Kling & Freitag SystemAmp Library 1.4
K&F PLM+ / D – Series

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1. Introduction

The Kling & Freitag (K&F) SystemAmp Library consists of presets for a save and optimized performance of K&F Speakers with K&F PLM+ and D-Series amplifiers. These amplifiers use Lake Controller as DSP platform.

This quick guide gives a brief overview of the structure and usage of the K&F SystemAmp Library. It starts with terms and definitions of Lake Controller.

Lake – terms and definitions:

- Frame:
  A frame represents one physical amplifier unit.
  It consists of 4 modules and is represented by those 4 modules in Lake Controller.

- Module:
  A module represents one channel strip from input to output, including all options like input routing, input gain, output gain, delay, input EQ (parametric and graphic) and output routing.

- Group:
  A group can contain any number of modules from any frame and control parameters like group gain, group EQ, delay, etc. for all assigned modules.
  Lake Controller provides 28 groups.

- EQ-Overlay:
  EQ overlays can be stored and recalled in the input EQ of a module or group. They can be used to adjust a speaker e.g. to a room.

- K&F additional EQ-Overlays:
  K&F additional EQ Overlays are pre-stored overlays, specific for each K&F speaker type and can be switched on and off. They are integrated in each K&F module to give a quick solution for typical applications. It's possible to use them for groups, for applying them to several speakers at the same time.
  Please refer to table 2 and 3 to get an overview.

- Frame Presets:
  A frame preset contains all settings for one frame. This includes information like modules, input routing, output routing, clock settings, input configuration and groups owning a module of that frame.

All K&F modules can just be used on K&F PLM+ and K&F D-Series amplifiers.

2. Mixed operation of K&F Systemrack and PLM+ / D-Series

If you want to use K&F Systemracks (K&F CD 44 & Lab.gruppen FP+10000Q) mixed with K&F SystemAmps (K&F PLM+ / D-Series), please take care of different latencys. Latency depends on selected input type.
Please refer to table 1 for compensation.

Table 1: latency compensation for mixed operation

	Systemrack	PLM+/D-Serie
Analog	+ 1,173 ms	0 ms
AES/EBU 48 kHz	+ 0,046 ms	0 ms
AES/EBU 96 kHz	0 ms	+ 0,514 ms

3. K&F Loudspeaker Module and additional EQ-Overlay

Table 2: Function of K&F additional EQ-Overlay Filters

Filter	**Function**
Cluster	To compensate undesired frequency addition in the low to mid frequency range. Usually for floor wedge application or when several speakers are placed directly next to another.
HighBoost	To compensate high frequency attenuation over long distances.
BassBoost	Adding a boost in the low frequency range of the speaker.
LoMidBoost	Adding a boost in the low to mid frequency range of the speaker.
Presence	Increases mid and high frequency range to achieve more presence.
SEQ Array Filter	Compensates the coupling of the arrayed low-mid speakers, which depends on array length.
SEQ Straight	Use for K&F Sequenza arrays with splay angles from 0° - 2° to harmonize midrange balance.

Table 3: Overview of the integrated K&F additional EQ-Overlays

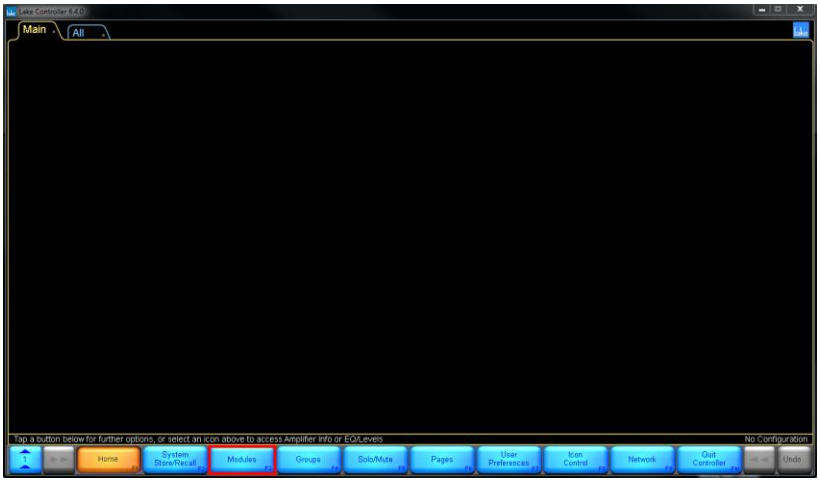
***Speaker-Type* /** additional Overlay	**Overlay Name**	**Module Type**
o ***ACCESS***		
– ACCESS B10 BassBoost	Accss B10 BBoost	---
– ACCESS T5-T9 Cluster	Accss T5-T9 Cluster	---
– ACCESS T5-T9 HighBoost	Accss T5-T9 HBoost	---
o ***CA 106***		
– CA 106 Cluster	CA 106 Cluster	FR / LCut
– CA 106 HighBoost	CA 106 HBoost	FR / LCut
o ***CA 1001***		
– CA 1001 Cluster	CA 1001 Cluster	FR / LCut
– CA 1001 HighBoost	CA 1001 HBoost	FR / LCut
o ***CA 1201***		
– CA 1201 Cluster	CA 1201 Cluster	FR / LCut
– CA 1201 HighBoost	CA 1201 HBoost	FR / LCut
o ***CA 1215 (6 / 9)***		
– CA 1215 Cluster	CA 1215 Cluster	FR / LCut
– CA 1215 HighBoost	CA 1215 HBoost	FR / LCut
o ***CA 1515 (6 / 9)***		
– CA 1515 Cluster	CA 1515 Cluster	FR / LCut
– CA 1515 HighBoost	CA 1515 HBoost	FR / LCut
o ***Gravis 8 W***		
– GRAVIS 8 BassBoost	GRAVIS 8 BBoost	FR
– GRAVIS 8 Cluster	GRAVIS 8 Cluster	FR / LCut
– GRAVIS 8 HighBoost	GRAVIS 8 HBoost	FR / LCut
o ***Gravis 12+ (N / W / XW)***		
– GRAVIS 12+ BassBoost	GRAVIS 12+ BBoost	FR
– GRAVIS 12+ Cluster	GRAVIS 12+ Cluster	FR / LCut
– GRAVIS 12+ LoMidBoost	GRAVIS 12+ LMBoost	LCut
o ***Gravis 15 (N / W / XW)***		
– GRAVIS 15 BassBoost	GRAVIS 15 BBoost	FR
– GRAVIS 15 Cluster	GRAVIS 15 Cluster	FR / LCut
– GRAVIS 15 LoMidBoost	GRAVIS 15 LMBoost	LCut
o ***Line 212 (6 / 9)***		
– Line 212 Cluster	Line 212 Cluster	FR / LCut
– Line 212 HighBoost	Line 212 HBoost	FR / LCut
o ***NOMOS LS2***		
– NOMOS LS2 60Hz LoMidBoost	NomLS2 60Hz LMBoost	60 Hz
– NOMOS LS2 BassBoost	NomLS2 BBoost	60Hz / 100Hz
– NOMOS LS2 LoMidBoost	NomLS2 LMBoost	100 Hz
o ***NOMOS LT***		
– NOMOS LT 60Hz LoMidBoost	NomLT 60Hz LMBoost	60 Hz
– NOMOS LT BassBoost	NomLT BBoost	60Hz / 100Hz
– NOMOS LT LoMidBoost	NomLT LMBoost	100 Hz

o ***NOMOS XLS***		
– NOMOS XLS 60Hz LoMidBoost	NomXLS 60Hz LMBoost	60 Hz
– NOMOS XLS BassBoost	NomXLS BBoost	60Hz / 100Hz
– NOMOS XLS LoMidBoost	NomXLS LMBoost	100 Hz
o ***NOMOS XLT***		
– NOMOS XLT 60Hz LoMidBoost	NomXLT 60Hz LMBoost	60 Hz
– NOMOS XLT BassBoost	NomXLT BBoost	60Hz / 100Hz
– NOMOS XLT LoMidBoost	NomXLT LMBoost	100 Hz
o ***PASSIO***		
– PASSIO BassBoost	PASSIO BBoost	FR
– PASSIO Cluster	PASSIO Cluster	FR / LCut
– Passio HighBoost	PASSIO HBoost	FR / LCut
o ***SEQUENZA 5 Array Filter***		
– 4x SEQ 5	4x SEQ 5	FR / LCut
– 5x SEQ 5	5x SEQ 5	FR / LCut
– 6x SEQ 5	6x SEQ 5	FR / LCut
– 7x SEQ 5	7x SEQ 5	FR / LCut
– 8x SEQ 5	8x SEQ 5	FR / LCut
– 9x SEQ 5	9x SEQ 5	FR / LCut
– 10x SEQ 5	10x SEQ 5	FR / LCut
– 11x SEQ 5	11x SEQ 5	FR / LCut
– 12x SEQ 5	12x SEQ 5	FR / LCut
– 13-15x SEQ 5	13-15x SEQ 5	FR / LCut
o ***SEQUENZA 5 HighBoost***		
– SEQ 5 HighBoost 1dB	SEQ 5 HBoost 1dB	FR / LCut
– SEQ 5 HighBoost 2dB	SEQ 5 HBoost 2dB	FR / LCut
– SEQ 5 HighBoost 3dB	SEQ 5 HBoost 3dB	FR / LCut
– SEQ 5 HighBoost 4dB	SEQ 5 HBoost 4dB	FR / LCut
o ***SEQUENZA 5***		
– SEQ 5 Straight	SEQ 5 Straight	FR / LCut
o ***SEQUENZA 10 Array Filter (N / W)***		
– 4-5x SEQ 10	4-5x SEQ 10	FR / LCut
– 6-7x SEQ 10	6-7x SEQ 10	FR / LCut
– 8-9x SEQ 10	8-9x SEQ 10	FR / LCut
– 10-11x SEQ 10	10-11x SEQ 10	FR / LCut
– 12-13x SEQ 10	12-13x SEQ 10	FR / LCut
– 14-15x SEQ 10	14-15x SEQ 10	FR / LCut
– 16-17x SEQ 10	16-17x SEQ 10	FR / LCut
– 18-19x SEQ 10	18-19x SEQ 10	FR / LCut
– 20-21x SEQ 10	20-21x SEQ 10	FR / LCut
22-23x SEQ 10	22-23x SEQ 10	FR / LCut
– 24x SEQ 10	24x SEQ 10	FR / LCut
o ***SEQUENZA 10 HighBoost (N / W)***		
– SEQ 10 HighBoost 1.5dB	SEQ 10 HBoost 1.5dB	FR / LCut
– SEQ 10 HighBoost 3dB	SEQ 10 HBoost 3dB	FR / LCut
– SEQ 10 HighBoost 4.5dB	SEQ 10 HBoost 4.5dB	FR / LCut

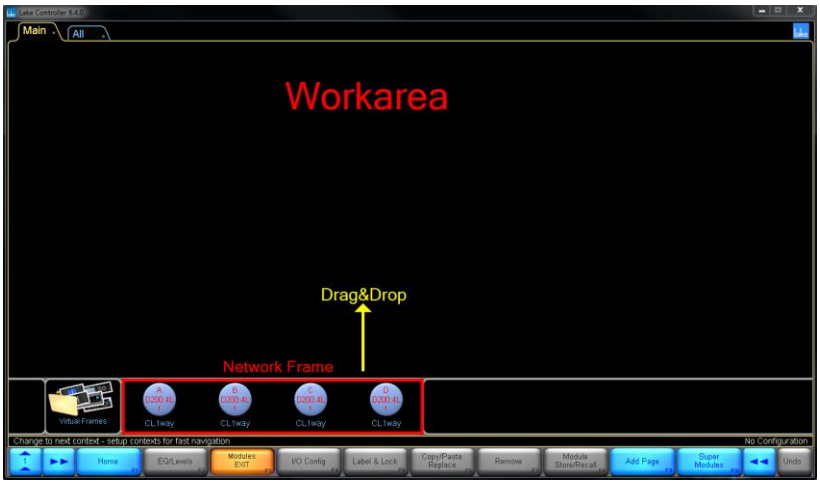
– SEQ 10 HighBoost 6dB	SEQ 10 HBoost 6dB	FR / LCut
o ***SEQUENZA 10***		
– SEQ 10 Straight	SEQ 10 Straight	FR / LCut
o ***SONA 5***		
– SONA 5 HighBoost	SONA 5 HBoost	---
– SONA 5 Presence	SONA 5 Presence	---
o ***SONA 6***		
– SONA 6 BassBoost	SONA 6 BBoost	FR
o ***SONA 8***		
– SONA 8 BassBoost	SONA 8 BBoost	FR
o ***SONA SUB II***		
– SONA SUB II BassBoost	SONA SUB II BBoost	---
o ***SPECTRA 212 Array Filter***		
– 2x S212 FR	2x S212 FR	FR
– 2x S212 LCut	2x S212 LCut	LCut
– 3x S212 FR	3x S212 FR	FR
– 3x S212 LCut	3x S212 LCut	LCut
– 4x S212 FR	4x S212 FR	FR
– 4x S212 LCut	4x S212 LCut	LCut
– 5x S212 FR	5x S212 FR	FR
– 5x S212 LCut	5x S212 LCut	LCut
– 6x S212 FR	6x S212 FR	FR
– 6x S212 LCut	6x S212 LCut	LCut
o ***(SW) B10 SubLow***		
– B10 SubLow BassBoost	B10 SubLow BBoost	---

4. Recall K&F Modules

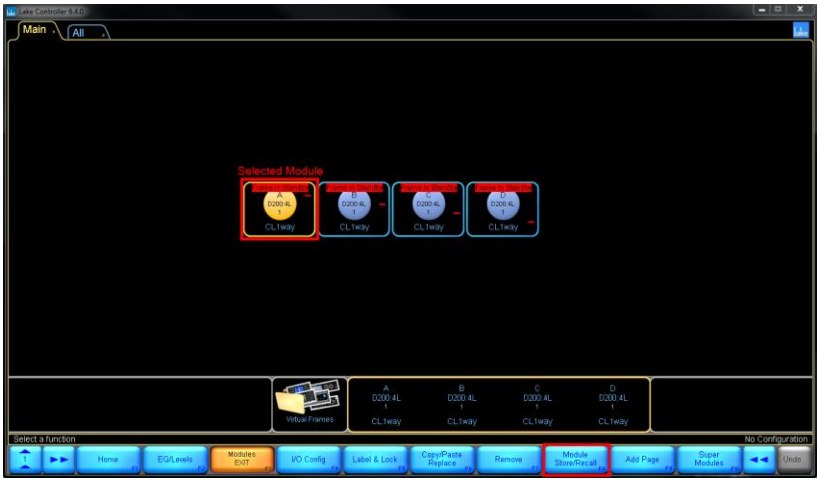
- Open Lake Controller Software.
- Click the 'Modules' button.



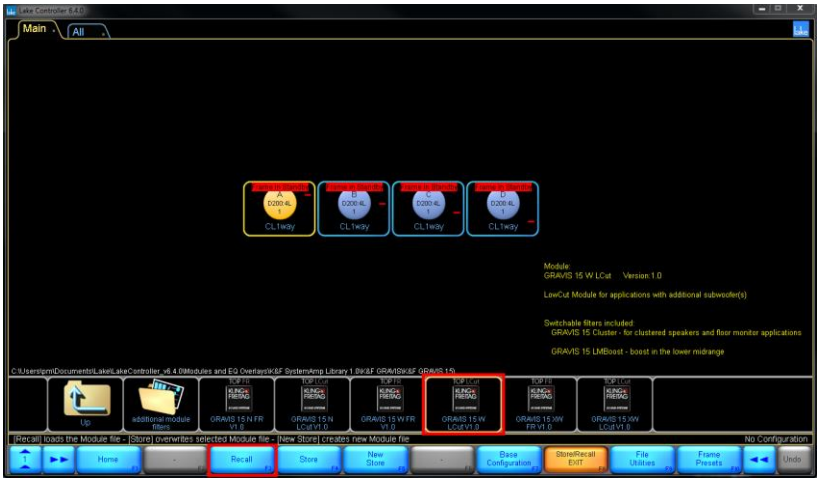
- Drag & Drop one or more PLM+ / D-Series into the Lake Controller workarea (virtual or network device).



- Select one module in the workarea (module becomes yellow).
- Click the 'Module Store/Recall' button.



- Choose your desired module out of the K&F SystemAmp Library and click the 'Recall' button to recall the module (e.g. Gravis 15 W Lcut).



- Confirm the recall process.
- The output routing window appears, where you can route one or more physical amp outputs to the module output.

5. K&F Frame Presets

All K&F Frame Presets work with PLM+ / D-Series Firmware 2.50 and higher.

The input priority for all K&F Frame Presets is:

- Prio 1: AES/EBU Input
- Prio 2: Analog Input

This way you can either use an analog or an AES/EBU input signal without the need for additional configuration.

All K&F Frame Presets have the following configuration for the Breaker Emulation Limiter:

- Nominal Current: 16.0 A
- Mains Breaker Characteristics: Universal

For further information regarding Frame Presets please see Lake Controller Operation Manual chapter 7.

We recommend creating customized Frame Presets for your own needs.

Table 4: Overview of K&F Frame Preset Examples

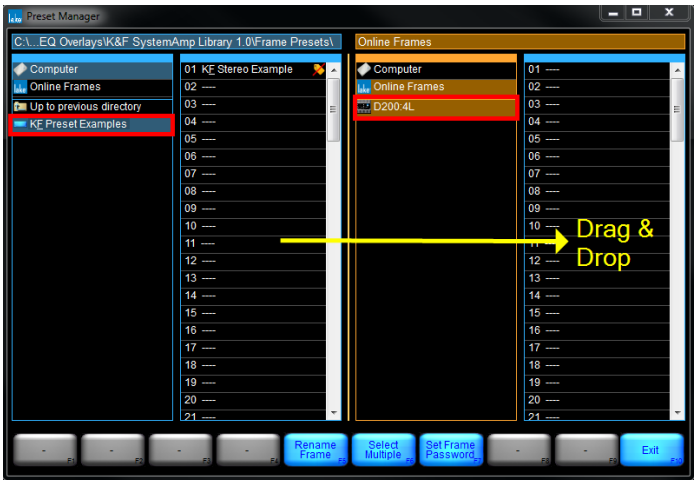
Preset-Type / Preset Name	Out 1	Out 2	Out 3	Out 4
○ ***Stereo (2 In / 4 Out)***				
– S-106/SW112	CA106 LC	SW112	CA106 LC	SW112
– S-106/SW112m (monomix)	CA106 LC	SW112	CA106 LC	SW112
– S-1001/SW115	CA1001 LC	SW115	CA1001 LC	SW115
– S-1001/SW115m (monomix)	CA 1001 LC	SW115	CA 1001 LC	SW115
– S-1215-9/SW118	CA 1215-6 LC	SW118	CA 1215-6 LC	SW118
– S-1215-9/SW118m (monomix)	CA 1215-6 LC	SW118	CA 1215-6 LC	SW118
– S-1215-9/SW215	CA 1215-6 LC	SW215	CA 1215-6 LC	SW215
– S-1215-9/SW215m (monomix)	CA 1215-6 LC	SW215	CA 1215-6 LC	SW215
– S-1515-9/SW118	CA 1515-6 LC	SW118	CA 1515-6 LC	SW118
– S-1515-9/SW118m (monomix)	CA 1515-6 LC	SW118	CA 1515-6 LC	SW118
– S-G8 W/NomLS2	G8 W LC	NomLS2	G8 W LC	NomLS2
– S-G8 W/NomLS2m (monomix)	G8 W LC	NomLS2	G8 W LC	NomLS2
– S-G12+W/NomLT	G12+W LC	NomLT	G12+W LC	NomLT
– S-G12+W/NomLTm (monomix)	G12+W LC	NomLT	G12+W LC	NomLT
– S-G15 W/NomXLT	G15 W LC	NomXLT	G15 W LC	NomXLT
– S-G15 W/NomXLTm (monomix)	G15 W LC	NomXLT	G15 W LC	NomXLT
– S-L212-9/NomXLT	Line212-9 LC	NomXLT	Line212-9 LC	NomXLT
– S-L212-9/NomXLTm (monomix)	Line212-9 LC	NomXLT	Line212-9 LC	NomXLT
– S-L212-9/SW215	Line212-9 LC	SW215	Line212-9 LC	SW215
– S-L212-9/SW215m (monomix)	Line212-9 LC	SW215	Line212-9 LC	SW215
– S-Passio/PSub15	Passio LC	PassioSub15	Passio LC	PassioSub15
– S-Passio/PSub15m (monomix)	Passio LC	PassioSub15	Passio LC	PassioSub15
○ ***1/4 (1 In / 4 Out) Top***				
– 1/4-AT5-9/B5/B10	Acc T5-9 High	Acc T5-9 Mid	B5	B10 55Hz
– 1/4-AT5-9/NomXLT	Acc T5-9 High	Acc T5-9 Mid	NomXLT	NomXLT
– 1/4-AT5-9/NomXLC	Acc T5-9 High	Acc T5-9 Mid	NomXLC F	NomXLC R
– 1/4-S5 FR	Seq 5 FR	Seq 5 FR	Seq 5 FR	Seq 5 FR
– 1/4-S5 LC	Seq 5 LC	Seq 5 LC	Seq 5 LC	Seq 5 LC
– 1/4-S5 LC/S5B	Seq 5 LC	Seq 5 LC	Seq 5 B	Seq5 B
– 1/4-S10 N FR	S10 N FR High	S10 N FR High	S10 N FR High	S10 N FR High
– 1/4-S10 N LC	S10 N LC High	S10 N LC High	S10 N LC High	S10 N LC High
– 1/4-S10 N/W FR	S10 N FR High	S10 N FR High	S10 W FR High	S10 W FR High
– 1/4-S10 N/W LC	S10 N LC High	S10 N LC High	S10 W LC High	S10 W LC High
– 1/4-S10 W FR	S10 W FR High	S10 W FR High	S10 W FR High	S10 W FR High
– 1/4-S10 W LC	S10 W FR High	S10 W FR High	S10 W FR High	S10 W FR High
○ ***1/4 (1 In / 4 Out) Bass***				
– 1/4-S10B C	Seq10B C F	Seq10B C F	Seq10B C R	
– 1/4-S10B HC	Seq10B HC F	Seq10B HC F	Seq10B HC R	
– 1/4-NomLT	NomLT	NomLT	NomLT	NomLT
– 1/4-NomLT C	NomLT C F	NomLT C F	NomLT C R	NomLS2 C R
– 1/4-NomLT HC	NomLT HC F	NomLT HC F	NomLT HC R	NomLS2 HC R
– 1/4-NomXLC	NomXLC F	NomXLC R	NomXLC F	NomXLC R
– 1/4-NomXLC HC	NomXLC HC F	NomXLC HC R	NomXLC HC F	NomXLC HC R
– 1/4-SW115	SW115	SW115	SW115	SW115
– 1/4-SW215	SW215	SW215	SW215	SW215
○ ***4/4 (4 In / 4 Out) monitor application***				
– 4/4-1215-6 FR Cl (cluster filter)	1215-6 FR	1215-6 FR	1215-6 FR	1215-6 FR
– 4/4-1215-9 Fr Cl (cluster filter)	1215-9 Fr	1215-9 Fr	1215-9 Fr	1215-9 Fr
– 4/4-1515-6 FR Cl (cluster filter)	1515-6 FR	1515-6 FR	1515-6 FR	1515-6 FR
– 4/4-1515-9 FR Cl (cluster filter)	1515-9 FR	1515-9 FR	1515-9 FR	1515-9 FR

– 4/4-G8 W FR Cl (cluster filter)	G8 W FR	G8 W FR	G8 W FR	G8 W FR
– 4/4-G12+N FR Cl (cluster filter)	G12+N FR	G12+N FR	G12+N FR	G12+N FR
– 4/4-G12+W FR Cl (cluster filter)	G12+W FR	G12+W FR	G12+W FR	G12+W FR
– 4/4-G15 N FR Cl (cluster filter)	G15 N FR	G15 N FR	G15 N FR	G15 N FR
– 4/4-G15 W FR Cl (cluster filter)	G15 W FR	G15 W FR	G15 W FR	G15 W FR
– 4/4-Sc15 1Ch FR	Sc15 1Ch FR	Sc15 1Ch FR	Sc15 1Ch FR	Sc15 1Ch FR

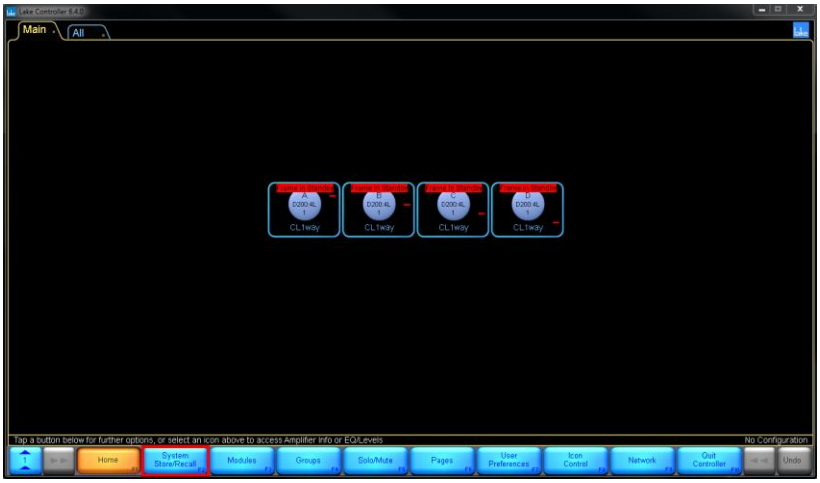
6. Transfer K&F Frame Presets from PC to amplifier

- Transfer presets to PLM+ / D-Series.
  - Open Lake PresetManager.
  - Choose PLM+ / D-Series.

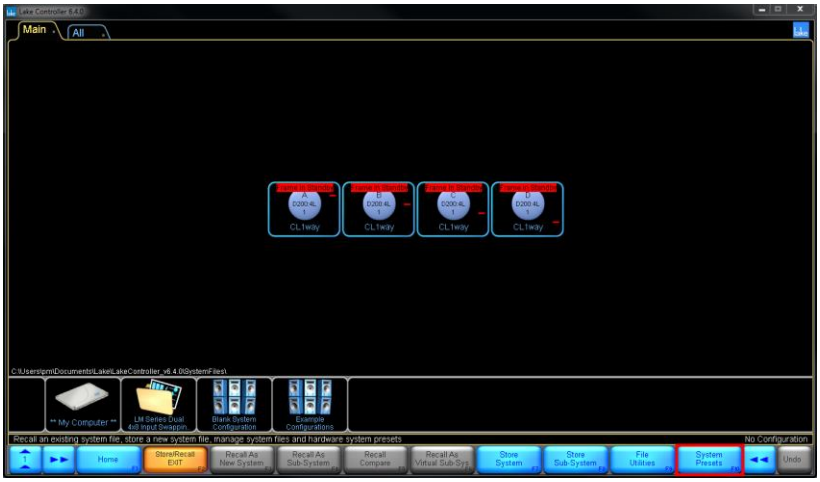
  - Open K&F Presets Examples Bank:
    (K&F SystemAmp Library -> K&F Frame Presets -> K&F Preset Examples).
  - Drag&Drop one or more presets into the internal preset memory of the PLM+ / D-Series connected in the network.



- Recall presets on a frame with Lake Controller software.
  - Open Lake Controller Software.
  - Click the ‘System Store Recall’ button.



  - Click the ‘System Presets’ button.



  - Select one Module/Frame in the workarea.
  - Choose your desired preset and click the ‘Recall’ button to recall the preset.

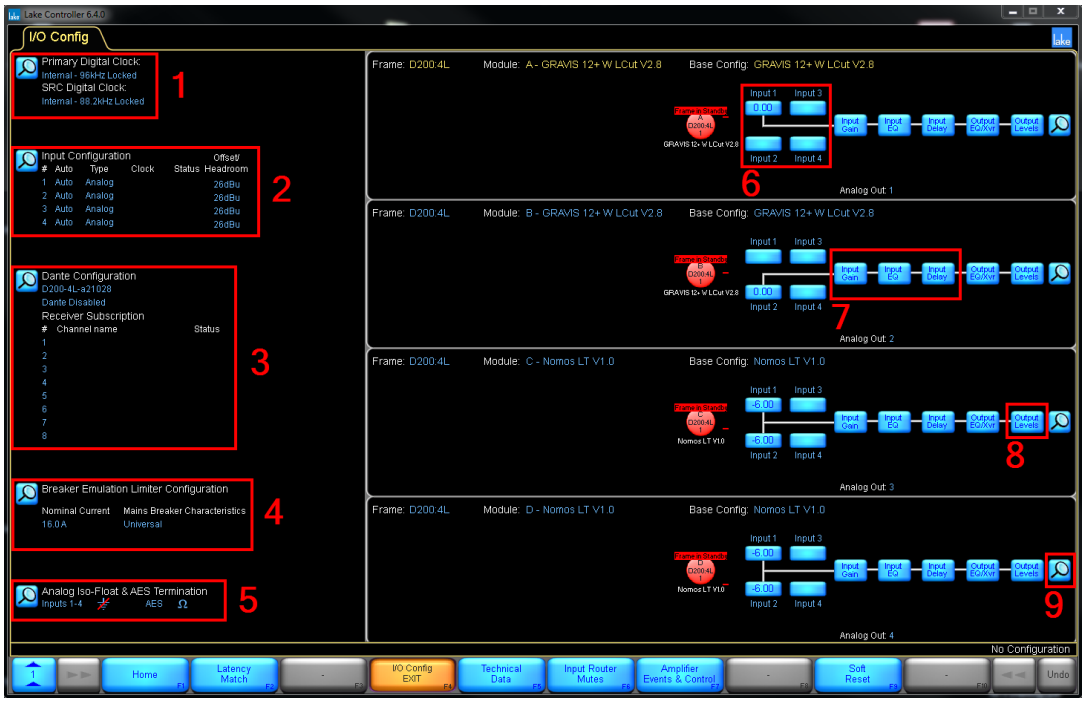
Please refer to Lake Controller / PLM+ / D-Series manual for further information.

7. Configurating a K&F PLM+ or D-Series

Most configuration options for modules and frames are accessible from "I/O Config"page in Lake Controller. You find that page with these steps:

- Open Lake Controller software.
- Drag a virtual or network frame to work area.
- Click button 'Modules'.
- Select one module in work area (the module becomes yellow).

- Click button 'I/O Config'.



I/O Config Page

1. Primary Digital Clock:Internal/External, Auto/Manual, AES 3/Dante

2. Input Configuration:
   Select the priority of physical inputs.

3. Dante Configuration:
   Routing and configuration of Dante Audio Network.

4. Breaker Emulation Limiter Configuration:
   5A – 32A, Conservative/Fast/Universal
   Set current limit for power supply according to available AC mains and connections.

5. Analog Iso-Float & AES Termination:
   Ground lift for analog inputs and switchable termination of AES 3 inputs.

6. Input Mixer:
   You can mix all four inputs for each module.
   See module C and D for an example for mono mixing two inputs. You need to remove 6 dB on both inputs to counteract summation.

7. Input Section:
   Configuration of input gain (incl. Output gain), input EQ (parametric, graphic and K&F additional Overlay EQs) and input delay.

8. Output Levels:

Configure output gain (incl. input gain).

9. Output Configuration:

Routing of physical amplifier output stages to module outputs, and bridge configuration.

Additional options for routing analog and AES 3 inputs to Dante stream, when using K&F PLM+ or D-Series as break-in box.

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Step 6-9 are available for each of the 4 modules (A-D).

The button "Output EQ/Xvr" is deactivated. It contains speaker specific settings predefined by K&F.

Changes

Version 1.4

New Modules:

Spectra 212 N LS FR V1.6, Spectra 212 N LS LCut V1.6, Spectra 212 N PS FR V1.6, Spectra 212 N PS LCut V1.6, Spectra 212 XW LS FR V1.6, Spectra 212 XW LS LCut V1.6, Spectra 212 XW PS FR V1.6, Spectra 212 XW PS LCut V1.6, CA 106 Pro FR V1.2, CA 106 Pro LCut V1.2

New Module Versions:

PASSIO FR V1.4

Version 1.3

New Modul:

SCENA 12 Monitor FR V1.0, SCENA 12 Monitor LCut V1.0, SCENA 12 Top FR V1.0, SCENA 12 Top LCut V1.0, SCENA 15 1Ch Monitor FR V1.0, SCENA 15 1Ch Monitor LCut V1.0, SCENA 15 2Ch Monitor FR V1.0, SCENA 15 2Ch Monitor LCut V1.0, SPECTRA 212 LS FR V1.0, SPECTRA 212 LS LCut V1.0, SPECTRA 212 PS FR V1.0, SPECTRA 212 PS LCut V1.0

Version 1.2

New Module Versions:

NOMOS LS2 [all] 1.2

NOMOS LT [all] 1.2

NOMOS XLS [all] 1.2

NOMOS XLT [all] 1.2

GRAVIS 8W [all] 1.2

GRAVIS 15N, GRAVIS 15W, GRAVIS 15XW [all] 1.2

Increased peak performance due to optimized ISVPL Limiter settings

PASSIO FR 1.2

Increased performance due to optimized MaxRMS Limiter settings

Version 1.1

New Module Version:

NOMOS XLC V2.2, NOMOS XLC HC V2.2, NOMOS XLC 60Hz V2.2, NOMOS XLC 60Hz HC V2.2

revised rms-limiter an all NOMOS XLC V2.2 modules

Version 1.0

initial release