OPERATIONAL DESCRIPTION

1.1. Product description

FEATURES

PCX882e and PCX881e are audio cards for PCI EXPRESS™ (PCIe®). They are in PCI EXPRESS™ x1 format and can thus be plugged into any PCIe® slot (x1, x2, x4, x8, x16, x32).

PCX881e main hardware features

- 4 digital AES/EBU* stereo inputs, with hardware sample rate converters (up to 96 kHz)
- 4 digital AES/EBU* stereo outputs (up to 192 kHz)
- 1 digital AES/EBU* stereo sync input (up to 192 kHz in play and record)
- 1 standard Word Clock input (up to 96 kHz)
- 1 standard Word Clock output (up to 96 kHz)
- 1 video sync input
- 1 SMPTE/LTC (Linear Time Code) sync input

PCX882e main hardware features

All features of the PCX881e, plus:

- 8 balanced** analog mono line inputs, with software programmable analog and digital gain
- 8 servo-balanced*** analog mono line outputs, with software programmable analog and digital gain
- 192 kHz / 24-bit converters
- Maximum level on analog inputs and outputs: +24 dBu

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[①], Float IEEE754 conversion supported (with 24-bit fixed-point dynamic range)
- When using the np SDK, real-time mixing of several PCM and MPEG audio streams, 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 DirectSound drivers

    [①] *MPEG Layer III play-only on DSP;*
    MPEG Layer III recording on the host computer is available through Digigram's PC Codec option using the np SDK

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* *can be used as S/PDIF interface as well*
** *can be used with unbalanced signals*
*** *Electronically servo-balanced outputs provide automatic level adjustment to accommodate either balanced or unbalanced lines*

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FEATURES

VX882e and VX881e are audio cards for PCI EXPRESS™ (PCIe®). They are in PCI EXPRESS™ x1 format and can thus be plugged into any PCIe® slot (x1, x2, x4, x8, x16, x32).

VX881e main hardware features

- 4 digital AES/EBU* stereo inputs, with hardware sample rate converters (up to 96 kHz)
- 4 digital AES/EBU* stereo outputs (up to 192 kHz)
- 1 digital AES/EBU* stereo sync input (up to 192 kHz in play and record)
- 1 standard Word Clock input (up to 96 kHz)
- 1 standard Word Clock output (up to 96 kHz)
- 1 video sync input
- 1 SMPTE/LTC (Linear Time Code) sync input

VX882e main hardware features

All features of the VX881e, plus:

- 8 balanced** analog mono line inputs, with software programmable analog and digital gain
- 8 servo-balanced*** analog mono line outputs, with software programmable analog and digital gain
- 192 kHz / 24-bit converters
- Maximum level on analog inputs and outputs: +24 dBu

Main software features

- Real-time, simultaneous PCM record and playback (8, 16 and 24 bits), Float IEEE754 (with 24-bit fixed-point dynamic range)
- When using the np SDK, real-time mixing of several PCM audio streams, direct monitoring, level adjustment, panning, cross-fades, punch-in/punch-out, scrubbing
- Low latency DirectSound drivers

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* can be used as S/PDIF interface as well

** can be used with unbalanced signals

*** Electronically servo-balanced outputs provide automatic level adjustment to accommodate either balanced or unbalanced lines

FEATURES

PCX1222e and PCX1221e are audio cards for PCI EXPRESS™ (PCIe®). They are in PCI EXPRESS™ x1 format and can thus be plugged into any PCIe® slot (x1, x2, x4, x8, x16, x32).

PCX1221e main hardware features

- 1 digital AES/EBU* stereo input, with hardware sample rate converter (up to 96 kHz) and programmable digital gain
- 6 digital AES/EBU* stereo outputs (up to 192 kHz) with programmable digital gain
- 1 digital AES/EBU* stereo sync input (up to 192 kHz in play and record)
- 1 standard Word Clock input (up to 96 kHz)
- 1 standard Word Clock output (up to 96 kHz)
- 1 video sync input
- 1 SMPTE/LTC (Linear Time Code) sync input

PCX1222e main hardware features

All features of the PCX1221e, plus:

- 2 balanced** analog mono line inputs, with software programmable analog and digital gain
- 12 servo-balanced*** analog mono line outputs, with software programmable analog and digital gain
- 192 kHz / 24-bit converters
- Maximum level on analog inputs and outputs: +24 dBu

Note: The digital outputs always play the digital version of the corresponding analog output. The selection of the AES/EBU input excludes the selection of the analog inputs.

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* *can be used as S/PDIF interface as well*

** *can be used with unbalanced signals*

*** *Electronically servo-balanced outputs provide automatic level adjustment to accommodate either balanced or unbalanced lines*

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FEATURES

VX1222e and VX1221e are audio cards for PCI EXPRESS™ (PCIe®). They are in PCI EXPRESS™ x1 format and can thus be plugged into any PCIe® slot (x1, x2, x4, x8, x16, x32).

VX1221e main hardware features

- 1 digital AES/EBU* stereo input, with hardware sample rate converter (up to 96 kHz) and programmable digital gain
- 6 digital AES/EBU* stereo outputs (up to 192 kHz) with programmable digital gain
- 1 digital AES/EBU* stereo sync input (up to 192 kHz in play and record)
- 1 standard Word Clock input (up to 96 kHz)
- 1 standard Word Clock output (up to 96 kHz)
- 1 video sync input
- 1 SMPTE/LTC (Linear Time Code) sync input

VX1222e main hardware features

All features of the VX1221e, plus:
- 2 balanced** analog mono line inputs, with software programmable analog and digital gain
- 12 servo-balanced*** analog mono line outputs, with software programmable analog and digital gain
- 192 kHz / 24-bit converters
- Maximum level on analog inputs and outputs: +24 dBu

Note: The digital outputs always play the digital version of the corresponding analog output. The selection of the AES/EBU input excludes the selection of the analog inputs.

Main software features

- Real-time, simultaneous PCM record and playback (8, 16 and 24 bits), Float IEEE754 (with 24-bit fixed-point dynamic range)
- When using the np SDK, real-time on-board mixing of several PCM audio streams, direct monitoring, level adjustment, panning, cross-fades, punch-in/punch-out, scrubbing
- Low latency DirectSound, Wave, andASIO drivers

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* *can be used as S/PDIF interface as well*
** *can be used with unbalanced signals*
*** *Electronically servo-balanced outputs provide automatic level adjustment to accommodate either balanced or unbalanced lines*

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

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

1.3. Tested System Details

The FCC IDs for all equipment, plus description of all cables used in the tested system are:

Trade Mark – Model Number (Serial number)	FCC ID	Description	Cable description
PCX 882e * (sn : 2345.00020002)	IGTMULTIE	PCI Express sound card	I/O cables shielded
PCX 1222e * (sn : 2341.00020001)	IGTMULTIE	PCI Express sound card	I/O cables shielded
DELL, Model: DCTA (sn: JGC8F2J)	DoC	Personal computer	Power cord unshielded. All other cable shielded.
Hewlett Packard pn:D2846 (sn: JP74001000)	DoC	Monitor	Power cord unshielded. Video cable shielded with ferrites
Hewlett Packard pn:C3751A (sn: LOA54656002)	DZL211029	Mouse	PS2 cable (1.2m)
DELL pn: CN-ODJ315-71616-64F-OVY4 (sn: None)	DoC	Keyboard	USB cable (1.2m)
Hewlett Packard DESKJET 895cxi (sn: HU9C51T11C)	none	Parallel printer	Power cord unshielded. All other cable shielded.
Hewlett Packard HP48GX (sn: ID83802369)	none	Serial calculator	Serial cable shielded
DIGIGRAM - Audio Load Box (sn: none)	none	I/O Load box	Earth wire (1.5m)

*: Equipment under test.

1.4. 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 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

1.5. Test facility

Tests have been performed on January 10th, 11th, 15th and 16th, 2007.

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 C63.4-2003 in a letter dated July 14, 2005 (registration number 94821).
This test facility has also been accredited by COFRAC (French accreditation authority for European Union test lab accreditation organization) according to NF EN ISO/IEC 17025, accreditation number 1-1633 as compliant with test site criteria and competence in 47 CFR Part 15/ANSI C63.4 and EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.