AOIP & MADI MULTICHANNEL SOUND CARD

LX-IP provides the perfect gateway from mission critical applications to RAVENNA and AES67 AoIP networks. Its 64 I/O channels, 0.5 ms latency and phase accuracy match all the requirements of demanding applications for multiple channels playout, recording, and processing.

Its hardware-based architecture maintains performance regardless of the computational load of other applications running on the host system. LX-IP with MADI optional interface provides a seamless migration path from legacy digital audio to AoIP and provides all MADI features described below.

64 I/O channels, ultra-low latency, and phase-accurate audio distribution on synchronous AoIP networks

Zero-latency onboard routing between 2*64 RAVENNA/AES67 channels, 64 DAW channels and (option) 64 MADI channels

64 audio channels of playback/recording between a DAW and an AES67 / RAVENNA network, and MADI equipment (option)

Works under Windows and Linux

Can be set as PTP slave.
The MADI output and WordClock clocks are then derived from the PTP clock

Can be set as PTP Grand Master . PTP is then derived from the internal clock, or the WordClock input, or the MADI clock..

Phase-accurate clock synchronization between digital audio and AoIP networks

Network redundancy (SMPTE 2022-7)

KEY FEATURES

Secure content delivery: HW-based permanence of service whatever the applications running on the host PC

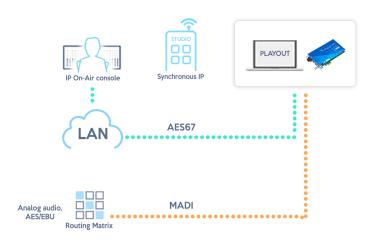Same latency as Digital audio: Sub-millisecond round trip latency

Seamless migration to IP: High density, ultra-low latency and phase accurate AoIP / PC / MADI bridge

Ensure interoperability: LX-IP is fully compliant with triple standards AES67, RAVENNA and MADI (AES10)

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1   CONFIGURATION

- **Bus/Format:** PCI Express(R) x1 (compatible x1, x4, x8, x16 slots)

- **Size:** 111.15 mm x 167.65 mm x 20 mm

- **Power requirements (+3.3V/+12V):** 0.4 A / 0.12 A

- **Operating: temp / humidity (non-condensing):** 0°C / +50°C • 5% / 90%

- **Storage: temp / humidity (non-condensing):** -5°C / +70°C • 0% / 95%

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2   AUDIO AND CLOCKS

- **Connectors**
  - 2 Gigabit Ethernet RJ45 ports for RAVENNA I/O (dual-ports, or SMPTE 2022-7 redundancy)
  - 1 optical connector for MADI I/O (Factory option)
  - 1 BNC for Word Clock In / Out

- **RAVENNA I/O channels:** 64/64 I/O (Mono) channels at 44.1 kHz or 48 kHz (64/64 I/O on each Gigabit Ethernet interface). 8 I/O channels at 192 kHz.

- **RAVENNA packet size:** From 128 down to 1 (ultra-low latency profile) audio samples per RAVENNA packet

- **AES67 compliance:** Full compliance in all respects with AES67. SMPTE 2022-7

- **Supported audio payload formats:** PCM16 / PCM24 / PCM32 / AM824 (PCM24+AES3 channel status)

- **PC Record/Play channels:**
  - 64/64 simultaneous Record/Play channels to/from PC

- **MADI (Factory option):**
  - Optical I/O connector,
  - 64/64 mono I/Os at 48 kHz ,32/32 Mono I/O at 96 kHz

- **Word Clock input or output**
  - BNC connector, Input/Output mode software selectable
  - TTL input, 75 Ohms / High Z impedance
  - Output: Max 5 Vpp, 75 Ohms output impedance

- **Clock sources:**
  - PTPv2 (IEEE1588-2008), internal, Word Clock or MADI
  - Local clock eligible as GrandMaster PTP
  - Local clock precision: better than 10 ppm

- **Sampling frequencies**
  - From local clock: 44.1, 48 , 96, 192 kHz
  - From network or Word Clock: 44.1, 48, 96, 192 kHz
  - From MADI: 44.1, 48, 96 kHz

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3   CONTROL AND ROUTING

- **Control:**
  - HTTP (web pages from embedded server)
  - EMBER+

- **Routing:**
Zero-latency on-board routing matrix between RAVENNA, PC Rec/Play and optional MADI channels

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4   ENVIRONMENT

- **Latency**: Round trip time down to 0.8 ms (excluding IP network)

- **Supported operating systems:**
  - Windows as of Windows 10 and Windows Server 2012 (32/64bits)
  - Linux: Ubuntu LTS as of ver.14.04, Debian LTS as of ver. 8, CentOS as of Cent OS7.
  Source code can be compiled for other Linux flavours.

- **Supported driver interfaces:**
  - Windows: ASIO, WASAPI / WDM DirectSound
  - Linux: ALSA