



*Professional stereo sound cards*

# PCX22HR, PCX924HR and PCX924HR-Mic

PCX stereo boards for production, editing, on-air and journalists' workstations.

Digigram upgrades its highly distinguished PCX stereo sound cards to HR level. The integration of HR features offers improved sound quality, more features and an even greater flexibility for mission critical audio applications requiring powerful embedded processing resources.

The PCX HR Series enables software based on Digigram's Software Development Kit (SDK) to offer dedicated functions for professional broadcast applications, such as DSP-based MPEG encoding, decoding and mixing, time-scaling or 3-band parametric equalization and signal level maximizing. The unique performance of Digigram's SDK combined with PCX boards has made this platform the most deployed in radios worldwide. At the same time, the HR Series boards benefit from Digigram-developed low latency WDM DirectSound, Wave and ASIO drivers, permitting to easily integrate software based on Standard Audio APIs.

### Key features

- 24-bit/192kHz AD/DA converters
- +24 dBu maximum analog signal levels
- Hardware sample rate converter on the digital input
- AES/EBU, LTC, and interboard synchronization inputs
- Native, low-latency HR drivers package: WDM DirectSound, ASIO, Wave and driver for Digigram SDK
- DirectSound driver signed by Microsoft Windows Hardware Quality Labs

### PCX924HR-Mic additional features:

- One professional grade analog mic preamp with analog compressor limiter, mixed with the analog line inputs
- AES42 support for AES42 digital microphones recording

	PCX924HR	PCX924HR-Mic	PCX22HR
<b>Configuration</b>			
Bus/Format	32-bit/66 Mhz Universal PCI, PCI and PCI-X compatible, master mode		
Digital Signal Processor	Motorola 56303 at 100 MHz		
RAM	512 kWords		
Size	175 mm x 99 mm x 20 mm		
Power requirements (+3.3V/+5V / +12V / -12V)	0.35 A / 0.2 A / 0.2 A / 0.08 A	0.4 A / 0.3 to 0.9 A / 0.22 A / 0.1 A	0.3 A / 0.18 A / 0.18 A / 0.08 A
Operating: temp / humidity (non-condensing)	0°C / +50°C • 5% / 90%		
Storage: temp / humidity (non-condensing)	-5°C / +70°C • 0% / 95%		
<b>Inputs</b>			
Balanced analog line inputs (mono)	2	2	-
Maximum line input level/impedance	+24 dBu / >10 kOhms	+24 dBu / >10 kOhms	-
Programmable input gain	Analog and digital	Analog and digital	-
Digital inputs (stereo)	1 AES/EBU with switchable hardware sample rate converter, ratio from 1:8 to 7.5:1, up to 192kHz	1 AES/EBU with switchable hardware sample rate converter, ratio from 1:8 to 7.5:1, up to 192kHz	-
AES/EBU sync input	Yes		
AES11 synchronization	Yes		
Other inputs	2 GPI (dry contact), LTC		
<b>Outputs</b>			
Servo-balanced analog line outputs (mono)	2		
Maximum output level / impedance	+24 dBu / < 100 Ohms		
Digital outputs (stereo)	1 AES/EBU		
Programmable output gain	Analog and digital		
Other outputs	1 stereo headphone output (600 Ohms), 2 GPO (relay, 0.5 A, 48 VCC)		
<b>Connectors</b>			
Internal connector	Inter-board synchronization		
External connectors	15-pin Sub-D for analog I/Os, 15-pin HD Sub-D for digital I/Os, Sync., and GPIO 1 mini jack 3.5 mm TRS female jack for headphone stereo output		
<b>Audio specifications</b> Measurements done at Fs=48 kHz unless stated otherwise, with filter on the 22 Hz - 22 kHz range			
Sampling frequencies available	Programmable from 8 to 192 kHz		
A/D and D/A converters resolution	24 bits		
Supported audio formats	PCM (8, 16, 24 bits), Float IEEE754, MPEG (Layer I, II, and III up to 48 kHz)		
Frequency response (record + play)	at 48 kHz: 20 Hz - 20 kHz: +0 / -0.3 dB at 96 kHz: 20 Hz - 40 kHz: +0 / -0.4 dB at 192 kHz: 20 Hz - 80 kHz: +0 / -1.1 dB		
Channel phase difference: 20/20kHz	< 0.2°/2°		
Dynamic range (A-weighted)	Analog In: >104 dB*, Analog out: > 106 dB		
THD + noise 1 kHz at -2 dBfs	Analog In: <-97 dB*, Analog out: <-95 dB AES/EBU in sample rate converter: <-130 dB*		
Crosstalk (Analog in or out)	1 kHz at 24 dBu: <-115 dB, 15 kHz at 24 dBu: <-100 dB		
<b>Development environments</b>			
Digigram management	np SDK (HR Runtime, PCM and MPEG)		
Other management	Wave (PCM, MPEG), ASIO, and DirectSound (PCM)		
Supported operating systems	Windows 2000, XP*, and Windows 2003 Server*		
Main on-board processing features (with np SDK)	PCM play, rec, Float IEEE754, direct monitoring, MPEG, direct monitoring, real-time mixing, level adjustment, 3-band parametric equalizer, maximizer panning, cross-fade, punch-in/punch-out, scrubbing, time-scaling		
<b>PCX924HR-Mic</b>			
<b>Additional analog microphone input</b>			
Balanced analog microphone input (mono)	1, with analog expander/compressor/limiter <i>This input is mixed with the two line inputs before A/D conversion</i>		
48V phantom power supply	Yes		
Programmable mic gain	0 to 66 dB in 0.5 dB steps		
Maximum mic input level/impedance	+10 dBu / >10 kOhms		
Equivalent Input Noise, A/D-D/A at 48kHz, G=60 dB, Z=200 Ohms	<-125 dBm		
<b>AES/EBU input special features</b>			
Support of AES42 digital microphones	Yes		
"Digital phantom power supply"	10 V min / 250 mA max		
Remote control of digital microphones	Yes		
AES42 synchronization mode	Operational mode 1 (the microphone generates its own clock)		

\* PCX924HR & PCX924HR-Mic only - (1) 32-bit version

### Digigram SA

(Serving Europe, Africa, Middle East, Latin America)

Parc de Pré Milliet  
38330 Montbonnot-FRANCE  
Tel: +33 (0)4 76 52 55 01  
Fax: +33 (0)4 76 52 53 07  
E-mail: sales@digigram.com

### Digigram Inc.

(Serving North America)

2101 Wilson Boulevard, Suite 1004,  
Arlington, VA 22201-USA  
Tel: +1 703 875 9100  
Fax: +1 703 875 9161  
E-mail: input@digigram.com

### Digigram Asia Pte Ltd.

(Serving Asia and Australia/Oceania)

350 Orchard Road  
#19-07 Shaw House Singapore  
238868-SINGAPORE  
Tel: +65 6291 2234 - Fax: +65 6291 3433  
E-mail: info\_asia@digigram.com