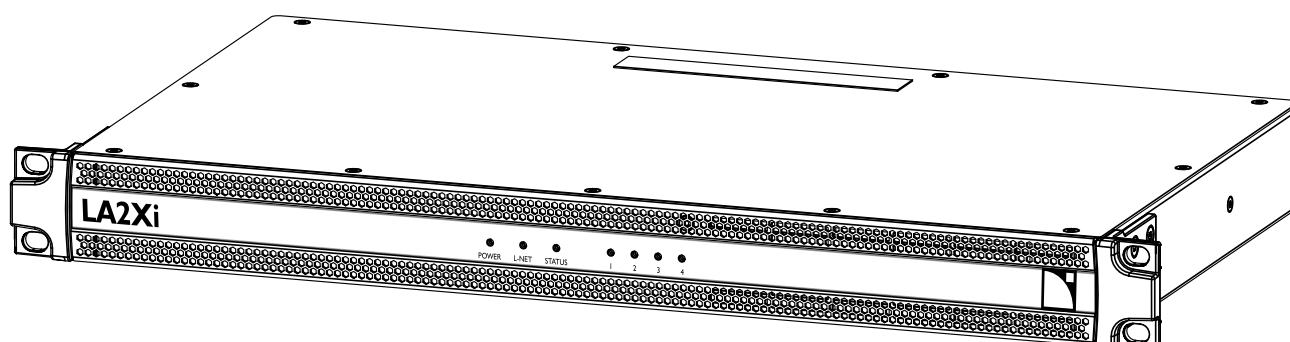


# LA2Xi



owner's manual (EN)



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# Safety

## Important safety instructions

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- 
**Inspect the product before operation.**  
 If any sign of defect or damage is detected, immediately withdraw the product from use for maintenance.
- 
**Perform preventive maintenance at least once a year.**  
 Refer to the preventive maintenance section for a list of actions and their periodicity.  
 Insufficient upkeep of the product can void the warranty.
- 
**Verify the electrical conformity and compatibility of the mains supply.**  
 Only connect the product to an AC power outlet rated 100-240 V, 50-60 Hz, with the following current values:  
 100-120 V: 20 A  
 200-240 V: 10 A  
 WARNING: The product is of Class 1 construction and shall be connected to a mains socket outlet with a protective connection to earth.
- 
**When the product is used in a three-phase circuit, verify the electrical conformity and compatibility of the three-phase circuit.**  
 Verify that the three phases work, and balance the loads between the three phases.  
 Verify that the neutral and earth work.  
 Never try to emulate a 230 V circuit connecting an apparatus to two live wires of a 120 V three-phase circuit.  
 Never try to emulate a 200 V circuit connecting an apparatus to two live wires of a 100 V three-phase circuit.
- 
**Always interconnect a Class C circuit breaker between the product and the mains supply.**  
 The circuit breaker current rating depends on the mains voltage rating, as follows:  
 100-120 V: 20 A  
 200-240 V: 10 A
- 
**Electrical generator**  
 You must power on the generator before powering on the product.
- 
**Terminals marked with the lightning flash symbol are HAZARDOUS LIVE.**  
 The external wiring connected to these **terminals** requires installation by an **instructed person** or the use of ready-made leads or cords.  
 Never attempt to touch any exposed speaker wiring while the product is operating: first disconnect the connector from the product.  
 Mute all output channels before connecting a speaker to an amplified controller.  
 Do not connect a speaker output in parallel or series with any output of another amplified controller.  
 Do not connect the speaker outputs to any other voltage source, such as a battery, power mains, or power supply, regardless of whether the amplified controller is turned on or off.
- 
- 
**Never incorporate equipment or accessories not approved by L-Acoustics.**
- 
**Read all the related PRODUCT INFORMATION documents shipped with the products before exploiting the system.**
- 
**Intended use**  
 This system is intended for use by trained personnel for professional applications.
- 
**As part of a continuous evolution of techniques and standards, L-Acoustics reserves the right to change the specifications of its products and the content of its documents without prior notice.**  
 Check [www.l-acoustics.com](http://www.l-acoustics.com) on a regular basis to download the latest document and software updates.



### **Beware of sound levels.**

Do not stay within close proximity of loudspeakers in operation.

Loudspeaker systems are capable of producing very high sound pressure levels (SPL) which can instantaneously lead to permanent hearing damage to performers, production crew and audience members. Hearing damage can also occur at moderate level with prolonged exposure to sound.

Check the applicable laws and regulations relating to maximum sound levels and exposure times.



### **Beware of over power risks.**

Only use compatible loudspeakers with appropriate presets to avoid damage to the loudspeakers.



### **Do not use the product outside its operating temperature range.**

The product operates at a room temperature between -5 °C / 23 °F and 50 °C / 122 °F.

Do not expose the product to direct sun.



### **Do not expose the product to extreme conditions.**

Do not expose the product to moisture (rain, mist, sea spray, steam, humidity, condensation...) or excessive heat (direct sun, radiator...) for a long period of time.

For more information, refer to the **Product protection ratings** document, available on the website.



### **Only use the product in a conformed electro-magnetic environment (EN55035 standard).**



### **Avoid radio interference.**

This product has been tested and complies with the limits indicated in the EMC directive (Electro Magnetic Compatibility). These limits are designed to provide reasonable protection against harmful interference from electrical equipment, but it cannot be guaranteed that interference will never occur.



### **Product disconnection**

To completely disconnect this product from the mains, disconnect the power supply cord plug from the mains socket outlet.



### **Power supply cord and socket accessibility**

The main plug of the power supply cord shall remain easily accessible.

The mains socket outlet shall be easily accessible.



### **Read the maintenance section of this document before servicing the product.**



### **Contact L-Acoustics for advanced maintenance.**

Any unauthorized maintenance operation will void the product warranty.

Before sending a product to L-Acoustics for maintenance, save all user presets to files using LA Network Manager.



### **Shipping**

Use the original packaging for shipping the product, unless it is mounted in a rack with the front and rear panels fixed to the rack, as described in this manual.

# Introduction

## LA2Xi amplified controller

---



LA2Xi is a four-channel amplified controller dedicated to permanent installations. Designed to match the power of small format loudspeakers, LA2Xi can also be used to support larger loudspeakers at lower SPL capability (4 x 4 single-ended mode) or at full SPL capability (4 x 3, 4 x 2 or 4 x 1 bridge mode).

The streamlined and elegant 1U front panel hides a powerful DSP engine with features for loudspeaker management, protection and monitoring as well as a comprehensive set of tools for system adjustment and calibration. In addition to analog and AES, LA2Xi integrates AVB signal inputs with Milan seamless network redundancy. Four GPIO and a 24 V DC backup power for the DSP card offer external control and improved reliability. The flexible LA2Xi is ideal for background music systems in leisure venues, distributed fills, studio monitors and private auditorium systems.

## How to use this manual

---

The LA2Xi owner's manual is intended for all actors involved in the system design, implementation, preventive and corrective maintenance of the LA2Xi product. It must be used as follows:

1. Read the technical description for an overview of all product elements, their features, and their compatibilities.
  - [Technical description](#) (p.9)
2. Before installing the product, perform mandatory inspections and functional checks.
  - [Inspection and preventive maintenance](#) (p.14)
3. To deploy the product, follow the step-by-step installation instructions and refer to the cabling schemes.
  - [Installation](#) (p.16)
  - [Audio and network cabling](#) (p.20)
4. To configure the settings and parameters of the product, follow the step-by-step operation instructions.
  - [Operation](#) (p.25)

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Check [www.l-acoustics.com](http://www.l-acoustics.com) on a regular basis to download the latest document and software updates.






## Contact information

For information on advanced corrective maintenance:

- contact your Certified Provider or your L-Acoustics representative
- for Certified Providers, contact the L-Acoustics customer service: [customer.service@l-acoustics.com](mailto:customer.service@l-acoustics.com)


## 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 indicates a potential risk of electrical injury.  
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.

## System components

### Loudspeaker enclosures

-  Refer to the user documentation of the loudspeaker systems for detailed instructions about the enclosures and their connection to the amplified controllers.

### Powering and driving system

LA2Xi                      Amplified controller with DSP, preset library and networking capabilities

### Software applications

LA Network Manager    Software for remote control and monitoring of amplified controllers

-  Refer to the **Soundvision** help.
-  Refer to the **LA Network Manager** help.

## Illustrations

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LA Network Manager

# Technical description

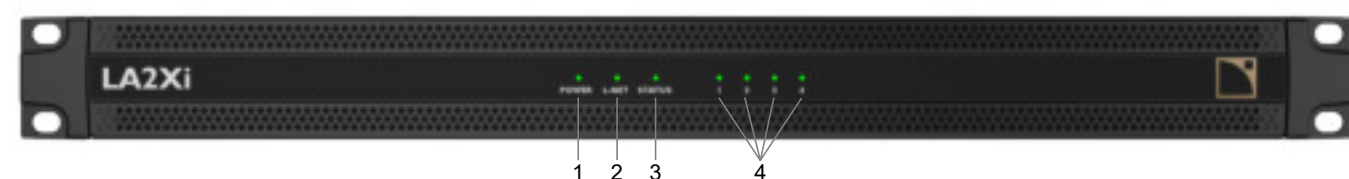
## Main features

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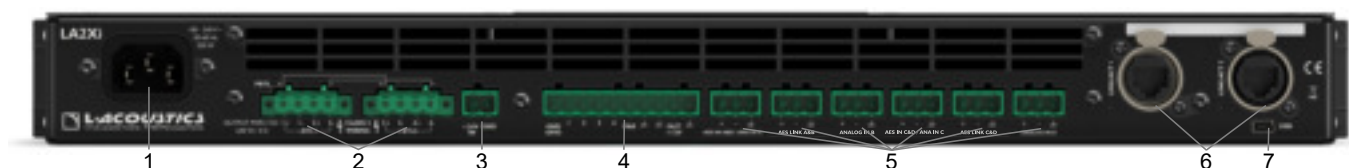
### Internal components

The core of the LA2Xi is a Gen. 4 dual DSP engine driving four channels of amplification from four inputs. LA2Xi features a flash memory for preset storage and management, high performance A/D-D/A converters for audio signals, a universal Switched Mode Power Supply (SMPS) with PFC (Power Factor Correction), and a dual-port Ethernet Gigabit interface.

### Front and rear panels



1. power LED
2. L-NET LED
3. status LED
4. signal LEDs



1. V-Lock compatible IEC connector
2. output female 4-point terminal blocks
3. 24 V DC male 2-point terminal block to connect a backup power supply for the DSP
4. General Purpose I/O (GPIO)
5. input/Link male 3-point terminal blocks
6. 1 Gb/s Ethernet etherCON I/O connectors
7. mini USB for configuring IP settings - refer to [Setting the IP via USB](#) (p.27)

## Signal processing and amplification

---

### Signal inputs

#### Analog

LA2Xi can be fed with up to four balanced analog audio signals using the four male 3-point terminal blocks (ANA IN A, ANALOG IN B, ANA IN C, and ANALOG IN D).

The input signals can be transmitted to daisy-chained amplified controllers by wiring the inputs of the next unit in the same terminal blocks.

To be processed by the DSP, the analog signal must be converted into a digital signal. For this purpose, the LA2Xi amplified controller is fitted with one 32-bit A/D converter with a sampling rate of 96 kHz.

## AES/EBU

LA2Xi can be fed with up to four AES/EBU digital audio signals (transported in pairs) using the two male 3-point terminal blocks (AES IN A&B and AES IN C&D).

The audio signals can come from a digital mixing desk or from a digital audio network bridge compliant with the AES/EBU (AES3) digital audio standards.

The input signals can be transmitted to daisy-chained amplified controllers using the two male 3-point terminal blocks (AES LINK A&B and AES LINK C&D).

Each AES/EBU input port is equipped with an SRC (Sample Rate Converter) that has been selected to support a wide range of input formats (16 - 24 bits / 44.1 - 192 kHz). The SRC converts the formats to the 24 bits / 96 kHz internal format used by the amplified controller. The SRC is a high-quality hardware component (140 dB dynamic range, THD+N < -120 dBFS, strong input jitter attenuation) and provides constant propagation delay regardless of the input sampling frequency.

There is no external synchronization mode. The amplified controller's clock runs using its high-precision internal quartz at 96 kHz (or on the clock of the connected AVB input stream). This ensures low jitter and high audio quality in live conditions (large cable lengths, large number of amplified controllers) while preventing phase shift, as required for line source systems.

## Digital domain benefits

Keeping the signal in the digital domain provides the following benefits (with any digital mixing desk or any audio network) compared to the analog signal distribution:

- Better audio quality by removing one D/A - A/D cycle.
- Optimized level chain by removing the risk of level misalignment between console and amplified controllers.
- Digital signal refreshed at each amplified controller in a daisy-chain.
- Improved maximum cable length. LA2Xi has been tested with up to 300 m / 984 ft of two models of AES/EBU rated cables (single cuts, digital source signal running at  $F_s = 48$  kHz):
  - 1696A from BELDEN INC.
  - OT234H from KLOTZ communications GmbH.

## AVB

One AVB stream of up to eight channels may be connected to LA2Xi. LA2Xi retrieves up to four channels from this stream.

Each Ethernet port uses a high speed data transfer protocol up to 1 Gb/s and supports the IEC 61883-6 AM824 and AAF PCM32 stream formats with stream frequencies of 48 kHz or 96 kHz.

The amplified controller synchronizes its audio clock on the clock used by the talker through the incoming stream.

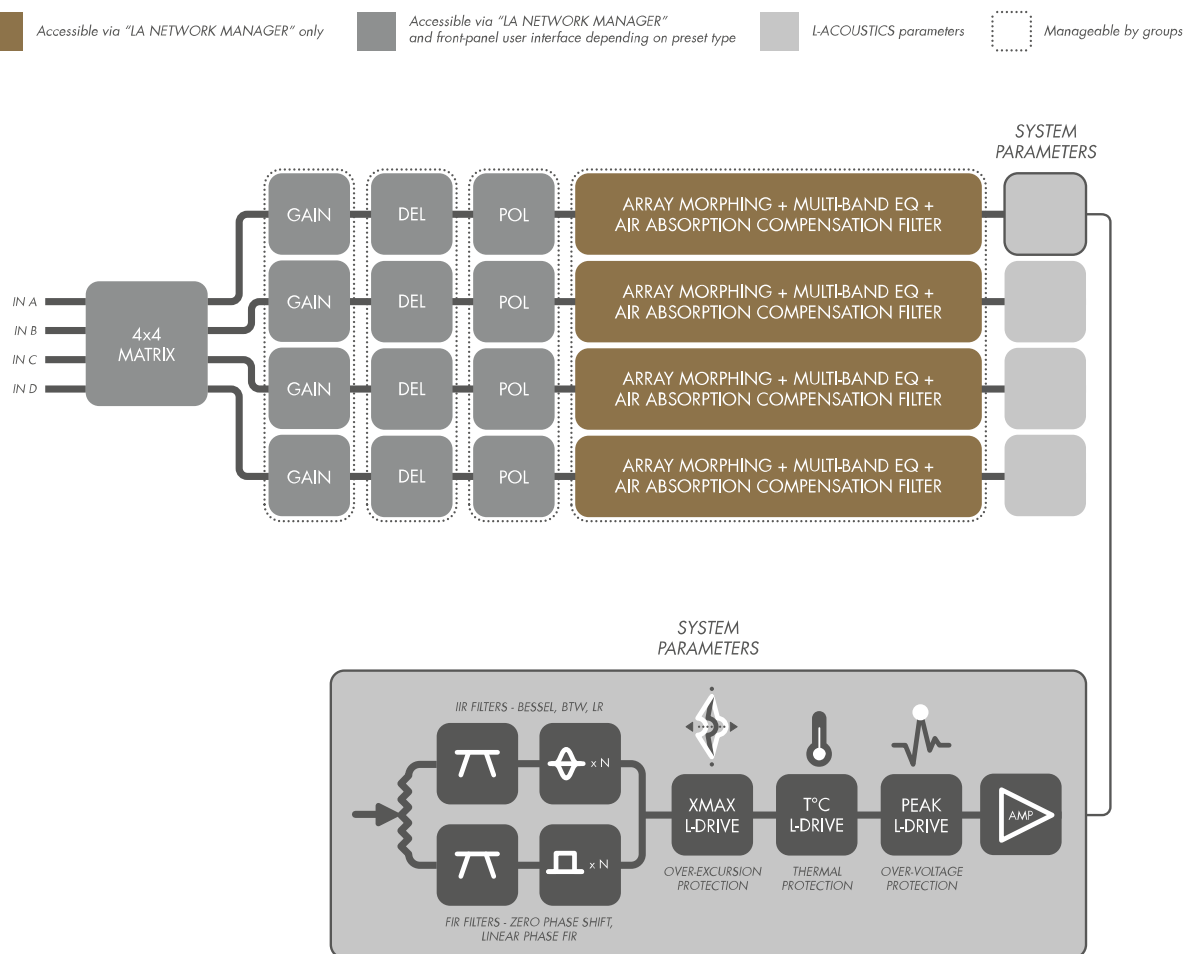
LA2Xi embeds an AVB bridge and may therefore be used to create an AVB network.

## DSP architecture

The proprietary algorithms allow optimum performance and protection of each individual transducer of the L-Acoustics systems for an even more natural, transparent and realistic sound experience.

- The DSP engine is a 32-bit floating point DSP at 96 kHz sampling rate providing an enhanced dynamic range since it does not generate calculation clips like a fixed point DSP.
- A dedicated engineering approach combining IIR and FIR filters generates perfectly linearized phase curves and significantly improved impulse responses.
- The  $4 \times 4$  matrix architecture offers flexibility for various system configurations.
- A delay of up to 1000 ms can be set for each output channel.
- The L-DRIVE transducer protection system offers advanced protection by simultaneously monitoring the excursion and the temperature of the transducer.
- With a complete factory preset library and the possibility to create additional user presets, the flash memory provides a quick access to all the usual L-Acoustics speaker system configurations (refer to the **Preset Guide**).

## audio path parameters



## Power supply and amplifier section

The Class D amplification circuits ensure the LA2Xi energy efficiency for minimal heat dissipation. LA2Xi delivers (no limiter 200 ms, sine burst < 1% THD, 1 kHz):

- 4 × 640 W at 4 Ω
- 4 × 360 W at 8 Ω
- 4 × 190 W at 16 Ω

LA2Xi is a green amplified controller that relies on a universal Switched Mode Power Supply (SMPS) suitable for mains 100 V AC - 240 V AC (± 10%, 50 Hz - 60 Hz). The SMPS features a PFC (Power Factor Correction) which maximizes the amplifier efficiency and takes advantage of nearly 100% of the electrical power available with a very high tolerance to unstable mains. This represents a reduction of the electrical power requirements (cable gauge, power conditioning, etc.) for substantial savings.

## Speaker outputs

LA2Xi features two female 4-point terminal blocks for loudspeaker outputs.

The terminal blocks can be used in a single-ended (SE) configuration, a bridge-tied load (BTL) configuration, or a parallel bridge-tied load (PBTL) configuration. Bridging the connectors improves maximum SPL, but reduces the maximum number of loudspeaker enclosure per output and per amplified controller (refer to the **Preset guide** or the **Amplification reference** technical bulletin for more information on enclosure drive capacity).

### Maximum SPL

Peak level measured at 1 m, under free field conditions for full range loudspeakers and half space conditions for subwoofers, using pink noise with crest factor 4 (preset specified in brackets).

|                          | LA2Xi  |        |        | LA4X   | LA8    | LA12X  |
|--------------------------|--------|--------|--------|--------|--------|--------|
|                          | SE     | BTL    | PBTL   |        |        |        |
| X4i ([X4])               | 116 dB | —      | —      | 116 dB |        |        |
| 5XT ([5XT])              | 121 dB | —      | —      | 121 dB |        |        |
| X8 ([X8])                | 125 dB | 129 dB | —      | 129 dB |        |        |
| X12 ([X12])              | 131 dB | 136 dB | —      | 136 dB |        |        |
| X15 HiQ ([X15])          | 133 dB | —      | —      | 138 dB |        |        |
| Syva ([SYVA])            | 130 dB | 137 dB | —      | 137 dB |        |        |
| ARCS Wide ([ARCS_WIFO])  | 131 dB | 137 dB | —      | 137 dB |        |        |
| ARCS Focus ([ARCS_WIFO]) | 133 dB | 139 dB | —      | 139 dB |        |        |
| A10(i) Wide ([A10])      | 133 dB | 137 dB | —      | 137 dB |        |        |
| A10(i) Focus ([A10])     | 136 dB | 140 dB | —      | 140 dB |        |        |
| A15(i) Wide ([A15])      | 136 dB | 141 dB | —      | 141 dB |        |        |
| A15(i) Focus ([A15])     | 139 dB | 144 dB | —      | 144 dB |        |        |
| Kara II ([KARA II 70])   | 137 dB | —      | —      | 142 dB |        |        |
| Kara(i) ([KARA])         | 136 dB | —      | —      | 141 dB |        |        |
| Kiva II ([KIVA II])      | 133 dB | 138 dB | —      | 138 dB |        |        |
| KS28 ([KS28_100])        | 136 dB | —      | 143 dB | —      | —      | 143 dB |
| SB28 ([SB28_100])        | 136 dB | —      | 142 dB | —      | 142 dB |        |
| KS21(i) ([KS21_100])     | 131 dB | 138 dB | —      | 138 dB |        |        |
| SB18(i) ([SB18_100])     | 133 dB | 138 dB | —      | 138 dB |        |        |
| SB15m ([SB15_100])       | 131 dB | 137 dB | —      | 137 dB |        |        |

|                           | LA2Xi  |        |      | LA4X   | LA8 | LA12X |
|---------------------------|--------|--------|------|--------|-----|-------|
|                           | SE     | BTL    | PBTL |        |     |       |
| Syva Low ([SYVA LOW_100]) | 131 dB | —      | —    | 137 dB |     |       |
| Syva Sub ([SYVA SUB_100]) | 123 dB | 128 dB | —    | 128 dB |     |       |

## Speaker protection

The L-DRIVE transducer protection system provides a dual analysis of both signal intensity and voltage in real-time and RMS. Under extreme conditions, when component membranes reach the over-excursion zone or if the coil temperature reaches a critical point, L-DRIVE is activated and acts as a power regulator.

As a result, the amount of power delivered at any channel is adjusted to the dynamic and thermal capacity of each individual transducer.

## Monitoring and control

### User interface

The LED display provides real-time monitoring functionalities:

- power
- L-NET network
- status
- mute, level, limit, clip, and error for each output



Refer to section [Operation](#) (p.25) for detailed operating instructions.

### L-NET remote control network

Remote control of processors and amplified controllers requires setting up a private local area Ethernet network to interconnect up to 253 units (and additional devices such as Ethernet switches / AVB bridges) with a single control computer. This Ethernet network, called L-NET, uses L-COM PROTOCOL, a proprietary communication protocol based on TCP/IPv4.

The integration of the L-NET Ethernet-based network, with its high speed data transfer protocol up to 1 Gb/s, allows up to 253 amplified controllers to be controlled and monitored in real-time from LA Network Manager.

Multiple network topologies such as daisy-chain, star, and hybrid are configurable. The computer running LA Network Manager and the amplified controllers are connected to each other using industry standard CAT5e U/FTP cables (or higher category) fitted with RJ45 connectors.

The LA2Xi connects to the network via the two Ethernet etherCON I/O sockets located on its rear panel.



Refer to the **LA Network Manager** Help for detailed operating instructions.

### Third party management solutions

L-Acoustics provides SNMP support to facilitate the integration via third-party control and monitoring systems.

L-Acoustics is a certified member of the Crestron® and Extron® partner programs, and provides software modules allowing control integration into their automation systems.

L-Acoustics provides a plug-in for control and monitoring of LA2Xi, LA4X and LA12X on the QSC Q-SYS platform.

# Inspection and preventive maintenance

## How to do preventive maintenance

---

Inspect the product periodically as indicated, and after any corrective maintenance operation.

### Structure and cleanness

Before and after each deployment (touring applications), or at least once a month (fixed installations):

- [External structure](#) (p.14)
- [Cleanness](#) (p.15)


### Functionalities

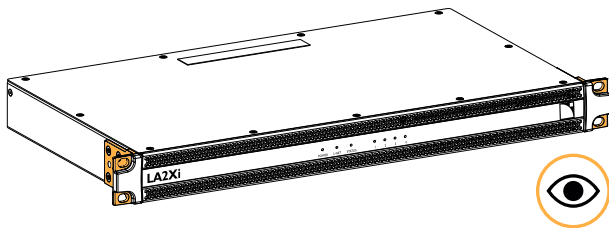
At least once a year:

- [Normal start-up sequence](#) (p.15)
- [Network functionalities and firmware](#) (p.15)

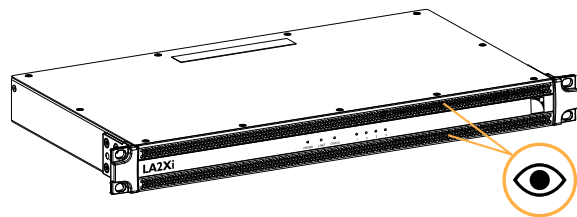
## External structure

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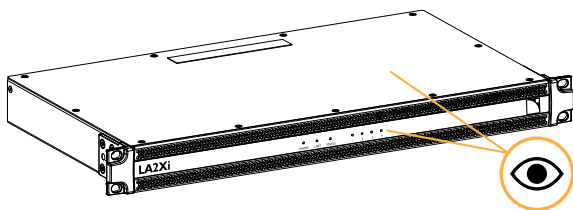
The  indicates a visual inspection.



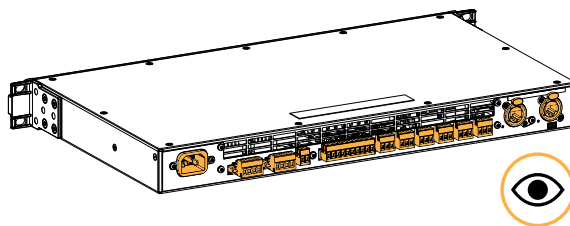
side brackets are present and not damaged



front grills are clean and not damaged  
see also [Cleanness](#) (p.15)



chassis, and LEDs are not damaged



connectors are not damaged

## Cleanness

---

### Equipment

- air blower

### Procedure

Clean the amplified controller through the front grill with an air blower.

## Normal start-up sequence

---

### Procedure

1. Plug the amplified controller to mains.
2. Check that all the LEDs lit during the start-up sequence.

## Network functionalities and firmware

---

### Equipment

- computer with LA Network Manager version 3.2.1 minimum
- CAT5e U/FTP cable

### Procedure

1. Connect the Ethernet port 1 of the amplified controller to an Ethernet port of a computer running LA Network Manager.  
Use the CAT5e U/FTP cable.
2. Run LA Network Manager.
3. Check that the amplified controllers are detected as online Units.  
Refer to the **LA Network Manager Help**.
4. Check that all LA2Xi in the system run the same version of the firmware, and that it matches with the version of LA Network Manager in use.  
Refer to the **LA NWM and Firmware Compatibility Issues** technical bulletin.
5. If convenient, update LA Network Manager and the firmware to the latest versions.



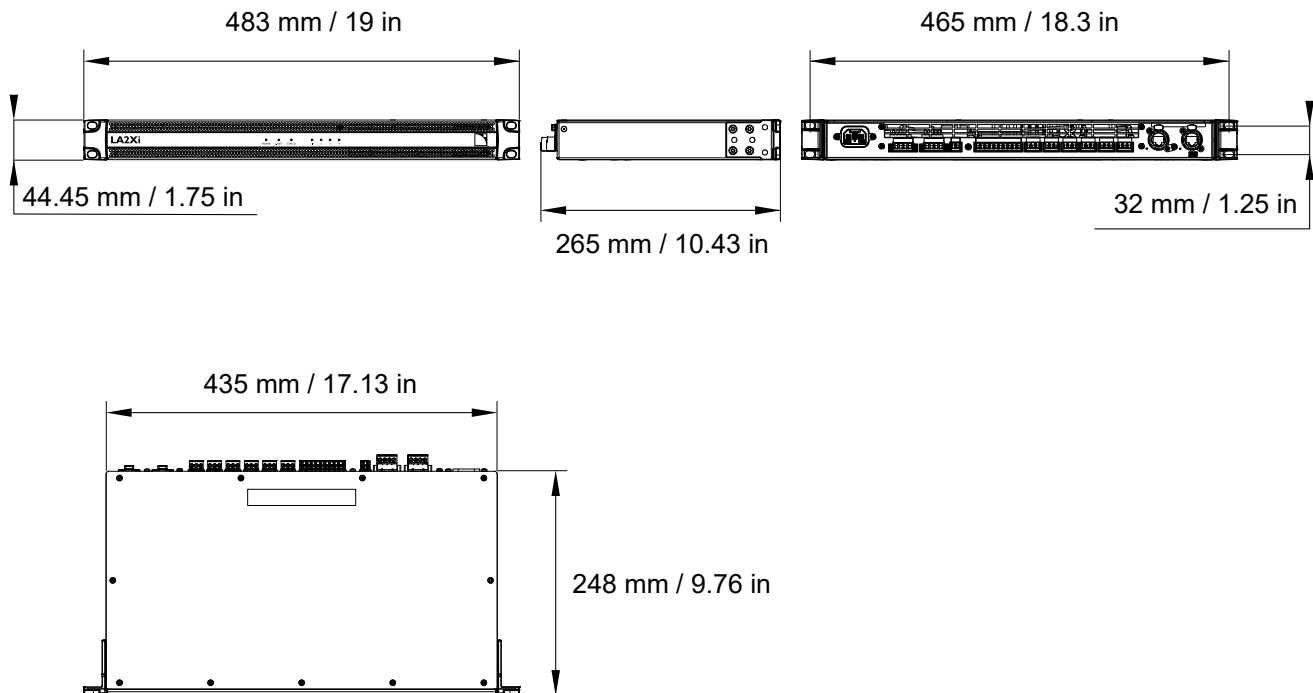
If using a third-party control system such as Crestron or Extron, check that updating firmware does not break compatibility.

# Installation

## Mounting

The LA2Xi is one rack units high (1U) and can be mounted in an EIA-standard 19" rack using the four points on the front panel. Use the fixing material provided by the rack manufacturer to mount the amplified controller to the rack front rails.

### LA2Xi dimensions



**LA2Xi is not compatible with L-Case.**

## Ventilation

To maintain moderate operating temperatures, the LA2Xi is equipped with fans and grills providing front to rear airflow.



### Ventilation instructions

Install the controller in an open area so that the front and rear panels are located at a minimum distance of 30 cm / 12 inches from any external object or structure.

Ensure the front grill is clean and dirt free.

Do not block the front and rear ventilation grills.

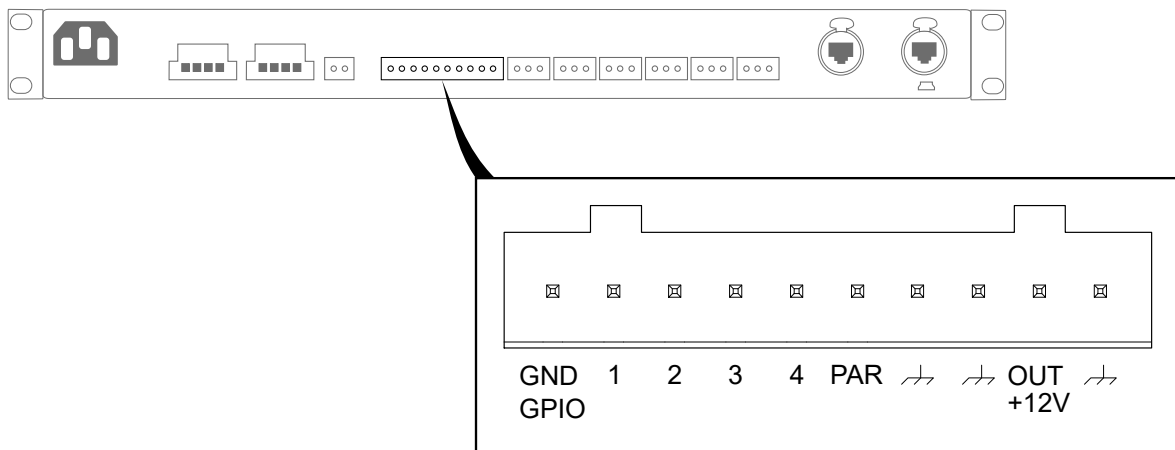
### Ventilation when rack-mounted

Do not block the ventilation grills with front or back panels or doors. If not possible, use a forced-ventilation system.

When stacking more than one controller in a rack, mount them directly on top of each other or close any open space in the rack with blank panels.

## General Purpose I/O (GPIO)

The amplified controller's rear side features a 10-point terminal block General Purpose I/O (GPIO).



|          |   |
|----------|---|
| GND      | ground  |
| 1        | input or output   |
| 2        |   |
| 3        |   |
| 4        |   |
| PAR      | Connect to a chassis ground pin for PBTL bridging. Refer to <a href="#">Speaker</a> (p.24). |
|          | chassis ground  |
|          | chassis ground  |
| OUT +12V | Used to power a contact relay, 45 mA maximum.   |
|          | chassis ground  |

GPIO can be configured using LA Network Manager. For more information, refer to the **LA Network Manager** Help.

## Connecting to AC mains

### Electrical specifications

#### AC mains specifications



#### Verify the electrical conformity and compatibility of the mains supply.

Only connect the product to an AC power outlet rated 100-240 V, 50-60 Hz, with the following current values:

100-120 V: 20 A

200-240 V: 10 A

WARNING: The product is of Class 1 construction and shall be connected to a mains socket outlet with a protective connection to earth.

#### Three-phase circuit



#### When the product is used in a three-phase circuit, verify the electrical conformity and compatibility of the three-phase circuit.


Verify that the three phases work, and balance the loads between the three phases.

Verify that the neutral and earth work.

Never try to emulate a 230 V circuit connecting an apparatus to two live wires of a 120 V three-phase circuit.

Never try to emulate a 200 V circuit connecting an apparatus to two live wires of a 100 V three-phase circuit.

Circuit breaker




**Always interconnect a Class C circuit breaker between the product and the mains supply.**

The circuit breaker current rating depends on the mains voltage rating, as follows:

100-120 V: 20 A

200-240 V: 10 A

Planning the power of the electrical generator



**Electrical generator**

You must power on the generator before powering on the product.

LA2Xi draws up to 10 A from 230 V.

A typical generator has a power factor of 0.8 and should operate at 70% load for good efficiency.

The kVA provision for one LA2Xi should therefore be:


$(10\text{ A} \times 230\text{ V}) / (0.8 \times 70\%) = 4.1\text{ kVA}$

This calculation is an example using typical values. It can be adapted using the table in section [Power consumption](#) (p.19).

Power cord

The removable power cord is fitted with a V-Lock compatible IEC connector at one end, and a country-specific plug at the other end.

| type | plug               | cable ratings | live  | neutral | ground       |
|------|--------------------|---------------|-------|---------|--------------|
| CE   | CEE7/VII, earthed  | 10 A / 250 V  | brown | blue    | green/yellow |
| CN   | GB 2099, earthed   | 10 A / 250 V  |       |         |              |
| JP   | JIS 8303, earthed  | 12 A / 125 V  | black | white   | green/yellow |
| US   | NEMA 5-15, earthed | 10 A / 125 V  |       |         |              |
|      |                    |               |       |         | green        |



Strictly apply the specific safety regulations of the country of use.

Do not defeat the ground connection of the supplied power cord using an adaptor or any other methods.

If the power plug does not match the local power outlet, have a qualified electrician wire a suitable plug.

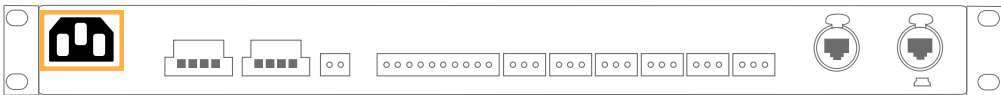
Verify that the plug conforms to the specific voltage and current rating given in section [Electrical specifications](#) (p.17).

Plugging the amplified controller

How to plug the amplified controller to the AC mains.

Procedure

- First, connect the IEC connector to the amplified controller mains panel.



- Then, connect the power plug to the mains socket.

## Power consumption

The LA2Xi power requirements depend on the load impedance and the signal level.

### Mains input power and current draw (all channels driven)

#### In SE mode

|                          |                   |                  |                  |
|--------------------------|-------------------|------------------|------------------|
| Maximum output power     | 4 × 190 W at 16 Ω | 4 × 360 W at 8 Ω | 4 × 640 W at 4 Ω |
| 1/3 output power (-5 dB) | 1.9 A / 330 W     | 2.9 A / 590 W    | 3.5 A / 740 W    |
| 1/8 output power (-9 dB) | 1.2 A / 150 W     | 1.6 A / 260 W    | 2.3 A / 430 W    |

#### In BTL mode

|                          |                   |                   |
|--------------------------|-------------------|-------------------|
| Maximum output power     | 2 × 710 W at 16 Ω | 2 × 1260 W at 8 Ω |
| 1/3 output power (-5 dB) | 2.9 A / 580 W     | 3.4 A / 710 W     |
| 1/8 output power (-9 dB) | 1.6 A / 250 W     | 2.3 A / 440 W     |

#### In PBTL mode

|                          |                   |                   |                   |
|--------------------------|-------------------|-------------------|-------------------|
| Maximum output power     | 1 × 780 W at 16 Ω | 1 × 1400 W at 8 Ω | 1 × 2550 W at 4 Ω |
| 1/3 output power (-5 dB) | 1.9 A / 320 W     | 2.9 A / 600 W     | 3.5 A / 730 W     |
| 1/8 output power (-9 dB) | 1.2 A / 160 W     | 1.7 A / 270 W     | 2.3 A / 440 W     |

#### In Idle and Standby (any mode)

|         |              |
|---------|--------------|
| Idle    | 0.5 A / 28 W |
| Standby | 0.4 A / 12 W |

Current values given for mains rated at 230 V. Multiply by:

- 2.3 for 100 V
- 1.92 for 120 V
- 1.15 for 200 V



#### Output power references

A third (1/3) of the maximum output power corresponds to the worst case scenario of a program source using highly compressed music or pink noise with amplified controller driven to clip level.

An eighth (1/8) of the maximum output power corresponds to a loud music program with a small dynamic range and 9 dB of headroom (IEC standard power rating).

## Heat power calculation

If a 4 Ω load is connected to each output channel of the LA2Xi in SE mode, each channel delivers up to 640 W.

With a standard use at one eighth (1/8) of full power (9 dB headroom), the power delivered per channel is:

$$640 \text{ W} / 8 = 80 \text{ W}$$

Therefore, a total power of:

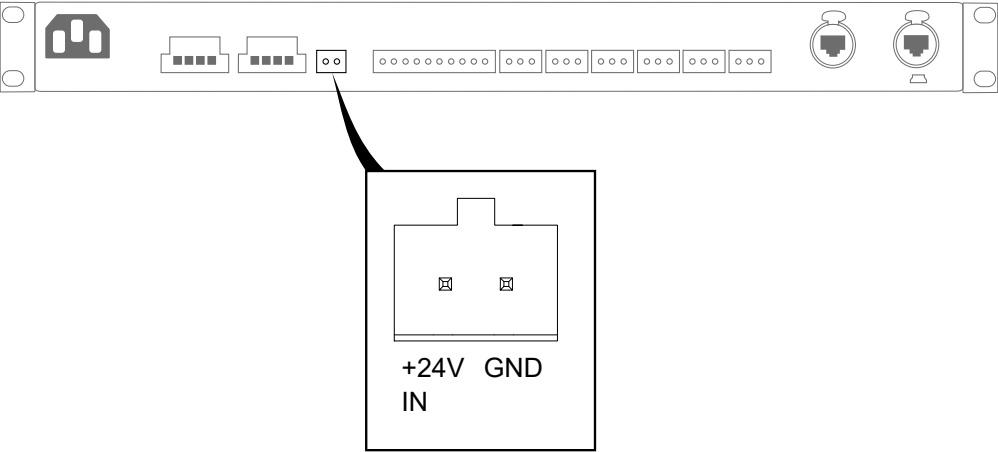
$$4 \times 80 \text{ W} = 320 \text{ W}$$

According to the table in section [Power consumption](#) (p.19), the LA2Xi power consumption is 430 W. The heat power produced is then (difference between power consumption and output power):

$$430 \text{ W} - 320 \text{ W} = 110 \text{ W}$$

## 24 V DC Input

The amplified controller's rear side features a 2-point terminal block for external powering of the DSP in case of mains failure.



The external power supply should be rated 24 V DC (± 10%) 10 W.

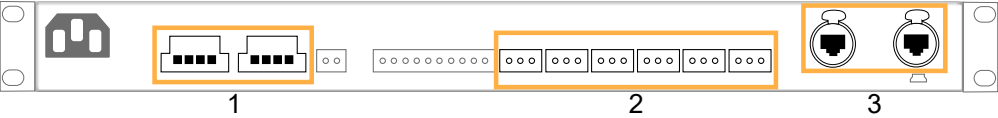
Audio and network cabling

Connection panels

The amplified controller's rear side features connectors for audio and network cabling:

- 1. For connection to the loudspeakers.
- 2. For connection of the analog and digital (AES/EBU) audio sources, and/or for linking the signals to another amplified controller.
- 3. For connection to an AVB network, and to be remotely controlled by LA Network Manager.

LA2Xi audio and network connection panels



Speaker connectors

Use the two female 4-point terminal blocks for loudspeaker connection. The connectors are wired as follows:

| left 4-point terminal block  |        |        | both 4-point terminal blocks |
|------------------------------|--------|--------|------------------------------|
|                              | SE*    | BTL*   | PBTL*                        |
| Pin 1+                       | Out 1+ | Out 1+ | Out 1+                       |
| Pin 1-                       | Out 1- | N/A    |                              |
| Pin 2+                       | Out 2+ | N/A    |                              |
| Pin 2-                       | Out 2- | Out 2- |                              |
| right 4-point terminal block |        |        |                              |
|                              | SE*    | BTL*   |                              |
| Pin 3+                       | Out 3+ | Out 3+ | Out 3+                       |
| Pin 3-                       | Out 3- | N/A    |                              |
| Pin 4+                       | Out 4+ | N/A    |                              |
| Pin 4-                       | Out 4- | Out 4- |                              |

\*SE: single-ended. BTL: bridge-tied load. PBTL: parallel bridge-tied load. Refer to [Speaker](#) (p.24).



## Analog audio

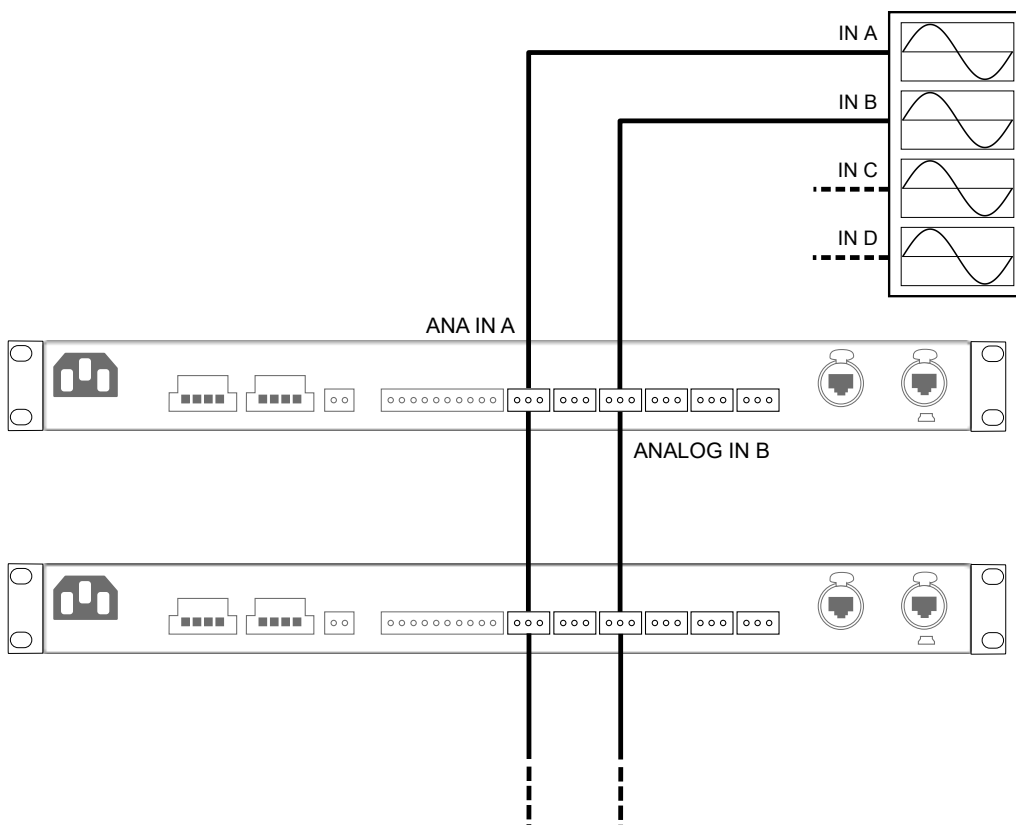
### **i** Balanced cables

Symmetrical (balanced) shielded cables are highly recommended as balanced signals are less sensitive to AC hum and radio interference.

Unbalanced lines may add noise especially over long cable runs.

In a daisy-chain layout, the input signals can be transmitted to daisy-chained amplified controllers by wiring the inputs of the next unit in the same terminal blocks.

### daisy-chaining analog audio



### **!** Analog daisy-chain and LA4/LA8 with power off or in standby

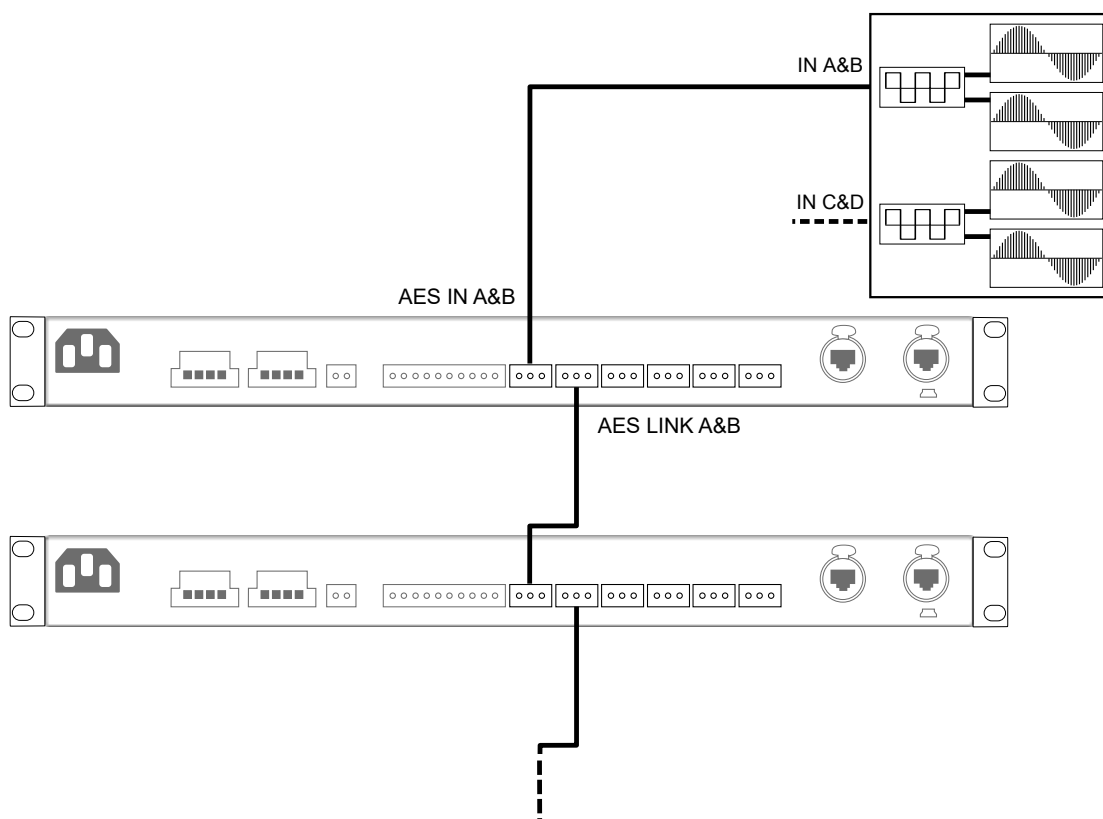
In an analog daisy-chain, LA4 and LA8 with power off or in standby cause sound distortion at high input levels to the other amplified controllers they are connected to.

Make sure all LA4 and LA8 are powered on and in operating (not in standby) mode, or disconnect them from the daisy-chain.

## Digital audio

In a daisy-chain layout, AES LINK A&B and AES LINK C&D feed the input signals to the next amplified controller in the signal chain.

### daisy-chaining digital audio



### Cables for AES/EBU digital audio

AES3 specifies that the nominal characteristic impedance of cables used for AES/EBU digital audio transmission shall be  $110 \Omega \pm 20\%$ , and closer tolerances allow for increased transmission reliability over long lengths or higher sampling rates.

Therefore, it is highly recommended to use high-quality AES/EBU rated cables only, although certain cables designed for balanced analog audio prove to be acceptable at 48 kHz sampling rate over very short distances.

It is recommended to use single lengths of cable between AES/EBU outputs and inputs. Using several shorter cables joined together reduces performance. If it is not possible to use single lengths, it is required to use the same model of cable between two AES/EBU interfaces.

In case an amplified controller shuts down, the failsafe relay makes a passive connection between the AES/EBU IN port and the LINK port to maintain continuity. However the signals are no longer refreshed for the next amplified controller, so that the input cable and the link cable must be considered as a unique input cable with regard to the maximum supported length.

In case of transmission losses, try to reduce the sampling frequency of the digital audio source. Moreover, as a general rule, avoid using sources rated beyond 96 kHz, as the maximum possible cable length is reduced, while the additional information is cancelled by SRC to 96 kHz.

## L-NET



**Do not create loops in the network setup.**



**Always place LA2Xi, LA4X, and LA12X amplified controllers *before* LA4/LA8 amplified controllers in daisy-chain networks.**

LA4 and LA8 amplified controllers are equipped with former generation 100 Mb/s Ethernet ports that cannot communicate with Ethernet ports of different capabilities, creating detection issues in LA Network Manager.

Use the etherCON connectors on the rear panel to connect LA2Xi to L-NET in a daisy-chain, star, or hybrid topology. Refer to the **LA Network Manager** Help for network setup.

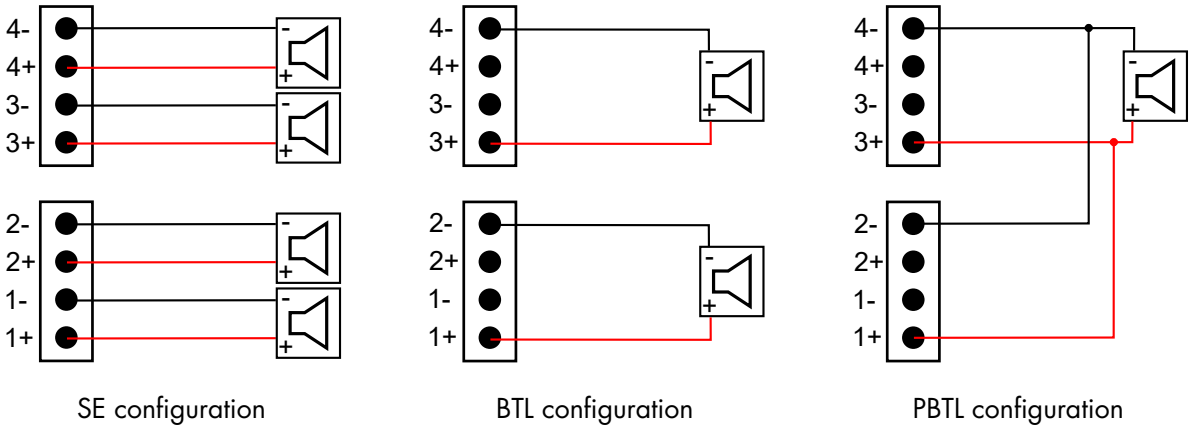
AVB

Use the two etherCON connectors on the rear panel to connect LA2Xi to an AVB network, or to use LA2Xi to create an AVB network. Refer to the **LA Network Manager** Help for more information on how to connect LA2Xi to the AVB network in daisy-chain, star or hybrid topologies.

Speaker

Use the two female 4-point terminal blocks to connect an enclosure to the amplified controller in a single-ended (SE), bridge-tied load (BTL), or a parallel bridge-tied load (PBTL) configuration. The corresponding output mode must be configured in LA Network Manager.

**!** **Strictly follow the loudspeaker wiring diagrams.**  
Risk of unwanted noise and errors (bridge modes not operational).  
Risk of acoustic cancellations and lack of audio source localization (discrepancy in loudspeaker polarities).



For PBTL configuration, it is necessary to connect the PAR pin to a ground pin. Refer to [General Purpose I/O \(GPIO\)](#) (p.17).

Bridging the connectors improves maximum SPL (refer to [Maximum SPL](#) (p.12)), but reduces the maximum number of loudspeaker enclosure per output and per amplified controller. For the enclosure drive capacity per amplified controller, refer to the **Amplification reference** technical bulletin or the **Preset guide**.

Cabling the bridged configurations must be made first, then connect LA2Xi to LA Network Manager and select the bridge mode. Unused pins do not need to be connected.

For more specific cabling schemes, refer to the **Amplification reference** technical bulletin.

Connector references

| usage              | number | type                          | reference                             |
|--------------------|--------|-------------------------------|---------------------------------------|
| GPIO               | 1      | male 10-point terminal block  | Phoenix MSTB 2.5/10-ST-5.08 – 1757093 |
| 24 V DC input      | 1      | male 2-point terminal block   | Phoenix MSTB 2.5/2-ST-5.08 – 1757019  |
| loudspeaker output | 2      | female 4-point terminal block | Phoenix IC 2.5/4-STF-5.08 – 1825336   |
| audio input/link   | 6      | male 3-point terminal block   | Phoenix MSTB 2.5/3-ST-5.08 – 1757022  |

The connectors have a pitch of 5.08 mm (0.200").

# Operation

## Powering on/off

LA2Xi turns on immediately when plugged, and turns off immediately when unplugged (no on/off switch), refer to [Plugging the amplified controller](#) (p.18).

If power is lost, the amplified controller shuts down, but all parameters are restored when the amplified controller turns on again.

The POWER LED is lit in orange when the amplified controller is in standby mode.



Use LA Network Manager to set the amplified controller to standby or back to operating mode. Refer to the **LA Network Manager** Help.

## Interpreting the front panel LEDs

### L-NET

The L-NET LED on the front panel displays the L-NET status.



- green: when LA2Xi is remotely controlled by LA Network Manager (refer to the **LA Network Manager** Help).
- orange: when LA2Xi is remotely controlled by a third-party software.
- off: when no software remotely controls the amplified controller.

### STATUS

The STATUS LED on the front panel displays the state of the amplified controller.



- green: when the LA2Xi operates normally
- orange: during firmware update
- red: when a fault is detected in the LA2Xi circuitry, indicating a protection system is active.

Refer to the **LA Network Manager** Help for more information on errors.

Meters

The four LED meters display the state of the corresponding output channel.



|        |                      |   |
|--------|----------------------|---|
| red    | continuous           | the output voltage reaches the maximum level (signal clip)            |
|        | fade in/out          | the output channel is muted   |
|        | 1 s blink            | there is an error on the output channel                               |
| orange | continuous           | the L-DRIVE limiter is activated with gain reduction of at least 3 dB |
|        | blink                | during identification from LA Network Manager                         |
| green  | high                 | the output voltage reaches 20 dB below the maximum level              |
|        | low                  | the output voltage reaches 60 dB below the maximum level              |
|        | progress from 1 to 4 | during firmware update  |
| off    |                      | the output voltage is more than 60 dB below the maximum level         |

## Other operations

---

The following operations can only be done from LA Network Manager:


- Preset management (loading, storing, deleting).
- Preset parameters (gain, delay, polarity, input selection).
- Group parameters (names, gains, delays, contour EQs).
- Input settings (input modes, fallback modes, fallback gain).
- Output modes.
- Mute/Unmute.
- GPIO configuration.
- Monitoring and status (temperature, mains voltage, firmware and preset library versions, settings protection).
- IP settings (for subnet settings, refer to [Setting the IP via USB](#) (p.27)).
- Spanning tree setting (RSTP) and network modes.
- Standby mode and reboot.

Refer to the **LA Network Manager** Help for more information.

## Setting the IP via USB

If the IP address of LA2Xi needs to be set on a different subnet, then proceed as follows.

### Procedure

1. Identify the IP address and the subnet mask of the network card of the computer on which LA Network Manager will be run.
2. Open the application with LA Network Manager.  
Click  > **Utilities** > **USB Terminal**.
3. Click **Scan** to retrieve the list of serial ports on the computer. Expand the list to visualize the ports detected.
4. Connect LA2Xi to the computer with a USB cable.
5. Click **Scan**, and select the COM port that appeared in the list.
6. Click **Refresh** to retrieve the LA2Xi information.
7. Enter the same **Netmask** as that of the network card that will be used to connect to the LA2Xi.
8. Assign a unique IP address to each LA2Xi on the corresponding subnet.
9. Click **Apply**.

# Specifications

All values given in this section are typical values.

## General

---

### Output power

|   |  |
|---|--|
| 12 dB Crest Factor 2ms, 1 kHz, all channels driven, sine burst      | 4 × 190 W peak (at 16 Ω)                                       |
|   | 4 × 370 W peak (at 8 Ω)  |
|   | 4 × 710 W peak (at 4 Ω)  |
| no limiter 200 ms, < 1% THD, 1 kHz, all channels driven, sine burst | 4 × 190 W (at 16 Ω)  |
|   | 4 × 360 W (at 8 Ω)   |
|   | 4 × 640 W (at 4 Ω)   |
| Amplification class   | High-efficiency Class D  |
| Digital Signal Processor (DSP)                                      | Gen. 4 dual SHARC 32-bit, floating point, 96 kHz sampling rate |
| Frequency response 20 Hz - 20 kHz                                   | ± 0.25 dB  |
| Distortion THD+N  | < 0.1%   |
| Output dynamic range  | > 113 dB (20 Hz - 20 kHz, 8 Ω, A-weighted, digital input)      |
|   | > 102 dB (20 Hz - 20 kHz, 8 Ω, A-weighted, analog input)       |
| Amplification gain  | 32 dB  |
| Noise level   | < -78 dBV (20 Hz - 20 kHz, 8 Ω, A-weighted, digital input)     |
|   | < -67 dBV (20 Hz - 20 kHz, 8 Ω, A-weighted, analog input)      |
| Channel separation  | > 80 dB (at 1 kHz, 8 Ω, 60 W)                                  |
| Damping factor  | > 80 (20 Hz - 200 Hz, 4 Ω load)                                |
| Output delay  | 0 ms to 1000 ms  |

## Mains input power and current draw (all channels driven)

### In SE mode

|                          |                   |                  |                  |
|--------------------------|-------------------|------------------|------------------|
| Maximum output power     | 4 × 190 W at 16 Ω | 4 × 360 W at 8 Ω | 4 × 640 W at 4 Ω |
| 1/3 output power (-5 dB) | 1.9 A / 330 W     | 2.9 A / 590 W    | 3.5 A / 740 W    |
| 1/8 output power (-9 dB) | 1.2 A / 150 W     | 1.6 A / 260 W    | 2.3 A / 430 W    |

### In BTL mode

|                          |                   |                   |
|--------------------------|-------------------|-------------------|
| Maximum output power     | 2 × 710 W at 16 Ω | 2 × 1260 W at 8 Ω |
| 1/3 output power (-5 dB) | 2.9 A / 580 W     | 3.4 A / 710 W     |
| 1/8 output power (-9 dB) | 1.6 A / 250 W     | 2.3 A / 440 W     |

### In PBTL mode

|                          |                   |                   |                   |
|--------------------------|-------------------|-------------------|-------------------|
| Maximum output power     | 1 × 780 W at 16 Ω | 1 × 1400 W at 8 Ω | 1 × 2550 W at 4 Ω |
| 1/3 output power (-5 dB) | 1.9 A / 320 W     | 2.9 A / 600 W     | 3.5 A / 730 W     |
| 1/8 output power (-9 dB) | 1.2 A / 160 W     | 1.7 A / 270 W     | 2.3 A / 440 W     |

### In Idle and Standby (any mode)

|         |              |
|---------|--------------|
| Idle    | 0.5 A / 28 W |
| Standby | 0.4 A / 12 W |

Current values given for mains rated at 230 V. Multiply by:

- 2.3 for 100 V
- 1.92 for 120 V
- 1.15 for 200 V

## Power supply

|                              |  |
|------------------------------|--|
| Model                        | universal Switched Mode Power Supply (SMPS) with power factor correction (PFC) |
| Power factor                 | > 0.9 (at full load)   |
| Mains rating                 | 100 V AC - 240 V AC ± 10%, 50 Hz - 60 Hz, 550 W                                |
| Nominal current requirements | 20 A for 100 V AC - 120 V AC, 10 A for 200 V AC - 240 V AC                     |
| Connector                    | IEC V-Lock compatible  |

## Operating conditions

|                  |                                 |
|------------------|---------------------------------|
| Temperature      | -5 °C / 23 °F to 50 °C / 122 °F |
| Maximum altitude | 2000 m                          |

## Protection

|                        |  |
|------------------------|--|
| Mains and power supply | over and under voltage<br>over temperature<br>overcurrent (fuse protection, and inrush current protection) |
| Power outputs          | overcurrent<br>DC<br>short circuit<br>over temperature   |

|                                  |   |
|----------------------------------|---|
| Transducers protection           | L-DRIVE<br>excursion<br>temperature<br>over-voltage                               |
| Cooling system                   | fans with temperature-controlled speed  |
| Fan noise (free field, 1 m)      | at minimum speed: 31 dBA<br>at maximum speed: 56 dBA                              |
| <b>Interface and connections</b> |   |
| Indicators                       | 1 power LED, 1 status LED, and 1 L-NET LED<br>4 signal LEDs                       |
| Output connectors                | 2 female 4-point terminal blocks  |
| L-NET connectors                 | 2 × 1 Gb/s Ethernet etherCON I/O  |
| Mini USB connector               | 1 - for configuring IP settings using the USB Terminal tool of LA Network Manager |

## Input signal distribution

---

### Interface and connections

|                              |  |
|------------------------------|--|
| Routing and summation matrix | 4 × 4  |
| Input                        | 4 male 3-point terminal blocks:<br>2 for Analog<br>2 for AES/EBU or Analog |
| Link                         | 2 male 3-point terminal blocks for AES/EBU                                 |

### Analog input

|                     |   |
|---------------------|---|
| Input impedance     | 22 k $\Omega$ (balanced)  |
| Maximum input level | 22 dBu (balanced, THD 1%)   |
| A/D conversion      | 32-bit analog/digital converter (121 dB dynamic range, A-weighted, 20 Hz - 20 kHz ) |

### Digital input

#### Supported digital input format

|                         |  |
|-------------------------|--|
| Standards               | AES/EBU (AES3)                               |
| Sampling frequency (Fs) | 44.1, 48, 88.2, 96, 176.4, or 192 kHz        |
| Word length             | 16, 18, 20, or 24 bits                       |
| Synchronization         | signal resampled to internal clock at 96 kHz |

#### Sample Rate Converter (SRC)

|                    |  |
|--------------------|--|
| Sampling frequency | 96 kHz (SRC referenced to the amplified controller internal clock) |
| Word length        | 24 bits  |
| Dynamic range      | 140 dB   |
| Distortion THD+N   | < -120 dBFS (dB Full Scale)  |
| Bandpass ripple    | ±0.05 dB 20 Hz - 40 kHz, 96 kHz                                    |

## Input gain

|       |                  |
|-------|------------------|
| Range | -12 dB to +12 dB |
| Steps | 0.1 dB           |

## Latency

---

### Analog and AES/EBU

|                               |         |
|-------------------------------|---------|
| In standard operating mode    | 3.84 ms |
| In low latency operating mode | 0.76 ms |

## AVB

---

|  |   |
|--|---|
| Featured AVB entities                            | MILAN™-certified, Avnu™-certified AVB Bridge and Listener   |
| Standards  | Ethernet AVB:<br>IEEE 802.1BA-2011<br>Transport: IEEE 1722-2016 (AVTP)<br>Control: IEEE 1722.1-2013 (AVDECC)  |
| Input audio stream                               | Number: 1 in redundancy mode or in normal mode<br>Class: A<br>Maximum network latency: 2 ms<br>Formats:<br>AAF PCM32, up to 2 × 8 channels, at 48 kHz or 96 kHz<br>IEC 61883-6 AM824, 8 channels, at 48 kHz or 96 kHz |
| Media clock                                      | automatically synchronized on clock of the connected AVB input stream (upsampling at 96 kHz in case of stream at 48 kHz)  |
| Streams forwarded by AVB Bridge (in normal mode) | up to 32  |

## Automatic fallback option

---

|                         |  |
|-------------------------|--|
| Mode                    | AVB to AES or analog<br>AES to analog  |
| Switchover conditions   | AVB: loss of lock<br>AES to analog: no clock, loss of lock, CRC error, bipolar encoding error or data slip |
| Constant delay          | independent from input Fs  |
| Constant level          | upon manual user selection of gain, independent from input Fs  |
| Revert to initial input | upon manual user selection   |

## Remote control and monitoring

---

|                    |                                      |
|--------------------|--------------------------------------|
| Network connection | dual-port Ethernet Gigabit interface |
|--------------------|--------------------------------------|

|                                     |   |
|-------------------------------------|---|
| Network redundancy                  | RSTP  |
| General Purpose I/O (GPIO)          | 1 × 10-point terminal block:<br>4 in or out<br>1 ground<br>1 × 12 V out<br>1 for PBTL configuration |
| External DSP backup voltage input   | 1 × 24 V DC / 0.5 A 2-point terminal block  |
| L-Acoustics remote control software | LA Network Manager 3  |
| Third-party management solutions    | SNMP, Extron <sup>®</sup> , Crestron <sup>®</sup> , QSC Q-SYS                                       |

Extron is a registered trademark of Extron Electronics.

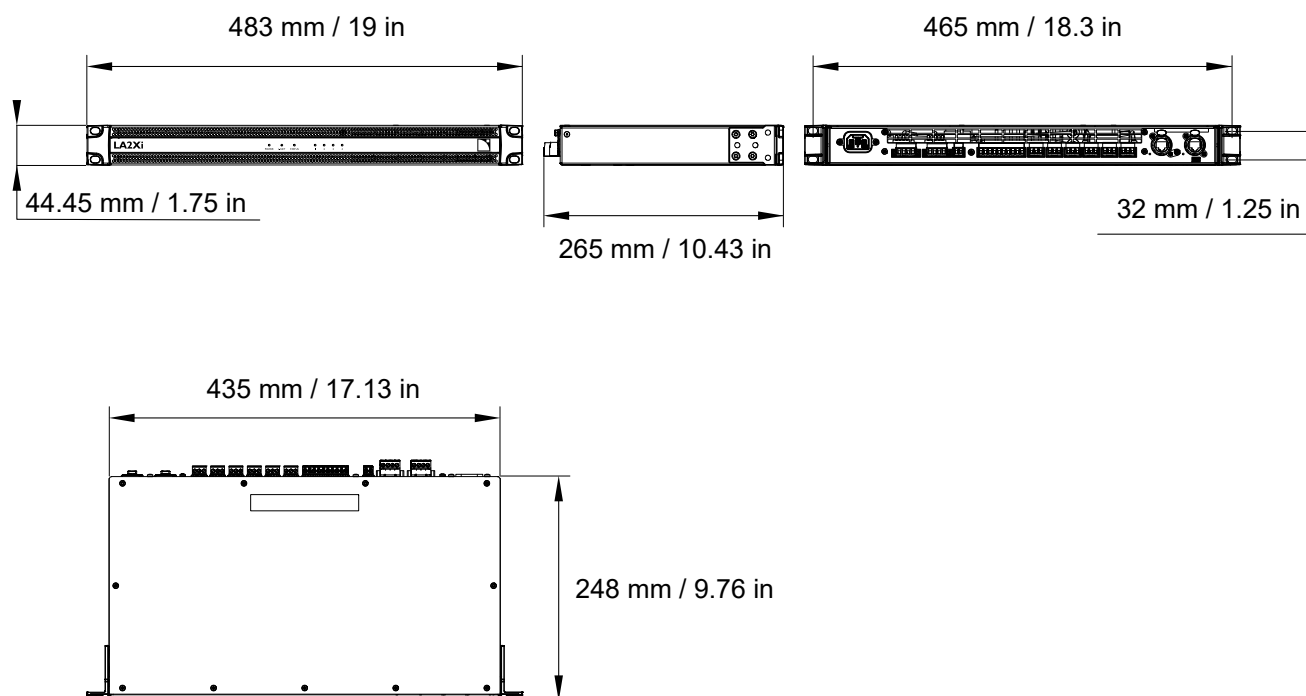
Crestron is a trademark or registered trademark of Crestron Electronics, Inc. in the United States, other countries or both.

QSC<sup>®</sup> and Q-SYS<sup>™</sup> are trademarks or registered trademarks of QSC, LLC in the U.S. Patent and Trademark Office and other countries.

## Physical data

|                   |                 |
|-------------------|-----------------|
| Height            | 1U              |
| Weight            | 4.4 kg / 9.7 lb |
| Finish            | black           |
| Protection rating | IP2x            |

## LA2Xi



## Glossary

|             |  |
|-------------|--|
| <b>CE</b>   | Europe   |
| <b>CHK</b>  | check procedure  |
| <b>CN</b>   | China  |
| <b>D/R</b>  | disassembly/reassembly procedure   |
| <b>JP</b>   | Japan  |
| <b>KR</b>   | repair kit   |
| <b>N.m</b>  | newton meter, international torque unit, 1 N.m = 9 in lbf                    |
| <b>SMPS</b> | Switched Mode Power Supply (power supply inside of the amplified controller) |
| <b>US</b>   | United States  |

## List of AVB reservation (RSV) errors

| code | error                              | resolution   |
|------|------------------------------------|--|
| 1    | Out of bandwidth                   | <p>There is not enough bandwidth on the path from the talker to the listener.</p> <ul style="list-style-type: none"> <li>• Check that all the bridges in use have a speed of 1 Gb/s (minimum).</li> <li>• Check the configuration of the bridges: some allow a higher bandwidth allocation for AVB streams (default is 75% of link speed).</li> <li>• Change the stream format: select a lower sampling rate, reduce the number of channels if some are unused.</li> <li>• Optimize the stream and channel usage: for each talker, use the minimum number of streams and the maximum number of channels per stream.</li> <li>• Disconnect some of the already connected streams to release bandwidth.</li> </ul> |
| 2    | Out of bridge resources            | <p>One of the bridges on the path from the talker to the listener reached its limits.</p> <ul style="list-style-type: none"> <li>• Try to reboot the bridges on the path from the talker to the listener.</li> <li>• Try to disconnect some streams.</li> </ul>  |
| 3    | Out of bandwidth for traffic class | See error 1.   |
| 4    | Stream ID used by another talker   | <p>A device on the network is behaving incorrectly.</p> <ul style="list-style-type: none"> <li>• Disconnect and reconnect the stream.</li> <li>• Reboot the talker.</li> <li>• Reboot the bridges on the path from the talker to the listener.</li> <li>• If the talker supports manual configuration of the stream parameters, configure the stream to use another Stream ID.</li> </ul>  |
| 5    | Stream dest. addr. already in use  | <p>A device on the network is behaving incorrectly.</p> <ul style="list-style-type: none"> <li>• Disconnect and reconnect the stream.</li> <li>• Reboot the talker.</li> <li>• Reboot the bridges on the path from the talker to the listener.</li> </ul>  |
| 6    | Stream preempted by higher rank    | <p>An emergency stream has been connected and reclaimed the bandwidth that was used by the Unit stream.</p> <ul style="list-style-type: none"> <li>• Wait until the emergency stream is disconnected (bandwidth is automatically reallocated).</li> <li>• Try the resolutions of error 1.</li> </ul>   |

| code | error                                  | resolution   |
|------|--|--|
| 7    | Reported latency has changed           | <p>A device on the network is behaving incorrectly.</p> <ul style="list-style-type: none"> <li>• Disconnect and reconnect the stream.</li> <li>• Reboot the talker.</li> <li>• Reboot the bridges on the path from the talker to the listener.</li> </ul>  |
| 8    | Egress port is not AVB capable         | <p>Temporarily displayed when a network cable is disconnected then reconnected.</p> <p>If displayed for more than a few seconds, it indicates one of the switches in the network is non-AVB capable, or is configured incorrectly.</p> <ul style="list-style-type: none"> <li>• Only use AVB-capable bridges on the path from the talker to the listener.</li> <li>• If the bridges support configuration of the SR Class priority, configure all the bridges with the same setting (default is 3 for Class A streams).</li> </ul> |
| 9    | Use a different dest. address          | <p>One of the bridges on the path from the talker to the listener has used all of its internal resources.</p> <ul style="list-style-type: none"> <li>• If the talker supports manual configuration of the stream parameters, configure it to use another destination MAC address.</li> <li>• Try to reboot the talker to make it use another MAC address.</li> <li>• Disconnect some already reserved streams.</li> </ul>  |
| 10   | Out of MSRP resources                  | <p>One of the bridges on the path from the talker to the listener has reached its limits.</p> <ul style="list-style-type: none"> <li>• Try to disconnect some streams.</li> <li>• Try to reboot the bridges on the path from the talker to the listener.</li> </ul>  |
| 11   | Out of MMRP resources                  | <p>One of the bridges on the path from the talker to the listener has reached its limits.</p> <ul style="list-style-type: none"> <li>• Try to disconnect some streams.</li> <li>• Try to reboot the bridges on the path from the talker to the listener.</li> </ul>  |
| 12   | Cannot store dest. addr.               | <p>One of the bridges on the path from the talker to the listener has reached its limits.</p> <ul style="list-style-type: none"> <li>• Try to disconnect some streams.</li> <li>• Try to reboot the bridges on the path from the talker to the listener.</li> </ul>  |
| 13   | Req. priority is not an SR class       | <p>The talker is behaving incorrectly, or the switches configuration has changed while the stream was active.</p> <ul style="list-style-type: none"> <li>• Disconnect and reconnect the stream.</li> <li>• Reboot the talker.</li> </ul>   |
| 14   | Max frame size too big for media       | <p>The talker is behaving incorrectly.</p> <ul style="list-style-type: none"> <li>• Disconnect and reconnect the stream.</li> <li>• Reboot the talker.</li> </ul>  |
| 15   | MSRP fan-in ports limit reached        | <p>One of the bridges on the path from the talker to the listener has AVB ports usage limitation and has reached its limits.</p> <ul style="list-style-type: none"> <li>• If possible, change the configuration of the bridges to allow more simultaneous usage of AVB ports.</li> <li>• Review the network cabling to use less ports on the limiting bridge(s).</li> </ul>  |
| 16   | Changed first value for reg. stream ID | <p>A device on the network is behaving incorrectly.</p> <ul style="list-style-type: none"> <li>• Disconnect and reconnect the stream.</li> <li>• Reboot the talker.</li> <li>• Reboot the bridges on the path from the talker to the listener.</li> </ul>  |
| 17   | VLAN blocked on egress port            | <p>One of the bridges on the path from the talker to the listener is incorrectly configured.</p> <ul style="list-style-type: none"> <li>• Configure the bridges to allow dynamic VLAN registration.</li> <li>• If possible, configure the talker to use a different VLAN (one that is authorized by the bridges).</li> </ul>   |

| <b>code</b> | <b>error</b>                    | <b>resolution</b>   |
|-------------|---------------------------------|---|
| 18          | VLAN tagging off on egress port | One of the bridges on the path from the talker to the listener is incorrectly configured. <ul style="list-style-type: none"><li>• Configure the bridges to enable VLAN tagging of the egress packets.</li></ul> |
| 19          | SR class priority mismatch      | A wrongly configured AVB bridge is present in the network. <ul style="list-style-type: none"><li>• Configure all the bridges with the same setting (default is 3 for Class A streams).</li></ul>                |

# Approvals

EU Declaration of Conformity (DoC)

## EU Declaration of Conformity (DoC)

We

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declare that the DoC is issued under our sole responsibility and belongs to the following product:

### **LA2Xi amplified controller**

The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

**2014/35/EU:** Low Voltage Directive  
**2014/30/EU:** Electro-Magnetic Compatibility Directive  
**2011/65/EU:** RoHS 2 Directive

The following harmonized standards and technical specifications have been applied:

**EN 62368-1: 2014** Audio/video, information and communication technology equipment — Part 1: Safety requirements  
**EN 55032: 2015** Electromagnetic compatibility of multimedia equipment — Emission Requirements  
**EN 55035:2017** Electromagnetic compatibility of multimedia equipment — Immunity requirements

Technical file compiled by:

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13/10/2020



Genio KRONAUER, Electronics Director

LA2Xi is compliant with the following:



Avnu Alliance and the Avnu design mark are registered trademarks and/or service marks of Avnu Alliance.



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