

## OPERATIONAL DESCRIPTION

### 1.1. Equipment description



Professional Multichannel Sound Cards with Livewire connectivity



## FEATURES

PCX-IP LW881e and PCX-IP LW1221e are sound cards for use with Axia Livewire™ systems, with PCI EXPRESS™ (PCIe®) bus interface. They are in PCI EXPRESS™ x1 format and can thus be plugged into any PCIe® slot (x1, x4, x8, x16).

### PCX-IP LW881 main hardware features

- 1 RJ-45 Ethernet port allowing for extraction of up to 8 mono channels from the Livewire network, and insertion of up to 8 mono channels in the Livewire network
- 1 Sub-D 9 pin connector for 5 physical GPI / 5 physical GPO transmitted through the Livewire network.
- 48 kHz sampling frequency
- Several cards can be plugged in one PC

### PCX-IP LW1221 main hardware features

- 1 RJ-45 Ethernet port allowing for extraction of up to 2 mono channels from the Livewire network, and insertion of up to 12 mono channels in the Livewire network
- 1 Sub-D 9 pin connector for 5 physical GPI / 5 physical GPO transmitted through the Livewire network.
- 48 kHz sampling frequency
- Several cards can be plugged in one PC

### Main software features

- Real-time, simultaneous record and playback in PCM (8, 16 and 24 bits) as well as in MPEG Audio Layer I, Layer II and Layer III\*, Float IEEE754 conversion supported (with 24-bit fixed-point dynamic range)
- When using the Digigram np SDK, real-time mixing of several PCM and MPEG audio streams per output channel, direct monitoring, level adjustment, panning, cross-fades, punch-in/punch-out, scrubbing, time-stretching, pitch-shifting, 3-band parametric equalizer, Maximizer, format and frequency conversions.
- Low latency WDM DirectSound, Wave, and ASIO drivers. Under DirectSound and ASIO, the cards operate in PCM mode only (nevertheless, an application can integrate coders/decoders on the host PC). Under Wave, HR boards can operate in both PCM and MPEG (layer 1 and layer 2).

\* MPEG Layer III play-only on DSP

MPEG Layer III recording on the host computer is available through Digigram's PC Codec using the np SDK

\* Only on PCX-IP version. (Not available on VX-IP card)

## Configuration

	<b>PCX-IP LW881e / PCX-IP LW12121e</b>
<b>Bus/Format</b>	PCI Express™ (PCIe x1) (x2, x4, x8, x16 compatible)
<b>Digital Signal Processor</b>	Motorola 56321 at 240 MHz
<b>RAM</b>	512 kWords
<b>Size</b>	168 mm x 111 mm x 20 mm
<b>Power requirements</b> (+3.3V/+5V / +12V / -12V)	2.5 A / 0 A / 0.1 A / 0 A
<b>Operating: temp / humidity</b> (non-condensing)	0°C/+50°C . 5%/95%
<b>Storage: temp / humidity</b> (non-condensing)	-5°C/+70°C . 0%/95%

## Inputs/Outputs

	<b>PCX-IP LW881e</b>	<b>PCX-IP LW12121e</b>
<b>Livewire input mono channels</b>	8	2
<b>Livewire output mono channels</b>	8	12
<b>Programmable input/output digital gain</b>	from -110 dB à +18 dB	from -110 dB à +18 dB
<b>General Purpose Inputs &amp; Outputs</b>	5	5

## Sampling frequency

<b>Sampling frequencies available</b>	48 kHz
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## Connectors

<b>Ethernet</b>	RJ-45
<b>GPIO</b>	Sub-D 15 pins

## 1.2. Related Submittal(s) / Grant(s)

All host equipment used in the test configuration are FCC granted, when relevant.

Trade Mark – Model Number (Serial number)	FCC ID	Description	Cable description
PCX-LW881 * (sn : 12009 25240)	IGTPCXIP	PCI Express sound card	I/O cables shielded
DELL VOSTRO 220 Model: DCSCMF (sn: 6L2374J)	DoC	Personal computer	Power cord unshielded. All other cable shielded.
PHILIPS 19S video monitor (Model: 190S6FS/00) (sn: BZ000551116501)	DoC	Monitor	Power cord unshielded. Video cable shielded with ferrites
DELL Model: SK-8115	DoC	Keyboard	USB cable (1.2m)
DELL Model: ODJ301	DoC	Mouse	USB cable (1.2m)
Gigabit Switch D-Link DGS-1016D (Sn: DRBO464001812)	DoC	Ethernet switch	Power cord unshielded. All other cable shielded.
Axia LiveWire 8x8 AES/EBU Audio node (TELOS Systems) Sn: 0135T1353	Doc	Audio node	Power cord unshielded. All other cable shielded.

\*: Equipment under test.

## 1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-2003, FCC Part 15 Subpart B.

Radiated testing was performed at an antenna to EUT distance of 10 or 3 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

## 1.4. Test facility

Tests have been performed on November 5<sup>th</sup> and 6<sup>th</sup>, 2012.

This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4-2009 in a letter dated May 9<sup>th</sup>, 2011 (registration number 171131). All pertinent data for this test facility remains unchanged.