

OPERATIONAL DESCRIPTION

1.1. Product description of PCX1222HR, PCX1221HR, VX1222HR, VX1221HR, VX1220HR

PCX1222HR, PCX1221HR, VX1221HR, VX1220HR and VX1222HR 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.

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

PCX1222HR, PCX1221HR, VX1221HR, VX1220HR and VX1222HR 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:

Trade Mark – Model Number (Serial number)	FCC ID	Description	Cable description
DIGIGRAM PCX882HR* (sn: 00000001)	IGTX1222HR	PCI Audio card	I/O cable, shielded
DELL Precision 670 pn:WHL (sn: 188X91J)	D.O.C.	Personnel computer	Standard power cable unshielded, All I/O cables are shielded.
HEWLETT PACKARD pn:D2846 (sn: JP74001000)	D.O.C.	monitor	Shielded cable
HEWLETT PACKARD pn:C4734-60111 (sn: M971168931)	GYUR38SK	Keyboard PS/2	Shielded cable
LOGITECH pn:851841-1000 (sn:LNA34465467)	JNZ211443	Mouse PS/2	Shielded cable
Microsoft pn:X05-87477 (sn:53121-576-5475527-10000)	D.O.C.	Mouse USB	Shielded cable
HEWLETT PACKARD – Deskjet 895CXI (sn: MY9761915S)	D.O.C.	Parallel Printer	Shielded cable
HEWLETT PACKARD pn: C2106A (sn: 3110S58792)	B94C2106X	Serial Printer	Shielded cable
Telex (sn: 700373.000A)	None	Microphone	Unshielded cable
Labtec LT-100 pn:D8387A (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
Olympus C-725 (sn: 186004098)	D.O.C.	Digital Camera	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 CISPR22-2003, 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 February 24th, 2005.

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 1222/12221HR

Configuration

	PCX1221HR	PCX1222HR
Bus/Format	64-bit/66 Mhz Universal PCI master mode, PCI-X compatible	
Digital Signal Processor	Motorola 56321 at 240 MHz	
RAM	512 kWords	
Size	175 mm x 99 mm x 20 mm	
Power requirements (+3.3V/+5V / +12V / -12V)	0 A / 0.8 A / 0.1 A / 0.1 A	0 A / 1.8 A / 0.1 A / 0.1 A
Operating: temp / humidity(non-condensing)	0°C / +50°C • 5% / 90%	
Storage: temp / humidity (non-condensing)	-5°C / +70°C • 0% / 95%	

Inputs

	PCX1221HR	PCX1222HR
Analog line inputs (mono)	-	2 balanced*
Maximum input level/ impedance	-	+24 dBu/ >10 kΩ
Digital input (stereo)	1 AES/EBU** with hw Sample Rate Converter, 1:3 to 3:1, up to 96 kHz	
Programmable input gain	digital: from -110 dB to +18 dB	analog: from -94.5 dB to +15.5 dB? digital: from -110 dB to +18 dB
Other inputs	AES/EBU Sync (up to 192 kHz), Word clock (up to 96 kHz), LTC, Video	
AES11 synchronization	Yes	

Outputs

	PCX1221HR	PCX1222HR
Analog line outputs (mono)	-	12 servo-balanced***
Maximum output level / impedance	-	+24 dBu / <100 Ω
Digital outputs (stereo)	6 AES/EBU** , up to 192 kHz	
Programmable output gain	digital: from -110 dB to +18 dB	analog: from -86 dB to +24 dB digital: from -110 dB to +18 dB
Other outputs	Word clock (up to 96 kHz)	

Connectors

	VX1221HR	VX1222HR
Internal connectors	Inter-board Sync and Companion Board Link	
External connector	62-pin Sub-D	
Digigram accessories available	Breakout cable or 2U 19" Breakout Box	

Audio specifications

	PCX1221HR	PCX1222HR
Sampling frequencies available	Programmable from 8 to 192 kHz	
A/D and D/A converter resolution	-	24 bits
Supported audio formats	PCM (8, 16, 24 bits), Float IEEE754	

1.6.2. VX 1220/1221/1222HR

Configuration

	VX1220HR	VX1221HR	VX1222HR
Bus/Format	64-bit/66 Mhz Universal PCI master mode, PCI-X compatible		
Digital Signal Processor	Motorola 56321 at 240 MHz		
RAM	512 kWords		
Size	175 mm x 99 mm x 20 mm		
Power requirements (+3.3V/+5V/+12V/-12V)	0 A / 1.8 A / 0.1 A / 0.1 A	0 A / 0.8 A / 0.1 A / 0 A	0 A / 1.8 A / 0.1 A / 0.1 A
Operating: temp / humidity(non-condensing)	0°C / +50°C • 5% / 90%		
Storage: temp / humidity (non-condensing)	-5°C / +70°C • 0% / 95%		

Inputs

	VX1220HR	VX1221HR	VX1222HR
Analog line inputs (mono)	-		2 balanced*
Maximum input level/ impedance	-		+24 dBu/ >10 kΩ
Digital input (stereo)		1 AES/EBU** with hw Sample Rate Converter, 1:3 to 3:1, up to 96 kHz	
Programmable input gain	digital: from -110 dB to +18 dB		analog: from -94.5dB to +15.5 dB? digital: from -110 dB to +18 dB
Other inputs	AES/EBU Sync (up to 192 kHz), Word clock (up to 96 kHz), LTC, Video		
AES11 synchronization		Yes	

Outputs

	VX1220HR	VX1221HR	VX1222HR
Analog line outputs (mono)	12 servo-balanced***	-	12 servo-balanced***
Maximum output level / impedance	-	-	+24 dBu / <100 Ω
Digital outputs (stereo)		6 AES/EBU**, up to 192 kHz	
Programmable output gain	digital: from -110 dB to +18 dB	-	analog: from -86 dB to +24 dB digital: from -110 dB to +18 dB
Other outputs		Word clock (up to 96 kHz)	

Connectors

	VX1220HR	VX1221HR	VX1222HR
Internal connectors	Inter-board Sync and Companion Board Link		
External connector	62-pin Sub-D		
Digigram accessories available	Breakout cable or 2U 19" Breakout Box		

Audio specifications

	VX1220HR	VX1221HR	VX1222HR
Sampling frequencies available	Programmable from 8 to 192 kHz		
A/D and D/A converter resolution	24 bits	-	24 bits
Supported audio formats	PCM (8, 16, 24 bits), Float IEEE754		