THE HEART OF L-ISA IMMERSIVE HYPERREAL SOUND

The L-ISA Processor is a hardware solution that is exclusively dedicated to spatial audio processing, providing state of the art object-based mixing to the most demanding immersive audio productions.

Combining a powerful multi-core architecture with a compact form factor, the LISA Processor is the audio heart of each LISA system. It offers spatial processing and room simulation for up to 96 audio objects based on speaker positioning information and mixing parameters (pan, width, distance, elevation, aux send) and provides up to 64 audio outputs to L-Acoustics amplified controllers. The LISA Processor is remotely and uniquely controlled by the LISA Controller software.

SPATIAL PROCESSING

In an object-based mixing approach, the properties of each sound object are defined independently from the loudspeaker layout – so the entire mix can be faithfully scaled from the studio to a wide variety of venue and system configurations.

The LISA Processor provides five parameters to the mixing engineer for each sound object:

- PAN: controls horizontal location
- WIDTH: controls perceived size, from point source to panoramic
- DISTANCE: controls perceived proximity (and applies the appropriate reverberation algorithm)
- ELEVATION: controls vertical location
- AUX SEND: provides a classic post-distance auxiliary bus send

PATENT-PENDING OBJECT-BASED ROOM ENGINE

The LISA room engine, accessible via the DISTANCE mixing parameter, allows users to naturally re-create different room acoustics within the same venue or show. Specifically designed for object-based audio and variable space configurations, the engine uses multi-channel 3D processing to diffuse energy across many loudspeakers, eliminating audible electronic processing.
I/O & DSP ARCHITECTURE

**INPUTS**
Up to 96 channels

- **WORD CLOCK**
- **MADI Optical 1**
- **MADI Optical 2**
- **MADI BNC**

**DSP**
Multicore floating point processing 44.1, 48 or 96kHz sampling rates
Latency < 5ms

- **INPUT ROUTING**
  - Spatial Processing: Direct sound
  - Room Engine: Early/Late

- **MIXDOWNS**
  - AUX

- **OUTPUT ROUTING**
  - LISA SPEAKERS

**OUTPUTS**
Up to 64 channels
(mirrored)

- **HEADPHONE**
  - 1 x AES/EBU
- **MADI Optical 1**
- **MADI Optical 2**
- **MADI BNC**

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**L-ISA CONTROLLER SOFTWARE**

- Windows 7+ / macOS 10.12+
- Online or offline setup/programming
- Control up to 96 objects
- Speaker layout import from Soundvision
- Advanced Grouping features
- Advanced Snapshot features
- Remote control from DeskLink enabled mixing consoles
- Automation via VST/AAX L-ISA plugin
- External control via OSC
- Dynamic source positioning via certified tracking systems

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**WORKFLOW**

The LISA Processor can sit at the heart of a pre-production, post-production or live workflow, thanks to control integration into major Digital Audio Workstations or mixing consoles.
AUDIO SIGNAL DISTRIBUTION

LISA Processor as "In-Line" device

LISA Processor as "Insert" device

AUDIO CLOCK DISTRIBUTION

Master Clock Generator

FOH Mixing Console(s) → Playback Engine (DAW) → LISA Processor → Recording/Mobile → Mon Mixing Console(s) → External Effects → Stage Racks

External Effects → Stage Racks
CONNECTIONS

• Audio inputs
  Sampling rate 44.1 kHz and 48 kHz:
  MADI optical 1: inputs 1 to 64
  MADI optical 2: inputs 65 to 96
  Sampling rate 96 kHz:
  MADI optical 1: inputs 1 to 32
  MADI optical 2: inputs 33 to 64
  MADI BNC 3: inputs 65 to 96

• Audio outputs
  MADI optical 1 / MADI optical 2 / BNC: redundant outputs 1-64 (48 kHz) / 1-32 (96 kHz)
  1 automatic stereo headphone downmix (analog, 6.3 mm TRS, 75 Ohms)
  1 automatic stereo downmix (AES/EBU, XLR)

• Audio Clock sources
  Word Clock In (BNC)
  MADI optical in (1, 2) / BNC in (3)

• Network
  1 Gb/s Ethernet port (RJ45) for remote control and monitoring from LISA Controller

FRONT AND REAR PANELS

1. Power switch
2. Status LED
3. Fan grill
4. Mains switch
5. IEC mains inlet
6. RJ45 Ethernet connector
7. MADI 1 i/o (optical)
8. MADI 2 i/o (optical)
9. Stereo headphones out (6.3 mm TRS)
10. Stereo AES/EBU out (breakout XLR)
11. MADI 3 i/o (BNC)
12. Word Clock i/o (BNC)

PHYSICAL

H/W/D 88 mm (2U) x 482.6 mm x 350.8 mm
3.5" (2U) x 19" x 13.78"

Weight (net) 8.9 kg / 19.6 lb

Finish black

IP IP20