

## OPERATIONAL DESCRIPTION

### 1.1. Product description of PCX882HR, PCX881HR, VX882HR, VX881HR

PCX882HR, PCX881HR, VX881HR and VX882HR are audio cards for PCI bus. They are 'Universal PCI 64-bit/66 MHz', which means they can be plugged in 32-bit/33 MHz 5 V PCI slots, 3.3V keyed PCI slots as well as in 64-bit/66 MHz 3.3 V keyed PCI slots.

The cards are also compatible with PCI-X interfaces.

The HR series are designed for the most demanding applications in broadcast such as production, on-air, and logging.

PCX882HR, PCX881HR, VX881HR and VX882HR cards are Digigram products .

See §1.6 for more detail.

### 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:

<b>Trade Mark – Model Number (Serial number)</b>	<b>FCC ID</b>	<b>Description</b>	<b>Cable description</b>
<b>DIGIGRAM PCX882HR*</b> (sn: 00000001)	<b>IGTX882HR</b>	<b>PCI Audio card</b>	I/O cable, shielded
DELL MTC2 (sn: CTMV21J)	D.O.C.	Personnel computer	Standard power cable unshielded, All I/O cables are shielded.
DELL SK8110 (sn: CN-04N741-71616-41G-07Q6)	D.O.C.	Keyboard	Shielded cable
DELL Logitech (sn: LZE20467057)	DZL211029	Mouse	Shielded cable
HEWLETT PACKARD – Deskjet 895CXI (sn: MY9761915S)	D.O.C.	Parallel Printer	Shielded cable
Telex (sn: 700373.000A)	None	Microphone	Unshielded cable
Labtec LT-100 (sn: none)	None	Headset	Unshielded cable
HEWLETT PACKARD 48GX (sn: ID83802369)	None	Graphic calculator	Serial adapter shielded
Intel YC76 (sn: 0045143)	EDUYC76	WebCam	Shielded cable
DIGIGRAM	None	Load box	Standard power cable unshielded

\* : 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 July 19<sup>th</sup>, 2004.

The test facility used to collect all the test data is the SMEE **Actions Mesures** facility, located ZI des Blanchisseries, 38500 VOIRON, France.

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 19, 2002 (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 1-0844 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.

## 1.6. Data sheets

### 1.6.1. PCX 881/882HR

	PCX882HR	PCX881HR
Bus/Format	64-bit/66 Mhz Universal PCI, PCI and PCI-X compatible, master mode	
Size	175 mm X 99 mm X 20mm, requires a single PCI slot, short-length PCI slots compatible	
Digital Signal Processor	Motorola 56321 at 240 MHz	
Inputs		
Balanced analog line inputs (mono)	8	-
Maximum input level / impedance	+24 dBu / > 10 kΩ	-
Sampling frequencies available	Programmable from 8 to 192 kHz	-
A/D and D/A converter resolution	24 bits	-
Digital inputs (stereo)	4 AES/EBU with hw Sample Rate Converters, 1:3 to 3:1, up to 96 kHz	
Programmable input gain	analog and digital	digital
PCM recording (encoding)	8, 16 or 24 bits	
Other inputs	AES/EBU Sync (up to 192 kHz), Word clock (up to 96 kHz), LTC, Video	
AES11 synchronization	Yes	
Outputs		
Analog line outputs (mono)	8 servo-balanced	-
Maximum output level / impedance	+24 dBu / < 100Ω	-
Digital outputs (stereo)	4 AES/EBU, up to 192 kHz	
Programmable output gain	analog and digital	digital
Other outputs	Wordclock, interboard sync, companion board connector	
Connectors		
External connector	62-pin SUB-D	
Digigram accessories available	Breakout cable or 2-RU Breakout Box	
Internal connectors	Inter-board Sync and Companion Board Link	
Audio performance measured at Fs=48kHz		
Frequency response (record + play)	20 Hz -20 kHz: ±0.2 dB	
Dynamic range (A-weighted)	Analog In: >104 dB Analog Out: >104 dB	
THD + noise 1 kHz at -1 dBfs (A-weighted)	Analog In: <-97 dB Analog Out: <-94 dB	
Channel phase difference: 20/20kHz	0.2° / 2°	
Crosstalk (Analog in or out)	1 kHz at 22 dBu: <-100 dB 15 kHz at 22 dBu: <-85 dB	
Development environments and on board processing		
Supported OS	Windows 2000 and XP	
Management	np SDK, Wave, ASIO (PCM only), DirectSound (PCM only)	
Main on-board processing features (with np SDK)	MPEG and PCM play, rec, direct monitoring, real-time mixing, panning, cross-fade,punch-in/punch-out, scrubbing, time-stretching, pitch-shifting, format and frequency conversions	
mp3 play and mix (with np SDK)	Yes	
MPEG play, rec and mix (w/ np SDK)	layer 1 and 2	

## 1.6.2. VX 881/882HR

	PCX882HR	PCX881HR
Bus/Format	64-bit/66 Mhz Universal PCI, PCI and PCI-X compatible, master mode	
Size	175 mm X 99 mm X 20mm, requires a single PCI slot, short-length PCI slots compatible	
Digital Signal Processor	Motorola 56311 at 150 MHz	
Inputs		
Balanced analog line inputs (mono)	8	-
Maximum input level / impedance	+24 dBu / > 10 kΩ	-
Sampling frequencies available	Programmable from 8 to 192 kHz	-
A/D and D/A converter resolution	24 bits	-
Digital inputs (stereo)	4 AES/EBU with hw Sample Rate Converters, 1:3 to 3:1, up to 96 kHz	
Programmable input gain	analog and digital	digital
PCM recording (encoding)	8, 16 or 24 bits	
Other inputs	AES/EBU Sync (up to 192 kHz), Word clock (up to 96 kHz), LTC, Video	
AES11 synchronization	Yes	
Outputs		
Analog line outputs (mono)	8 servo-balanced	-
Maximum output level / impedance	+24 dBu / < 100Ω	-
Digital outputs (stereo)	4 AES/EBU, up to 192 kHz	
Programmable output gain	analog and digital	digital
Other outputs	Wordclock, interboard sync, companion board connector	
Connectors		
External connector	62-pin SUB-D	
Digigram accessories available	Breakout cable or 2-RU Breakout Box	
Internal connectors	Inter-board Sync and Companion Board Link	
Audio performance measured at Fs=48kHz		
Frequency response (record + play)	20 Hz -20 kHz: ±0.2 dB	
Dynamic range (A-weighted)	Analog In: >104 dB Analog Out: >104 dB	
THD + noise 1 kHz at -1 dBfs (A-weighted)	Analog In: <-97 dB Analog Out: <-94 dB	
Channel phase difference: 20/20kHz	0.2° / 2°	
Crosstalk (Analog in or out)	1 kHz at 22 dBu: <-100 dB 15 kHz at 22 dBu: <-85 dB	
Development environments and on board processing		
Supported OS	Windows 2000 and XP	
Management	np SDK, Wave, ASIO, DirectSound (all:PCM only)	
Main on-board processing features (with np SDK)	PCM play, rec, direct monitoring, real-time mixing, panning, cross-fade,punch-in/punch-out, scrubbing, level adjustment, frequency conversions	