

**User Manual**

020-101262-02

# **Vive Audio LA2 Speaker**



## NOTICES

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### WARRANTY

Products are warranted under Christie's standard limited warranty, the complete details of which are available by contacting your Christie dealer or Christie. In addition to the other limitations that may be specified in Christie's standard limited warranty and, to the extent relevant or applicable to your product, the warranty does not cover:

- a. Problems or damage occurring during shipment, in either direction.
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- f. Problems or damage caused by misuse, improper power source, accident, fire, flood, lightning, earthquake or other natural disaster.
- g. Problems or damage caused by improper installation/alignment, or by equipment modification, if by other than Christie service personnel or a Christie authorized repair service provider.
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- i. Problems or damage caused by use of a projector in the presence of an oil-based fog machine or laser-based lighting that is unrelated to the projector.
- j. For LCD projectors, the warranty period specified in the warranty applies only where the LCD projector is in "normal use" which means the LCD projector is not used more than 8 hours a day, 5 days a week.
- k. Except where the product is designed for outdoor use, problems or damage caused by use of the product outdoors unless such product is protected from precipitation or other adverse weather or environmental conditions and the ambient temperature is within the recommended ambient temperature set forth in the specifications for such product.
- l. Image retention on LCD flat panels.
- m. Defects caused by normal wear and tear or otherwise due to normal aging of a product.

The warranty does not apply to any product where the serial number has been removed or obliterated. The warranty also does not apply to any product sold by a reseller to an end user outside of the country where the reseller is located unless (i) Christie has an office in the country where the end user is located or (ii) the required international warranty fee has been paid.

The warranty does not obligate Christie to provide any on site warranty service at the product site location.

### PREVENTATIVE MAINTENANCE

Preventative maintenance is an important part of the continued and proper operation of your product. Please see the Maintenance section for specific maintenance items as they relate to your product. Failure to perform maintenance as required, and in accordance with the maintenance schedule specified by Christie, will void the warranty.


### REGULATORY

The product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment. The product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of the product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at the user's own expense.

CAN ICES-3 (A) / NMB-3 (A)

이 기기는 업무용 (A 급) 으로 전자파적합등록을 한 기기이오니 판매자 또는 사용자는 이점을 주의하시기 바라며, 가정 외의 지역에서 사용하는 것을 목적으로 합니다.

### Environmental

The product is designed and manufactured with high-quality materials and components that can be recycled and reused. This symbol  means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from regular waste. Please dispose of the product appropriately and according to local regulations. In the European Union, there are separate collection systems for used electrical and electronic products. Please help us to conserve the environment we live in!

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# Safety Information

- Read this information thoroughly before installing or operating a speaker.
- Read these instructions.
- Keep these instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other devices (including amplifiers) that produce heat.
- Do not use this apparatus near water.
- Do not install the speaker near water where the electrical components can be exposed to moisture. Do not place objects containing liquids, such as vases, on the product.
- Clean only with a dry cloth.
- Do not overpower or underpower speaker systems.
- Use only in accordance with manufacturer's specifications and installation guidelines.
- Exposure to extremely high noise levels may cause permanent hearing loss. Individuals vary considerably in their susceptibility to noise-induced hearing loss, but nearly everyone will lose some hearing if exposed to sufficiently intense noise for a sufficient time. These are the permissible noise level exposures specified by the United States Occupational Safety and Health Administration (OSHA):

<b>Duration (Consecutive)</b>	<b>Sound Pressure Level (dbA), Slow Responses</b>
8 hrs	90
6 hrs	92
4 hrs	95
3 hrs	97
2 hrs	100
1.5 hrs	102
1 hr	105
30 min	110

Duration (Consecutive)	Sound Pressure Level (dbA), Slow Responses
≤15 min	115

- According to the OSHA, any exposure in excess of the above permissible limits could result in some hearing loss. Earplugs or protectors to the ear canals or over the ears must be worn when operating this amplification system to prevent permanent hearing loss, if exposure is in excess of the described limits.
- Two people are required to safely lift and install the speaker.
- Speakers and speakers mounted to brackets must be affixed to a suitable structure following all local safety standards and regulations.
- Always install all legally required additional redundant safety straps or cables.
- Install the minimum number of rigging wires (refer to [Installation](#) for more details) that are required to suspend the speaker. Observe load ratings and all applicable local safety codes.
- Only use attachments or accessories specified by Christie.
- To reduce the risk of system damage, turn off the power amplifier and then disconnect the speaker wire before performing a repair or maintenance.
- All servicing must be completed by qualified service personnel. Servicing is required when the apparatus has been damaged in any way. For example, liquid has been spilled or objects have fallen onto the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Changes or modifications to the product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

## Technical support

Technical support for Christie products is available at:

- North and South America: +1-800-221-8025 or [Support.Americas@christiedigital.com](mailto:Support.Americas@christiedigital.com) Europe, Middle East, and Africa: +44 (0) 1189 778111 or [Support.EMEA@christiedigital.com](mailto:Support.EMEA@christiedigital.com)
- Asia Pacific: +65 6877-8737 or [Support.APAC@christiedigital.com](mailto:Support.APAC@christiedigital.com)
- Coolux: +49 221 99 512 300 or [Support.PandorasBox@christiedigital.com](mailto:Support.PandorasBox@christiedigital.com)
- Christie Managed Services: +1-800-550-3061 or [NOC@christiedigital.com](mailto:NOC@christiedigital.com)

# Introduction

This user manual provides speaker installation, troubleshooting, and specification information.

## Speaker overview

The LA2 articulated coaxial ribbon line array speaker is designed for use as part of a screen channel in auditoriums with approximately 150 to 250 seats, or for use as a corner surround speaker in auditoriums with approximately 250 to 350 seats when paired with an S215 subwoofer and bi-amped.

It may also be used for a range of other applications, where vertical coverage and maximum throw distance are appropriate.

The speaker contains an internal passive crossover, allowing it to operate with a single channel amplifier. Multiple hardware attachment points on the speaker allow for multiple installation options.

## What's in the box?

This table lists the components that are shipped with the LA2.

Quantity	Description	Part number
1	Christie LA2 speaker or Christie LA2 speaker with grill	145-118101-XX or 145-119102-XX

# Installation



**Warning!** Failure to comply with the following could result in death or serious injury.

- Before installation, inspect all components for cracks, deformations, corrosion, and missing or damaged parts that could reduce their installation strength.
- A minimum of two people are required to safely lift and install the speaker.
- Speakers must be affixed to a suitable structure following all local safety standards and regulations.
- Only use attachments or accessories specified by the manufacturer.



**Notice.** Failure to comply with the following may result in property damage.

- Allow speakers exposed to extremely low temperatures to warm for a minimum of one hour before playing them at typical application levels. Failure to comply may result in equipment or property damage.
- Speaker wire affects sound quality. Make sure the speaker wire quality and gauge are appropriate for your application.

Complete the following procedures to install the speaker.

## Connect the speaker wire

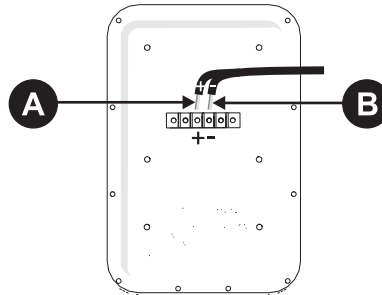


**Notice.** Failure to comply with the following may result in property damage.

- The amplifier must be turned off and unplugged before you start this procedure.

1. Install the speaker according to the mounting instructions provided in this manual.
2. Connect the speaker wire to the positive (A) and negative (B) terminals on the back of the speaker.

Use a #8 spade lug (part number: 145-159106-XX) if you are creating crimped spade lug terminations.



<b>A</b>	Positive (+) connection
<b>B</b>	Negative (-) connection

3. Connect the negative and positive speaker wires from the speaker to the corresponding terminals on the amplifier.
4. Turn on the amplifier and verify that the speaker is receiving power.

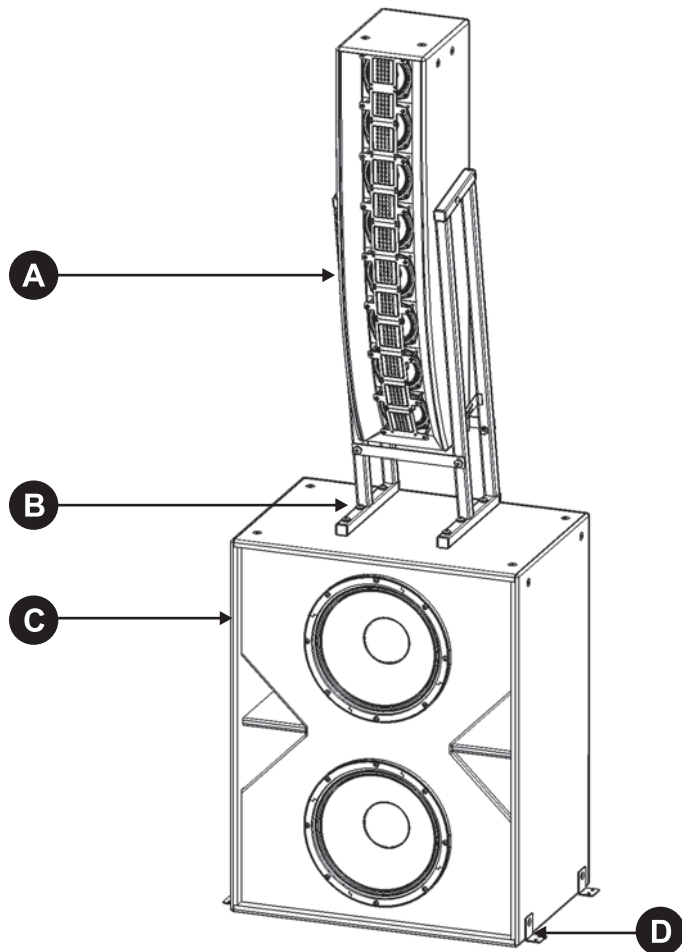


## Platform mount the LA2 with an S215 subwoofer

Use the BKT-LA2 and BKS-SUB brackets to install the LA2 speaker and an S215 subwoofer on a platform.

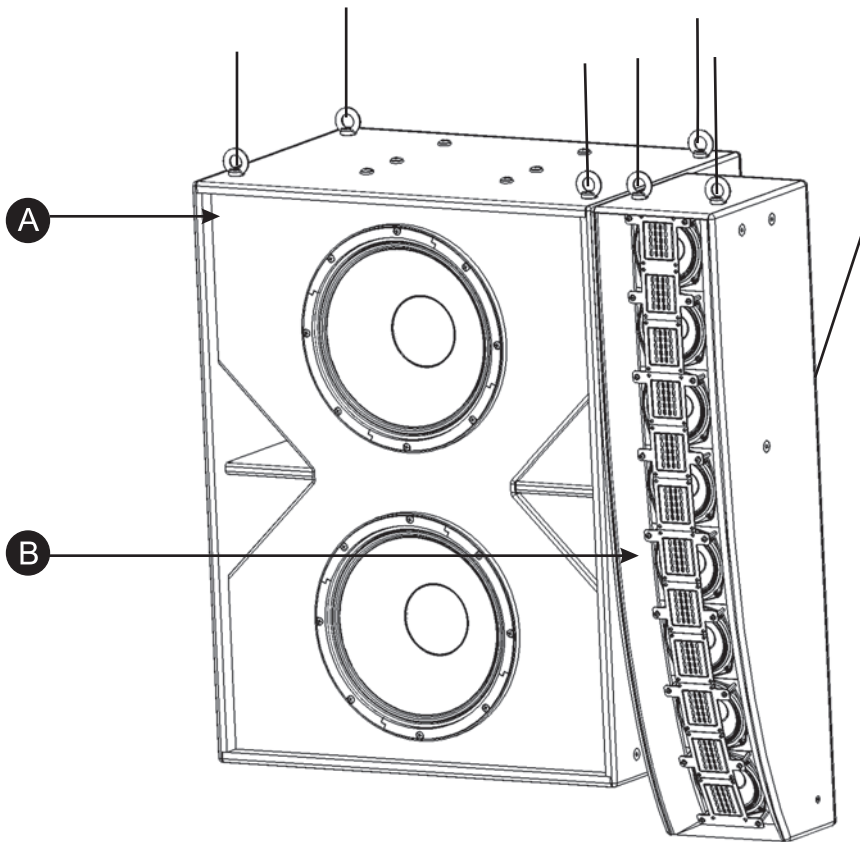
For mounting instructions, see the [Christie Vive Audio BKT-LA2 Bracket User Manual](#) and [Christie Vive Audio BKS-SUB User Manual](#).

<b>A</b>	LA2 speaker
<b>B</b>	BKT-LA2 bracket
<b>C</b>	S215 subwoofer
<b>D</b>	BKS-SUB brackets (1 of 4)



## Fly the LA2 with an S215 subwoofer beside

The LA2 and S215 are independently flown, according to installer best practices, using seven rigging wires and any legally required redundant safety cables.



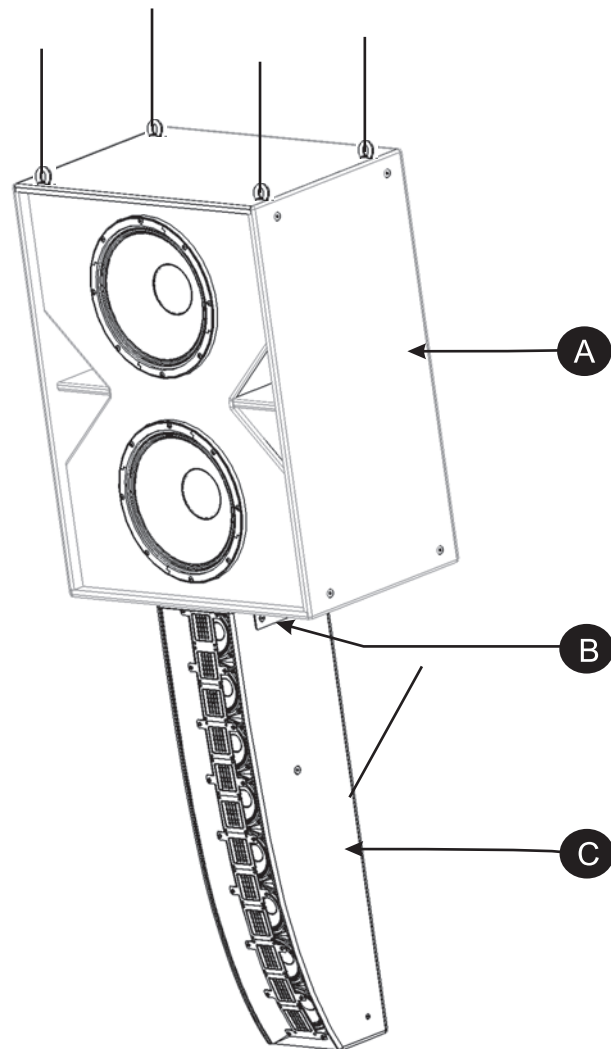
<b>A</b>	S215 subwoofer
<b>B</b>	LA2 speaker

## Fly the LA2 below an S215 subwoofer

The S215 subwoofer is flown, according to installer best practices, using four rigging wires and any legally required redundant safety cables. The LA2 is mounted to the S215 subwoofer with the BKL-LA2 bracket kit.

For mounting instructions see the [Christie Vive Audio BKL-LA2 Bracket User Manual](#) (P/N 020-101281-XX).

<b>A</b>	S215 subwoofer
<b>B</b>	BKL-LA2 bracket (1 of 2)
<b>C</b>	LA2 speaker



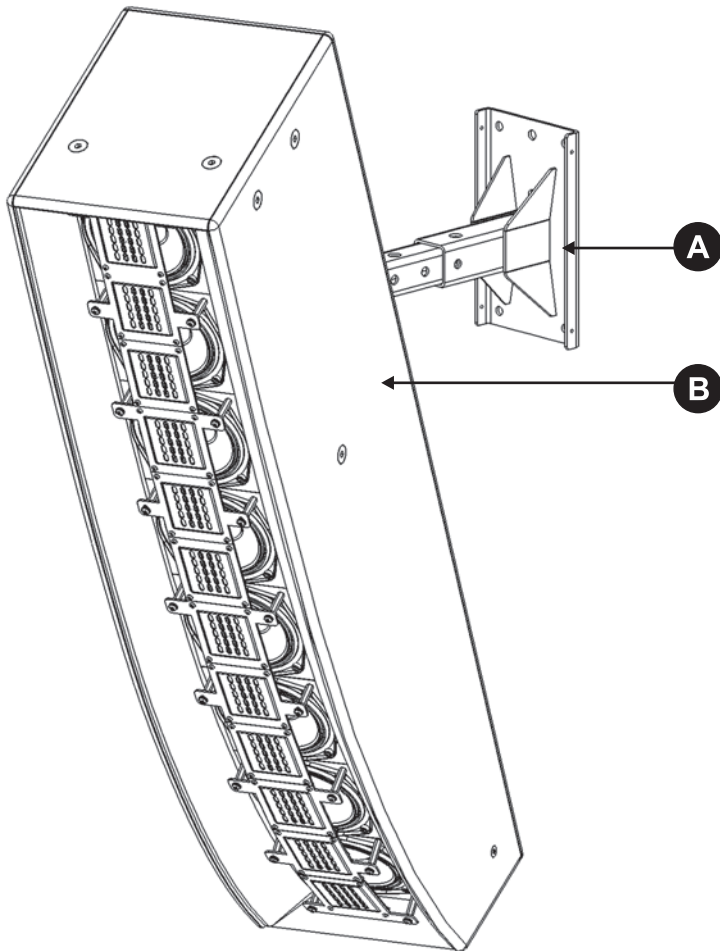
## Wall mount the LA2

1. Remove the four pre-installed M8 button head screws on the back of the speaker.
2. Attach one of the following brackets to the back of the speaker using the four M8 button head screws.

Description	Part number
Wall mount bracket (MM-024)	111-681207-XX

Description	Part number
Wall mount bracket (MM-060)	111-682208-XX
Wall mount bracket (MM-120)	111-693200-XX

3. Mount the speaker to the wall using the manufacturer documentation provided with the bracket.



<b>A</b>	LA2 speaker
<b>B</b>	Wall mount bracket

# Troubleshooting



**Caution!** Failure to comply with the following could result in minor or moderate injury.

- Do not service the speaker. All servicing must be completed by qualified service personnel.

## The speaker does not function

The speaker is connected to the amplifier, but is not producing any sound.

### Resolution

- Verify that the speaker is receiving power from the amplifier.
- Verify that the circuit breaker for the main circuit to the amplifier is closed.
- Reset the circuit breaker. If the AC mains breaker continues to open, check the voltage and amperage of the circuit.
- Verify that the negative and positive speaker wires from the speaker are correctly connected to the terminals on the amplifier.

## The speaker sound is degraded

The speaker is powered on and sound is being produced, but it is distorted.

### Resolution

- Visually inspect the speaker for deterioration or holes.
- Reduce the output level of the source.
- Verify that the negative and positive speaker wires from the speaker are securely connected to the terminals on the amplifier.
- Verify that there are no missing screws. Replace all screws that you removed during installation.
- Have an authorized dealer complete an audio test (for example, pink noise, frequency sweeps, and content and program material).

## There is speaker noise or hiss

The speaker is producing static noise or hiss when powered.

### Resolution

- Mute channels, one at a time, to isolate the problem.
- Verify that the cables are in good working condition.
- Reroute audio cables away from AC power and lighting cables.
- Verify correct gain structuring of B Chain and input and output levels of source devices and amplifiers.
- Check the polarity.

# Specifications

## Audio

Specification	Description
System type	Coaxial articulated line array, two-way, passive, single sealed enclosure.
Driver components	Twelve 3.5 in Kapton® ribbon drivers with Neodymium magnets and eight 5.25 in. paper/ Kevlar composite mid-bass cone drivers
Crossover	Linear phase, two-way, passive crossover at 1.5 kHz, 12 dB/octave
Frequency response <sup>a</sup>	80 Hz - 20 kHz at -6 dB
Maximum sound pressure level (SPL) <sup>b</sup>	125.6 dB (AES) continuous, 137.6 dB, peak
System coverage <sup>c</sup>	120° horizontal dispersion, 35° vertical dispersion
Sensitivity <sup>a</sup> , 1 W/1 m	96.5 dB
Recommended amplifier power	850 W - 1500 W (FTC) at 4 Ohms / Christie CDA3 or Christie CDA5 (depending on application)
Rated impedance	4 Ohms

<sup>a</sup>Measured at distances of 4m and 8m, in free field and on ground plane. Sensitivity is calculated based on measured SPL response averaged in the 200 Hz-5 kHz range and scaled back to 1 m.

<sup>b</sup>AES refers to the AES2-2012 standard. IEC refers to the IEC 60268-5 standard. Maximum continuous SPL is calculated based on sensitivity and AES power handling. IEC short-term power is tested using IEC pink noise with a 9 dB crest factor. The crest factor was specifically increased to reflect real life parameters of digital cinema soundtracks. Maximum peak SPL is calculated using peak voltage during the IEC short-term power test.

<sup>c</sup>Averaged in the 500 Hz-16 kHz range, at -6 dB. Screen scattering effect results in a slight increase of coverage at high frequency.

## Connections

Specification	Description
Inputs	Screw terminal barrier strip

## Power

Specification	Description
Power handling <sup>b</sup>	800 W (AES) continuous, 1600 W (IEC) short-term

## Physical

Specification	Description
Enclosure	Closed box alignment 18 mm marine plywood Heavily damped and braced
Dimensions (H x W x D)	110.0 cm x 23.8 cm x 32.0 cm (43.3 in.) x (9.4 in.) x (12.6 in.)
Weight (net)	26.3 kg (58 lb)

## Parts

Specification	Part Number
5.25 in. woofer Kevlar	003-005485-XX
TWTR Bridge Kapton LA2	003-005486-XX
Crossover Network LA2	003-005484-XX



## Accessories

Specification	Part Number
Christie Vive Audio S215 Subwoofer	145-103105-XX
BKT-LA2 Tilt Bracket (for mounting on the Christie S215)	145-150107-XX
BKL-LA2 "L" Bracket (for flying under the Christie S215)	145-151108-XX
BKS-SUB bracket (for platform mounting)	145-110103-XX
Wall mount bracket (MM-024)	111-681207-XX
Wall mount bracket (MM-060)	111-682208-XX
Wall mount bracket (MM-120)	111-693200-XX
4x fly cables and hardware	111-685201-XX
1x fly cables and hardware	111-686202-XX
SpeakON Connector (for amplifier output to speaker)	145-158105-XX
#8 Spade Lug (for speaker input from amplifier)	145-159106-XX

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