ADAMSON

Adamson PLM & Lake Handbook

Version 5.2 - Released on July 7th 2021

lake®

PLM & Lake™ Handbook

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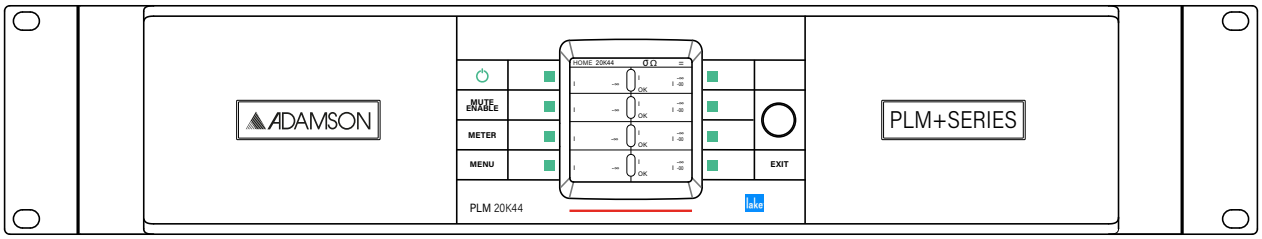
Lake™ System Overview

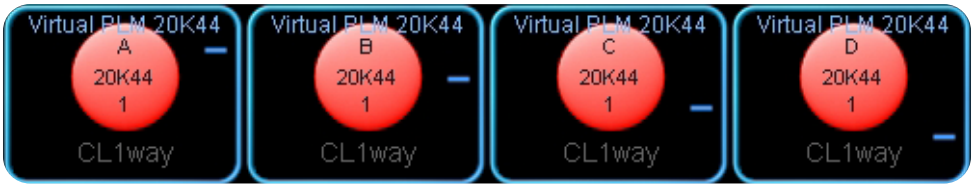
1.1 Lake™ Terminology

Lake™ Terminology:

Frame: All physical Lake™ enabled hardware eg; PLM+ or LM26



Module: Each piece of Lake™ enabled equipment contains DSP modules, example shown is a PLM 20K44 which contains 4 modules. The module count is reduced when using Adamson Linear Phase presets (FIR3), which combines two modules in order to use their DSP.

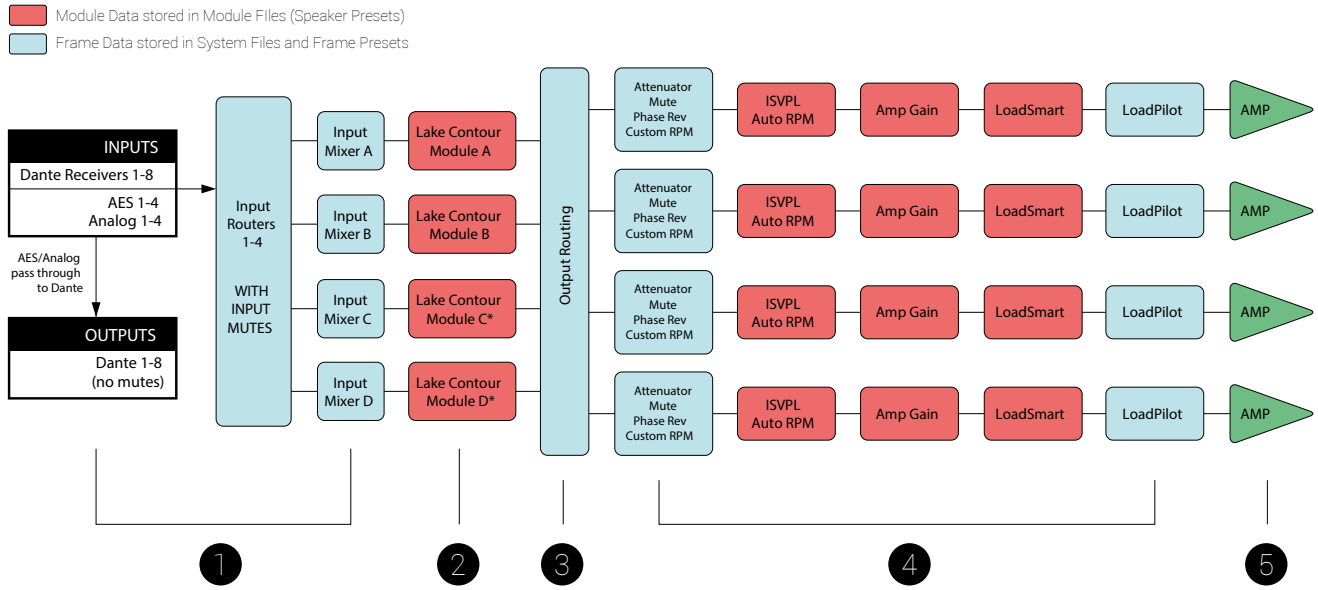


Groups: Within Lake™ controller, modules can be grouped together to provide overall system changes to Level, EQ and Delay.

Lake™ System Overview

1.2 PLM Signal Path

Lab.gruppen & Lake™ signal flow overview



1. The input section (input, input router and input mixer) allows for mixing capabilities as well as redundant and prioritized inputs with automatic switch-over in case of signal failure.

2. Up to four Lake™ Processing modules provide user EQ and loudspeaker processing, including LimiterMax limiting.

3. The output router allows free routing between module outputs and power output channels.

4. Each power output channel provides individual channel processing, including ISVPL limiter, RPM and load monitoring.

5. Power Amplifier output stage.

Source: Lab.gruppen PLM+ Quick Start Guide page 15.

Firmware & Presets

2.1 Updating PLM+ Firmware

Before proceeding with Lake™ firmware updates, make sure your computer and all online frames are connected to a stable power supply and that the secondary network cable is disconnected.

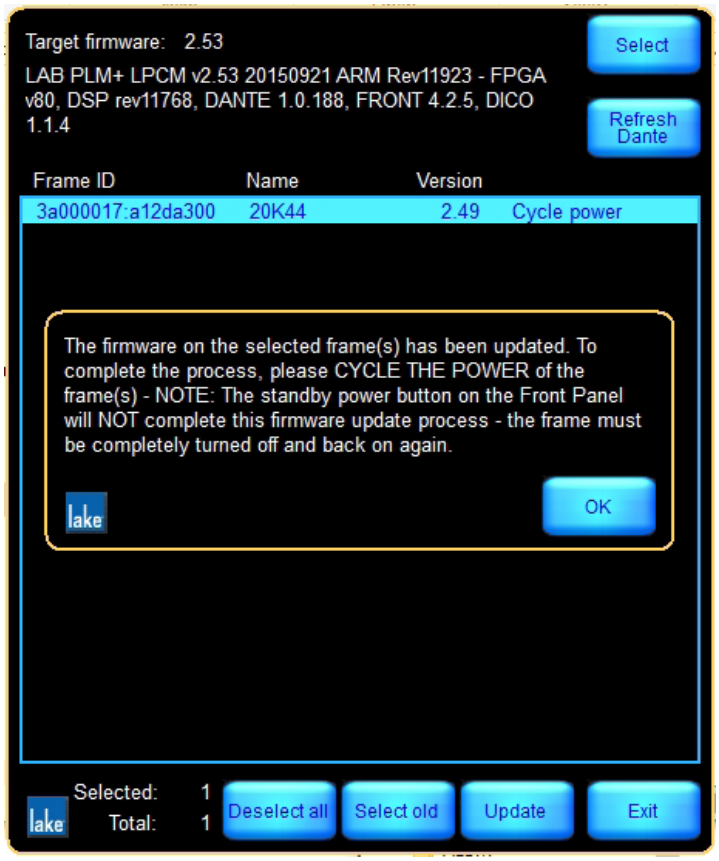
1. Open Lake™ Update and select the platform you wish to update

You will be prompted to select the network adaptor the device(s) is/are connected to

2. Lake™ Update will scan for devices. Any devices that need updating will show up with a red X. Select these devices, or press the select old button and update. A dialog box will appear confirming the procedure.

2.1 Updating PLM+ Firmware

3. Once the firmware has loaded onto the devices, a pop up window might prompt you to cycle power.



To correctly cycle power, disconnect devices from the mains power supply for at least 30 seconds. Powering off from the front panel will not complete the update.

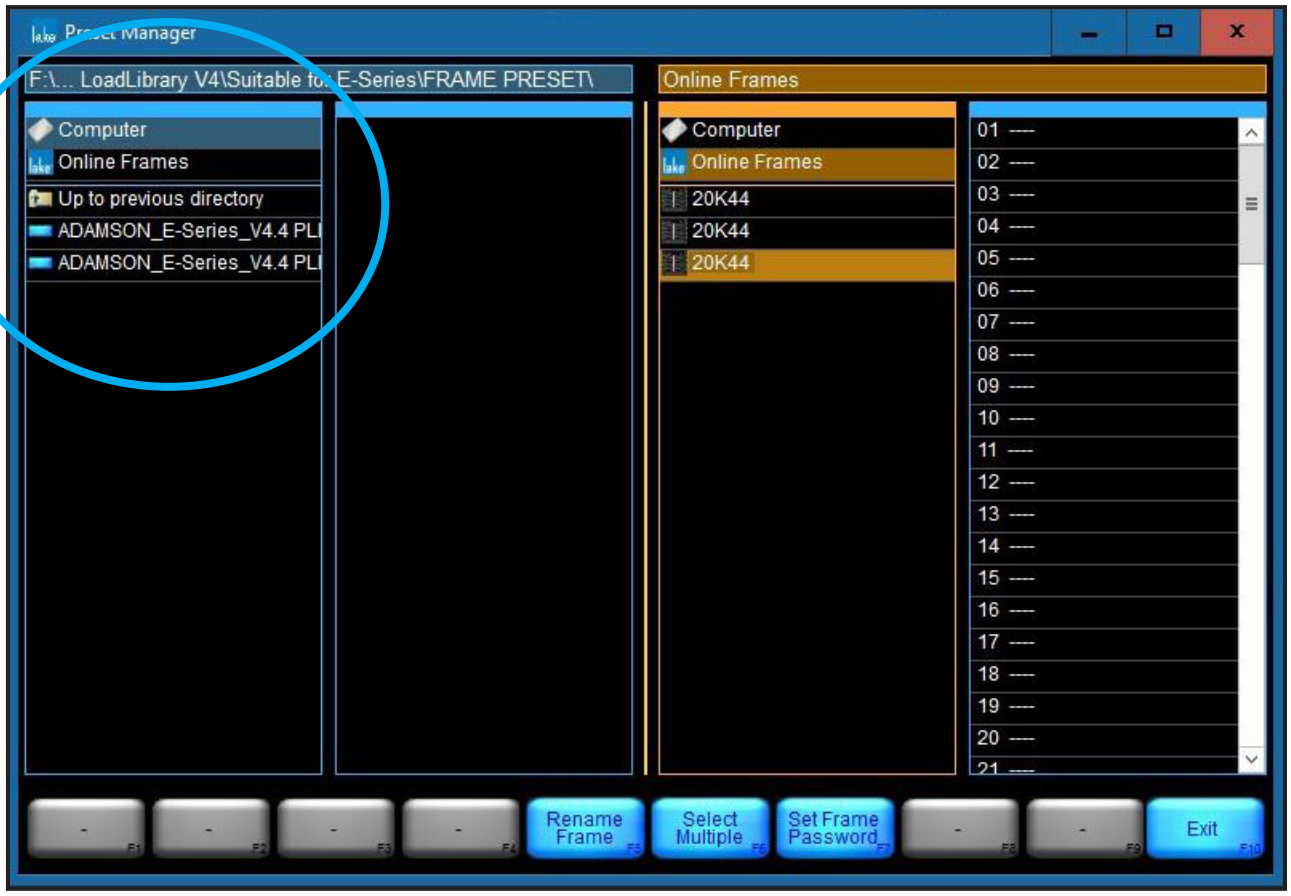
Once reconnected, the device will power on to finish the firmware update.

Adamson recommends performing a Soft Reset from the front panel of the amplifier after every firmware upgrade. MENU/FRAME/FRAME RST/SOFT RESET

2.2 Loading Frame Presets

1. Open PresetManager, choose the correct product type and your network adaptor.

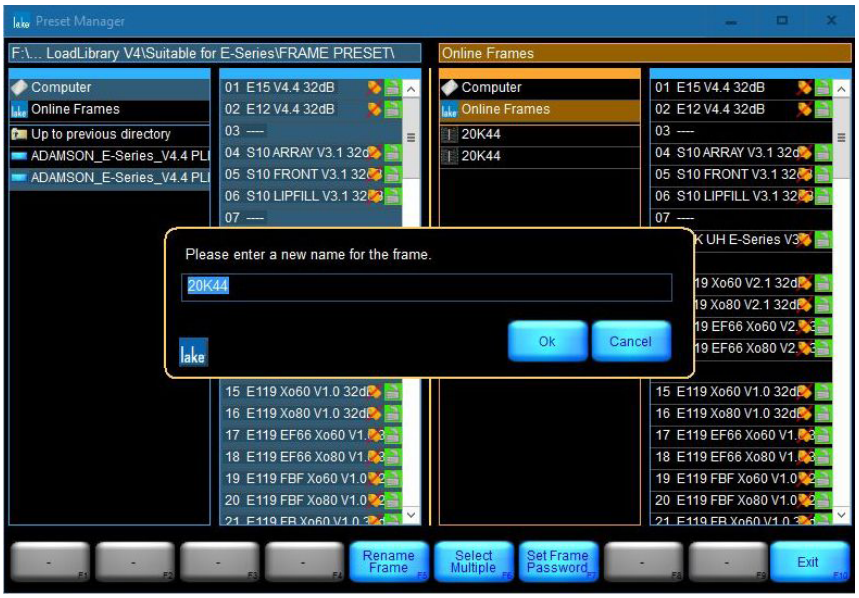
2. In the left hand window, navigate to the Frame Presets folder contained in the load library. Double click to open the Frame Preset bank file and select all desired presets. You can select multiple using Ctrl-A, shift or the Select Multiple button.



2.2 Loading Frame Presets

3. In the right hand window select the amplifier frame(s), then click and drag all frame presets to the online frame. Copying will take a moment, but you will then see the bank duplicated in your online frame.

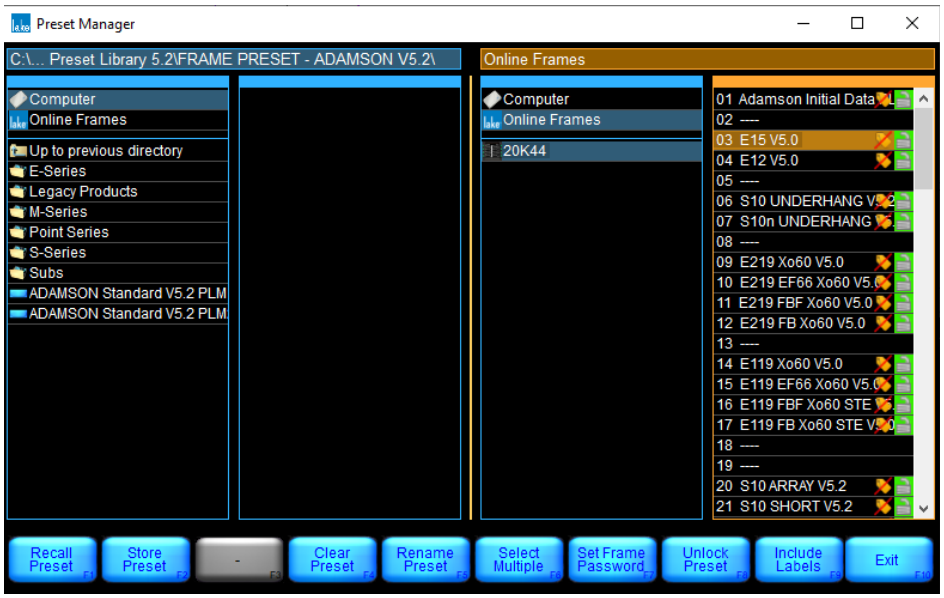
4. All Frame Presets are now contained within the active frame. This is a good time to re-label each amplifier frame for easy identification when building your Lake™ show file. To do this select the frame you wish to re-label then press Rename Frame



2.3 Recalling Frame Presets

Recalling frame presets from PresetManager

1. Select the amplifier frame(s) and the preset you want to load.



2. To complete the process, press Recall Preset to load the selected preset on all selected frames.

3. You can store complete frame settings by pressing Store Preset. When multiple frames are selected these frame presets are stored per amplifier and might be different per amplifier while having the same name.

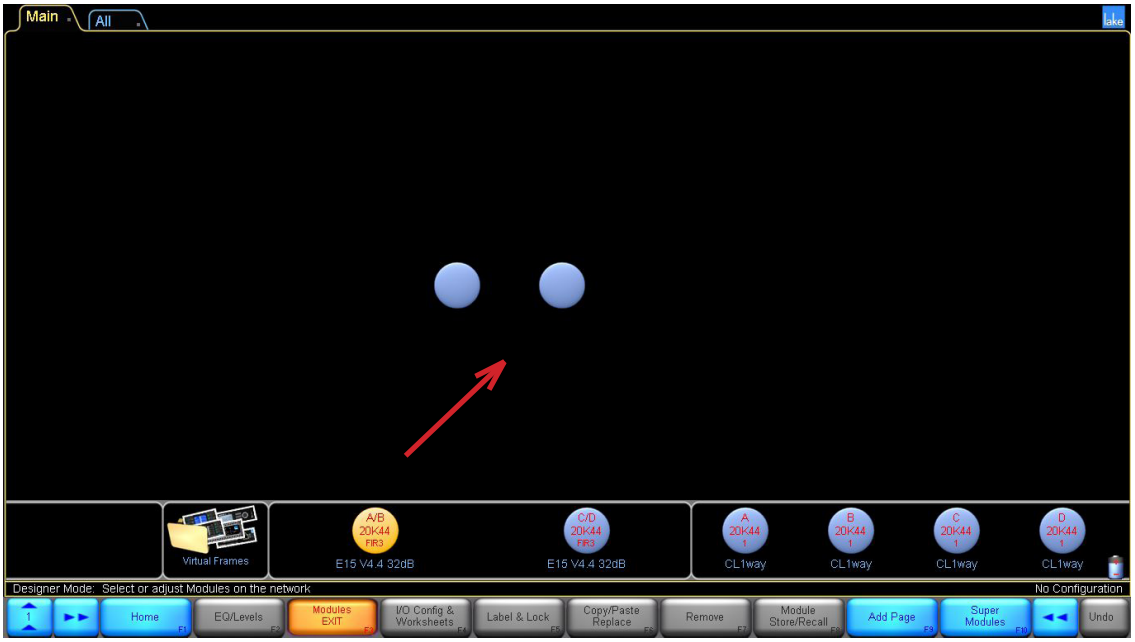
Loading frame presets only works on frames connected to your computer.

2.3 Recalling Frame Presets

Recalling frame presets from PLM+ front panel

1. Menu --> Frame Prst --> Use cursor wheel to select Frame Preset --> Recall

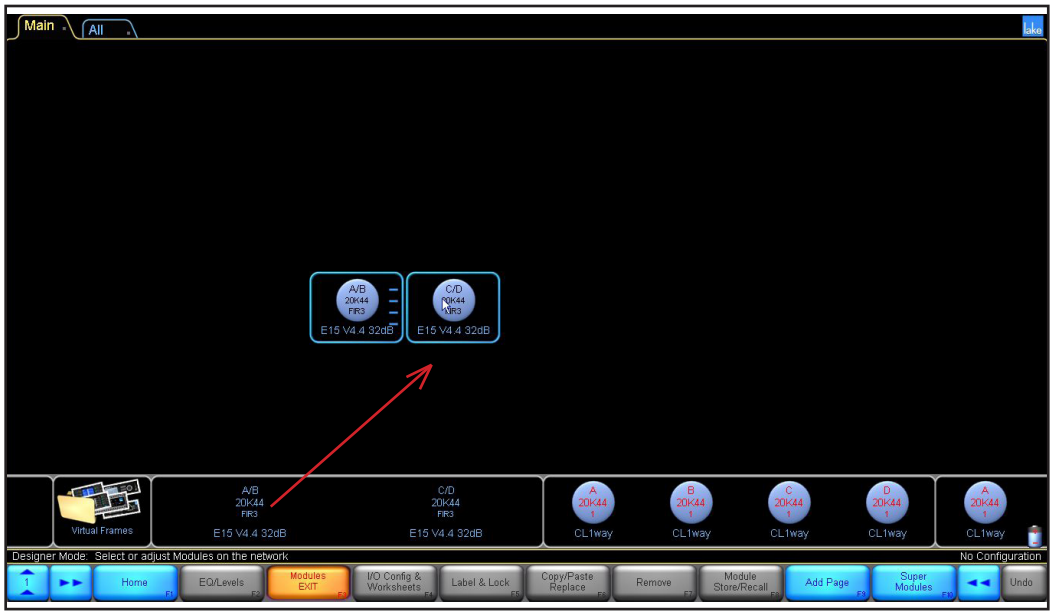
2. Connect the PLM+ to your control PC, open Lake™ Controller and select your active network adapter. Navigate to the Modules tab and place all Online Frames you have recalled Frame Presets for in your workspace.



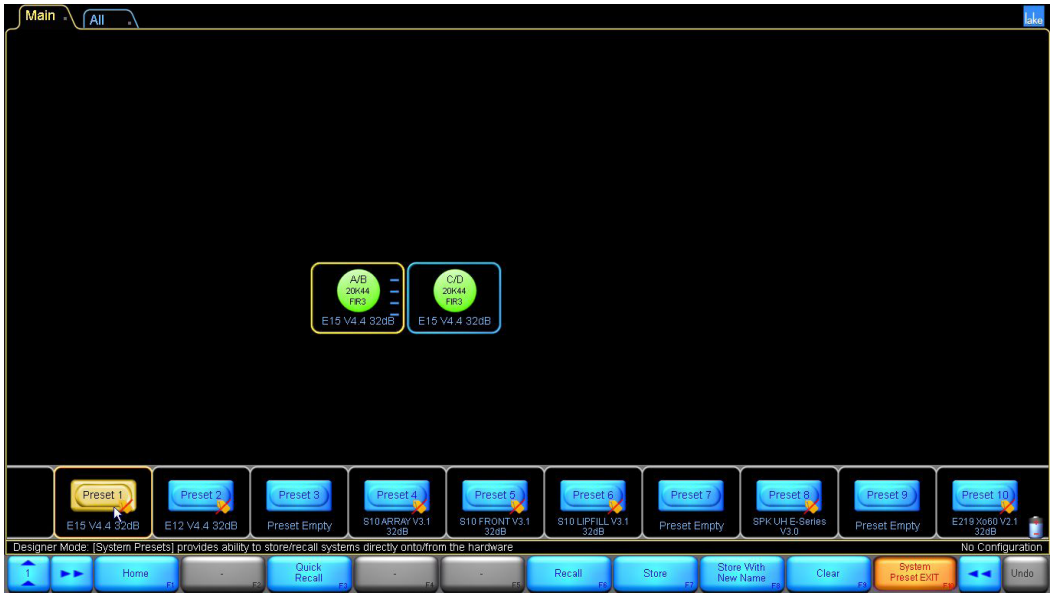
2.3 Recalling Frame Presets

Recalling frame presets from Lake™ Controller:

1. Open Lake™ Controller and select your active network adapter. Select Modules then drag all online modules into the work space.

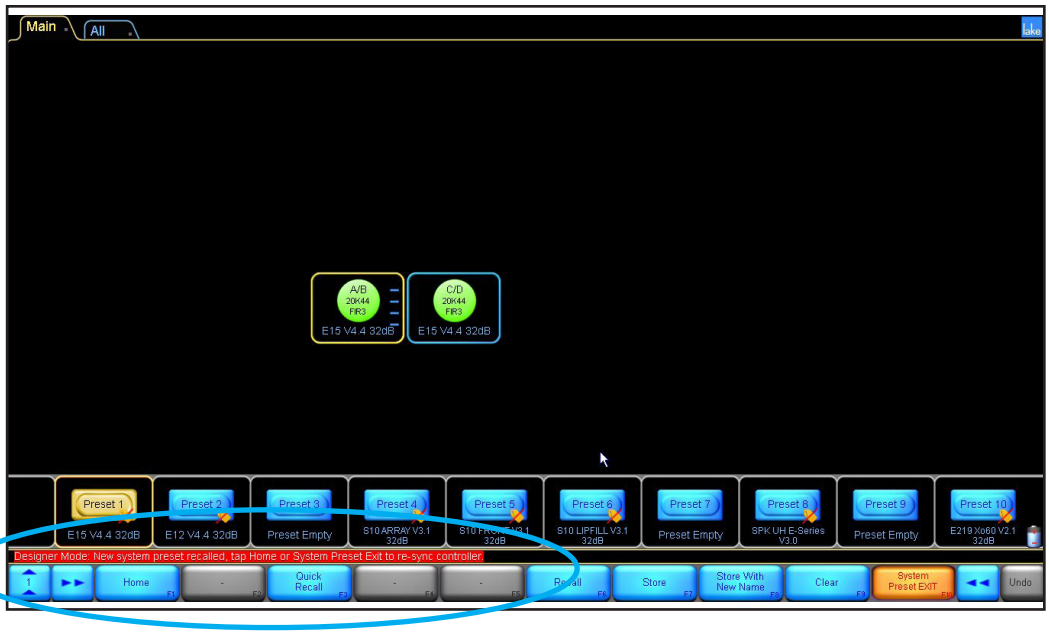


2. Select System Store/Recall then System Presets. Select destination module, choose desired frame preset and either double click or select Recall and confirm.



2.3 Recalling Frame Presets

3. You will be notified that to complete the recall, Lake™ Controller must be re-synced to the module by clicking Home or System Preset EXIT Once either is pressed the frame preset will be loaded.



4. Once all modules are loaded you can hide un-used modules or sort by location / type. Create a new page by selecting Pages then Page Add. To label your page, click on Page Label. Labeling the page #Unused will cause all modules placed on this page to disappear from the "All" page.

2.3 Recalling Frame Presets

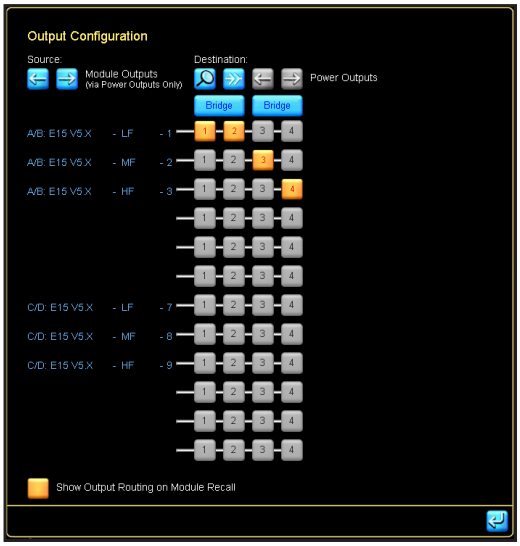
5. Unused modules can be removed from the main page to save real estate. Create a new page and label it "#Unused" Select the unused modules and drag them all the way up into the #Unused page. Hovering over a page tab for 1 second will select that page.

2.4 Recalling Module Presets

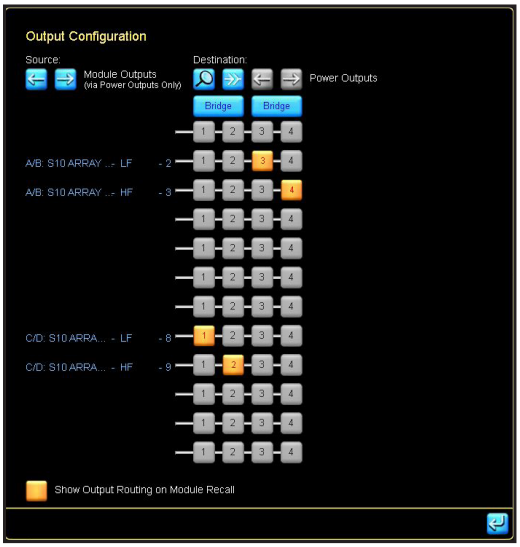
1. Open Lake™ Controller and select your active network adapter. Place all online frames you wish to load in your workspace area.

2. Choose Modules then Module Store/Recall and navigate to the folder containing the Adamson Load Library files, locate the correct module presets and load the applicable preset to your frame.

3. Each time you load a preset, you will be prompted to assign power channel routing. The following is how power channels are routed for all E and S-Series line array cabinets.



E-Series Routing

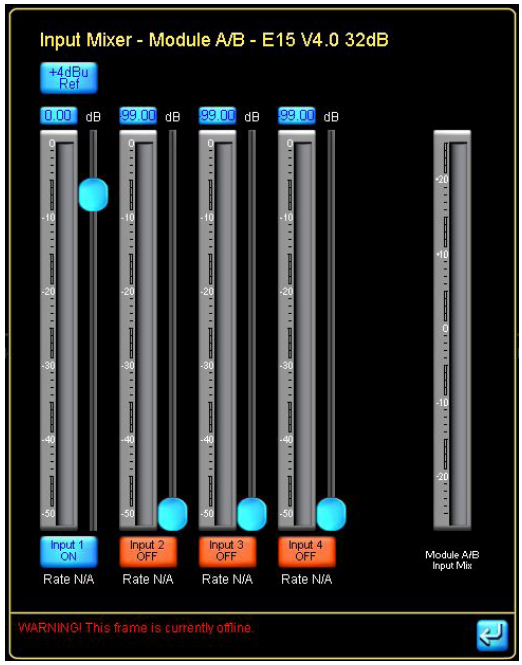


S-Series Routing

2.4 Recalling Module Presets

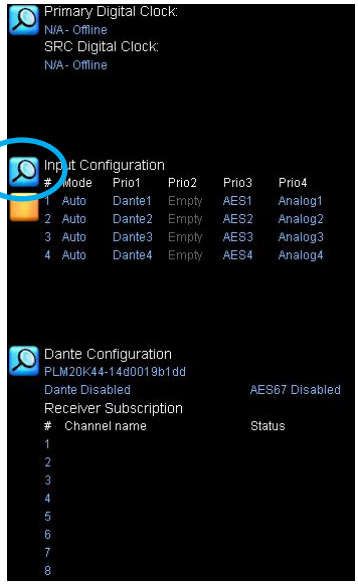
4. Make sure the correct input source is applied to the module, in the levels page use the 

and select the input source.



5. To define each input type in the module page select 

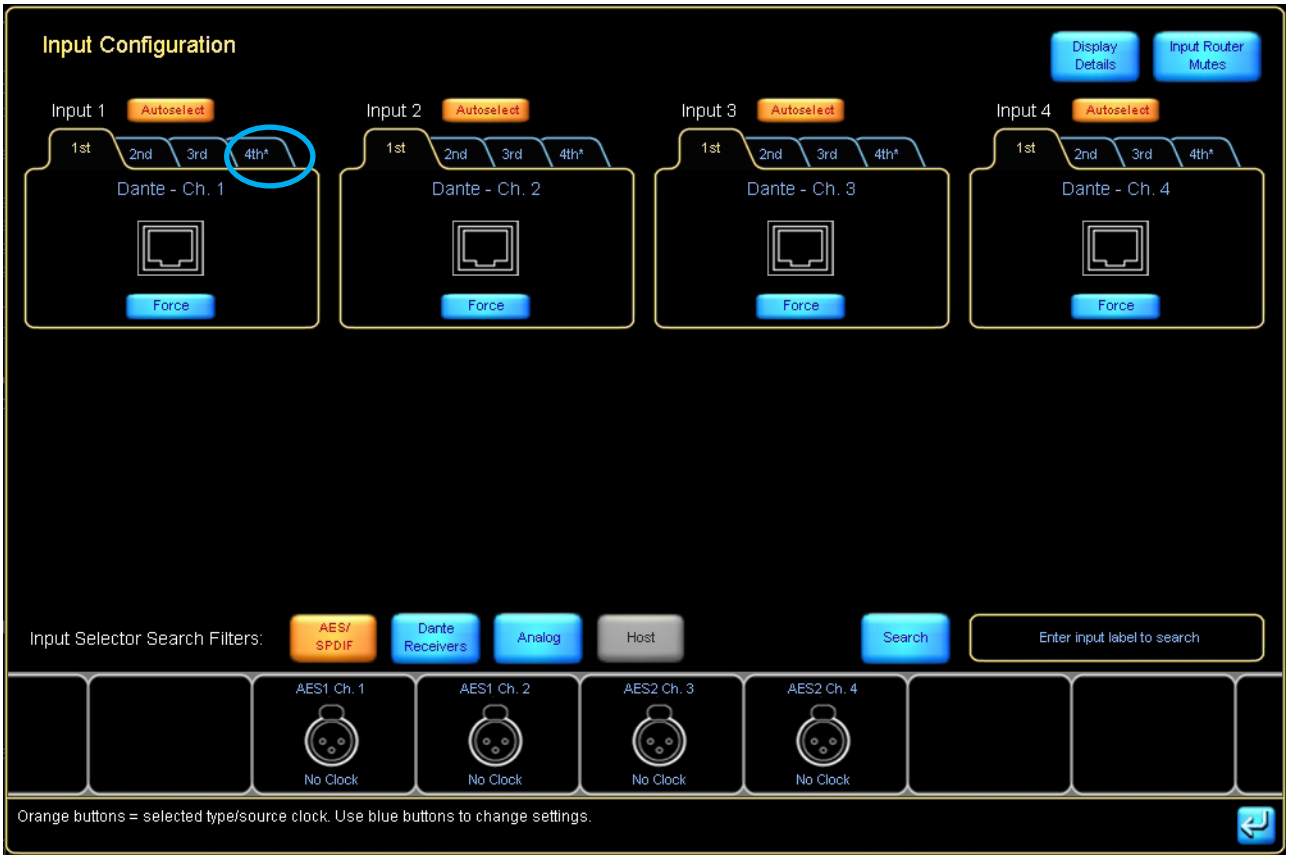
and in the left hand column choose input cofiguration.



2.4 Recalling Module Presets

Navigate to 

to configure input type and redundancy priority.



*The * next to the input type circled here shows the active input type for each input channel.*

2.5 LoadSmart™

Lab.gruppen PLM+ amplifiers offer LoadSmart™ load verification, a file contained within the Adamson Load Library allows for each bank of cabinets in an array to be verified before being flown. This feature is accessible from the front panel of the PLM+ by first loading the correct Frame Preset for your loudspeaker.

1. Connect the cable between the amplifier and the loudspeaker(s),

2. From the front panel of the PLM select Menu --> Load Mon --> Configure # of Cabinets in Parallel. Make sure to enter the correct number of cabinets in each stack connected to the PLM, if there are 3 E15 select the 4 soft buttons on the right of the display and turn the scroll wheel until they all display 3.

3. EXIT --> LoadSmart™ Verification. You will hear the load verification tone sweep for each band in the loudspeaker; For E-Series fullrange there will be 3 verification sweep for the LF, MF and HF. (I)S-Series fullrange will have two sweeps for LF and HF and Subwoofers will sweep once.

4. The PLM+ will collate a verification report, and a notification of any components that are reading results outside of the desired value will be displayed.

LoadSmart is also available in Lake™ Controller. In the modules page select IO config --> Amplifier Events and Control and select the LoadSmart tab.

In Lake™ Controller only 1 module or the entire system can be verified at once. To verify the entire system go to global control in the "All" page.

2.6 Preset Notes

In each frame preset folder of the Adamson load library you can find a spreadsheet containing info on the included frame presets. Below is a list of descriptions for abbreviations contained in the Preset List:

Abbreviation	Description
SPK	SpekTrix
UH	Underhang
Xo	Crossover
EF66(40)	End Fire at a spacing of 66”(40”), grill to grill
FBF	Front-Back-Front cardioid configuration
FB	Front-Back cardioid configuration

The PLM series offers the ISVPL™ (Inter-Sample Voltage Peak Limiter) feature, which is a digitally implemented, zero overshoot peak limiter. Below is a reference list of ISVPL™ settings Adamson includes in its presets.

Model	ISVPL Limit Threshold		
	SUB/LF	MF	HF
E12	175	139	115
E15	175	277	175
E218	160	---	---
E219	190	---	---
T21	120	---	---
S10(n) / IS10(n)	196	---	136
S119 / IS119	170	---	---
S7	126	---	88
IS7	179	---	124
S118 /IS118	124	---	---

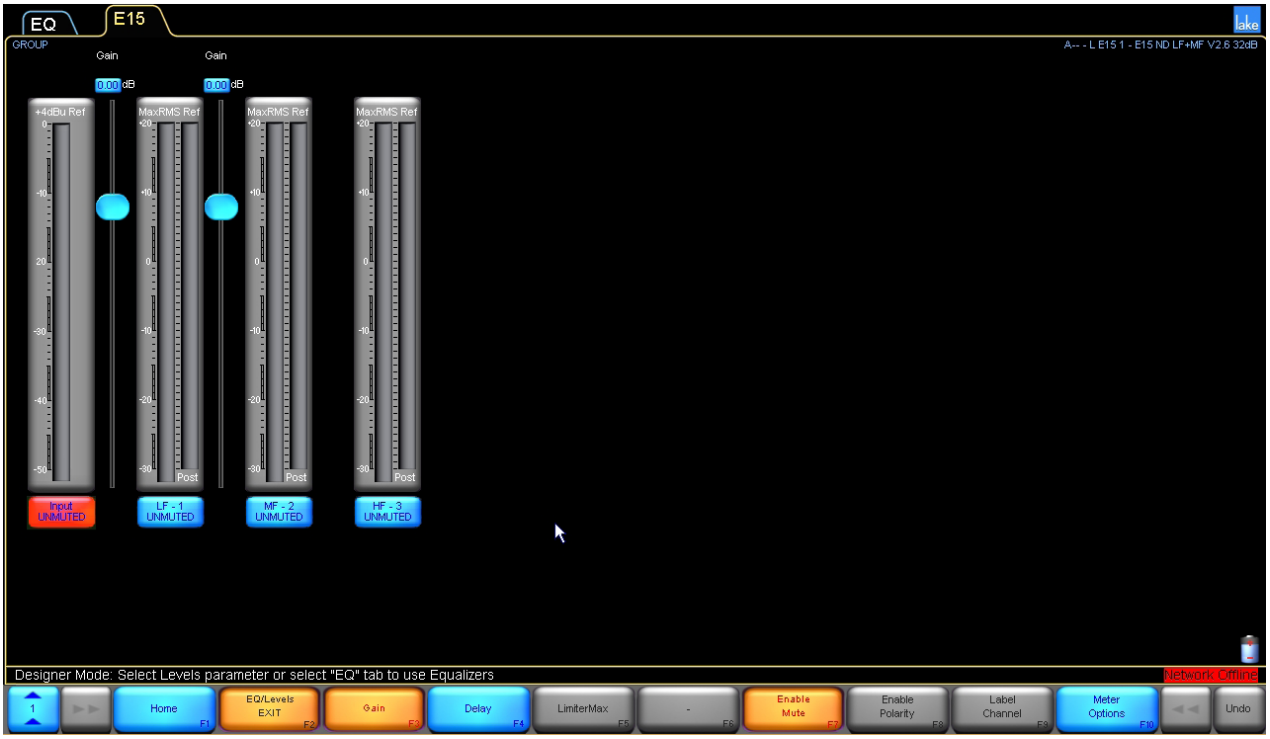
(I)S119, (I)S118 and E219 presets are gain-matched, assuming a ratio of 2 top cabinets to 1 sub cabinet (i.e. 12 E15 to 6 E219 and 8 S7 to 4 S118). If using a different ratio of tops to subs, gain changes may have to be applied to achieve the desired balance. T21 presets must have +1 dB added in order to achieve the same result at this ratio, as this preset is also intended for use with other product families. Recommended ratio for E119 is 1:1.

3.1 Groups & Overlays

Groups perform many useful functions in Lake™ Controller, acting in a similar way to a VCA or Group on a mixing console. Within each group, users are able to EQ, Delay and perform other useful control functions to as many or as few modules assigned to it.

Shown here 4 modules in a frame all asigned to Group 1

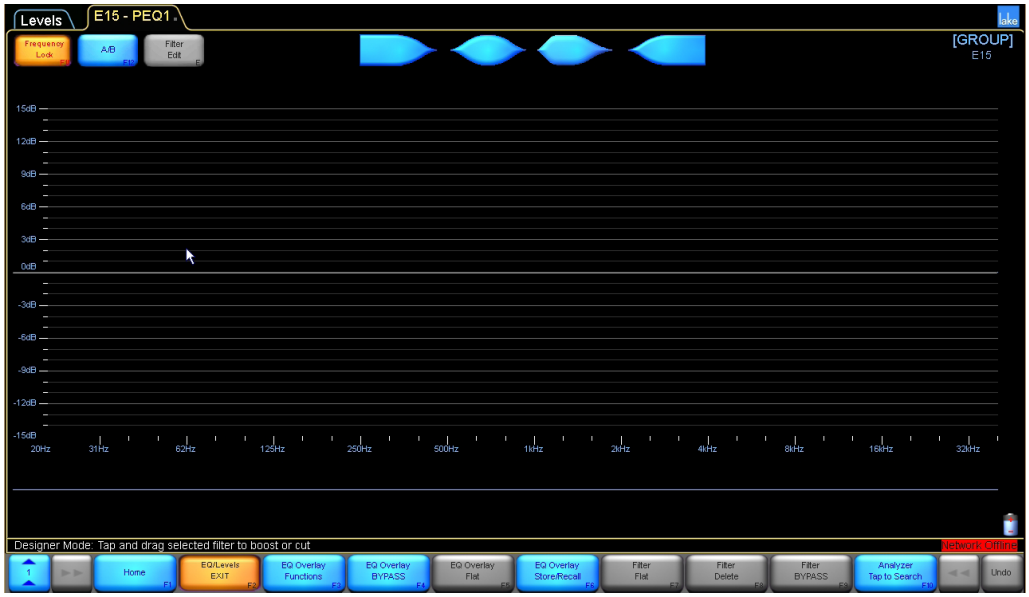
Groups are necessary for affecting several modules at once, which is the most efficient way of controlling large systems comprised of many Adamson line array enclosures. When opening a Group of E-Series modules you are presented with either a Level or EQ page

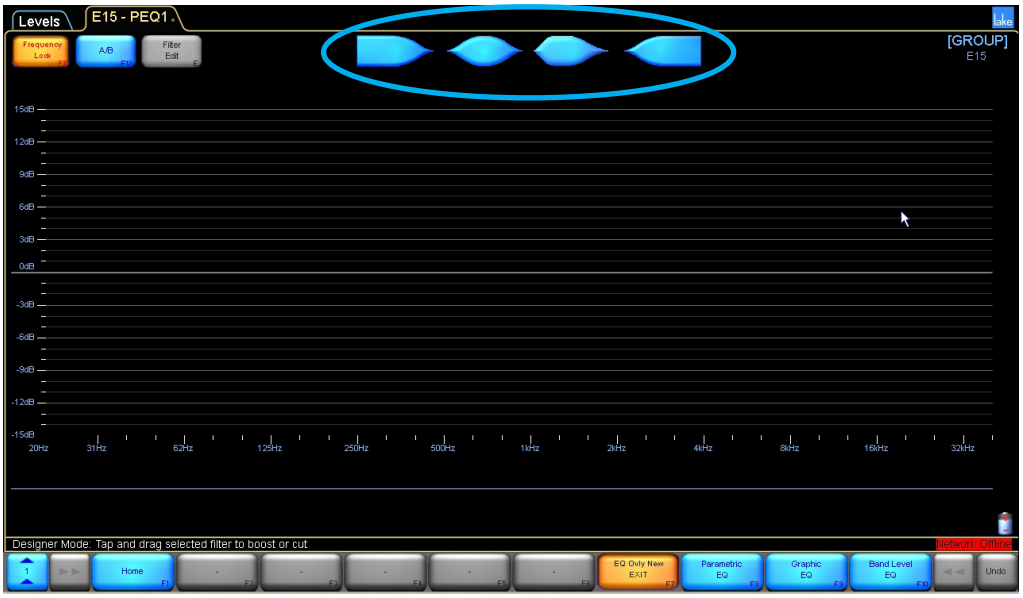


Groups & Overlays

3.1 Groups & Overlays

To add a new EQ overlay select EQ Overlay Functions then select an EQ Overlay type Parametric EQ Graphic EQ Band Level EQ



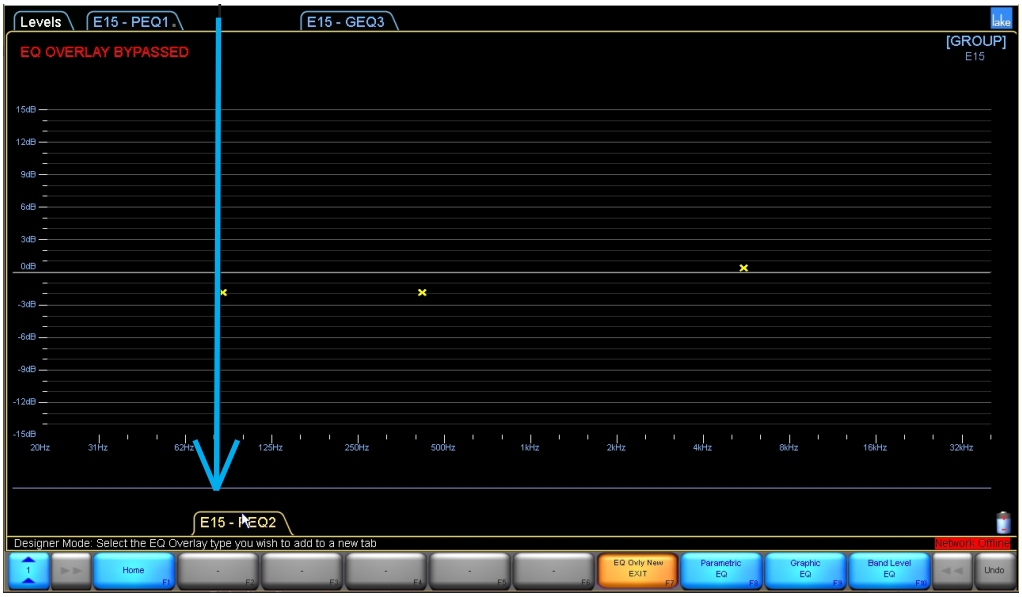


Select a filter type and add it to the work surface.

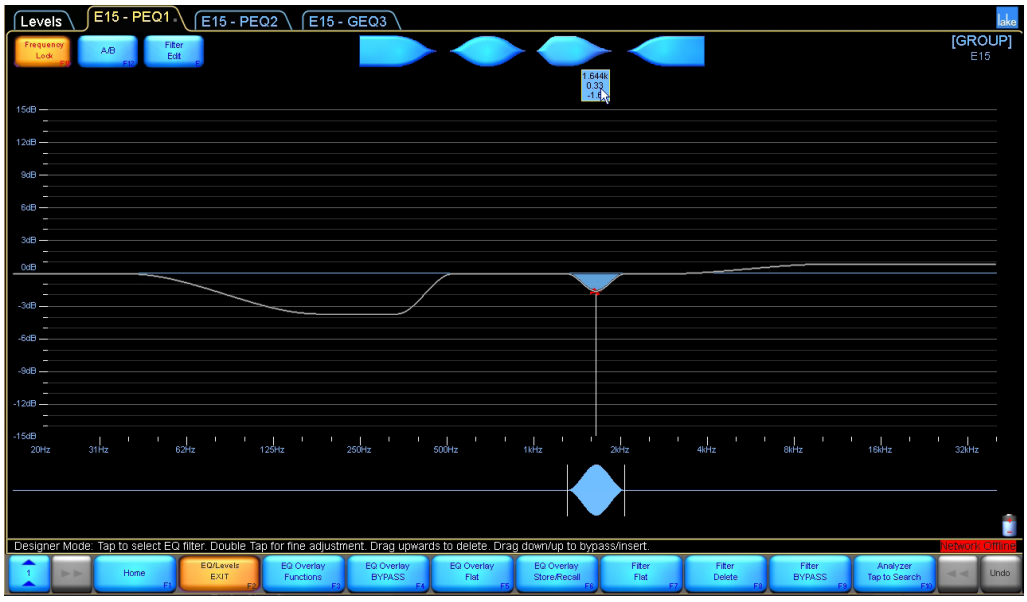
Groups & Overlays

3.1 Groups & Overlays

Each overlay can be bypassed by selecting the overlay tab at the top of the page and dragging it down across the workspace.



Each filter added can be bypassed with the same technique. Filters can be deleted by dragging them up. Each EQ page will show any user EQ applied in Overlays within that group, Each module within a group will show all EQ applied in any groups above it.



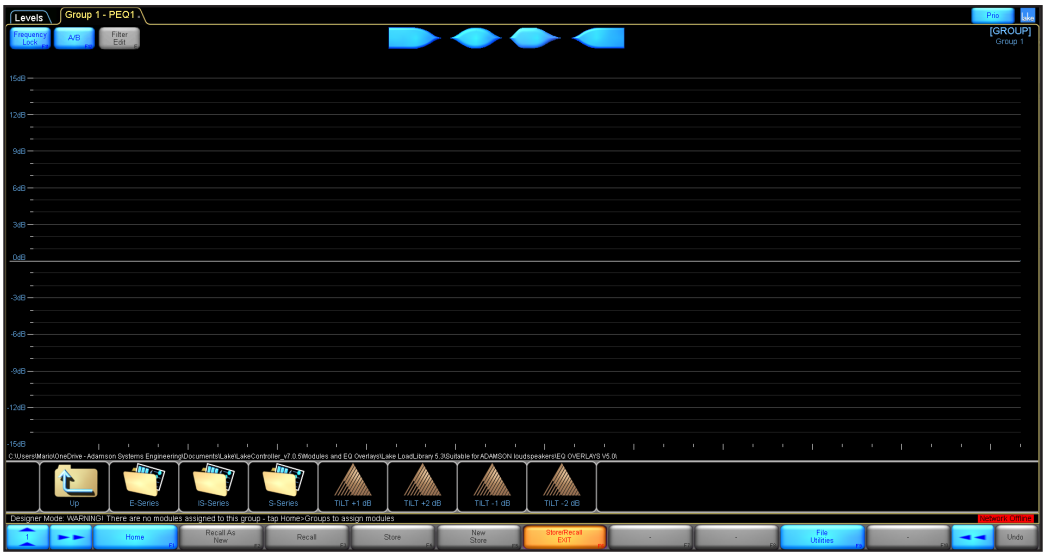
Groups & Overlays

3.2 Array Shaping

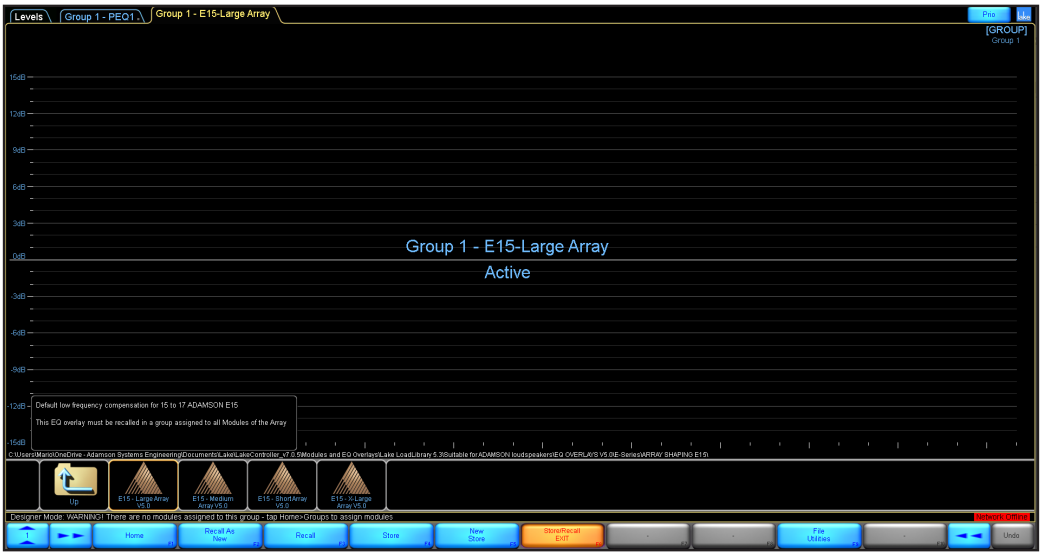
Array Shaping will compensate the E and S-Series presets based on the number of boxes flown or stacked. Adamson offers Array Shaping in the form of a recallable EQ Overlay.

Array Shaping Overlays

1. Once you have assigned all array modules to a group, return to the Home page and click the group you have just created in the workspace. Make sure you are on the EQ tab, and click the EQ Overlay Store/Recall button.



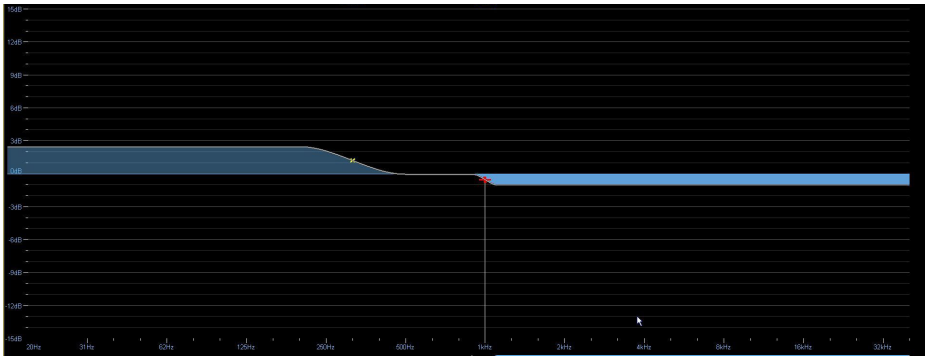
2. Navigate to the appropriate product family folder on your hard drive and select the "EQ Overlays" folder. Select the appropriate overlay and press Recall As New, clicking yes when prompted to confirm. This will enable the correct EQ overlay on all modules assigned to the group.



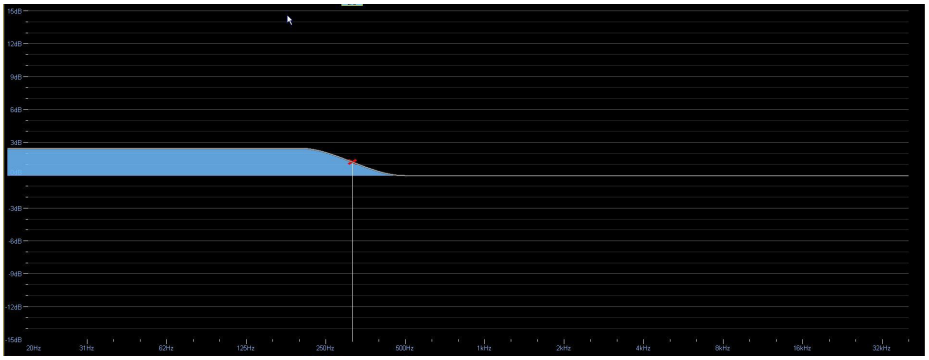
3.2 Array Shaping

Array Shaping Overlays are hidden from view when using the Adamson LoadLibrary. Below are the unlocked views for reference.

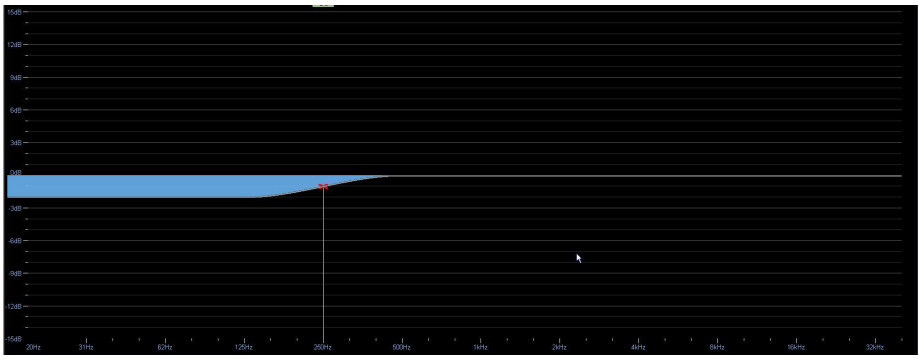
Array Shaping Overlays - E15



E15 - Short Array (6-8 enclosures)

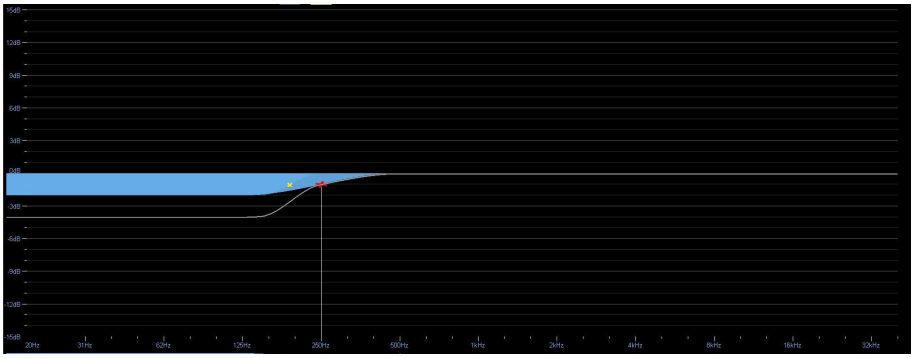


E15 - Medium Array (9-11 enclosures)



E15 - Large Array (15-17 enclosures)

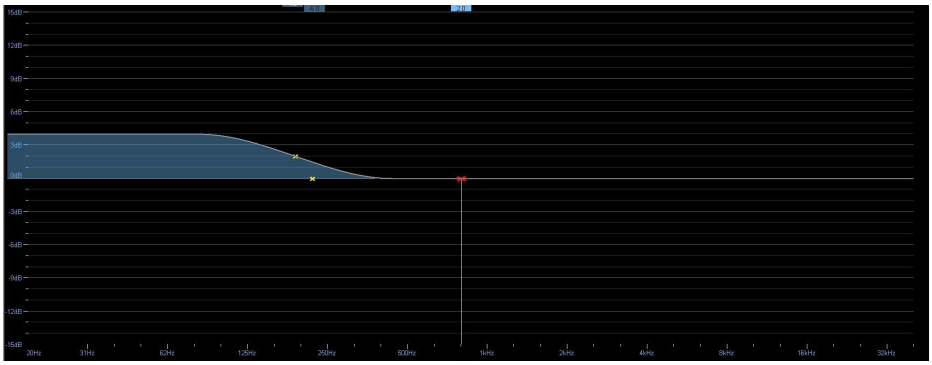
3.2 Array Shaping



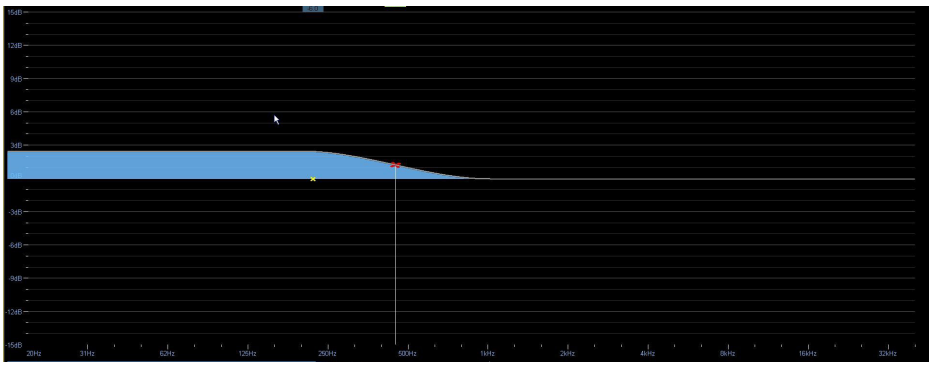
E15 - X-Large Array (18-20 enclosures)

The standard E15 preset is the E15 Array preset and shall be loaded without Array Shaping Overlays when used with a 12-15 enclosure array.

Array Shaping Overlays - E12

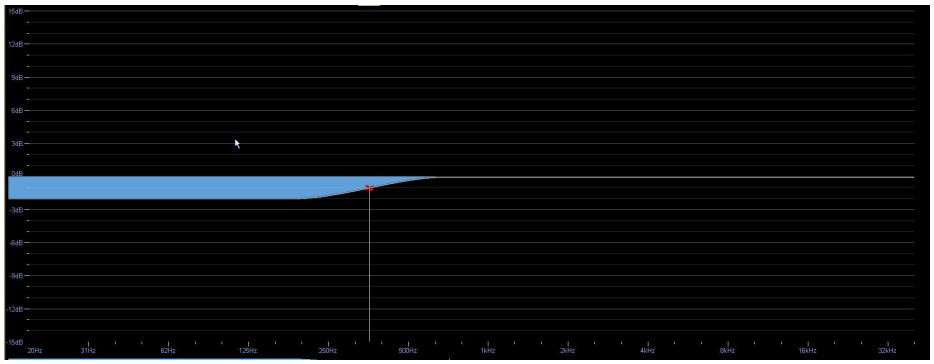


E12 - Short Array (6-8 enclosures)



E12 - Medium Array (9-11 enclosures)

3.2 Array Shaping

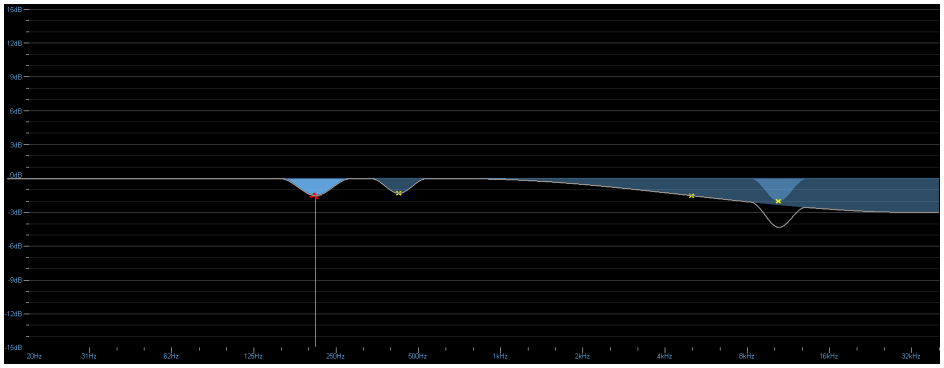


E12 - Large Array (15-17 enclosures)

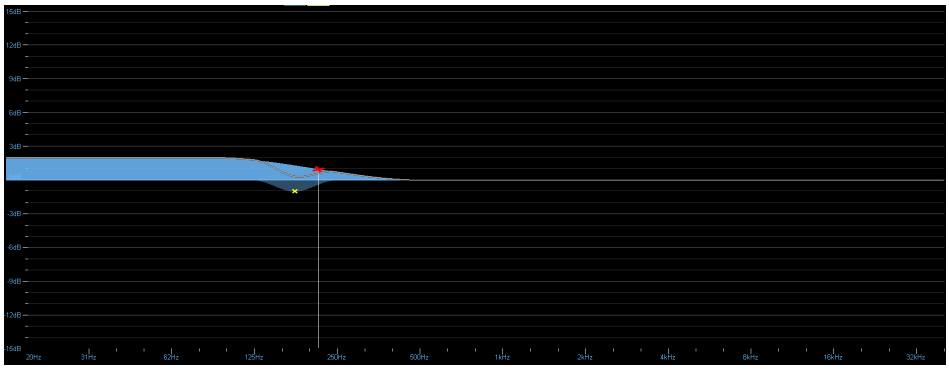
The standard E12 preset is the E12 Array preset and shall be loaded without Array Shaping Overlays when used with a 12-15 enclosure array.

If hanging an array of mixed cabinet types, please use the Array Shaping overlay designed for the predominant box in that array. Example: A 15 box array contains 12x E15, 3x E12. In this instance, the E15 Large Array overlay would be implemented.

Array Shaping Overlays - S10

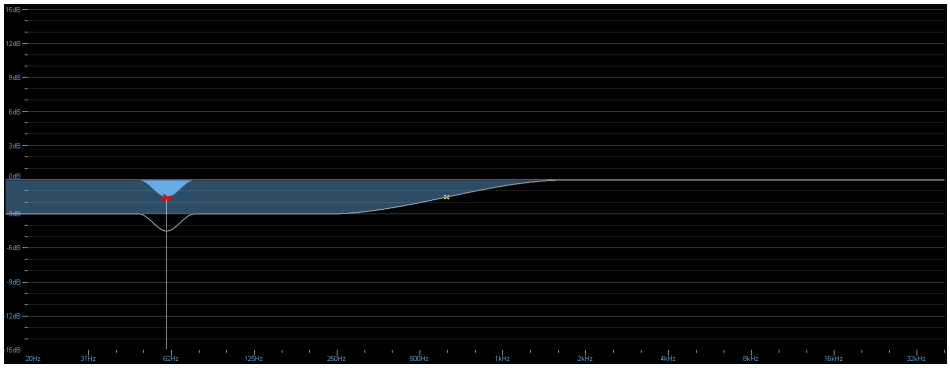


S10 - Compact Array(4 S10 stacked on 2 S119)



S10 - Short Array (4-6 enclosures)

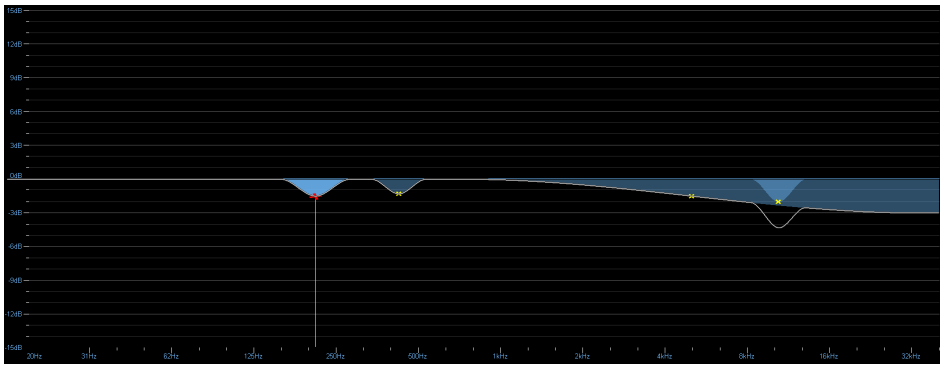
3.2 Array Shaping



S10 - Large Array (More than 11 enclosures)

The standard S10 preset is the S10 Array preset and shall be loaded without Array Shaping Overlays when used with a 7-11 enclosure array.

Array Shaping Overlays - S7



S7 - Short Array (4-6 enclosures)

The standard S7 preset is the S7 Array preset and shall be used without Array Shaping Overlays when used with a 7 and more enclosure array.

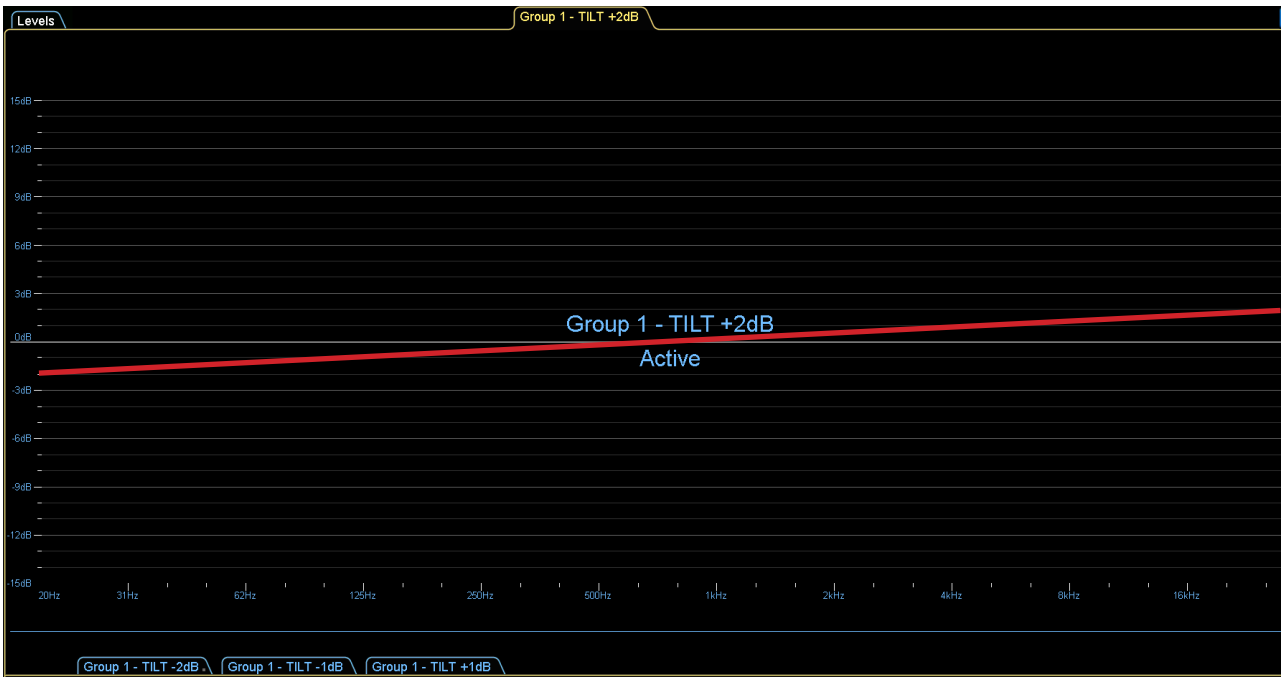
When using module or frame presets including the array shaping overlay for S7 or S10 the array shaping should not be loaded in a group. If loading the array shaping in a group please use the array preset to avoid loading the overlay two times.

The Array Shaping Overlays for S10 can also be used for S10n, IS10 and IS10n. The array Shaping overlays for S7 can also be used for IS7.

3.3 Tilt Overlays

The Tilt Array Shaping Overlays allow the user to apply a tilted EQ curve to their system in 1 dB steps, up to a maximum of +/- 3 dB. The four overlays contained in the Tilt Array Shaping folder are labeled as Tilt -2 dB, -1 dB, +1 dB and +2 dB. These values refer to the change in high frequency. For instance, if you wanted a very warm curve with 3 dB more in low frequency and 3 dB less in high frequency, you would add the -1 dB and -2 dB overlays. To achieve a very bright curve with 3 dB more in high frequency and 3 dB less in low frequency, you would add the +1 dB and +2 dB overlays.

To recall the Tilt Array Shaping Overlays, follow the same instructions found in Section 3.2.



The red line illustrates how the Tilt group affects modules assigned to the Tilt group. The Tilt Array Shaping Group allows the user to apply a tilted EQ curve to their system in 1 dB steps, up to a maximum of 3 dB. Equalization data will not be shown on Lake™ Controller

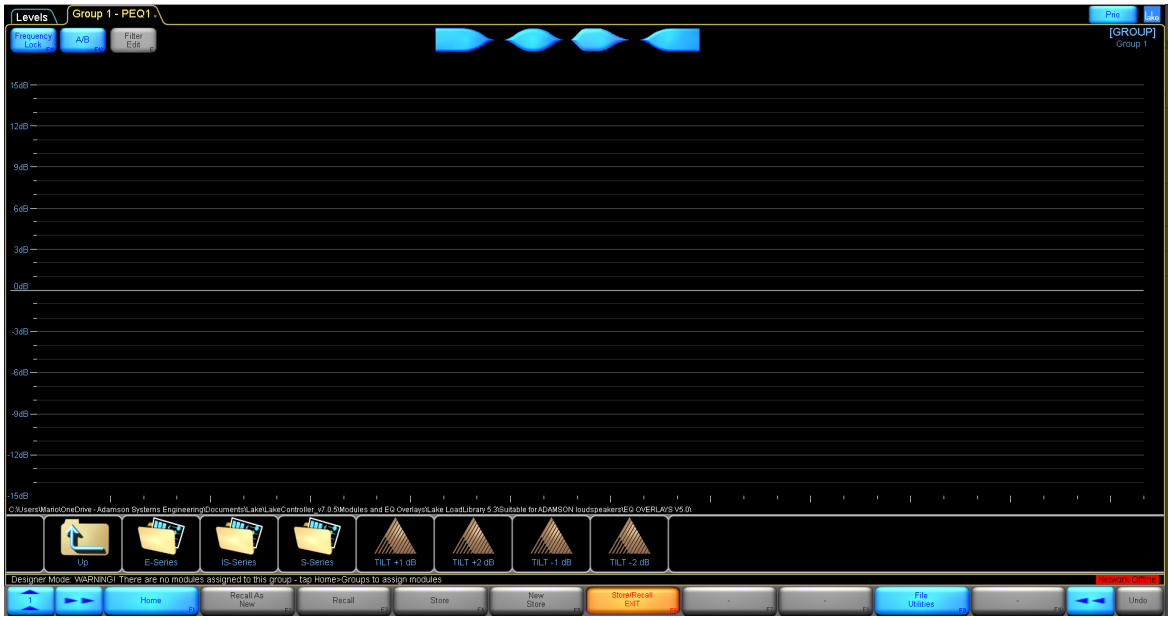
Groups & Overlays

3.4 Overlay Store & Recall

In Lake™ Controller *you* have the ability to store and recall EQ overlays between Groups.

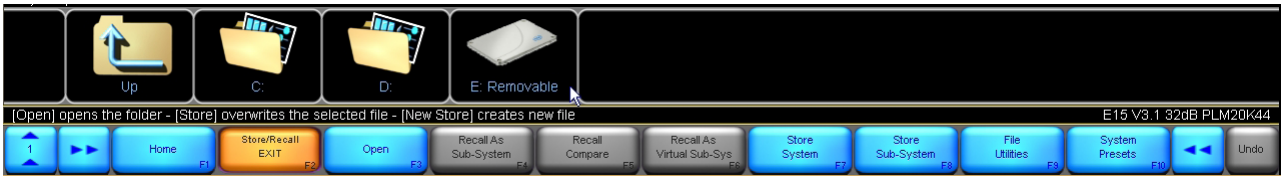
If not stored already recall an Array shaping group as shown in chapter 3.2, activate the overlay to be recalled in another group. Press EQ Overlay Store/Recall and navigate to where the overlay will be stored then press New Store enter a name and save.

Select a group to recall the EQ overlay, press EQ Overlay Store/Recall, select the overlay and either recall into the existing Group EQ overlay or recall as new overlay.



4.1 File Management

1. Saving a System File allows you to restore to your last saved session and take your system file to other Lake™ computers. To save a System File System Store/Recall



2. Navigate to where you wish to store your file. Then Store System and name your file.

Storing a system file with online frames will remember which frame was used in your system at which position through MAC-Address. If recalling the file with different amps or amps on different positions you should recall the system file as a virtual system. This is described in section 4.2. Normal loading of the system file might lead to wrong data on amps.

File Management

4.2 System Files & Batch Replace

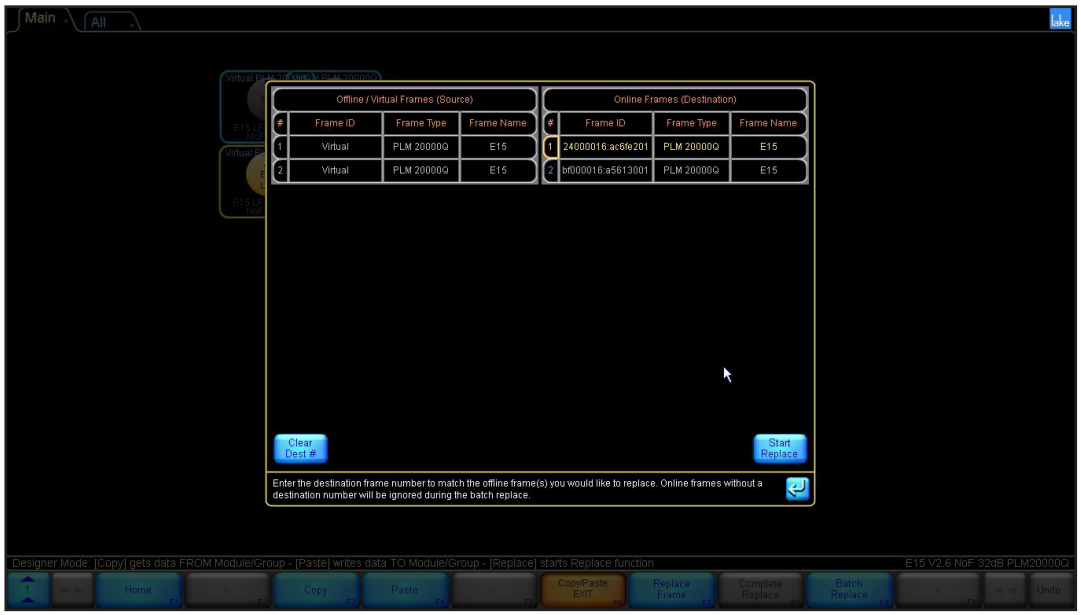
Loading system files allows you to prepare a system file including frame presets offline and loading it on your amps later with batch replace.

1. System Store/Recall Navigate to Adamson system files folder in the Adamson load library.

Choose desired preset for the appropriate amplifier Recall As Virtual Sub-Sys
(repeat recall until virtual modules match desired amount of live modules)

You will be prompted to either recall on the same page, or a new page. Select same page.

2. Modules select a module, Copy/Paste Replace then Batch Replace Assign ID# in the # column of live modules to match virtual modules then start the replace process Start Replace



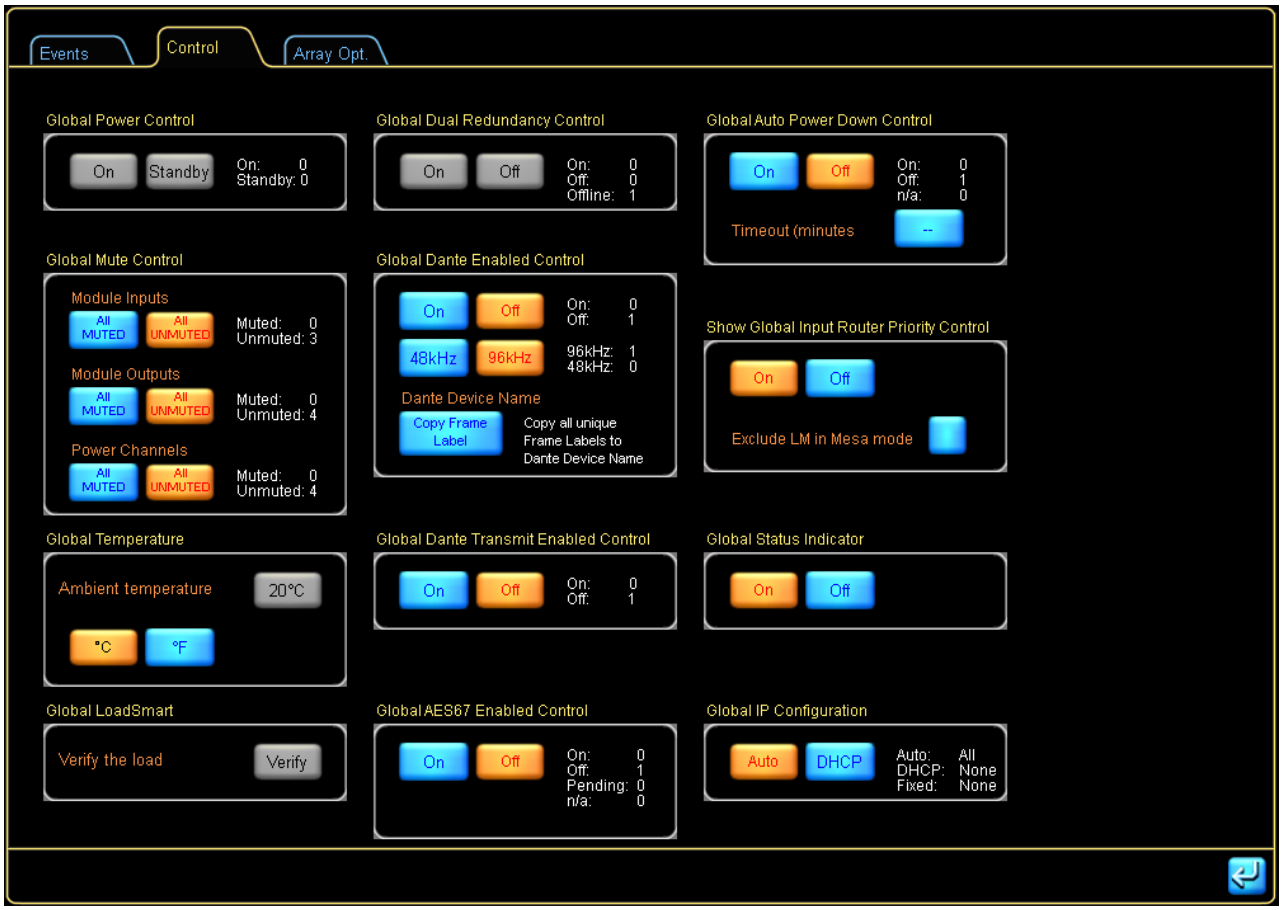
3. Repeat steps 1 and 2 for every enclosure, preset and amplifier type you wish to recall in your system.

Global Events & Control

5.1 Global Events & Control

1. Once all modules are connected to Lake™ controller navigate to the ALL tab at the top of the workspace

2. At the bottom of this page choose Global Events & Control to launch the Events and Control page. Choose the Control tab.



This tab allows you to control global settings for all frames connected to your Lake™ *Controller.*

If dual redundancy DANTE is not enabled, make sure the secondary ethernet cable is un-plugged for all DANTE enabled devices in your network.If not, you will have network errors..

You can access the global controll page by using the shortcut CTRL + F9.