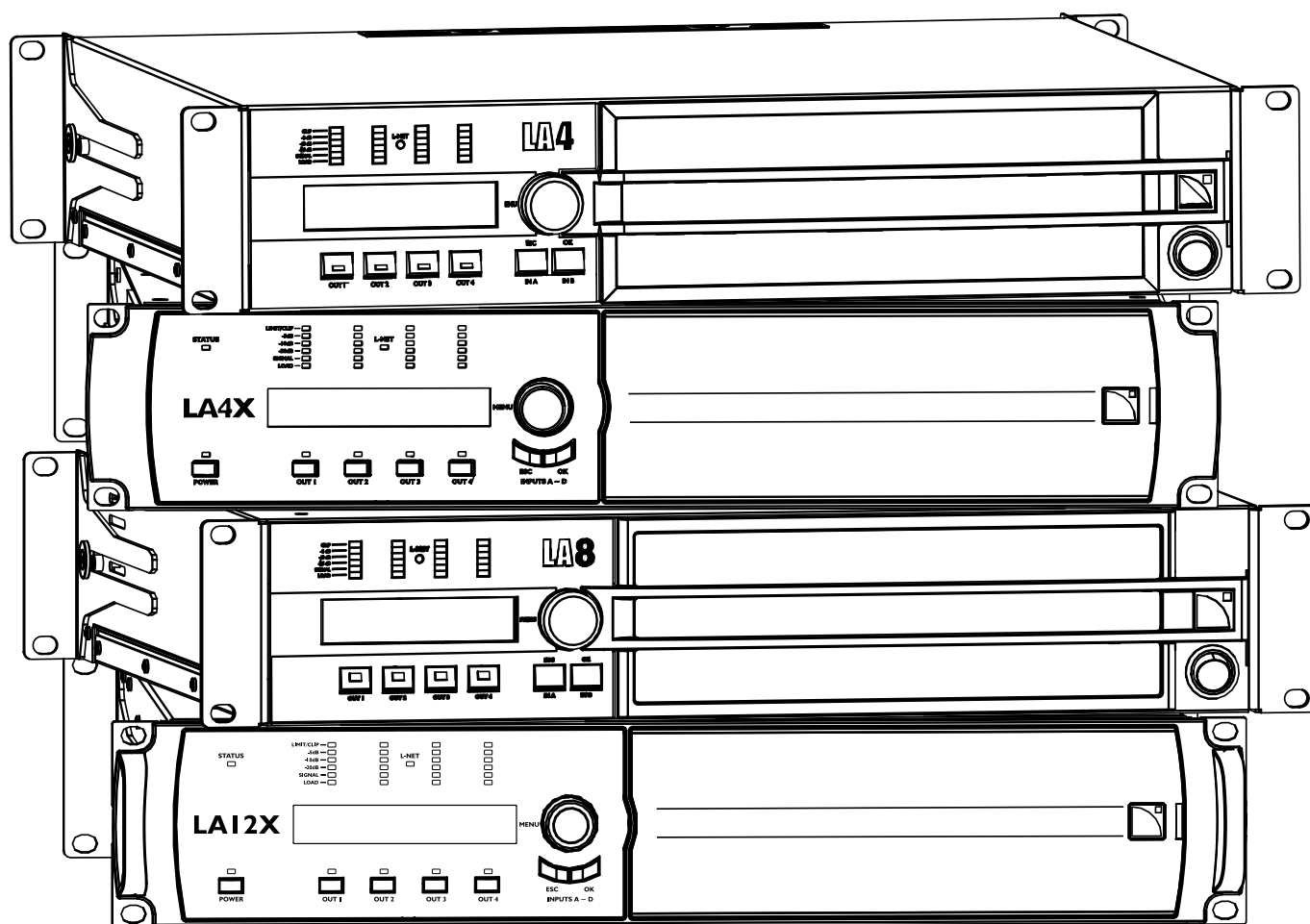


Preset Guide



owner's manual (EN)



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Introduction

The L-Acoustics amplified controllers are delivered with onboard firmware and preset library.

Presets of the onboard library can be loaded from the front panel of the amplified controller, or from the LA Network Manager software application, a management tool dedicated to the remote control and monitoring of a network of L-Acoustics amplified controllers.

LA Network Manager must be used for updating firmware on L-Acoustics amplified controllers. An up-to-date preset library is automatically installed with the firmware. Check the L-Acoustics website for the latest version of software, firmware and libraries.



Operating L-Acoustics amplified controllers

Refer to the LA2Xi, LA4, LA4X, LA8, LA12X, LA-RAK, LA-RAK II, and LA-RAK II AVB owner's manuals.

Installing LA Network Manager

Download the latest release pack from the L-Acoustics website and refer to the **LA NWM Installation** technical bulletin.

Updating firmware on an L-Acoustics amplified controller

Refer to the LA Network Manager help, accessible from the Help menu of the software.

This version of the preset guide describes the LA2Xi, LA4, LA4X, LA8 and LA12X preset libraries version 6.5(.7).

Symbols

The following symbols are used in this document:



This symbol indicates a potential risk of harm to an individual or damage to the product.

It can also notify the user about instructions that must be strictly followed to ensure safe installation or operation of the product.



This symbol notifies the user about instructions that must be strictly followed to ensure proper installation or operation of the product.



This symbol notifies the user about complementary information or optional instructions.



Do not open unless authorized.

This symbol indicates the presence of electrical shock hazards.

It also indicates that no maintenance performed by the end user requires access to internal components.

Preset design

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, 5XT, X8, 8XT, Kiva, Kilo).

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], [SB_28_100], [SB18_60], [SB18_100], [SB218_100], [SB118_60], [SB118_100]: + 3 dB

[KS28_100]: + 2 dB

[K1SB_60]: + 1 dB

Electro-acoustic coupling

Each recommended loudspeaker configuration provides a coherent sound source, by implementing a loudspeaker system in a specific deployment pattern and with defined factory presets.

L-Acoustics factory presets ensure the coupling between the different transducer sections, whether it is internal coupling as in active loudspeaker enclosures, or external coupling as when several loudspeaker enclosures are combined.

Users can adjust preset parameters on top of factory settings and for predefined channel sets.

Channel sets have been defined for the presets dedicated to active loudspeaker enclosures and to some specific loudspeaker configurations. A channel set maintains a coherent coupling by linking several output channels for the setting of routing, gain and delay parameters. For example, [LF HF] is a channel set for 2-way loudspeaker enclosure presets, and [SR SB SB SB] is a channel set for cardioid subwoofer presets.

The Preset Guide describes the recommended loudspeaker configurations for each system, with the corresponding factory presets and the main resulting acoustic properties.

When applicable, refer to the user documentation of the related system for the limit between coupled and separated subwoofers.

For some loudspeaker enclosure combinations, it is necessary to adjust the delay values for time-alignment. Refer to section [Pre-alignment delay values](#) (p.65).

Frequency response contour

For the X Series coaxial loudspeaker enclosures, there are two distinct contours:

- the standard preset, for all applications except stage monitor applications
- the _MO preset, dedicated to stage monitor applications

For legacy coaxial loudspeaker enclosures (XT and MTD Series), there are three distinct contours:

- the _FR presets, for most of FOH applications
- the _FI presets, for spoken word, classical music, jazz, or fill systems
- the _MO presets, for half-space loading conditions, typically monitor applications

For current WST systems, there are one or two distinct contours:

- the main preset, ensuring a reference FOH contour to the line source with usual deployment parameters
- the _FI preset, dedicated to loudspeaker enclosures used as a fill system (for some systems only)

The oldest WST systems inherit from a legacy preset structure (_HI and _LO presets).

If necessary, users can adjust the sonic signature of L-Acoustics systems through the Contour EQ tools in LA Network Manager.

The Array Morphing tool provides two parameters, zoom factor and LF contour, that allow users to adjust the response of a WST system. At any reference listening distance and with any line source length, the engineer can obtain the sonic signature of a bigger, smaller, closer or further system, and can unify the sonic signature of multiple sources. Refer to the LA Network Manager Help and Array Morphing white paper for detailed information.

Onboard preset libraries

Each onboard preset library includes the L-Acoustics loudspeaker enclosures of which power requirements match the delivering capability of the corresponding amplified controller.

amplified controllers maximum output power

Type	16 Ω load	8 Ω load	4 Ω load	2.7 Ω load
LA12X	—	4 x 1400 W	4 x 2600 W	4 x 3300 W
LA8	—	4 x 1100 W	4 x 1800 W	
LA4X	—	4 x 1000 W		—
LA4	—	4 x 800 W	4 x 1000 W	—
LA2Xi	4 x 190 W	4 x 360 W	4 x 640 W	—
	—	2 x 1260 W	—	
	—	—	1 x 2550 W	

CEA-2006/490A 1 kHz test method, all channels driven.

LA2Xi preset library

The LA2Xi onboard preset library is stored in the factory memory locations 011 to 065 of the controller (the memory locations 001 to 010 are dedicated to the storage of presets modified by the user). Each preset family is described in the tables below, including the presets memory location number, name, and description.

LA2Xi Preset Library 6.5

KARA_II

011	[KARA II 70]	Kara II, full range, 70° adjustable fins settings
012	[KARA II 90]	Kara II, full range, 90° adjustable fins settings
013	[KARA II 110]	Kara II, full range, 110° adjustable fins settings
014	[KARA II_FI]	Kara II, HPF=100 Hz, fill

KARA

015	[KARA]	Kara, full range, FOH
016	[KARA_FI]	Kara, HPF=100 Hz, fill

KIVA_II

017	[KIVA II]	Kiva II, full range, FOH
018	[KIVA II_FI]	Kiva II, full range, fill

A15

019	[A15]	A15 Wide or A15 Focus, full range
020	[A15_FI]	A15 Wide or A15 Focus, full range, fill

A10

021	[A10]	A10 Wide or A10 Focus, full range
022	[A10_FI]	A10 Wide or A10 Focus, full range, fill

ARCS_WF

023	[ARCS_WIFO]	ARCS Wide or ARCS Focus, full range, FOH
024	[ARCS_WIFO_FI]	ARCS Wide or ARCS Focus, full range, fill

KS28

025	[KS28_60]	KS28, LPF=60 Hz
026	[KS28_100]	KS28, LPF=100 Hz
027	[KS28_60_C]	KS28, LPF=60 Hz, cardioid pattern
028	[KS28_100_C]	KS28, LPF=100 Hz, cardioid pattern
029	[KS28_60_Cx]	KS28, LPF=60 Hz, extended cardioid pattern
030	[KS28_100_Cx]	KS28, LPF=100 Hz, extended cardioid pattern

SB28

031	[SB28_60]	SB28, LPF=60 Hz
032	[SB28_100]	SB28, LPF=100 Hz
033	[SB28_60_C]	SB28, LPF=60 Hz, cardioid pattern
034	[SB28_100_C]	SB28, LPF=100 Hz, cardioid pattern
035	[SB28_60_Cx]	SB28, LPF=60 Hz, extended cardioid pattern
036	[SB28_100_Cx]	SB28, LPF=100 Hz, extended cardioid pattern

KS21

037	[KS21_60]	KS21, LPF=60 Hz
038	[KS21_100]	KS21, LPF=100 Hz
039	[KS21_60_C]	KS21, LPF=60 Hz, cardioid pattern
040	[KS21_100_C]	KS21, LPF=100 Hz, cardioid pattern
041	[KS21_60_Cx]	KS21, LPF=60 Hz, extended cardioid pattern
042	[KS21_100_Cx]	KS21, LPF=100 Hz, extended cardioid pattern

SB18

043	[SB18_60]	SB18, LPF=60 Hz
044	[SB18_100]	SB18, LPF=100 Hz
045	[SB18_60_C]	SB18, LPF=60 Hz, cardioid pattern
046	[SB18_100_C]	SB18, LPF=100 Hz, cardioid pattern
047	[SB18_60_Cx]	SB18, LPF=60 Hz, extended cardioid pattern
048	[SB18_100_Cx]	SB18, LPF=100 Hz, extended cardioid pattern

SB15

049	[SB15_100]	SB15, LPF=100 Hz
050	[SB15_100_C]	SB15, LPF=100 Hz, cardioid pattern
051	[SB15_100_Cx]	SB15, LPF=100 Hz, extended cardioid pattern

SYVA

052	[SYVA]	Syva, full range
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SYVA_LOW

053	[SYVA_LOW_100]	Syva Low (separated), LPF=100 Hz
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SYVA+LOW

054	[SYVA_LOW_SYVA]	Syva & Syva Low (coupled)
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SYVA_SUB

055	[SYVA_SUB_100]	Syva Sub, LPF=100 Hz
056	[SYVA_SUB_200]	Syva Sub, LPF=200 Hz, optimized for [X4] preset

X15HiQ

057	[X15]	X15 HiQ, full range
058	[X15_MO]	X15 HiQ, full range, monitor, low latency

X12

059	[X12]	X12, full range
060	[X12_MO]	X12, full range, monitor, low latency

X8

061	[X8]	X8, full range
062	[X8_MO]	X8, full range, monitor, low latency

5XT

063	[5XT]	5XT, full range
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X4

064	[X4]	X4i, full range
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FLAT

065	[FLAT_LA2X]	Flat EQ, protection minimizing clipping risks
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LA4 preset library

The LA4 onboard preset library is stored in the factory memory locations 011 to 094 of the controller (the memory locations 001 to 010 are dedicated to the storage of presets modified by the user). Each preset family is described in the tables below, including the presets memory location number, name, and description.

LA4 Preset Library 6.5

KIVA

011	[KIVA]	Kiva, full range, FOH
012	[KIVA_FI]	Kiva, full range, fill

SB15KIVA

013	[KIVA_SB15]	Kiva & SB15m, X-OVER=100 Hz, full range, FOH
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KILOKIVA

014	[KIVA_KILO]	Kiva & Kilo, full range, X-OVER=100 Hz, FOH
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ARCS

015	[ARCS_LO]	ARCS, full range, LO contour
016	[ARCS_LO_60]	ARCS, HPF=60 Hz, LO contour
017	[ARCS_LO_100]	ARCS, HPF=100 Hz, LO contour
018	[ARCS_HI]	ARCS, full range, HI contour
019	[ARCS_HI_60]	ARCS, HPF=60 Hz, HI contour
020	[ARCS_HI_100]	ARCS, HPF=100 Hz, HI contour

ARCS_WF

021	[ARCS_WIFO]	ARCS Wide or ARCS Focus, full range, FOH
022	[ARCS_WIFO_FI]	ARCS Wide or ARCS Focus, full range, fill

SB18

023	[SB18_60]	SB18, LPF=60 Hz
024	[SB18_100]	SB18, LPF=100 Hz
025	[SB18_60_C]	SB18, LPF=60 Hz, cardioid pattern
026	[SB18_100_C]	SB18, LPF=100 Hz, cardioid pattern
027	[SB18_60_Cx]	SB18, LPF=60 Hz, extended cardioid pattern
028	[SB18_100_Cx]	SB18, LPF=100 Hz, extended cardioid pattern

SB118

029	[SB118_60]	SB118, LPF=60 Hz
030	[SB118_100]	SB118, LPF=100 Hz
031	[SB118_60_C]	SB118, LPF=60 Hz, cardioid pattern
032	[SB118_100_C]	SB118, LPF=100 Hz, cardioid pattern

SB15

033	[SB15_100]	SB15, LPF=100 Hz
034	[SB15_100_C]	SB15, LPF=100 Hz, cardioid pattern
035	[SB15_100_Cx]	SB15, LPF=100 Hz, extended cardioid pattern

KILO

036	[KILO]	Kilo, LPF=100 Hz
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SYVA_SUB

037	[SYVA SUB_200]	Syva Sub, LPF=200 Hz, optimized for [X4] preset
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12XTA

038	[12XTA_FI]	12XT active, full range, fill
039	[12XTA_FI_100]	12XT active, HPF=100 Hz, fill
040	[12XTA_FR]	12XT active, full range, FOH
041	[12XTA_FR_100]	12XT active, HPF=100 Hz, FOH
042	[12XTA_MO]	12XT active, full range, monitor
043	[12XTA_MO_100]	12XT active, HPF=100 Hz, monitor

12XTP

044	[12XTP_FI]	12XT passive, full range, fill
045	[12XTP_FI_100]	12XT passive, HPF=100 Hz, fill
046	[12XTP_FR]	12XT passive, full range, FOH
047	[12XTP_FR_100]	12XT passive, HPF=100 Hz, FOH
048	[12XTP_MO]	12XT passive, full range, monitor
049	[12XTP_MO_100]	12XT passive, HPF=100 Hz, monitor

8XT

050	[8XT_FI]	8XT, full range, fill
051	[8XT_FI_100]	8XT, HPF=100 Hz, fill
052	[8XT_FR]	8XT, full range, FOH
053	[8XT_FR_100]	8XT, HPF=100 Hz, FOH
054	[8XT_MO]	8XT, full range, monitor
055	[8XT_MO_100]	8XT, HPF=100 Hz, monitor

5XT

056	[5XT]	5XT, full range
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X4

057	[X4]	X4i, full range
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115XT

058	[115XT_FI]	115XT, full range, fill
059	[115XT_FI_100]	115XT, HPF=100 Hz, fill
060	[115XT_FR]	115XT, full range, FOH
061	[115XT_FR_100]	115XT, HPF=100 Hz, FOH
062	[115XT_MO]	115XT, full range, monitor
063	[115XT_MO_100]	115XT, HPF=100 Hz, monitor

MTD115bA

064	[115bA_FI]	MTD115b active, full range, fill
065	[115bA_FI_100]	MTD115b active, HPF=100 Hz, fill
066	[115bA_FR]	MTD115b active, full range, FOH
067	[115bA_FR_100]	MTD115b active, HPF=100 Hz, FOH
068	[115bA_MO]	MTD115b active, full range, monitor
069	[115bA_MO_100]	MTD115b active, HPF=100 Hz, monitor

MTD115bP

070	[115bP_FI]	MTD115b passive, full range, fill
071	[115bP_FI_100]	MTD115b passive, HPF=100 Hz, fill
072	[115bP_FR]	MTD115b passive, full range, FOH
073	[115bP_FR_100]	MTD115b passive, HPF=100 Hz, FOH
074	[115bP_MO]	MTD115b passive, full range, monitor
075	[115bP_MO_100]	MTD115b passive, HPF=100 Hz, monitor

112XT

076	[112XT_FI]	112XT, full range, fill
077	[112XT_FI_100]	112XT, HPF=100 Hz, fill
078	[112XT_FR]	112XT, full range, FOH
079	[112XT_FR_100]	112XT, HPF=100 Hz, FOH
080	[112XT_MO]	112XT, full range, monitor
081	[112XT_MO_100]	112XT, HPF=100 Hz, monitor

MTD112b

082	[112b_FI]	MTD112b, full range, fill
083	[112b_FI_100]	MTD112b, HPF=100 Hz, fill
084	[112b_FR]	MTD112b, full range, FOH
085	[112b_FR_100]	MTD112b, HPF=100 Hz, FOH
086	[112b_MO]	MTD112b, full range, monitor
087	[112b_MO_100]	MTD112b, HPF=100 Hz, monitor

MTD108a

088	[108a_FI]	MTD108a, full range, fill
089	[108a_FI_100]	MTD108a, HPF=100 Hz, fill
090	[108a_FR]	MTD108a, full range, FOH
091	[108a_FR_100]	MTD108a, HPF=100 Hz, FOH
092	[108a_MO]	MTD108a, full range, monitor
093	[108a_MO_100]	MTD108a, HPF=100 Hz, monitor

FLAT

094	[FLAT_LA4]	Flat EQ, protection minimizing clipping risks
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LA4X preset library

The LA4X onboard preset library is stored in the factory memory locations 011 to 104 of the controller (the memory locations 001 to 010 are dedicated to the storage of presets modified by the user). Each preset family is described in the tables below, including the presets memory location number, name, and description.

LA4X Preset Library 6.5

K2

011	[K2 70]	K2, full range, 70° adjustable fins settings
012	[K2 90]	K2, full range, 90° adjustable fins settings
013	[K2 110]	K2, full range, 110° adjustable fins settings

K3

014	[K3 70]	K3, full range, 70° adjustable fins settings
015	[K3 90]	K3, full range, 90° adjustable fins settings
016	[K3 110]	K3, full range, 110° adjustable fins settings

KUDO

017	[KUDO50_25]	Kudo, HPF=25 Hz, 50° K-Louver settings
018	[KUDO50_40]	Kudo, HPF=40 Hz, 50° K-Louver settings
019	[KUDO50_60]	Kudo, HPF=60 Hz, 50° K-Louver settings
020	[KUDO80_25]	Kudo, HPF=25 Hz, 80° K-Louver settings
021	[KUDO80_40]	Kudo, HPF=40 Hz, 80° K-Louver settings
022	[KUDO80_60]	Kudo, HPF=60 Hz, 80° K-Louver settings
023	[KUDO110_25]	Kudo, HPF=25 Hz, 110° K-Louver settings
024	[KUDO110_40]	Kudo, HPF=40 Hz, 110° K-Louver settings
025	[KUDO110_60]	Kudo, HPF=60 Hz, 110° K-Louver settings

KARA_II

026	[KARA II 70]	Kara II, full range, 70° adjustable fins settings
027	[KARA II 90]	Kara II, full range, 90° adjustable fins settings
028	[KARA II 110]	Kara II, full range, 110° adjustable fins settings
029	[KARA II_FI]	Kara II, HPF=100 Hz, fill
030	[KARAII DOWNK1]	Kara II, optimized delay for K1 downfill
031	[KARAII DOWNK2]	Kara II, optimized delay for K2 downfill
032	[KARAII DOWNK3]	

KARA

033	[KARA]	Kara, full range, FOH
034	[KARA_FI]	Kara, HPF=100 Hz, fill
035	[KARADOWNK1]	Kara, HPF=100 Hz, optimized delay for K1 downfill
036	[KARADOWNK2]	Kara, HPF=100 Hz, optimized delay for K2 downfill
037	[KARADOWNK3]	

KIVA_II

038	[KIVA II]	Kiva II, full range, FOH
039	[KIVA II_FI]	Kiva II, full range, fill

KIVA

040	[KIVA]	Kiva, full range, FOH
041	[KIVA_FI]	Kiva, full range, fill

SB15KIVA

042	[KIVA_SB15]	Kiva & SB15m, X-OVER=100 Hz, full range, FOH
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KILOKIVA

043	[KIVA_KILO]	Kiva & Kilo, full range, X-OVER=100 Hz, FOH
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ARCS_II

044	[ARCS II]	ARCS II, full range
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A15

045	[A15]	A15 Wide or A15 Focus, full range
046	[A15_FI]	A15 Wide or A15 Focus, full range, fill

A10

047	[A10]	A10 Wide or A10 Focus, full range
048	[A10_FI]	A10 Wide or A10 Focus, full range, fill

ARCS_WF

049	[ARCS_WIFO]	ARCS Wide or ARCS Focus, full range, FOH
050	[ARCS_WIFO_FI]	ARCS Wide or ARCS Focus, full range, fill

KS21

051	[KS21_60]	KS21, LPF=60 Hz
052	[KS21_100]	KS21, LPF=100 Hz
053	[KS21_60_C]	KS21, LPF=60 Hz, cardioid pattern
054	[KS21_100_C]	KS21, LPF=100 Hz, cardioid pattern
055	[KS21_60_Cx]	KS21, LPF=60 Hz, extended cardioid pattern
056	[KS21_100_Cx]	KS21, LPF=100 Hz, extended cardioid pattern

SB18

057	[SB18_60]	SB18, LPF=60 Hz
058	[SB18_100]	SB18, LPF=100 Hz
059	[SB18_60_C]	SB18, LPF=60 Hz, cardioid pattern
060	[SB18_100_C]	SB18, LPF=100 Hz, cardioid pattern
061	[SB18_60_Cx]	SB18, LPF=60 Hz, extended cardioid pattern
062	[SB18_100_Cx]	SB18, LPF=100 Hz, extended cardioid pattern

SB15

063	[SB15_100]	SB15, LPF=100 Hz
064	[SB15_100_C]	SB15, LPF=100 Hz, cardioid pattern
065	[SB15_100_Cx]	SB15, LPF=100 Hz, extended cardioid pattern

KILO

066	[KILO]	Kilo, LPF=100 Hz
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SYVA

067	[SYVA]	Syva, full range
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SYVA_LOW

068	[SYVA_LOW_100]	Syva Low (separated), LPF=100 Hz
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SYVA+LOW

069	[SYVA_LOW SYVA]	Syva & Syva Low (coupled)
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SYVA_SUB

070	[SYVA SUB_100]	Syva Sub, LPF=100 Hz
071	[SYVA SUB_200]	Syva Sub, LPF=200 Hz, optimized for [X4] preset

X15HiQ

072	[X15]	X15 HiQ, full range
073	[X15_MO]	X15 HiQ, full range, monitor, low latency

X12

074	[X12]	X12, full range
075	[X12_MO]	X12, full range, monitor, low latency

X8

076	[X8]	X8, full range
077	[X8_MO]	X8, full range, monitor, low latency

115XTHiQ

078	[HiQ_FI]	115XT HiQ, full range, fill
079	[HiQ_FI_100]	115XT HiQ, HPF=100 Hz, fill
080	[HiQ_FR]	115XT HiQ, full range, FOH
081	[HiQ_FR_100]	115XT HiQ, HPF=100 Hz, FOH
082	[HiQ_MO]	115XT HiQ, full range, monitor
083	[HiQ_MO_100]	115XT HiQ, HPF=100 Hz, monitor

12XTA

084	[12XTA_FI]	12XT active, full range, fill
085	[12XTA_FI_100]	12XT active, HPF=100 Hz, fill
086	[12XTA_FR]	12XT active, full range, FOH
087	[12XTA_FR_100]	12XT active, HPF=100 Hz, FOH
088	[12XTA_MO]	12XT active, full range, monitor
089	[12XTA_MO_100]	12XT active, HPF=100 Hz, monitor

12XTP

090	[12XTP_FI]	12XT passive, full range, fill
091	[12XTP_FI_100]	12XT passive, HPF=100 Hz, fill
092	[12XTP_FR]	12XT passive, full range, FOH
093	[12XTP_FR_100]	12XT passive, HPF=100 Hz, FOH
094	[12XTP_MO]	12XT passive, full range, monitor
095	[12XTP_MO_100]	12XT passive, HPF=100 Hz, monitor

8XT

096	[8XT_FI]	8XT, full range, fill
097	[8XT_FI_100]	8XT, HPF=100 Hz, fill
098	[8XT_FR]	8XT, full range, FOH
099	[8XT_FR_100]	8XT, HPF=100 Hz, FOH
100	[8XT_MO]	8XT, full range, monitor
101	[8XT_MO_100]	8XT, HPF=100 Hz, monitor

5XT

102	[5XT]	5XT, full range
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X4

103	[X4]	X4i, full range
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FLAT

104	[FLAT_LA4X]	Flat EQ, protection minimizing clipping risks
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LA8 preset library

The LA8 onboard preset library is stored in the factory memory locations 011 to 182 of the controller (the memory locations 001 to 010 are dedicated to the storage of presets modified by the user). Each preset family is described in the tables below, including the presets memory location number, name, and description.

LA8 Preset Library 6.5

K1

011	[K1]	K1, full range
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K2

012	[K2 70]	K2, full range, 70° adjustable fins settings
013	[K2 90]	K2, full range, 90° adjustable fins settings
014	[K2 110]	K2, full range, 110° adjustable fins settings

K3

015	[K3 70]	K3, full range, 70° adjustable fins settings
016	[K3 90]	K3, full range, 90° adjustable fins settings
017	[K3 110]	K3, full range, 110° adjustable fins settings

K1-SB

018	[K1SB_60]	K1-SB, LPF=60 Hz, optimized for CONTOUR configuration
019	[K1SB_X]	K1-SB, LPF=200 Hz, optimized for THROW configuration with K1
020	[K1SB_X K2]	K1-SB, LPF=200 Hz, optimized for THROW configuration with K2

V-DOSC

021	[V-DOSC_LO]	V-DOSC, full range, LO contour
022	[V-DOSC_LO_60]	V-DOSC, HPF=60 Hz, LO contour
023	[V-DOSC_LO_X]	V-DOSC, full range, LO contour, optimized for [SB218_X] & [dV-S_X] presets
024	[V-DOSC_HI]	V-DOSC, full range, HI contour
025	[V-DOSC_HI_60]	V-DOSC, HPF=60 Hz, HI contour
026	[V-DOSC_HI_X]	V-DOSC, full range, HI contour, optimized for [SB218_X] & [dV-S_X] presets

KUDO

027	[KUDO50_25]	Kudo, HPF=25 Hz, 50° K-Louver settings
028	[KUDO50_40]	Kudo, HPF=40 Hz, 50° K-Louver settings
029	[KUDO50_60]	Kudo, HPF=60 Hz, 50° K-Louver settings
030	[KUDO80_25]	Kudo, HPF=25 Hz, 80° K-Louver settings
031	[KUDO80_40]	Kudo, HPF=40 Hz, 80° K-Louver settings
032	[KUDO80_60]	Kudo, HPF=60 Hz, 80° K-Louver settings
033	[KUDO110_25]	Kudo, HPF=25 Hz, 110° K-Louver settings
034	[KUDO110_40]	Kudo, HPF=40 Hz, 110° K-Louver settings
035	[KUDO110_60]	Kudo, HPF=60 Hz, 110° K-Louver settings

KARA_II

036	[KARA II 70]	Kara II, full range, 70° adjustable fins settings
037	[KARA II 90]	Kara II, full range, 90° adjustable fins settings
038	[KARA II 110]	Kara II, full range, 110° adjustable fins settings
039	[KARA II_FI]	Kara II, HPF=100 Hz, fill
040	[KARAIIIDOWNK1]	Kara II, optimized delay for K1 downfill
041	[KARAIIIDOWNK2]	Kara II, optimized delay for K2 downfill
042	[KARAIIIDOWNK3]	

KARA

043	[KARA]	Kara, full range, FOH
044	[KARA_FI]	Kara, HPF=100 Hz, fill
045	[KARADOWNK1]	Kara, HPF=100 Hz, optimized delay for K1 downfill
046	[KARADOWNK2]	Kara, HPF=100 Hz, optimized delay for K2 downfill
047	[KARADOWNK3]	

dV-DOSC

048	[dV_FI]	dV-DOSC, HPF=100 Hz, fill
049	[dV_LO]	dV-DOSC, full range, LO contour
050	[dV_LO_100]	dV-DOSC, HPF=100 Hz, LO contour
051	[dV_HI]	dV-DOSC, full range, HI contour
052	[dV_HI_100]	dV-DOSC, HPF=100 Hz, HI contour

dV-D_dVS

053	[dV_dV-S_LO]	dV-DOSC & dV-SUB, X-OVER=100 Hz, LO contour
054	[dV_dV-S_HI]	dV-DOSC & dV-SUB, X-OVER=100 Hz, HI contour
055	[dV_dV-S_LO60]	dV-DOSC & dV-SUB, HPF=60 Hz, X-OVER=100 Hz, LO contour
056	[dV_dV-S_HI60]	dV-DOSC & dV-SUB, HPF=60 Hz, X-OVER=100 Hz, HI contour

dV-SUB

057	[dV-S_60_100]	dV-SUB, HPF=60 Hz, LPF=100 Hz
058	[dV-S_100]	dV-SUB, LPF=100 Hz
059	[dV-S_60_X]	dV-SUB, HPF=60 Hz, LPF=200 Hz, optimized for [V-DOSC_xx_60] presets
060	[dV-S_X]	dV-SUB, LPF=200 Hz, optimized for [V-DOSC_xx_X] presets

ARCS_II

061	[ARCS II]	ARCS II, full range
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ARCS

062	[ARCS_LO]	ARCS, full range, LO contour
063	[ARCS_LO_60]	ARCS, HPF=60 Hz, LO contour
064	[ARCS_LO_100]	ARCS, HPF=100 Hz, LO contour
065	[ARCS_HI]	ARCS, full range, HI contour
066	[ARCS_HI_60]	ARCS, HPF=60 Hz, HI contour
067	[ARCS_HI_100]	ARCS, HPF=100 Hz, HI contour

A15

068	[A15]	A15 Wide or A15 Focus, full range
069	[A15_FI]	A15 Wide or A15 Focus, full range, fill

A10

070	[A10]	A10 Wide or A10 Focus, full range
071	[A10_FI]	A10 Wide or A10 Focus, full range, fill

ARCS_WF

072	[ARCS_WIFO]	ARCS Wide or ARCS Focus, full range, FOH
073	[ARCS_WIFO_FI]	ARCS Wide or ARCS Focus, full range, fill

SB28

074	[SB28_60]	SB28, LPF=60 Hz
075	[SB28_100]	SB28, LPF=100 Hz
076	[SB28_60_C]	SB28, LPF=60 Hz, cardioid pattern
077	[SB28_100_C]	SB28, LPF=100 Hz, cardioid pattern
078	[SB28_60_Cx]	SB28, LPF=60 Hz, extended cardioid pattern
079	[SB28_100_Cx]	SB28, LPF=100 Hz, extended cardioid pattern

KS21

080	[KS21_60]	KS21, LPF=60 Hz
081	[KS21_100]	KS21, LPF=100 Hz
082	[KS21_60_C]	KS21, LPF=60 Hz, cardioid pattern
083	[KS21_100_C]	KS21, LPF=100 Hz, cardioid pattern
084	[KS21_60_Cx]	KS21, LPF=60 Hz, extended cardioid pattern
085	[KS21_100_Cx]	KS21, LPF=100 Hz, extended cardioid pattern

SB218

086	[SB218_60]	SB218, LPF=60 Hz
087	[SB218_100]	SB218, LPF=100 Hz
088	[SB218_X]	SB218, LPF=200 Hz, optimized for [V-DOSC_xx_X] presets

SB18

089	[SB18_60]	SB18, LPF=60 Hz
090	[SB18_100]	SB18, LPF=100 Hz
091	[SB18_60_C]	SB18, LPF=60 Hz, cardioid pattern
092	[SB18_100_C]	SB18, LPF=100 Hz, cardioid pattern
093	[SB18_60_Cx]	SB18, LPF=60 Hz, extended cardioid pattern
094	[SB18_100_Cx]	SB18, LPF=100 Hz, extended cardioid pattern

SB118

095	[SB118_60]	SB118, LPF=60 Hz
096	[SB118_100]	SB118, LPF=100 Hz
097	[SB118_60_C]	SB118, LPF=60 Hz, cardioid pattern
098	[SB118_100_C]	SB118, LPF=100 Hz, cardioid pattern

SB15

099	[SB15_100]	SB15, LPF=100 Hz
100	[SB15_100_C]	SB15, LPF=100 Hz, cardioid pattern
101	[SB15_100_Cx]	SB15, LPF=100 Hz, extended cardioid pattern

KILO

102	[KILO]	Kilo, LPF=100 Hz
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KIVA_II

103	[KIVA II]	Kiva II, full range, FOH
104	[KIVA II_FI]	Kiva II, full range, fill

KIVA

105	[KIVA]	Kiva, full range, FOH
106	[KIVA_FI]	Kiva, full range, fill

SB15KIVA

107	[KIVA_SB15]	Kiva & SB15m, X-OVER=100 Hz, full range, FOH
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KILOKIVA

108	[KIVA_KILO]	Kiva & Kilo, full range, X-OVER=100 Hz, FOH
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SYVA

109	[SYVA]	Syva, full range
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SYVA_LOW

110	[SYVA_LOW_100]	Syva Low (separated), LPF=100 Hz
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SYVA+LOW

111	[SYVA LOW SYVA]	Syva & Syva Low (coupled)
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SYVA_SUB

112	[SYVA SUB_100]	Syva Sub, LPF=100 Hz
113	[SYVA SUB_200]	Syva Sub, LPF=200 Hz, optimized for [X4] preset

X15HiQ

114	[X15]	X15 HiQ, full range
115	[X15_MO]	X15 HiQ, full range, monitor, low latency

X12

116	[X12]	X12, full range
117	[X12_MO]	X12, full range, monitor, low latency

X8

118	[X8]	X8, full range
119	[X8_MO]	X8, full range, monitor, low latency

115XTHiQ

120	[HiQ_FI]	115XT HiQ, full range, fill
121	[HiQ_FI_100]	115XT HiQ, HPF=100 Hz, fill
122	[HiQ_FR]	115XT HiQ, full range, FOH
123	[HiQ_FR_100]	115XT HiQ, HPF=100 Hz, FOH
124	[HiQ_MO]	115XT HiQ, full range, monitor
125	[HiQ_MO_100]	115XT HiQ, HPF=100 Hz, monitor

12XTA

126	[12XTA_FI]	12XT active, full range, fill
127	[12XTA_FI_100]	12XT active, HPF=100 Hz, fill
128	[12XTA_FR]	12XT active, full range, FOH
129	[12XTA_FR_100]	12XT active, HPF=100 Hz, FOH
130	[12XTA_MO]	12XT active, full range, monitor
131	[12XTA_MO_100]	12XT active, HPF=100 Hz, monitor

12XTP

132	[12XTP_FI]	12XT passive, full range, fill
133	[12XTP_FI_100]	12XT passive, HPF=100 Hz, fill
134	[12XTP_FR]	12XT passive, full range, FOH
135	[12XTP_FR_100]	12XT passive, HPF=100 Hz, FOH
136	[12XTP_MO]	12XT passive, full range, monitor
137	[12XTP_MO_100]	12XT passive, HPF=100 Hz, monitor

8XT

138	[8XT_FI]	8XT, full range, fill
139	[8XT_FI_100]	8XT, HPF=100 Hz, fill
140	[8XT_FR]	8XT, full range, FOH
141	[8XT_FR_100]	8XT, HPF=100 Hz, FOH
142	[8XT_MO]	8XT, full range, monitor
143	[8XT_MO_100]	8XT, HPF=100 Hz, monitor

5XT

144	[5XT]	5XT, full range
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X4

145	[X4]	X4i, full range
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115XT

146	[115XT_FI]	115XT, full range, fill
147	[115XT_FI_100]	115XT, HPF=100 Hz, fill
148	[115XT_FR]	115XT, full range, FOH
149	[115XT_FR_100]	115XT, HPF=100 Hz, FOH
150	[115XT_MO]	115XT, full range, monitor
151	[115XT_MO_100]	115XT, HPF=100 Hz, monitor

MTD115bA

152	[115bA_FI]	MTD115b active, full range, fill
153	[115bA_FI_100]	MTD115b active, HPF=100 Hz, fill
154	[115bA_FR]	MTD115b active, full range, FOH
155	[115bA_FR_100]	MTD115b active, HPF=100 Hz, FOH
156	[115bA_MO]	MTD115b active, full range, monitor
157	[115bA_MO_100]	MTD115b active, HPF=100 Hz, monitor

MTD115bP

158	[115bP_FI]	MTD115b passive, full range, fill
159	[115bP_FI_100]	MTD115b passive, HPF=100 Hz, fill
160	[115bP_FR]	MTD115b passive, full range, FOH
161	[115bP_FR_100]	MTD115b passive, HPF=100 Hz, FOH
162	[115bP_MO]	MTD115b passive, full range, monitor
163	[115bP_MO_100]	MTD115b passive, HPF=100 Hz, monitor

112XT

164	[112XT_FI]	112XT, full range, fill
165	[112XT_FI_100]	112XT, HPF=100 Hz, fill
166	[112XT_FR]	112XT, full range, FOH
167	[112XT_FR_100]	112XT, HPF=100 Hz, FOH
168	[112XT_MO]	112XT, full range, monitor
169	[112XT_MO_100]	112XT, HPF=100 Hz, monitor

MTD112b

170	[112b_FI]	MTD112b, full range, fill
171	[112b_FI_100]	MTD112b, HPF=100 Hz, fill
172	[112b_FR]	MTD112b, full range, FOH
173	[112b_FR_100]	MTD112b, HPF=100 Hz, FOH
174	[112b_MO]	MTD112b, full range, monitor
175	[112b_MO_100]	MTD112b, HPF=100 Hz, monitor

MTD108a

176	[108a_FI]	MTD108a, full range, fill
177	[108a_FI_100]	MTD108a, HPF=100 Hz, fill
178	[108a_FR]	MTD108a, full range, FOH
179	[108a_FR_100]	MTD108a, HPF=100 Hz, FOH
180	[108a_MO]	MTD108a, full range, monitor
181	[108a_MO_100]	MTD108a, HPF=100 Hz, monitor

FLAT

182	[FLAT_LA8]	Flat EQ, protection minimizing clipping risks
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LA12X preset library

The LA12X onboard preset library is stored in the factory memory locations 011 to 109 of the controller (the memory locations 001 to 010 are dedicated to the storage of presets modified by the user). Each preset family is described in the tables below, including the presets memory location number, name, and description.

LA12X Preset Library 6.5

K1

011	[K1]	K1, full range
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K2

012	[K2 70]	K2, full range, 70° adjustable fins settings
013	[K2 90]	K2, full range, 90° adjustable fins settings
014	[K2 110]	K2, full range, 110° adjustable fins settings

K3

015	[K3 70]	K3, full range, 70° adjustable fins settings
016	[K3 90]	K3, full range, 90° adjustable fins settings
017	[K3 110]	K3, full range, 110° adjustable fins settings

K1-SB

018	[K1SB_60]	K1-SB, LPF=60 Hz, optimized for CONTOUR configuration
019	[K1SB_X]	K1-SB, LPF=200 Hz, optimized for THROW configuration with K1
020	[K1SB_X K2]	K1-SB, LPF=200 Hz, optimized for THROW configuration with K2

KARA_II

021	[KARA II 70]	Kara II, full range, 70° adjustable fins settings
022	[KARA II 90]	Kara II, full range, 90° adjustable fins settings
023	[KARA II 110]	Kara II, full range, 110° adjustable fins settings
024	[KARA II_FI]	Kara II, HPF=100 Hz, fill
025	[KARAII DOWNK1]	Kara II, optimized delay for K1 downfill
026	[KARAII DOWNK2]	Kara II, optimized delay for K2 downfill
027	[KARAII DOWNK3]	

KARA

028	[KARA]	Kara, full range, FOH
029	[KARA_FI]	Kara, HPF=100 Hz, fill
030	[KARADOWNK1]	Kara, HPF=100 Hz, optimized delay for K1 downfill
031	[KARADOWNK2]	Kara, HPF=100 Hz, optimized delay for K2 downfill
032	[KARADOWNK3]	

ARCS_II

033	[ARCS II]	ARCS II, full range
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A15

034	[A15]	A15 Wide or A15 Focus, full range
035	[A15_FI]	A15 Wide or A15 Focus, full range, fill

A10

036	[A10]	A10 Wide or A10 Focus, full range
037	[A10_FI]	A10 Wide or A10 Focus, full range, fill

ARCS_WF

038	[ARCS_WIFO]	ARCS Wide or ARCS Focus, full range, FOH
039	[ARCS_WIFO_FI]	ARCS Wide or ARCS Focus, full range, fill

KS28

040	[KS28_60]	KS28, LPF=60 Hz
041	[KS28_100]	KS28, LPF=100 Hz
042	[KS28_60_C]	KS28, LPF=60 Hz, cardioid pattern
043	[KS28_100_C]	KS28, LPF=100 Hz, cardioid pattern
044	[KS28_60_Cx]	KS28, LPF=60 Hz, extended cardioid pattern
045	[KS28_100_Cx]	KS28, LPF=100 Hz, extended cardioid pattern

SB28

046	[SB28_60]	SB28, LPF=60 Hz
047	[SB28_100]	SB28, LPF=100 Hz
048	[SB28_60_C]	SB28, LPF=60 Hz, cardioid pattern
049	[SB28_100_C]	SB28, LPF=100 Hz, cardioid pattern
050	[SB28_60_Cx]	SB28, LPF=60 Hz, extended cardioid pattern
051	[SB28_100_Cx]	SB28, LPF=100 Hz, extended cardioid pattern

KS21

052	[KS21_60]	KS21, LPF=60 Hz
053	[KS21_100]	KS21, LPF=100 Hz
054	[KS21_60_C]	KS21, LPF=60 Hz, cardioid pattern
055	[KS21_100_C]	KS21, LPF=100 Hz, cardioid pattern
056	[KS21_60_Cx]	KS21, LPF=60 Hz, extended cardioid pattern
057	[KS21_100_Cx]	KS21, LPF=100 Hz, extended cardioid pattern

SB18

058	[SB18_60]	SB18, LPF=60 Hz
059	[SB18_100]	SB18, LPF=100 Hz
060	[SB18_60_C]	SB18, LPF=60 Hz, cardioid pattern
061	[SB18_100_C]	SB18, LPF=100 Hz, cardioid pattern
062	[SB18_60_Cx]	SB18, LPF=60 Hz, extended cardioid pattern
063	[SB18_100_Cx]	SB18, LPF=100 Hz, extended cardioid pattern

SB15

064	[SB15_100]	SB15, LPF=100 Hz
065	[SB15_100_C]	SB15, LPF=100 Hz, cardioid pattern
066	[SB15_100_Cx]	SB15, LPF=100 Hz, extended cardioid pattern

KIVA_II

067	[KIVA II]	Kiva II, full range, FOH
068	[KIVA II_FI]	Kiva II, full range, fill

KIVA

069	[KIVA]	Kiva, full range, FOH
070	[KIVA_FI]	Kiva, full range, fill

SB15KIVA

071	[KIVA_SB15]	Kiva & SB15m, X-OVER=100 Hz, full range, FOH
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SYVA

072	[SYVA]	Syva, full range
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SYVA_LOW

073	[SYVA_LOW_100]	Syva Low (separated), LPF=100 Hz
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SYVA+LOW

074	[SYVA_LOW SYVA]	Syva & Syva Low (coupled)
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SYVA_SUB

075	[SYVA_SUB_100]	Syva Sub, LPF=100 Hz
076	[SYVA_SUB_200]	Syva Sub, LPF=200 Hz, optimized for [X4] preset

X15HiQ

077	[X15]	X15 HiQ, full range
078	[X15_MO]	X15 HiQ, full range, monitor, low latency

X12

079	[X12]	X12, full range
080	[X12_MO]	X12, full range, monitor, low latency

X8

081	[X8]	X8, full range
082	[X8_MO]	X8, full range, monitor, low latency

115XTHiQ

083	[HiQ_FI]	115XT HiQ, full range, fill
084	[HiQ_FI_100]	115XT HiQ, HPF=100 Hz, fill
085	[HiQ_FR]	115XT HiQ, full range, FOH
086	[HiQ_FR_100]	115XT HiQ, HPF=100 Hz, FOH
087	[HiQ_MO]	115XT HiQ, full range, monitor
088	[HiQ_MO_100]	115XT HiQ, HPF=100 Hz, monitor

12XTA

089	[12XTA_FI]	12XT active, full range, fill
090	[12XTA_FI_100]	12XT active, HPF=100 Hz, fill
091	[12XTA_FR]	12XT active, full range, FOH
092	[12XTA_FR_100]	12XT active, HPF=100 Hz, FOH
093	[12XTA_MO]	12XT active, full range, monitor
094	[12XTA_MO_100]	12XT active, HPF=100 Hz, monitor

12XTP

095	[12XTP_FI]	12XT passive, full range, fill
096	[12XTP_FI_100]	12XT passive, HPF=100 Hz, fill
097	[12XTP_FR]	12XT passive, full range, FOH
098	[12XTP_FR_100]	12XT passive, HPF=100 Hz, FOH
099	[12XTP_MO]	12XT passive, full range, monitor
100	[12XTP_MO_100]	12XT passive, HPF=100 Hz, monitor

8XT

101	[8XT_FI]	8XT, full range, fill
102	[8XT_FI_100]	8XT, HPF=100 Hz, fill
103	[8XT_FR]	8XT, full range, FOH
104	[8XT_FR_100]	8XT, HPF=100 Hz, FOH
105	[8XT_MO]	8XT, full range, monitor
106	[8XT_MO_100]	8XT, HPF=100 Hz, monitor

5XT

107	[5XT]	5XT, full range
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X4

108	[X4]	X4i, full range
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FLAT

109	[FLAT_LA12X]	Flat EQ, protection minimizing clipping risks
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FLAT presets

! **The transducer connected to an output channel of a FLAT preset is not protected by L-DRIVE.**

The only active limitation allows minimizing clipping risks to protect the amplifier.

Therefore, when driving a third party loudspeaker enclosure, it is recommended to connect an external DSP device using a preset specifically designed for this model before the amplified controller.

With a FLAT preset, an input signal is amplified and directly routed to output without any modification of the frequency response. All the output parameters are accessible (Mute, Gain, Delay, Polarity, and Routing).

- Using the [FLAT_LA2X] preset with LA2Xi in SE mode provides 0 dB of headroom.
- Using the [FLAT_xxxx] preset with LA2Xi in BTL/PBTL modes, LA4, or LA4X provides 6 dB of headroom.
- Using the [FLAT_LA8] preset with LA8 provides 8 dB of headroom.
- Using the [FLAT_LA12X] preset with LA12X provides 9.5 dB of headroom.

[FLAT_xxxx]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Variable Curvature WST systems presets

The factory presets dedicated to variable curvature WST line sources are optimized for long throw applications. In the following sections, tables describe the loudspeaker configurations and the factory presets for each system. Discriminant acoustic properties of each loudspeaker configuration are given, such as -10 dB bandwidth or LF limit, frequency response contour, or directivity specificity.

K1



Compatibility issues

[K1], [KARADOWNK1] and [K2 xxx] presets from versions 4.x and later of the preset library are not compatible with [K1] and [KARADOWNK1] from versions of the preset library prior to 4.0.

Compatibility issues may occur when working from a Session file with units using older presets. Use the same version of the preset library for all units within a single line source.

loudspeaker configuration	preset(s)			acoustic properties
	K1	K1-SB	KS28 or SB28*	
K1 line source	[K1]	—	—	35 Hz - 20 kHz
K1 / K1-SB line source (K1-SB on top)	[K1]	[K1SB_X]	—	enhanced LF throw
K1 line source + coupled K1-SB subwoofers (beside or behind)	[K1]	[K1SB_60]	—	down to 30 Hz reinforced LF contour LF rejection (side polarized or rear cardioid)
K1 line source + subwoofers	[K1]	—	[xx28_60]	down to 25 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [xx28_60_C] or [xx28_60_Cx]



Downfill options for additional vertical coverage

K2 enclosures driven by [K2 110].

Kara enclosures driven by [KARADOWNK1] or Kara II enclosures driven by [KARAIIDOWNK1].

[K1] and [K2 xxx]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
left LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
right LF	OUT 2	LF					ON
MF	OUT 3	MF					ON
HF	OUT 4	HF					ON



left/right when looking at the front face of the enclosure

[K1SB_X] and [K1SB_60]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON

[KARADOWNK1] / [KARAIIDOWNK1]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON



The [KARAIIDOWNK1] preset is optimized for a **110°** fins setting on Kara II.



The factory parameters already include optimal delay value for the coupling of a K1 line source with Kara or Kara II as a downfill.



Routing, gain, delay, polarity and mute parameters can be modified by the user.

K2

loudspeaker configuration	preset(s)			acoustic properties
	K2	K1-SB	KS28 or SB28 *	
K2 line source	[K2 xxx]	—		35 Hz - 20 kHz adjustable horizontal directivity
K2 / K1-SB line source (K1-SB on top)	[K2 xxx]	[K1SB_X K2]	—	enhanced LF throw
K2 line source + coupled K1-SB subwoofers (on top, beside or behind)	[K2 xxx]	[K1SB_60]	—	down to 30 Hz reinforced LF contour LF rejection (side polarized or rear cardioid)
K2 line source + subwoofers	[K2 xxx]	—	[xx28_60]	down to 25 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [xx28_60_C] or [xx28_60_Cx]



K2 adjustable fins and presets

Always ensure that the K2 adjustable fins are set in accordance with the selected preset:

[K2 70]: 70°, [K2 90]: 90°, [K2 110]: 110°

Refer to the K2 owner's manual for details.



Downfill options for additional vertical coverage

Kara enclosures driven by [KARADOWNK2] or Kara II enclosures driven by [KARAIIDOWNK2].

[K2 xxx]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
left LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
right LF	OUT 2	LF					ON
MF	OUT 3	MF					ON
HF	OUT 4	HF					ON



left/right when looking at the front face of the enclosure

[K1SB_X K2] and [K1SB_60]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON



[K1SB_X K2] provides 10 dB of headroom.

[KARADOWNK2] / [KARAIIDOWNK2]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF	IN A	0 dB	0 ms	+	ON
LF	OUT 3	LF					ON
HF	OUT 4	HF					ON



The [KARAIIDOWNK2] preset is optimized for a **110°** fins setting on Kara II.



The factory parameters already include optimal delay value for the coupling of a K2 line source with Kara or Kara II as a downfill.

[KARADOWNK2] / [KARAIIDOWNK2] provide 11 dB of headroom.



Routing, gain, delay, polarity and mute parameters can be modified by the user.

K3

loudspeaker configuration	preset(s)		acoustic properties
	K3	KS28 or KS21 *	
K3 line source	[K3 xxx]	—	42 Hz - 20 kHz adjustable horizontal directivity
K3 line source + subwoofers	[K3 xxx]	[xxxx_60]	down to 29 Hz (KS21) or 25 Hz (KS28) reinforced LF contour

* with subwoofers as a cardioid array, use [xxxx_xx_C] or [xxxx_xx_Cx]

! K3 adjustable fins and presets

Always ensure that the K3 adjustable fins are set in accordance with the selected preset:

[K3 70]: 70°, [K3 90]: 90°, [K3 110]: 110°

Refer to the K3 owner's manual for details.

i Downfill options for additional vertical coverage

Kara enclosures driven by [KARADOWNK3] or Kara II enclosures driven by [KARAIIDOWNK3].

[K3 xxx]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON

[KARADOWNK3] / [KARAIIDOWNK3]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON

! The [KARAIIDOWNK3] preset is optimized for a **110°** fins setting on Kara II.

i The factory parameters already include optimal delay value for the coupling of a K3 line source with Kara or Kara II as a downfill.

[KARADOWNK3] / [KARAIIDOWNK3] provide 15 dB of headroom.

i Routing, gain, delay, polarity and mute parameters can be modified by the user.

Kara II

loudspeaker configuration	preset(s)			acoustic properties
	Kara II	SB18 or KS21*	KS28 or SB28 *	
line source	[KARA II xxx]	—	—	55 Hz - 20 kHz
line source + coupled subwoofers	[KARA II xxx]	[xxxx_100]	—	down to 32 Hz (SB18), 31 Hz (KS21) or 25 Hz (KS28 or SB28) reinforced LF contour
line source + separated subwoofers	[KARA II xxx]	[xxxx_60]	—	
line source + coupled subwoofers + KS28 or SB28	[KARA II xxx]	[xxxx_100]	[xxxx_60]	
single or pair of enclosures	[KARA II_FI]	—	—	high-pass at 100 Hz flat response

* with subwoofers as a cardioid array, use [xxxx_xx_C] or [xxxx_xx_Cx].



Kara II adjustable fins and presets

Always ensure that the Kara II adjustable fins are set in accordance with the selected preset:

[KARA II 70]: 70°, [KARA II 90]: 90°, [KARA II 110]: 110°

Refer to the Kara II owner's manual for details.



Avoid using Kara and Kara II in the same line source

The acoustic coupling between Kara and Kara II is not optimal.

[KARA II 70] / [KARA II 90] / [KARA II 110]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON

[KARA II_FI]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN B	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON



The [KARA II_FI] preset is optimized for a **110°** fins setting on Kara II.



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Kara



Kara and Karai are different versions of the same enclosure. They share the same factory presets and recommended loudspeaker configurations.

loudspeaker configuration	preset(s)		acoustic properties
	Kara	KS28, SB28, SB18 or KS21*	
line source	[KARA]	—	55 Hz - 20 kHz
line source + coupled subwoofer	[KARA]	[xxxx_100]	down to 32 Hz (SB18), 31 Hz (KS21) or 25 Hz (KS28 or SB28) reinforced LF contour
line source + separated subwoofer	[KARA]	[xxxx_60]	
single or pair of enclosures	[KARA_FI]	—	high-pass at 100 Hz flat response

* with subwoofers as a cardioid array, use [xxxx_xx_C] or [xxxx_xx_Cx]

[KARA]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON

[KARA_FI]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN B	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Kiva II

loudspeaker configuration	preset(s)			acoustic properties
	Kiva II	SB15m*	SB18*	
line source	[KIVA II]	—		70 Hz - 20 kHz
line source + coupled subwoofer	[KIVA II]	[SB15_100]	[SB18_60]	down to 32 Hz (SB18) / 40 Hz (SB15m) reinforced LF contour
up to three enclosures	[KIVA II_FI]	—		70 Hz - 20 kHz flat response
up to three enclosures + coupled subwoofer	[KIVA II_FI]	[SB15_100]	—	down to 40 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [SB1x_xx_C] or [SB1x_xx_Cx]

[KIVA II]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

[KIVA II_FI]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Kiva SB15m

loudspeaker configuration	preset(s)		acoustic properties
	Kiva	SB15m*	
line source	[KIVA]	—	80 Hz - 20 kHz
line source + coupled subwoofer	[KIVA_SB15]		down to 40 Hz reinforced LF contour
	[KIVA]	[SB15_100]	
single or pair of enclosures	[KIVA_FI]	—	80 Hz - 20 kHz flat response
pair of enclosures + coupled subwoofer	[KIVA_FI]	[SB15_100]	down to 40 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [SB15_100_C] or [SB15_100_Cx]

[KIVA]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

[KIVA_FI]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON

[KIVA_SB15]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
SB15m	OUT 1	LF	IN A	0 dB	0 ms	+	ON
KIVA	OUT 2	PA					ON
KIVA	OUT 3	PA					ON
KIVA	OUT 4	PA					ON



Hybrid preset combining [KIVA] with [SB15_100], pre-alignment delay included.



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Kiva Kilo

loudspeaker configuration	preset(s)			acoustic properties
	Kiva	Kilo	SB18*	
line source	[KIVA]	—		80 Hz - 20 kHz
line source + coupled Kilo	[KIVA_KILO]		—	down to 50 Hz
line source + coupled Kilo + SB18	[KIVA_KILO]		[SB18_100]	down to 32 Hz reinforced LF contour
single or pair of enclosures	[KIVA_FI]	—		80 Hz - 20 kHz flat response

* with subwoofers as a cardioid array, use [SB18_100_C] or [SB18_100_Cx]

[KIVA]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

[KIVA_FI]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON

[KIVA_KILO]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
KILO	OUT 1	LF	IN A	0 dB	0 ms	+	ON
KIVA	OUT 2	PA					ON
KIVA	OUT 3	PA					ON
KIVA	OUT 4	PA					ON



Hybrid preset combining [KIVA] with [KILO], pre-alignment delay included.

[KILO]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Kudo

loudspeaker configuration	preset(s)		acoustic properties
	Kudo	KS28 or SB28 or SB18 *	
line source	[KUDOxx_25]	—	35 Hz - 20 kHz
	[KUDOxx_40]		40 Hz - 20 kHz
	[KUDOxx_60]		60 Hz - 20 kHz
line source + subwoofer	[KUDOxx_40]	[xxx8_60]	down to 25 Hz (KS28 and SB28) or 32 Hz (SB18) reinforced LF contour

* with subwoofers as a cardioid array, use [xxx8_60_C] or [xxx8_60_Cx]



K-LOUVER and presets

Always ensure that the K-LOUVER panels are set in accordance with the selected preset:

[KUDO50_xx]: 50°, [KUDO80_xx]: 80°, [KUDO110_xx]: 110°

Refer to the Kudo user manual for details.

[KUDOxx_xx]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
left LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
right LF	OUT 2	LF					ON
MF	OUT 3	MF					ON
HF	OUT 4	HF					ON



left/right when looking at the front face of the enclosure



Routing, gain, delay, polarity and mute parameters can be modified by the user.

V-DOSC

loudspeaker configuration	preset(s)			acoustic properties
	V-DOSC*	dV-SUB	KS28 / SB28 / SB218 **	
line source	[V-DOSC_LO] or [V-DOSC_HI]	—	—	40 Hz - 20 kHz
line source + coupled dV-SUB	[V-DOSC_xx_X]	[dV-S_X]	—	down to 35 Hz reinforced LF contour
line source + KS28 / SB28	[V-DOSC _xx_60]	—	[xx28_60]	down to 25 Hz reinforced LF contour
line source + coupled SB218	[V-DOSC_xx_X]	—	[SB218_X]	
line source + coupled dV-SUB + KS28 / SB28	[V-DOSC _xx_60]	[dV-S_60_X]	[xx28_60]	down to 25 Hz reinforced LF contour additional LF resources

* standard HF contour with [xx_LO] or increased HF contour with [xx_HI]


** with subwoofers as a cardioid array, use [xxxx_xx_C], or [xx28_xx_Cx] (KS28 / SB28)

Downfill options for additional vertical coverage

dV-DOSC enclosures driven by [dV_xx_100].

[V-DOSC_LO], [V-DOSC_HI], [V-DOSC_xx_60] and [V-DOSC_xx_X]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
left LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
right LF	OUT 2	LF					ON
MF	OUT 3	MF					ON
HF	OUT 4	HF					ON

 left/right when looking at the front face of the enclosure

[dV-S_X], [dV-S_60_X] and [SB218_X]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON

[dV_xx_100]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF	IN A	0 dB	0 ms	+	ON
LF	OUT 3	LF					ON
HF	OUT 4	HF					ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

dV-DOSC

loudspeaker configuration	preset(s)			acoustic properties
	dV-DOSC*	dV-SUB	KS28, SB218, SB28, SB18 or SB118**	
line source	[dV_LO] or [dV_HI]	—		65 Hz - 20 kHz
line source + coupled dV-SUB	[dV_dV-S_xx]		—	down to 35 Hz reinforced LF contour
	[dV_xx_100]	[dV-S_100]		
line source + coupled subwoofer	[dV_xx_100]	—	[xxxx_100]	down to 32 Hz (SB18/SB118) or 25 Hz (KS28 / SB28 / SB218)
line source + coupled dV-SUB + coupled subwoofer	[dV_dV-S_xx60]		[xxxx_60]	
	[dV_xx_100]	[dV-S_60_100]		
single or pair of enclosures	[dV_FI]	—		high-pass at 100 Hz flat response

* standard HF contour with [xx_LO] or increased HF contour with [xx_HI]

** with subwoofers as a cardioid array, use [xxxx_xx_C], or [xxxx_xx_Cx] (KS28 / SB28 / SB18)

[dV_LO], [dV_HI], [dV_xx_60] and [dV_xx_100]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON

[dV_FI]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN B	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON

[dV-S_100] and [dV-S_60_100]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON

[dV_dV-S_HI], [dV_dV-S_HI60], [dV_dV-S_LO] and [dV_dV-S_LO60]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
dV-SUB	OUT 1	SB	IN A	0 dB	0 ms	+	ON
dV-SUB	OUT 2	SB					ON
dV-DOSC LF	OUT 3	LF					ON
dV-DOSC HF	OUT 4	HF					ON

i [dV_dV-S_xx] are hybrid presets combining [dV_LO_100] or [dV_HI_100] with [dV-S_100], pre-alignment delay included.

[dV_dV-S_xx60] are hybrid presets combining [dV_LO_100] or [dV_HI_100] with [dV-S_60_100], pre-alignment delay included.

i Routing, gain, delay, polarity and mute parameters can be modified by the user.

Constant Curvature WST systems presets

The factory presets dedicated to constant curvature WST line sources are optimized for medium throw applications.

In the following sections, tables describe the loudspeaker configurations and the factory presets for each system.

Discriminant acoustic properties of each loudspeaker configuration are given, such as -10 dB bandwidth or LF limit, or frequency response contour.

ARCS Wide / ARCS Focus

loudspeaker configuration	preset(s)		acoustic properties
	ARCS Wide / ARCS Focus	SB18*	
line source	[ARCS_WIFO]	—	55 Hz - 20 kHz
line source + SB18	[ARCS_WIFO]	[SB18_60]	down to 32 Hz reinforced LF contour
single enclosure	[ARCS_WIFO_FI]	—	55 Hz - 20 kHz flat response
single enclosure + SB18m	[ARCS_WIFO_FI]	[SB18_60]	down to 32 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [SB18_60_C] or [SB18_60_Cx]

[ARCS_WIFO]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

[ARCS_WIFO_FI]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

A10 Wide/Focus



A10 Wide/Focus and A10i Wide/Focus are different versions of the same enclosures. They share the same factory presets and recommended loudspeaker configurations.

KS21 and KS21i are different versions of the same enclosure. They share the same factory presets and recommended loudspeaker configurations.

loudspeaker configuration	preset(s)		acoustic properties
	A10 Wide/Focus	KS21*	
line source	[A10]	—	67 Hz - 20 kHz
line source + KS21	[A10]	[KS21_100]	down to 31 Hz reinforced LF contour
single enclosure	[A10_FI]	—	67 Hz - 20 kHz flat response
single enclosure + KS21	[A10_FI]	[KS21_100]	down to 31 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [KS21_100_C] or [KS21_100_Cx]

[A10]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

[A10_FI]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

A15 Wide/Focus

i A15 Wide/Focus and A15i Wide/Focus are different versions of the same enclosures. They share the same factory presets and recommended loudspeaker configurations.

KS21 and KS21i are different versions of the same enclosure. They share the same factory presets and recommended loudspeaker configurations.

loudspeaker configuration	preset(s)		acoustic properties
	A15 Wide/Focus	KS21*	
line source	[A15]	—	41 Hz - 20 kHz
line source + KS21	[A15]	[KS21_60]	down to 29 Hz reinforced LF contour
single enclosure	[A15_FI]	—	41 Hz - 20 kHz flat response
single enclosure + KS21	[A15_FI]	[KS21_60]	down to 29 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [KS21_60_C] or [KS21_60_Cx]

[A15]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

[A15_FI]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON

i Routing, gain, delay, polarity and mute parameters can be modified by the user.

ARCS II

loudspeaker configuration	preset(s)		acoustic properties
	ARCS II	KS28 or SB28*	
line source	[ARCS II]	—	50 Hz - 20 kHz
line source + subwoofer	[ARCS II]	[xx28_60]	down to 25 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [xx28_60_C] or [xx28_60_Cx]

[ARCS II]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

ARCS

loudspeaker configuration	preset(s)		acoustic properties
	ARCS*	SB18/SB118 or KS28/SB28/SB218**	
line source	[ARCS_LO] or [ARCS_HI]	—	50 Hz - 20 kHz
line source + subwoofer	[ARCS_xx_60]	[xxxx_60]	down to 32 Hz (SB18/SB118) or 25 Hz (KS28 / SB28 / SB218) reinforced LF contour
line source + coupled subwoofer	[ARCS_xx_100]	[xxxx_100]	

* standard HF contour with [xx_LO] or increased HF contour with [xx_HI]

** with subwoofers as a cardioid array, use [xxxx_xx_C], or [xxxx_xx_Cx] (SB18/KS28/SB28)

[ARCS_LO], [ARCS_HI], [ARCS_xx_60] and [ARCS_xx_100]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Colinear systems presets

The factory presets dedicated to colinear sources are optimized for medium throw applications.

In the following sections, tables describe the loudspeaker configurations and the factory presets for each system.

Discriminant acoustic properties of each loudspeaker configuration are given, such as -10 dB bandwidth or LF limit, or frequency response contour.

Syva

loudspeaker configuration	preset(s)			acoustic properties
	Syva	Syva Low	Syva Sub	
colinear source	[SYVA]	—	—	87 Hz - 20 kHz
colinear source + coupled Syva Low	[SYVA LOW SYVA]		—	down to 40 Hz
colinear source + separated Syva Low	[SYVA]	[SYVA LOW_100]	—	reinforced LF contour
colinear source + coupled Syva Low + Syva Sub	[SYVA LOW SYVA]		[SYVA SUB_100]	down to 27 Hz
colinear source + separated Syva Low + Syva Sub	[SYVA]	[SYVA LOW_100]	[SYVA SUB_100]	reinforced LF contour



No pre-alignment delay values are required for the Syva system.

[SYVA]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN A	0 dB	0 ms	+	ON
OUT 4	PA	IN A	0 dB	0 ms	+	ON

[SYVA LOW SYVA]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
Syva Low	OUT 1	LF	IN A	0 dB	0 ms	+	ON
Syva	OUT 2	PA					ON
Syva Low	OUT 3	LF	IN B	0 dB	0 ms	+	ON
Syva	OUT 4	PA					ON



Hybrid preset combining Syva and Syva Low.

Use only with AutoConnect or when Syva and Syva Low are within 60 cm (24 in) from each other, that is, acoustically coupled.

When Syva and Syva Low are more than 60 cm (24 in) apart, create a custom preset in LA Network Manager combining [SYVA] and [SYVA LOW_100].



[SYVA SUB_100] polarity is reversed to optimize Syva Sub acoustic summation with Syva/Syva Low.



Do not use [SYVA SUB_200] with Syva.

[SYVA SUB_200] is optimized for use with the [X4] preset.

Refer to [X4i](#) (p.55).



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Coaxial loudspeaker enclosures presets

The factory presets dedicated to coaxial enclosures are optimized for short throw applications. In the following sections, tables describe the loudspeaker configurations and the factory presets for each system. Discriminant acoustic properties of each loudspeaker configuration are given, such as -10 dB bandwidth or LF limit, or frequency response contour.

X4i

X4i is a passive coaxial loudspeaker enclosure.

loudspeaker configuration	preset(s)		acoustic properties
	X4i	Syva Sub	
X4i	[X4]	—	120 Hz - 20 kHz
X4i + Syva Sub	[X4]	[SYVA SUB_200]	down to 29 Hz reinforced LF contour

[X4]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

5XT

5XT is a passive coaxial loudspeaker enclosure.

loudspeaker configuration	preset(s)		acoustic properties
	5XT	SB15m*	
5XT	[5XT]	—	95 Hz - 20 kHz
5XT + SB15m	[5XT]	[SB15_100]	down to 40 Hz reinforced LF contour

* with subwoofers as a cardioid array, use [SB15_100_C] or [SB15_100_Cx]

[5XT]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON




Routing, gain, delay, polarity and mute parameters can be modified by the user.

X8

X8 is a passive coaxial loudspeaker enclosure.

loudspeaker configuration	preset(s)		acoustic properties
	X8	SB15m*	
X8	[X8]	—	60 Hz - 20 kHz
	[X8_MO]	—	55 Hz - 20 kHz low latency
X8 + SB15m	[X8]	[SB15_100]	down to 40 Hz reinforced LF contour
	[X8_MO]		down to 40 Hz reinforced LF contour low latency

* with subwoofers as a cardioid array, use [SB15_100_C] or [SB15_100_Cx]

 [xx_MO] presets for the X series use the amplified controller low latency operating mode. When used along with subwoofers, it is recommended to use the subwoofers in low latency operating mode. To achieve this, create custom presets combining low latency channel sets and subwoofer channel sets.

If the subwoofers are driven from a dedicated amplified controller using a subwoofer factory preset, they are operated in normal latency mode. Therefore, an additional delay should be set to the [xx_MO] low latency channels to align them: 2.66 ms on LA8 or 3.00 ms on LA4X and LA12X.

[X8] and [X8_MO]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON




Routing, gain, delay, polarity and mute parameters can be modified by the user.

X12

X12 is a passive coaxial loudspeaker enclosure.

loudspeaker configuration	preset(s)		acoustic properties
	X12	SB15m/SB18/KS21*	
X12	[X12]	—	59 Hz - 20 kHz
	[X12_MO]	—	57 Hz - 20 kHz low latency
X12 + subwoofer	[X12]	[xxxx_100]	down to 40 Hz (SB15m) or 32 Hz (SB18) reinforced LF contour
	[X12_MO]		down to 40 Hz (SB15m) or 32 Hz (SB18) reinforced LF contour low latency

* with subwoofers as a cardioid array, use [xxxx_100_C] or [xxxx_100_Cx]

 [xx_MO] presets for the X series use the amplified controller low latency operating mode. When used along with subwoofers, it is recommended to use the subwoofers in low latency operating mode. To achieve this, create custom presets combining low latency channel sets and subwoofer channel sets.

If the subwoofers are driven from a dedicated amplified controller using a subwoofer factory preset, they are operated in normal latency mode. Therefore, an additional delay should be set to the [xx_MO] low latency channels to align them: 2.66 ms on LA8 or 3.00 ms on LA4X and LA12X.

[X12] and [X12_MO]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON




Routing, gain, delay, polarity and mute parameters can be modified by the user.

X15 HiQ

X15 HiQ is an active coaxial loudspeaker enclosure.

loudspeaker configuration	preset(s)		acoustic properties
	X15 HiQ	SB18/KS21*	
X15 HiQ	[X15]	—	55 Hz - 20 kHz
	[X15_MO]	—	52 Hz - 20 kHz low latency
X15 HiQ + SB18	[X15]	[xxxx_100]	down to 32 Hz reinforced LF contour
	[X15_MO]		down to 32 Hz reinforced LF contour low latency

* with subwoofers as a cardioid array, use [xxxx_100_C] or [xxxx_100_Cx]

 [xx_MO] presets for the X series use the amplified controller low latency operating mode. When used along with subwoofers, it is recommended to use the subwoofers in low latency operating mode. To achieve this, create custom presets combining low latency channel sets and subwoofer channel sets.

If the subwoofers are driven from a dedicated amplified controller using a subwoofer factory preset, they are operated in normal latency mode. Therefore, an additional delay should be set to the [xx_MO] low latency channels to align them: 2.66 ms on LA8 or 3.00 ms on LA4X and LA12X.

[X15] and [X15_MO]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF					ON
LF	OUT 3	LF	IN B	0 dB	0 ms	+	ON
HF	OUT 4	HF					ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

8XT, 12XTP, MTD108a, MTD112b and MTD115bP

8XT, 12XTP, MTD108a, MTD112b and MTD115bP are passive coaxial loudspeaker enclosures.

Preset names

passive coaxial loudspeaker enclosure	preset
8XT	[8XT_xx]
12XTP (in passive mode)	[12XTP_xx]
MTD108a	[108a_xx]
MTD112b	[112b_xx]
MTD115b (in passive mode)	[115bP_xx]

loudspeaker configuration	preset(s)		acoustic properties	
	passive xxx	SB15m, SB18 or SB118*		
coaxial	[xxx_FR], [xxx_FI] or [xxx_MO]	—	nominal bandwidth	choice between 3 contours**
coaxial + coupled subwoofer	[xxx_xx_100]	[SBxx_100]	down to 40 Hz (SB15m) or 32 Hz (SB18/SB118) reinforced LF contour	

* with subwoofers as a cardioid array, use [SBxx_xx_C] or [SBxx_xx_Cx]

** [xxx_FR] for FOH application, [xxx_FI] for speech, classical music or fill, [xxx_MO] flat in half-space loading conditions (floor, wall or ceiling)

[xxx_FR], [xxx_FI], [xxx_MO] and [xxx_xx_100]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	PA	IN A	0 dB	0 ms	+	ON
OUT 2	PA	IN A	0 dB	0 ms	+	ON
OUT 3	PA	IN B	0 dB	0 ms	+	ON
OUT 4	PA	IN B	0 dB	0 ms	+	ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

12XTA, 115XT, 115XT HiQ and MTD115bA

12XTA, 115XT, 115XT HiQ and MTD115bA are active coaxial loudspeaker enclosures.

Preset names

active coaxial loudspeaker enclosure	preset
12XT (in active mode)	[12XTA_xx]
115XT HiQ	[HiQ_xx]
MTD115b (in active mode)	[115bA_xx]
115XT	[115XT_xx]

loudspeaker configuration	preset(s)		acoustic properties	
	active xxx	SB18 or SB118*		
coaxial	[xxx_FR], [xxx_FI] or [xxx_MO]	—	nominal bandwidth	choice between 3 contours**
coaxial + coupled subwoofer	[xxx_xx_100]	[SBxx_100]	down to 32 Hz reinforced LF contour	

* with subwoofers as a cardioid array, use [SBxx_xx_C], or [SB18_100_Cx]

** [xxx_FR] for FOH application, [xxx_FI] for speech, classical music or fill, [xxx_MO] flat in half-space loading conditions (floor, wall or ceiling)

[xxx_FR], [xxx_FI], [xxx_MO] and [xxx_xx_100]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
LF	OUT 1	LF	IN A	0 dB	0 ms	+	ON
HF	OUT 2	HF	IN B	0 dB	0 ms	+	ON
LF	OUT 3	LF					ON
HF	OUT 4	HF					ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Subwoofer loudspeaker enclosures presets

In this section, tables describe the loudspeaker configurations for L-Acoustics versatile subwoofers, and the corresponding factory presets. Discriminant acoustic properties of each loudspeaker configuration are given, such as -10 dB bandwidth or LF limit, or directivity specificity.



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], [SB_28_100], [SB18_60], [SB18_100], [SB218_100], [SB118_60], [SB118_100]: + 3 dB

[KS28_100]: + 2 dB

[K1SB_60]: + 1 dB

subwoofer	presets	optimal compatibility
KS28	[KS28_60],[KS28_60_C], or [KS28_60_Cx]	K1, K2, K3, V-DOSC, Kudo, dV-DOSC/dV-SUB, Kara/SB18, Kara II, ARCS, ARCS II
	[KS28_100], [KS28_100_C], or [KS28_100_Cx]	dV-DOSC, Kara, coupled ARCS
SB28	[SB28_60],[SB28_60_C], or [SB28_60_Cx]	K1, K2, V-DOSC, Kudo, dV-DOSC/dV-SUB, Kara/SB18, Kara II, ARCS, ARCS II
	[SB28_100], [SB28_100_C], or [SB28_100_Cx]	dV-DOSC, Kara, coupled ARCS
KS21(i)	[KS21_60],[KS21_60_C], or [KS21_60_Cx]	A15 Wide/Focus(i), Kara(i), Kara II, K3
	[KS21_100], [KS21_100_C], or [KS21_100_Cx]	A10 Wide/Focus(i), X15 HiQ, X12, XT, Kara(i), Kara II
SB18(i) SB18m	[SB18_60],[SB18_60_C], or [SB18_60_Cx]	Kudo, Kara, Kara II, Kiva/Kilo, ARCS, ARCS Wide, ARCS Focus
	[SB18_100],[SB18_100_C], or [SB18_100_Cx]	Kara, Kara II, ARCS, XT, X series, Kiva II
SB218	[SB218_60]	V-DOSC, Kudo, dV-DOSC/dV-SUB, ARCS
	[SB218_100]	dV-DOSC, coupled ARCS
SB118	[SB118_60] or [SB118_60_C]	Kudo, dV-DOSC/dV-SUB, Kiva/Kilo, ARCS
	[SB118_100] or [SB118_100_C]	dV-DOSC, ARCS, XT, coupled MTD
SB15m	[SB15_100],[SB15_100_C], or [SB15_100_Cx]	Coupled Kiva, coupled Kiva II, XT, X12, X8
Syva Low	[SYVA LOW SYVA]	coupled Syva, coupled Syva + Syva Sub
	[SYVA LOW_100]	Syva, Syva + Syva Sub
Syva Sub	[SYVA SUB_100]	Syva/Syva Low, coupled Syva/Syva Low

subwoofer	presets	optimal compatibility
	[SYVA SUB_200]	X4i

loudspeaker configuration ¹	preset(s) ²	acoustic properties
standard	[xxxx_60] or [xxxx_100]	down to: 25 Hz (KS28 / SB28 / SB218), 27 Hz (Syva Low+Syva Sub), 29 Hz (KS21), 32 Hz (SB18 / SB118), 40 Hz (SB15m, Syva Low)
cardioid	[xxxx_60_C] or [xxxx_100_C]	down to: 25 Hz (KS28 / SB28), 29 Hz (KS21), 32 Hz (SB18 / SB118), 40 Hz (SB15m) cardioid directivity pattern
	[xxxx_60_Cx], or [xxxx_100_Cx]	down to: 25 Hz (KS28 / SB28), 29 Hz (KS21), 32 Hz (SB18), 40 Hz (SB15m) extended cardioid directivity pattern

[xxxx_60] or [xxxx_100]

outputs	channels	routing	gain	delay	polarity	mute
OUT 1	SB	IN A	0 dB	0 ms	+	ON
OUT 2	SB	IN A	0 dB	0 ms	+	ON
OUT 3	SB	IN A	0 dB	0 ms	+	ON
OUT 4	SB	IN A	0 dB	0 ms	+	ON

¹ Refer to the subwoofer manual for the recommended deployment patterns in each configuration.

² SB28 and SB218 are exclusively driven by LA8 and LA12X amplified controllers. KS28 is exclusively driven by LA12X amplified controllers.

[xxxx_60_C], [xxxx_100_C], [xxxx_60_Cx], or [xxxx_100_Cx]

loudspeaker elements	outputs	channels	routing	gain	delay	polarity	mute
SR	OUT 1	SR	IN A	0 dB	0 ms	+	ON
SB	OUT 2	SB					ON
SB	OUT 3	SB					ON
SB	OUT 4	SB					ON



Routing, gain, delay, polarity and mute parameters can be modified by the user.

Pre-alignment delay values



Time alignment from geometric measurements

When combining several loudspeaker systems, it is important to adjust their delay values to optimize acoustic summation. If no acoustic measurement tool is available, it is possible to use the pre-alignment delay values given in the tables on this section.

Pre-alignment delays have been measured with the enclosures at the same geometric location, front face on the same plane.

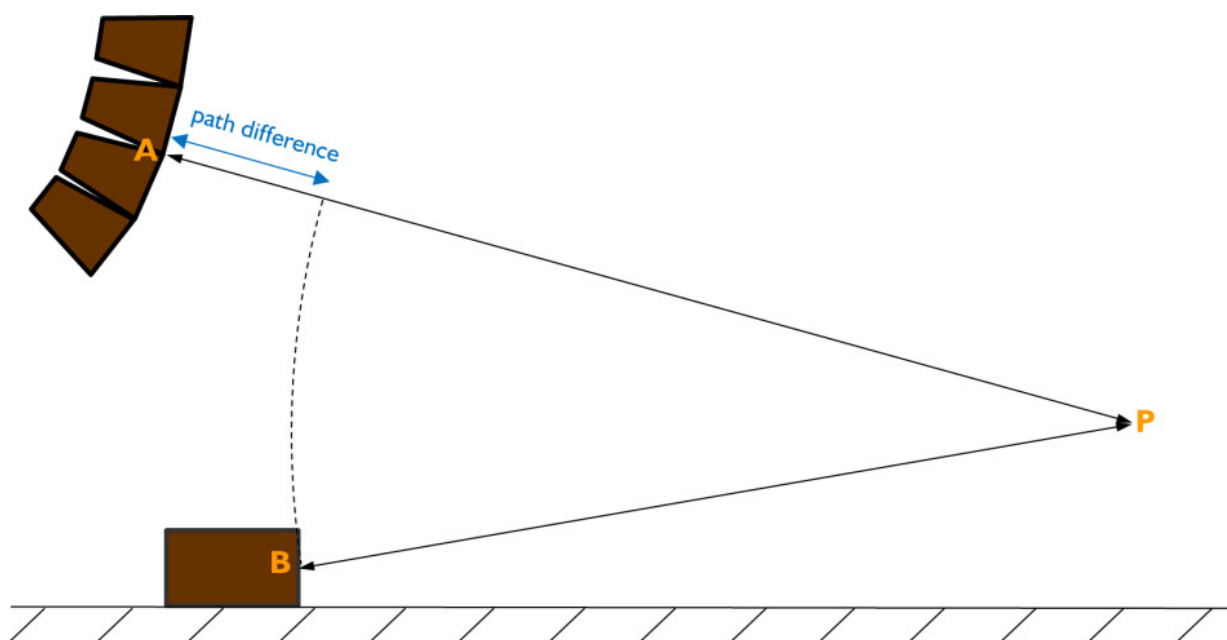
After adding these values to the factory presets, time-alignment is then obtained by adding the geometric delay to the closest system. The geometric delay is calculated from the path difference between a reference listening point and the center of each system.



Laser rangefinders

The L-Acoustics Tech Toolcase includes two laser devices that can be used for geometric measurements: TruPulse™ 200 (trademark of Laser Technology, Inc.) and Leica DISTO™ D3 (trademark Leica Geosystems).

line source + separated subwoofer







Procedure







1. Measure the path difference: $PA - PB$, with:
 - P: reference listening point
 - A: center of the further system, named system a
 - B: center of the closest system, named system b
 2. Calculate the Geometric delay(s): $\text{Path difference (m)} / \text{Sound velocity (m.s}^{-1}\text{)}$, with:
 - sound velocity $\approx 340 \text{ m.s}^{-1}$ at 20°C and in dry air
 3. Refer to the tables of this section to find the **Pre-alignment delay a** and the **Pre-alignment delay b**, corresponding to the system a + system b combination.
 4. Add the Alignment delay to the factory preset of each system. Being the closest to the reference listening point, the geometric delay must be added to the system b only:
 - a) alignment delay (ms) for system a = **Pre-alignment delay a** (ms)
 - b) alignment delay (ms) for system b = **Pre-alignment delay b** (ms) + Geometric delay (ms)
- Normalization: If $\neq 0$, subtract **Pre-alignment delay a** to both Alignment delay values.

Variable curvature WST systems







K1 + K1-SB

presets	pre-alignment delay values and polarity settings			
[K1] + [K1SB_X]	K1 = 0 ms		K1-SB = 0 ms	
[K1] + [K1SB_60]	K1 = 6 ms		K1-SB = 0 ms	



















K1 + SB28

presets	pre-alignment delay values and polarity settings			
[K1] + [SB28_60]	K1 = 0.5 ms		SB28 = 0 ms	
[K1] + [SB28_60_C]	K1 = 6 ms		SB28 = 0 ms	
[K1] + [SB28_60_Cx]	K1 = 4 ms		SB28 = 0 ms	



















K1 + KS28

presets	pre-alignment delay values and polarity settings			
[K1] + [KS28_60]	K1 = 0.5 ms		KS28 = 0 ms	
[K1] + [KS28_60_C]	K1 = 6 ms		KS28 = 0 ms	
[K1] + [KS28_60_Cx]	K1 = 4 ms		KS28 = 0 ms	





K1 + K1-SB + SB28

presets	pre-alignment delay values and polarity settings					
[K1] + [K1SB_X] + [SB28_60]	K1 = 0 ms		K1-SB = 0 ms		SB28 = 0 ms	
[K1] + [K1SB_X] + [SB28_60_C]	K1 = 5.5 ms		K1-SB = 5.5 ms		SB28 = 0 ms	
[K1] + [K1SB_X] + [SB28_60_Cx]	K1 = 3.5 ms		K1-SB = 3.5 ms		SB28 = 0 ms	
[K1] + [K1SB_60] + [SB28_60]	K1 = 6 ms		K1-SB = 0 ms		SB28 = 6 ms	
[K1] + [K1SB_60] + [SB28_60_C]	K1 = 6 ms		K1-SB = 0 ms		SB28 = 0.5 ms	
[K1] + [K1SB_60] + [SB28_60_Cx]	K1 = 6 ms		K1-SB = 0 ms		SB28 = 4 ms	







K1 + K1-SB + KS28

presets	pre-alignment delay values and polarity settings		
[K1] + [K1SB_X] + [KS28_60]	K1 = 0 ms 	K1-SB = 0 ms 	KS28 = 0 ms 
[K1] + [K1SB_X] + [KS28_60_C]	K1 = 5.5 ms 	K1-SB = 5.5 ms 	KS28 = 0 ms 
[K1] + [K1SB_X] + [KS28_60_Cx]	K1 = 3.5 ms 	K1-SB = 3.5 ms 	KS28 = 0 ms 
[K1] + [K1SB_60] + [KS28_60]	K1 = 6 ms 	K1-SB = 0 ms 	KS28 = 6 ms 
[K1] + [K1SB_60] + [KS28_60_C]	K1 = 6 ms 	K1-SB = 0 ms 	KS28 = 0.5 ms 
[K1] + [K1SB_60] + [KS28_60_Cx]	K1 = 6 ms 	K1-SB = 0 ms 	KS28 = 4 ms 







K2 + K1-SB

presets	pre-alignment delay values and polarity settings	
[K2] + [K1SB_X K2]	K2 = 0 ms 	K1-SB = 0 ms 
[K2] + [K1SB_60]	K2 = 6 ms 	K1-SB = 0 ms 



















K2 + SB28

presets	pre-alignment delay values and polarity settings	
[K2] + [SB28_60]	K2 = 0.5 ms 	SB28 = 0 ms 
[K2] + [SB28_60_C]	K2 = 6 ms 	SB28 = 0 ms 
[K2] + [SB28_60_Cx]	K2 = 4 ms 	SB28 = 0 ms 



















K2 + KS28

presets	pre-alignment delay values and polarity settings	
[K2] + [KS28_60]	K2 = 0.5 ms 	KS28 = 0 ms 
[K2] + [KS28_60_C]	K2 = 6 ms 	KS28 = 0 ms 
[K2] + [KS28_60_Cx]	K2 = 4 ms 	KS28 = 0 ms 







K2 + K1-SB + SB28

presets	pre-alignment delay values and polarity settings			
[K2] + [K1SB_X K2] + [SB28_60]	K2 = 0 ms		K1-SB = 0 ms	 SB28 = 0 ms 
[K2] + [K1SB_X K2] + [SB28_60_C]	K2 = 5.5 ms		K1-SB = 5.5 ms	 SB28 = 0 ms 
[K2] + [K1SB_X K2] + [SB28_60_Cx]	K2 = 3.5 ms		K1-SB = 3.5 ms	 SB28 = 0 ms 
[K2] + [K1SB_60] + [SB28_60]	K2 = 6 ms		K1-SB = 0 ms	 SB28 = 6 ms 
[K2] + [K1SB_60] + [SB28_60_C]	K2 = 6 ms		K1-SB = 0 ms	 SB28 = 0.5 ms 
[K2] + [K1SB_60] + [SB28_60_Cx]	K2 = 6 ms		K1-SB = 0 ms	 SB28 = 4 ms 







K2 + K1-SB + KS28

presets	pre-alignment delay values and polarity settings			
[K2] + [K1SB_X K2] + [KS28_60]	K2 = 0 ms		K1-SB = 0 ms	 KS28 = 0 ms 
[K2] + [K1SB_X K2] + [KS28_60_C]	K2 = 5.5 ms		K1-SB = 5.5 ms	 KS28 = 0 ms 
[K2] + [K1SB_X K2] + [KS28_60_Cx]	K2 = 3.5 ms		K1-SB = 3.5 ms	 KS28 = 0 ms 
[K2] + [K1SB_60] + [KS28_60]	K2 = 6 ms		K1-SB = 0 ms	 KS28 = 6 ms 
[K2] + [K1SB_60] + [KS28_60_C]	K2 = 6 ms		K1-SB = 0 ms	 KS28 = 0.5 ms 
[K2] + [K1SB_60] + [KS28_60_Cx]	K2 = 6 ms		K1-SB = 0 ms	 KS28 = 4 ms 





K3 + KS28

presets	pre-alignment delay values and polarity settings			
[K3] + [KS28_60]	K3 = 0.5 ms		KS28 = 0 ms	
[K3] + [KS28_60_C]	K3 = 6 ms		KS28 = 0 ms	
[K3] + [KS28_60_Cx]	K3 = 4 ms		KS28 = 0 ms	





K3 + KS21

presets	pre-alignment delay values and polarity settings			
[K3] + [KS21_60]	K3 = 0 ms		KS21 = 0 ms	
[K3] + [KS21_60_C]	K3 = 5.5 ms		KS21 = 0 ms	
[K3] + [KS21_60_Cx]	K3 = 5 ms		KS21 = 0 ms	



Kudo + SB118

presets	pre-alignment delay values and polarity settings	
[KUDOxx_60] + [SB118_60]	Kudo = 0 ms 	SB118 = 3.5 ms 
[KUDOxx_60] + [SB118_60_C]	Kudo = 2 ms 	SB118 = 0 ms 





Kudo + SB18

presets	pre-alignment delay values and polarity settings	
[KUDOxx_60] + [SB18_60]	Kudo = 0 ms 	SB18 = 3.9 ms 
[KUDOxx_60] + [SB18_60_C]	Kudo = 1.6 ms 	SB18 = 0 ms 





Kudo + SB218

presets	pre-alignment delay values and polarity settings	
[KUDOxx_60] + [SB218_60]	Kudo = 0 ms 	SB218 = 5 ms 



















Kudo + SB28

presets	pre-alignment delay values and polarity settings	
[KUDOxx_60] + [SB28_60]	Kudo = 0 ms 	SB28 = 5 ms 
[KUDOxx_60] + [SB28_60_C]	Kudo = 0.5 ms 	SB28 = 0 ms 



















Kudo + KS28

presets	pre-alignment delay values and polarity settings	
[KUDOxx_60] + [KS28_60]	Kudo = 0 ms 	KS28 = 5 ms 
[KUDOxx_60] + [KS28_60_C]	Kudo = 0.5 ms 	KS28 = 0 ms 













Kara + SB18

presets	pre-alignment delay values and polarity settings			
[KARA] + [SB18_100]	Kara = 0 ms		SB18 = 0 ms	
[KARA_FI] + [SB18_100]	Kara = 3 ms		SB18 = 0 ms	
[KARA] + [SB18_100_C]	Kara = 5.5 ms		SB18 = 0 ms	
[KARA] + [SB18_100_Cx]	Kara = 4 ms		SB18 = 0 ms	
[KARA_FI] + [SB18_100_C]	Kara = 8.5 ms		SB18 = 0 ms	
[KARA_FI] + [SB18_100_Cx]	Kara = 7 ms		SB18 = 0 ms	
[KARA] + [SB18_60]	Kara = 2.5 ms		SB18 = 0 ms	
[KARA] + [SB18_60_C]	Kara = 8 ms		SB18 = 0 ms	
[KARA] + [SB18_60_Cx]	Kara = 6.5 ms		SB18 = 0 ms	













Kara + KS21

presets	pre-alignment delay values and polarity settings			
[KARA] + [KS21_60]	Kara = 0.5 ms		KS21 = 0 ms	
[KARA] + [KS21_60_C]	Kara = 6 ms		KS21 = 0 ms	
[KARA] + [KS21_60_Cx]	Kara = 5.5 ms		KS21 = 0 ms	
[KARA] + [KS21_100]	Kara = 0 ms		KS21 = 0.5 ms	
[KARA] + [KS21_100_C]	Kara = 5 ms		KS21 = 0 ms	
[KARA] + [KS21_100_Cx]	Kara = 4 ms		KS21 = 0 ms	
[KARA_FI] + [KS21_100]	Kara = 0 ms		KS21 = 2.5 ms	
[KARA_FI] + [KS21_100_C]	Kara = 3 ms		KS21 = 0 ms	
[KARA_FI] + [KS21_100_Cx]	Kara = 2 ms		KS21 = 0 ms	










Kara + SB28

presets	pre-alignment delay values and polarity settings			
[KARA] + [SB28_100]	Kara = 0 ms		SB28 = 1 ms	
[KARA] + [SB28_100_C]	Kara = 4.5 ms		SB28 = 0 ms	
[KARA] + [SB28_100_Cx]	Kara = 7.5 ms		SB28 = 0 ms	
[KARA] + [SB28_60]	Kara = 0 ms		SB28 = 5 ms	
[KARA] + [SB28_60_C]	Kara = 0.5 ms		SB28 = 0 ms	
[KARA] + [SB28_60_Cx]	Kara = 4.5 ms		SB28 = 0 ms	










Kara + KS28

presets	pre-alignment delay values and polarity settings			
[KARA] + [KS28_100]	Kara = 0 ms		KS28 = 1 ms	
[KARA] + [KS28_100_C]	Kara = 4.5 ms		KS28 = 0 ms	
[KARA] + [KS28_100_Cx]	Kara = 7.5 ms		KS28 = 0 ms	
[KARA] + [KS28_60]	Kara = 0 ms		KS28 = 5 ms	
[KARA] + [KS28_60_C]	Kara = 0.5 ms		KS28 = 0 ms	
[KARA] + [KS28_60_Cx]	Kara = 4.5 ms		KS28 = 0 ms	










Kara + SB18 + SB28

presets	pre-alignment delay values and polarity settings					
[KARA] + [SB18_100] + [SB28_60]	Kara = 0 ms		SB18 = 0 ms		SB28 = 5.5 ms	
[KARA] + [SB18_100] + [SB28_60_C]	Kara = 0 ms		SB18 = 0 ms		SB28 = 0 ms	
[KARA] + [SB18_100] + [SB28_60_Cx]	Kara = 5.5 ms		SB18 = 5.5 ms		SB28 = 0 ms	










Kara + SB18 + KS28

presets	pre-alignment delay values and polarity settings					
[KARA] + [SB18_100] + [KS28_60]	Kara = 0 ms		SB18 = 0 ms		KS28 = 5.5 ms	
[KARA] + [SB18_100] + [KS28_60_C]	Kara = 0 ms		SB18 = 0 ms		KS28 = 0 ms	
[KARA] + [SB18_100] + [KS28_60_Cx]	Kara = 5.5 ms		SB18 = 5.5 ms		KS28 = 0 ms	



















Kara + KS21 + SB28

presets	pre-alignment delay values and polarity settings					
[KARA] + [KS21_100] + [SB28_60]	Kara = 0 ms		KS21 = 0.5 ms		SB28 = 5.5 ms	
[KARA] + [KS21_100] + [SB28_60_C]	Kara = 0 ms		KS21 = 0.5 ms		SB28 = 0 ms	
[KARA] + [KS21_100] + [SB28_60_Cx]	Kara = 5.5 ms		KS21 = 6 ms		SB28 = 0 ms	



















Kara + KS21 + KS28

presets	pre-alignment delay values and polarity settings		
[KARA] + [KS21_100] + [KS28_60]	Kara = 0 ms 	KS21 = 0 ms 	KS28 = 5.5 ms 
[KARA] + [KS21_100] + [KS28_60_C]	Kara = 0 ms 	KS21 = 0.5 ms 	KS28 = 0 ms 
[KARA] + [KS21_100] + [KS28_60_Cx]	Kara = 5.5 ms 	KS21 = 6 ms 	KS28 = 0 ms 













Kara II + SB18

presets	pre-alignment delay values and polarity settings	
[KARA II] + [SB18_100]	Kara II = 0 ms 	SB18 = 0 ms 
[KARA_II_FI] + [SB18_100]	Kara II = 3 ms 	SB18 = 0 ms 
[KARA II] + [SB18_100_C]	Kara II = 5.5 ms 	SB18 = 0 ms 
[KARA II] + [SB18_100_Cx]	Kara II = 4 ms 	SB18 = 0 ms 
[KARA_II_FI] + [SB18_100_C]	Kara II = 8.5 ms 	SB18 = 0 ms 
[KARA_II_FI] + [SB18_100_Cx]	Kara II = 7 ms 	SB18 = 0 ms 
[KARA II] + [SB18_60]	Kara II = 2.5 ms 	SB18 = 0 ms 
[KARA II] + [SB18_60_C]	Kara II = 8 ms 	SB18 = 0 ms 
[KARA II] + [SB18_60_Cx]	Kara II = 6.5 ms 	SB18 = 0 ms 













Kara II + KS21

presets	pre-alignment delay values and polarity settings			
[KARA II] + [KS21_60]	Kara II = 0.5 ms		KS21 = 0 ms	
[KARA II] + [KS21_60_C]	Kara II = 6 ms		KS21 = 0 ms	
[KARA II] + [KS21_60_Cx]	Kara II = 5.5 ms		KS21 = 0 ms	
[KARA II] + [KS21_100]	Kara II = 0 ms		KS21 = 0.5 ms	
[KARA II] + [KS21_100_C]	Kara II = 5 ms		KS21 = 0 ms	
[KARA II] + [KS21_100_Cx]	Kara II = 4 ms		KS21 = 0 ms	
[KARA_II_FI] + [KS21_100]	Kara II = 0 ms		KS21 = 2.5 ms	
[KARA_II_FI] + [KS21_100_C]	Kara II = 3 ms		KS21 = 0 ms	
[KARA_II_FI] + [KS21_100_Cx]	Kara II = 2 ms		KS21 = 0 ms	










Kara II + SB28

presets	pre-alignment delay values and polarity settings			
[KARA II] + [SB28_100]	Kara II = 0 ms		SB28 = 1 ms	
[KARA II] + [SB28_100_C]	Kara II = 4.5 ms		SB28 = 0 ms	
[KARA II] + [SB28_100_Cx]	Kara II = 7.5 ms		SB28 = 0 ms	
[KARA II] + [SB28_60]	Kara II = 0 ms		SB28 = 5 ms	
[KARA II] + [SB28_60_C]	Kara II = 0.5 ms		SB28 = 0 ms	
[KARA II] + [SB28_60_Cx]	Kara II = 4.5 ms		SB28 = 0 ms	










Kara II + KS28

presets	pre-alignment delay values and polarity settings			
[KARA II] + [KS28_100]	Kara II = 0 ms		KS28 = 1 ms	
[KARA II] + [KS28_100_C]	Kara II = 4.5 ms		KS28 = 0 ms	
[KARA II] + [KS28_100_Cx]	Kara II = 7.5 ms		KS28 = 0 ms	
[KARA II] + [KS28_60]	Kara II = 0 ms		KS28 = 5 ms	
[KARA II] + [KS28_60_C]	Kara II = 0.5 ms		KS28 = 0 ms	
[KARA II] + [KS28_60_Cx]	Kara II = 4.5 ms		KS28 = 0 ms	










Kara II + SB18 + SB28

presets	pre-alignment delay values and polarity settings					
[KARA II] + [SB18_100] + [SB28_60]	Kara II = 0 ms		SB18 = 0 ms		SB28 = 5.5 ms	
[KARA II] + [SB18_100] + [SB28_60_C]	Kara II = 0 ms		SB18 = 0 ms		SB28 = 0 ms	
[KARA II] + [SB18_100] + [SB28_60_Cx]	Kara II = 5.5 ms		SB18 = 5.5 ms		SB28 = 0 ms	










Kara II + SB18 + KS28

presets	pre-alignment delay values and polarity settings					
[KARA II] + [SB18_100] + [KS28_60]	Kara II = 0 ms		SB18 = 0 ms		KS28 = 5.5 ms	
[KARA II] + [SB18_100] + [KS28_60_C]	Kara II = 0 ms		SB18 = 0 ms		KS28 = 0 ms	
[KARA II] + [SB18_100] + [KS28_60_Cx]	Kara II = 5.5 ms		SB18 = 5.5 ms		KS28 = 0 ms	



Kara II + KS21 + SB28

presets	pre-alignment delay values and polarity settings					
[KARA II] + [KS21_100] + [SB28_60]	Kara II = 0 ms		KS21 = 0.5 ms		SB28 = 5.5 ms	
[KARA II] + [KS21_100] + [SB28_60_C]	Kara II = 0 ms		KS21 = 0.5 ms		SB28 = 0 ms	
[KARA II] + [KS21_100] + [SB28_60_Cx]	Kara II = 5.5 ms		KS21 = 6 ms		SB28 = 0 ms	





Kara II + KS21 + KS28

presets	pre-alignment delay values and polarity settings		
[KARA II] + [KS21_100] + [KS28_60]	Kara II = 0 ms 	KS21 = 0 ms 	KS28 = 5.5 ms 
[KARA II] + [KS21_100] + [KS28_60_C]	Kara II = 0 ms 	KS21 = 0.5 ms 	KS28 = 0 ms 
[KARA II] + [KS21_100] + [KS28_60_Cx]	Kara II = 5.5 ms 	KS21 = 6 ms 	KS28 = 0 ms 





Kiva + Kilo

presets	pre-alignment delay values and polarity settings	
[KIVA] + [KILO]	Kiva = 0 ms 	Kilo = 1.5 ms 







Kiva/Kilo + SB118

presets	pre-alignment delay values and polarity settings	
[KIVA_KILO] + [SB118_60]	Kiva/Kilo = 0 ms 	SB118 = 5.9 ms 
[KIVA_KILO] + [SB118_60_C]	Kiva/Kilo = 0 ms 	SB118 = 0.4 ms 





Kiva/Kilo + SB18

presets	pre-alignment delay values and polarity settings	
[KIVA_KILO] + [SB18_60]	Kiva/Kilo = 0 ms 	SB18 = 6.3 ms 
[KIVA_KILO] + [SB18_60_C]	Kiva/Kilo = 0 ms 	SB18 = 0.8 ms 













Kiva + SB15m

presets	pre-alignment delay values and polarity settings	
[KIVA] + [SB15_100]	Kiva = 0 ms 	SB15m = 1.4 ms 
[KIVA] + [SB15_100_C]	Kiva = 2.4 ms 	SB15m = 0 ms 
[KIVA_FI] + [SB15_100]	Kiva = 0 ms 	SB15m = 0.6 ms 



















Kiva/SB15m + SB18

presets	pre-alignment delay values and polarity settings	
[KIVA_SB15] + [SB18_60]	Kiva/SB15m = 0 ms 	SB18 = 8.5 ms 
[KIVA_SB15] + [SB18_60_C]	Kiva/SB15m = 0 ms 	SB18 = 3 ms 





Kiva II + SB15m

presets	pre-alignment delay values and polarity settings			
[KIVA II] + [SB15_100]	Kiva II = 0 ms		SB15m = 1 ms	
[KIVA II] + [SB15_100_C]	Kiva II = 2.5 ms		SB15m = 0 ms	
[KIVA II] + [SB15_100_Cx]	Kiva II = 4.5 ms		SB15m = 0 ms	
[KIVA II_FI] + [SB15_100]	Kiva II = 0 ms		SB15m = 1 ms	
[KIVA II_FI] + [SB15_100_C]	Kiva II = 2.5 ms		SB15m = 0 ms	
[KIVA II_FI] + [SB15_100_Cx]	Kiva II = 5 ms		SB15m = 0 ms	





Kiva II + SB15m + SB18

presets	pre-alignment delay values and polarity settings					
[KIVA II] + [SB15_100] + [SB18_60]	Kiva II = 0 ms		SB15m = 1 ms		SB18 = 1 ms	
[KIVA II] + [SB15_100] + [SB18_60_C]	Kiva II = 4.5 ms		SB15m = 5.5 ms		SB18 = 0 ms	
[KIVA II] + [SB15_100] + [SB18_60_Cx]	Kiva II = 1 ms		SB15m = 2 ms		SB18 = 0 ms	
[KIVA II] + [SB15_100_C] + [SB18_60]	Kiva II = 2.5 ms		SB15m = 0 ms		SB18 = 3.5 ms	
[KIVA II] + [SB15_100_C] + [SB18_60_C]	Kiva II = 4.5 ms		SB15m = 2 ms		SB18 = 0 ms	
[KIVA II] + [SB15_100_C] + [SB18_60_Cx]	Kiva II = 3 ms		SB15m = 0.5 ms		SB18 = 0 ms	





V-DOSC + SB218

presets	pre-alignment delay values and polarity settings			
[V-DOSC_xx_X] + [SB218_X]	V-DOSC = 1.8 ms		SB218 = 0 ms	
[V-DOSC_xx_60] + [SB218_60]	V-DOSC = 0 ms		SB218 = 3.8 ms	



V-DOSC + SB28

presets	pre-alignment delay values and polarity settings			
[V-DOSC_xx_60] + [SB28_60]	V-DOSC = 0 ms		SB28 = 3.8 ms	
[V-DOSC_xx_60] + [SB28_60_C]	V-DOSC = 1.7 ms		SB28 = 0 ms	




V-DOSC + KS28

presets	pre-alignment delay values and polarity settings	
[V-DOSC_xx_60] + [KS28_60]	V-DOSC = 0 ms 	KS28 = 3.8 ms 
[V-DOSC_xx_60] + [KS28_60_C]	V-DOSC = 1.7 ms 	KS28 = 0 ms 







V-DOSC + dV-SUB

presets	pre-alignment delay values and polarity settings	
[V-DOSC_xx_X] + [dV-S_X]	V-DOSC = 0 ms 	dV-SUB = 0.2 ms 







V-DOSC + dV-SUB + SB218

presets	pre-alignment delay values and polarity settings		
[V-DOSC_xx_60] + [dV-S_60_X] + [SB218_60]	V-DOSC = 0 ms 	dV-SUB = 0.2 ms 	SB218 = 3.7 ms 



V-DOSC + dV-SUB + SB28

presets	pre-alignment delay values and polarity settings		
[V-DOSC_xx_60] + [dV-S_60_X] + [SB28_60]	V-DOSC = 0 ms 	dV-SUB = 0.2 ms 	SB28 = 3.7 ms 
[V-DOSC_xx_60] + [dV-S_60_X] + [SB28_60_C]	V-DOSC = 1.9 ms 	dV-SUB = 2 ms 	SB28 = 0 ms 



V-DOSC + dV-SUB + KS28

presets	pre-alignment delay values and polarity settings		
[V-DOSC_xx_60] + [dV-S_60_X] + [KS28_60]	V-DOSC = 0 ms 	dV-SUB = 0.2 ms 	KS28 = 3.7 ms 
[V-DOSC_xx_60] + [dV-S_60_X] + [KS28_60_C]	V-DOSC = 1.9 ms 	dV-SUB = 2 ms 	KS28 = 0 ms 





V-DOSC + dV-DOSC

presets	pre-alignment delay values and polarity settings	
[V-DOSC_xx_60] + [dV_xx_100]	V-DOSC = 0 ms 	dV-DOSC = 0 ms 



V-DOSC + dV-DOSC downfill

presets	pre-alignment delay values and polarity settings	
[V-DOSC_xx_60] + [dV_xx_100]	V-DOSC = 0 ms 	dV-DOSC = 0.04 ms 





dV-DOSC + SB118

presets	pre-alignment delay values and polarity settings			
[dV_xx_100] + [SB118_100]	dV = 2.7 ms		SB118 = 0 ms	
[dV_xx_100] + [SB118_100_C]	dV = 8.3 ms		SB118 = 0 ms	





dV-DOSC + SB218

presets	pre-alignment delay values and polarity settings			
[dV_xx_100] + [SB218_100]	dV = 0.8 ms		SB218 = 0 ms	





dV-DOSC + SB18

presets	pre-alignment delay values and polarity settings			
[dV_xx_100] + [SB18_100]	dV = 2.4 ms		SB18 = 0 ms	
[dV_xx_100] + [SB18_100_C]	dV = 8 ms		SB18 = 0 ms	



dV-DOSC + SB28

presets	pre-alignment delay values and polarity settings			
[dV_xx_100] + [SB28_100]	dV = 0.8 ms		SB28 = 0 ms	
[dV_xx_100] + [SB28_100_C]	dV = 6.3 ms		SB28 = 0 ms	







dV-DOSC + KS28

presets	pre-alignment delay values and polarity settings			
[dV_xx_100] + [KS28_100]	dV = 0.8 ms		KS28 = 0 ms	
[dV_xx_100] + [KS28_100_C]	dV = 6.3 ms		KS28 = 0 ms	




dV-DOSC + dV-SUB

presets	pre-alignment delay values and polarity settings			
[dV_xx_100] + [dV-S_100]	dV = 0 ms		dV-SUB = 0 ms	







dV-DOSC + dV-SUB + SB118

presets	pre-alignment delay values and polarity settings					
[dV_xx_100] + [dV-S_60_100] + [SB118_60]	dV = 0 ms		dV-SUB = 0.75 ms		SB118 = 4 ms	
[dV_xx_100] + [dV-S_60_100] + [SB118_60_C]	dV = 1.5 ms		dV-SUB = 2.25 ms		SB118 = 0 ms	







dV-DOSC + dV-SUB + SB218

presets	pre-alignment delay values and polarity settings		
[dV_xx_100] + [dV-S_60_100] + [SB218_60]	dV = 0 ms 	dV-SUB = 0.75 ms 	SB218 = 4.5 ms 







dV-DOSC + dV-SUB + SB18

presets	pre-alignment delay values and polarity settings		
[dV_xx_100] + [dV-S_60_100] + [SB18_60]	dV = 0 ms 	dV-SUB = 0.75 ms 	SB18 = 4.4 ms 
[dV_xx_100] + [dV-S_60_100] + [SB18_60_C]	dV = 1.1 ms 	dV-SUB = 1.85 ms 	SB18 = 0 ms 









dV-DOSC + dV-SUB + SB28

presets	pre-alignment delay values and polarity settings		
[dV_xx_100] + [dV-S_60_100] + [SB28_60]	dV = 0 ms 	dV-SUB = 0.75 ms 	SB28 = 4.5 ms 
[dV_xx_100] + [dV-S_60_100] + [SB28_60_C]	dV = 1 ms 	dV-SUB = 1.75 ms 	SB28 = 0 ms 









dV-DOSC + dV-SUB + KS28

presets	pre-alignment delay values and polarity settings		
[dV_xx_100] + [dV-S_60_100] + [KS28_60]	dV = 0 ms 	dV-SUB = 0.75 ms 	KS28 = 4.5 ms 
[dV_xx_100] + [dV-S_60_100] + [KS28_60_C]	dV = 1 ms 	dV-SUB = 1.75 ms 	KS28 = 0 ms 





Constant curvature WST systems**ARCS + SB118**

presets	pre-alignment delay values and polarity settings	
[ARCS_xx_60] + [SB118_60]	ARCS = 0.8 ms 	SB118 = 0 ms 
[ARCS_xx_60] + [SB118_60_C]	ARCS = 6.3 ms 	SB118 = 0 ms 
[ARCS_xx_100] + [SB118_100]	ARCS = 1.4 ms 	SB118 = 0 ms 
[ARCS_xx_100] + [SB118_100_C]	ARCS = 6.9 ms 	SB118 = 0 ms 









ARCS + SB18

presets	pre-alignment delay values and polarity settings	
[ARCS_xx_60] + [SB18_60]	ARCS = 0.4 ms 	SB18 = 0 ms 
[ARCS_xx_60] + [SB18_60_C]	ARCS = 5.9 ms 	SB18 = 0 ms 
[ARCS_xx_100] + [SB18_100]	ARCS = 1.1 ms 	SB18 = 0 ms 
[ARCS_xx_100] + [SB18_100_C]	ARCS = 6.6 ms 	SB18 = 0 ms 









ARCS + SB218

presets	pre-alignment delay values and polarity settings	
[ARCS_xx_60] + [SB218_60]	ARCS = 0 ms 	SB218 = 0.9 ms 
[ARCS_xx_100] + [SB218_100]	ARCS = 0 ms 	SB218 = 0.3 ms 

ARCS + SB28

presets	pre-alignment delay values and polarity settings	
[ARCS_xx_60] + [SB28_60]	ARCS = 0 ms 	SB28 = 0.6 ms 
[ARCS_xx_60] + [SB28_60_C]	ARCS = 4.9 ms 	SB28 = 0 ms 
[ARCS_xx_100] + [SB28_100]	ARCS = 0 ms 	SB28 = 0.5 ms 
[ARCS_xx_100] + [SB28_100_C]	ARCS = 5.0 ms 	SB28 = 0 ms 

ARCS + KS28

presets	pre-alignment delay values and polarity settings	
[ARCS_xx_60] + [KS28_60]	ARCS = 0 ms 	KS28 = 0.6 ms 
[ARCS_xx_60] + [KS28_60_C]	ARCS = 4.9 ms 	KS28 = 0 ms 
[ARCS_xx_100] + [KS28_100]	ARCS = 0 ms 	KS28 = 0.5 ms 
[ARCS_xx_100] + [KS28_100_C]	ARCS = 5.0 ms 	KS28 = 0 ms 

ARCS II + SB28

presets	pre-alignment delay values and polarity settings			
[ARCS_II] + [SB28_60]	ARCS II = 0 ms	+	SB28 = 2 ms	+
[ARCS_II] + [SB28_60_C]	ARCS II = 3.5 ms	+	SB28 = 0 ms	+
[ARCS_II] + [SB28_60_Cx]	ARCS II = 7.5 ms	+	SB28 = 0 ms	-

ARCS II + KS28

presets	pre-alignment delay values and polarity settings			
[ARCS_II] + [KS28_60]	ARCS II = 0 ms	+	KS28 = 2 ms	+
[ARCS_II] + [KS28_60_C]	ARCS II = 3.5 ms	+	KS28 = 0 ms	+
[ARCS_II] + [KS28_60_Cx]	ARCS II = 7.5 ms	+	KS28 = 0 ms	-

ARCS Wide/Focus + SB18m

presets	pre-alignment delay values and polarity settings			
[ARCS_WIFO] or [ARCS_WIFO_FI] + [SB18_60]	ARCS Wide/Focus = 1.5 ms	+	SB18m = 0 ms	+
[ARCS_WIFO] or [ARCS_WIFO_FI] + [SB18_60_C]	ARCS Wide/Focus = 7 ms	+	SB18m = 0 ms	+
[ARCS_WIFO] or [ARCS_WIFO_FI] + [SB18_60_Cx]	ARCS Wide/Focus = 6 ms	+	SB18m = 0 ms	-

A15 Wide/Focus + KS21

presets	pre-alignment delay values and polarity settings			
[A15] or [A15_FI] + [KS21_60]	A15 Wide/Focus = 3.5 ms	+	KS21 = 0 ms	-
[A15] or [A15_FI] + [KS21_60_C]	A15 Wide/Focus = 9 ms	+	KS21 = 0 ms	-
[A15] or [A15_FI] + [KS21_60_Cx]	A15 Wide/Focus = 8 ms	+	KS21 = 0 ms	+

A10 Wide/Focus + KS21

presets	pre-alignment delay values and polarity settings			
[A10] or [A10_FI] + [KS21_100]	A10 Wide/Focus = 0 ms	+	KS21 = 0 ms	+
[A10] or [A10_FI] + [KS21_100_C]	A10 Wide/Focus = 5.5 ms	+	KS21 = 0 ms	+
[A10] or [A10_FI] + [KS21_100_Cx]	A10 Wide/Focus = 0 ms	+	KS21 = 0 ms	+

Colinear systems



No pre-alignment delay values are required for the Syva system.

Coaxial loudspeaker enclosures



[xx_MO] presets for the X series use the amplified controller low latency operating mode. When used along with subwoofers, it is recommended to use the subwoofers in low latency operating mode. To achieve this, create custom presets combining low latency channel sets and subwoofer channel sets.

If the subwoofers are driven from a dedicated amplified controller using a subwoofer factory preset, they are operated in normal latency mode. Therefore, an additional delay should be set to the [xx_MO] low latency channels to align them: 2.66 ms on LA8 or 3.00 ms on LA4X and LA12X.

X15 HiQ + SB18

presets	pre-alignment delay values and polarity settings			
[X15] + [SB18_100]	X15 HiQ = 4 ms		SB18 = 0 ms	
[X15_MO] + [SB18_100]	X15 HiQ = 0 ms		SB18 = 1 ms	

X15 HiQ + KS21

presets	pre-alignment delay values and polarity settings			
[X15] + [KS21_100]	X15 HiQ = 0 ms		KS21 = 1.5 ms	
[X15_MO] + [KS21_100]	X15 HiQ = 0 ms		KS21 = 1.5 ms	

X12 + SB15m

presets	pre-alignment delay values and polarity settings			
[X12] + [SB15_100]	X12 = 1.5 ms		SB15m = 0 ms	
[X12_MO] + [SB15_100]	X12 = 0 ms		SB15m = 3 ms	





X12 + SB18

presets	pre-alignment delay values and polarity settings			
[X12] + [SB18_100]	X12 = 0 ms		SB18 = 0 ms	
[X12_MO] + [SB18_100]	X12 = 0 ms		SB18 = 0 ms	



X12 + KS21

presets	pre-alignment delay values and polarity settings			
[X12] + [KS21_100]	X12 = 0 ms		KS21 = 1 ms	
[X12_MO] + [KS21_100]	X12 = 0 ms		KS21 = 1 ms	







X8 + SB15m

presets	pre-alignment delay values and polarity settings	
[X8] + [SB15_100]	X8 = 2 ms 	SB15m = 0 ms 
[X8_MO] + [SB15_100]	X8 = 0 ms 	SB15m = 3 ms 







X4i + Syva Sub

presets	pre-alignment delay values and polarity settings	
[X4] + [SYVA SUB_200]	X4i = 0 ms 	Syva Sub = 0.5 ms 







115XT HiQ + SB118

presets	pre-alignment delay values and polarity settings	
[HIQ_FI_100] + [SB118_100]	HiQ = 2.6 ms 	SB118 = 0 ms 
[HIQ_FR_100] + [SB118_100]	HiQ = 2.6 ms 	SB118 = 0 ms 
[HIQ_MO_100] + [SB118_100]	HiQ = 2.5 ms 	SB118 = 0 ms 







115XT HiQ + SB18

presets	pre-alignment delay values and polarity settings	
[HIQ_FI_100] + [SB18_100]	HiQ = 2.3 ms 	SB18 = 0 ms 
[HIQ_FR_100] + [SB18_100]	HiQ = 2.3 ms 	SB18 = 0 ms 
[HIQ_MO_100] + [SB18_100]	HiQ = 2.2 ms 	SB18 = 0 ms 







115XT HiQ + dV-SUB

presets	pre-alignment delay values and polarity settings	
[HIQ_FI_100] + [dV-S_100]	HiQ = 0.6 ms 	dV-SUB = 0 ms 
[HIQ_FR_100] + [dV-S_100]	HiQ = 0.6 ms 	dV-SUB = 0 ms 
[HIQ_MO_100] + [dV-S_100]	HiQ = 0.5 ms 	dV-SUB = 0 ms 







Active 12XT + SB118

presets	pre-alignment delay values and polarity settings	
[12XTA_FI_100] + [SB118_100]	12XTA = 2.6 ms 	SB118 = 0 ms 
[12XTA_FR_100] + [SB118_100]	12XTA = 2.6 ms 	SB118 = 0 ms 
[12XTA_MO_100] + [SB118_100]	12XTA = 2.5 ms 	SB118 = 0 ms 







Active 12XT + SB18

presets	pre-alignment delay values and polarity settings	
[12XTA_FI_100] + [SB18_100]	12XTA = 2.3 ms 	SB18 = 0 ms 
[12XTA_FR_100] + [SB18_100]	12XTA = 2.3 ms 	SB18 = 0 ms 
[12XTA_MO_100] + [SB18_100]	12XTA = 2.2 ms 	SB18 = 0 ms 







Passive 12XT + SB118

presets	pre-alignment delay values and polarity settings	
[12XTP_FI_100] + [SB118_100]	12XTP = 2.4 ms 	SB118 = 0 ms 
[12XTP_FR_100] + [SB118_100]	12XTP = 2.4 ms 	SB118 = 0 ms 
[12XTP_MO_100] + [SB118_100]	12XTP = 2.4 ms 	SB118 = 0 ms 







Passive 12XT + SB18

presets	pre-alignment delay values and polarity settings	
[12XTP_FI_100] + [SB18_100]	12XTP = 2.1 ms 	SB18 = 0 ms 
[12XTP_FR_100] + [SB18_100]	12XTP = 2.1 ms 	SB18 = 0 ms 
[12XTP_MO_100] + [SB18_100]	12XTP = 2.1 ms 	SB18 = 0 ms 



8XT + SB118

presets	pre-alignment delay values and polarity settings	
[8XT_FI_100] + [SB118_100]	8XT = 3.1 ms 	SB118 = 0 ms 
[8XT_FR_100] + [SB118_100]	8XT = 3.2 ms 	SB118 = 0 ms 
[8XT_MO_100] + [SB118_100]	8XT = 3.0 ms 	SB118 = 0 ms 







8XT + SB18

presets	pre-alignment delay values and polarity settings	
[8XT_FI_100] + [SB18_100]	8XT = 2.8 ms 	SB18 = 0 ms 
[8XT_FR_100] + [SB18_100]	8XT = 2.9 ms 	SB18 = 0 ms 
[8XT_MO_100] + [SB18_100]	8XT = 2.7 ms 	SB18 = 0 ms 







5XT + SB15m

presets	pre-alignment delay values and polarity settings	
[5XT] + [SB15_100]	5XT = 0 ms 	SB15m = 0 ms 







115XT + SB118

presets	pre-alignment delay values and polarity settings	
[115XT_FI_100] + [SB118_100]	115XT = 2.6 ms 	SB118 = 0 ms 
[115XT_FR_100] + [SB118_100]	115XT = 2.5 ms 	SB118 = 0 ms 
[115XT_MO_100] + [SB118_100]	115XT = 2.9 ms 	SB118 = 0 ms 







115XT + SB18

presets	pre-alignment delay values and polarity settings	
[115XT_FI_100] + [SB18_100]	115XT = 2.3 ms 	SB18 = 0 ms 
[115XT_FR_100] + [SB18_100]	115XT = 2.2 ms 	SB18 = 0 ms 
[115XT_MO_100] + [SB18_100]	115XT = 2.6 ms 	SB18 = 0 ms 







Active MTD115 + SB118

presets	pre-alignment delay values and polarity settings	
[115bA_FI_100] + [SB118_100]	115bA = 2.4 ms 	SB118 = 0 ms 
[115bA_FR_100] + [SB118_100]	115bA = 2.5 ms 	SB118 = 0 ms 
[115bA_MO_100] + [SB118_100]	115bA = 2.7 ms 	SB118 = 0 ms 







Active MTD115 + SB18

presets	pre-alignment delay values and polarity settings	
[115bA_FI_100] + [SB18_100]	115bA = 2.1 ms 	SB18 = 0 ms 
[115bA_FR_100] + [SB18_100]	115bA = 2 ms 	SB18 = 0 ms 
[115bA_MO_100] + [SB18_100]	115bA = 2.4 ms 	SB18 = 0 ms 







Passive MTD115 + SB118

presets	pre-alignment delay values and polarity settings	
[115bP_FI_100] + [SB118_100]	115bP = 2.1 ms 	SB118 = 0 ms 
[115bP_FR_100] + [SB118_100]	115bP = 2.2 ms 	SB118 = 0 ms 
[115bP_MO_100] + [SB118_100]	115bP = 2.8 ms 	SB118 = 0 ms 







Passive MTD115 + SB18

presets	pre-alignment delay values and polarity settings	
[115bP_FI_100] + [SB18_100]	115bP = 1.8 ms 	SB18 = 0 ms 
[115bP_FR_100] + [SB18_100]	115bP = 1.9 ms 	SB18 = 0 ms 
[115bP_MO_100] + [SB18_100]	115bP = 2.5 ms 	SB18 = 0 ms 







112XT + SB118

presets	pre-alignment delay values and polarity settings	
[112XT_FI_100] + [SB118_100]	112XT = 2.3 ms 	SB118 = 0 ms 
[112XT_FR_100] + [SB118_100]	112XT = 2.3 ms 	SB118 = 0 ms 
[112XT_MO_100] + [SB118_100]	112XT = 2.6 ms 	SB118 = 0 ms 







112XT + SB18

presets	pre-alignment delay values and polarity settings	
[112XT_FI_100] + [SB18_100]	112XT = 2 ms 	SB18 = 0 ms 
[112XT_FR_100] + [SB18_100]	112XT = 2 ms 	SB18 = 0 ms 
[112XT_MO_100] + [SB18_100]	112XT = 2.3 ms 	SB18 = 0 ms 







MTD112b + SB118

presets	pre-alignment delay values and polarity settings	
[112b_FI_100] + [SB118_100]	112b = 2.4 ms 	SB118 = 0 ms 
[112b_FR_100] + [SB118_100]	112b = 2.5 ms 	SB118 = 0 ms 
[112b_MO_100] + [SB118_100]	112b = 3.0 ms 	SB118 = 0 ms 







MTD112b + SB18

presets	pre-alignment delay values and polarity settings	
[112b_FI_100] + [SB18_100]	112b = 2.1 ms 	SB18 = 0 ms 
[112b_FR_100] + [SB18_100]	112b = 2.2 ms 	SB18 = 0 ms 
[112b_MO_100] + [SB18_100]	112b = 2.7 ms 	SB18 = 0 ms 

MTD108a + SB118

presets	pre-alignment delay values and polarity settings	
[108a_FI_100] + [SB118_100]	108a = 3.5 ms 	SB118 = 0 ms 
[108a_FR_100] + [SB118_100]	108a = 3.6 ms 	SB118 = 0 ms 
[108a_MO_100] + [SB118_100]	108a = 4.0 ms 	SB118 = 0 ms 

MTD108a + SB18

presets	pre-alignment delay values and polarity settings	
[108a_FI_100] + [SB18_100]	108a = 3.2 ms 	SB18 = 0 ms 
[108a_FR_100] + [SB18_100]	108a = 3.3 ms 	SB18 = 0 ms 
[108a_MO_100] + [SB18_100]	108a = 3.7 ms 	SB18 = 0 ms 

Impedance load

Most enclosures have a nominal impedance of 8 Ω . The exceptions are:

- 16 Ω :
 - K2 (HF section), Kiva II, V-DOSC (HF section), 5XT, X4i
- 4 Ω :
 - SB28, KS28, Syva Low, K1-SB

total impedance

Nominal	number of enclosures/sections in parallel				
	2	3	4	5	6
16 Ω	8 Ω	5.3 Ω	4 Ω	3.2 Ω	2.7 Ω
8 Ω	4 Ω	2.7 Ω	—	—	—



4 Ω enclosures cannot be connected in parallel.

Refer to [Enclosure drive capacity per amplified controller](#) (p.90) for the maximum number of enclosures/sections per output and in total on each amplified controller.

Enclosure drive capacity per amplified controller



Risks of output mute, global attenuation, or loss of audio quality.

Do not exceed the maximum number of connected enclosures per channel and in total.

Driving more enclosures than indicated can trigger the amplified controller protection systems.

	LA2Xi			LA4X	LA8	LA12X
	per output [*] / total			per output [*] / total	per output [*] / total	per output [*] / total
	SE [#]	BTL	PBTL			
coaxial enclosures						
X4i	4 / 16	—		4 / 16	6 / 24	6 / 24
5XT	4 / 16	—		4 / 16	6 / 24	6 / 24
X8	2 / 8	1 / 2	—	2 / 8	3 / 8 ^a	3 / 12
X12	1 / 4	1 / 2	—	1 / 4	2 / 8	3 / 12
X15 HiQ	1 / 2	—		1 / 2	2 / 4	3 / 6
8XT	—			2 / 8	3 / 12	3 / 12
Active 12XT	—			2 / 4	3 / 6	3 / 6
Passive 12XT	—			1 / 4	2 / 8	3 / 12
112XT	—			2 / 4	3 / 6	3 / 6
115XT HiQ	—			1 / 2	2 / 4	3 / 6
115XT	—			1 / 2	3 / 6	3 / 6
MTD108a	—			2 / 8	3 / 12	3 / 12
MTD112b	—			1 / 4	2 / 8	2 / 8
Active MTD115b	—			1 / 2	2 / 4	2 / 4
Passive MTD115b	—			1 / 4	2 / 8	2 / 8
colinear sources						
Syva	1 / 4	1 / 2	—	1 / 4	2 / 8	3 / 12
constant curvature WST enclosures						
ARCS Wide/Focus	1 / 4	1 / 2	—	1 / 4	2 / 8	3 / 12
A10(i) Wide/Focus	2 / 8	1 / 2	—	2 / 8	2 / 8	3 / 12
A15(i) Wide/Focus	1 / 4	1 / 2	—	1 / 4	2 / 8	3 / 12
ARCS II	—			1 / 2	2 / 4	3 / 6
ARCS	—			1 / 2	3 / 6	3 / 6
variable curvature WST enclosures						
K1	—			—	2 / 2	2 / 2
K1-SB	—			—	1 / 4	1 / 4
K2	—			1 / 1	3 / 3	3 / 3
K3	—			1 / 2	2 / 4	3 / 6
Kara(i)	2 / 4	—		2 / 4	3 / 6	3 / 6

^a LA8 can drive up to three X8 per output, but no more than eight per controller at high level.

	LA2Xi			LA4X	LA8	LA12X
	per output* / total			per output* / total	per output* / total	per output* / total
	SE [#]	BTL	PBTL			
Kara II	2 / 4	—		2 / 4	3 / 6	3 / 6
Kiva II	2 / 8	2 / 4	—	2 / 8	4 / 16	6 / 24
Kiva / Kilo	—			2 / 8	3 / 12	3 / 12
Kudo	—			1 / 1	3 / 3	3 / 3
V-DOSC	—			—	2 / 2	2 / 2
dV-DOSC	—			—	3 / 6	3 / 6
subwoofer enclosures						
KS28	1 / 4	—	1 / 1	—	—	1 / 4
SB28	1 / 4	—	1 / 1	—	1 / 4	1 / 4
KS21(i)	1 / 4	1 / 2	—	1 / 4	2 / 6 ^b	2 / 8
SB18(i)	1 / 4	1 / 2	—	1 / 4	2 / 8	3 / 12
SB218	—			—	1 / 4	1 / 4
SB118	—			1 / 4	2 / 8	2 / 8
SB15m	1 / 4	1 / 2	—	1 / 4	2 / 6 ^c	3 / 12
Syva Low	1 / 4	—		1 / 4	1 / 4	2 / 6 ^d
Syva Sub	1 / 4	1 / 2	—	1 / 4	2 / 8	3 / 12
dV-SUB	—			—	1 / 4	1 / 4

^b LA8 can drive up to two KS21 or KS21i per output, but no more than six per controller at high level.

^c LA8 can drive up to two SB15m per output, but no more than six per controller at high level.

^d LA12X can drive up to two Syva Low per output, but no more than six per controller at high level.

* For passive loudspeakers, the value corresponds to the number of enclosures in parallel on the output. For active loudspeakers, the value corresponds to the number of sections in parallel on the output.

[#] Maximum SPL is reduced in SE operating mode for all systems except X4i and 5XT. Refer to the LA2Xi Owner's Manual for more information.

Enclosure drive capacity per LA4



Risks of output mute, global attenuation, or loss of audio quality.

Do not exceed the maximum number of connected enclosures per channel and in total.

Driving more enclosures than indicated can trigger the amplified controller protection systems.

	per output* / total
coaxial enclosures	
X4i	4 / 16
5XT	3 / 12
8XT	2 / 8
Active 12XT	2 / 4
Passive 12XT	1 / 4
112XT	2 / 4
115XT HiQ	1 / 2
115XT	1 / 2
MTD108a	2 / 8
MTD112b	1 / 4
Active MTD115b	1 / 2
Passive MTD115b	1 / 4
constant curvature WST enclosures	
ARCS Wide/Focus	1 / 4
ARCS	1 / 2
variable curvature WST enclosures	
Kiva / Kilo	2 / 8
subwoofer enclosures	
SB18	1 / 4
SB118	1 / 4
SB15m	1 / 4
Syva Sub	1 / 4

* For passive loudspeakers, the value corresponds to the number of enclosures in parallel on the output. For active loudspeakers, the value corresponds to the number of sections in parallel on the output.



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