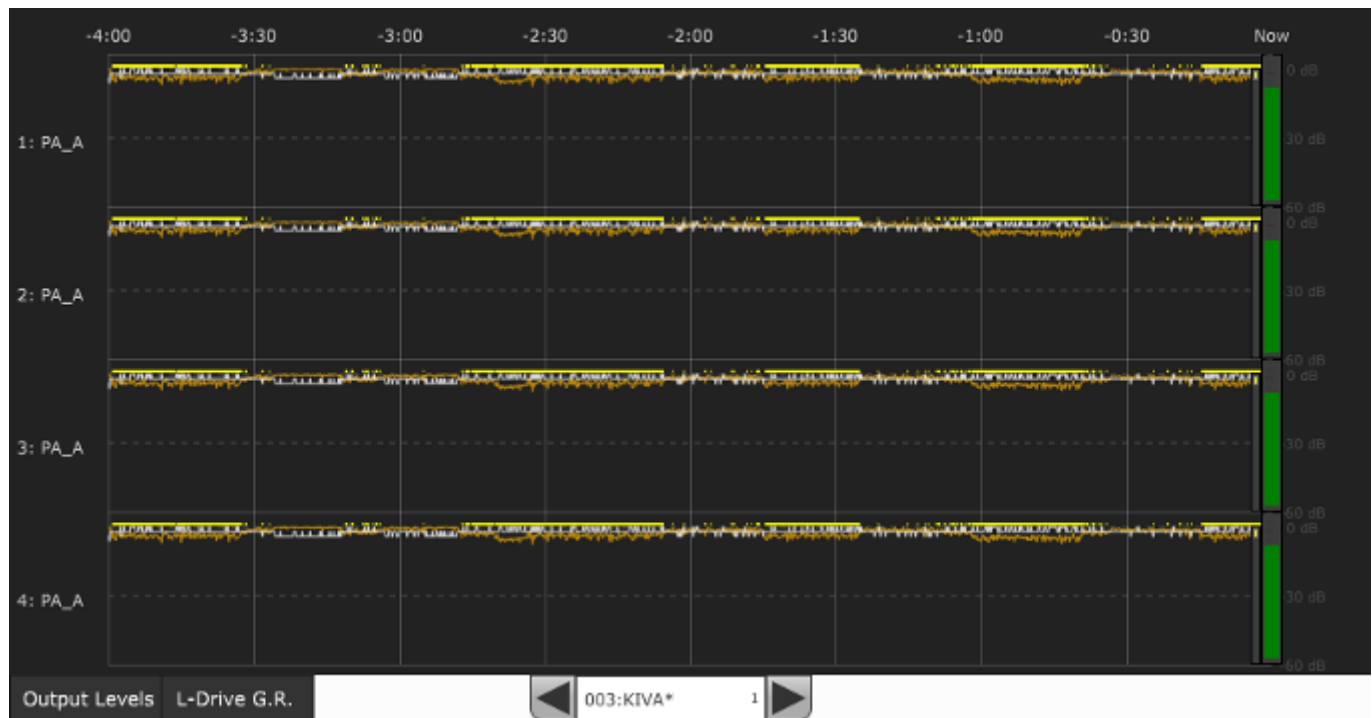


Output level is slightly above the -30 dB mark on average, and limiters are never triggered.

### optimal use of the system:



Output level generally comprised between -30 dB and 0 dB, with limiters occasionally triggered.

**extreme use of the system:**

Limiters are very frequently triggered, which can cause loudspeaker failure in the long term. System is probably under-dimensioned for the application, or not correctly attended to.