

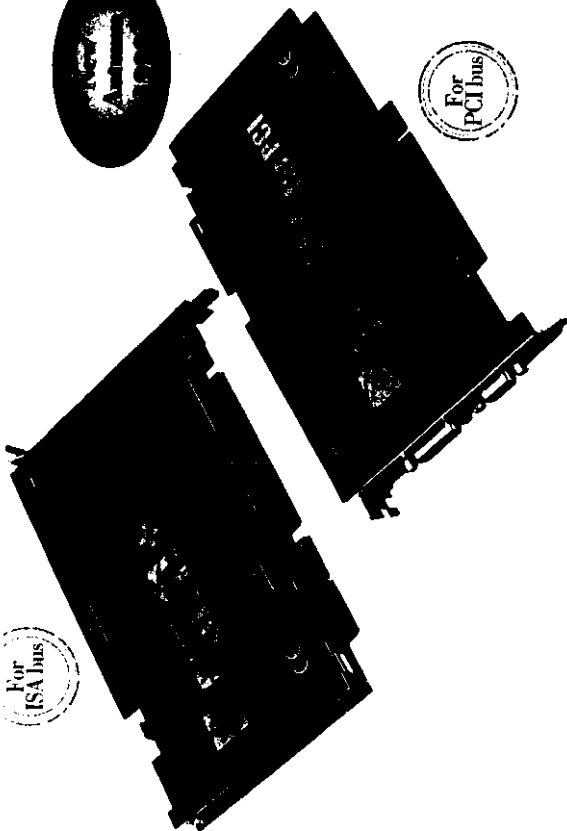
# PCX11+ Versatile balanced analog board

New for 1998, the popular PCX11+ board is now available in two versions: a PCI bus model joins the established ISA bus model, each offering two balanced, analog, mono inputs/outputs.

A high level of processing power allows the PCX11+ to handle both MPEG Audio (compressed mode) and PCM (hi-res mode) data. Real-time processing operations such as simultaneous coding/decoding or mixing of several tracks may be carried out in both modes.

A digital option accommodates two AES/EBU and SPDIF inputs/outputs with a separate synchronization input. This option does not require an additional PC slot on the PCX11+ for PCI version.

PCX11+ is available with a complete set of development tools, Vivrack multitrack editor and a wide range of applications developed by Digigram's OEMs.



## PCX11+ Technical features

### Principal features

- Two-channel record/playback, PC sound card available in two configurations:
  - PCI bus (slave mode)
  - ISA bus
- Recording, processing and playback of professional-quality sound
- Interboard synchronization for multi-channel applications
- Analog audio input/outputs
- AES/EBU SMPTE (LTC) time-code input

### Processing power

- Motorola-56002 DSP
- DSP Clock frequency: 66 MHz
- RAM: 128kwords

### Audio specifications

- Two-channel analog inputs/outputs (18-bit A/D and D/A conversion)
- Programmable sampling frequency among the following values: 48, 44.1, 32, 24, 22.05, 16, 11.025, 8 kHz, external frequency
- Frequency response at 48 kHz (record + play): 20 Hz - 20 kHz  $\pm$  0.25 dB
- Signal/noise ratio (record + play): > 88 dB
- Distortion + noise at 1 kHz (record + play): < -84 dB
- Phase difference between channels: 20 Hz - 20 kHz: 0.2° / 2°
- Balanced line inputs: impedance 600  $\Omega$  or > 18 kOhms
- Balanced line outputs and headphone output (600  $\Omega$ )
- Programmable input and output levels: maximum +22 dBu
- Analog CD-ROM input (PCX11+ for PCI version): maximum +6 dBu

### Processing functions\*

- Simultaneous real-time MPEG Audio compression/decompression (two channels), professional audio quality. This format reduces disk storage requirements in a programmable ratio of 1:4 to 1:48. At 128 kbps (1:6 compression at 48 kHz), 1 minute of mono sound (or 30 seconds of stereo sound) takes up only 960 Kbytes. PCX11+ supports Layers I and II of the MPEG Audio standard (ISO 11172-3) and the low sampling frequencies of the MPEG2 Audio standard (ISO 13818-3)

### Simultaneous record/playback in PCM mode (no compression)

- Real-time mixing of several PCM or MPEG Audio files up to 8 stereo MPEG Audio Layer II tracks at 256 kbps or up to 6 stereo PCM tracks
- A wide range of software functions:
  - Time-stretching (in real time and offline)
  - Pitch-shifting
  - Scrubbing
  - Panning
  - Format conversion
  - Sampling frequency conversion

\*Optimum performance at the user's choice, with the 18-bit mono 16-bit stereo. Performance in PCM depends on the PC used.

### Physical format and connections

- PCX11+ for ISA bus:
  - 1 slot, half-length format (180 mm x 99 mm)
  - Connections:
    - one 15-pin SUB-D connector for analog inputs/outputs
    - one eight-pin mini-DIN connector for the SMPTE time-code input
    - one connector for interboard synchronization
    - stereo headphone mini jack (3.5 mm)
- PCX11+ for PCI bus:
  - 1 slot, short format (175 mm x 99 mm)
  - Connections:
    - one 15-pin SUB-D connector for analog inputs/outputs
    - one high density 15-pin SUB-D connector for the SMPTE time-code input and optional digital inputs/outputs
    - one connector for interboard synchronization
    - one four-pin connector for analog CD-ROM input
    - stereo headphone mini jack (3.5 mm)

### Driver

- PCX11+ (ISA bus version) is managed by both the PCX and np drivers
- PCX11+ for PCI is managed by the np driver.

### Available on request

- PCXtools — development tools
- WAVE driver

### Options

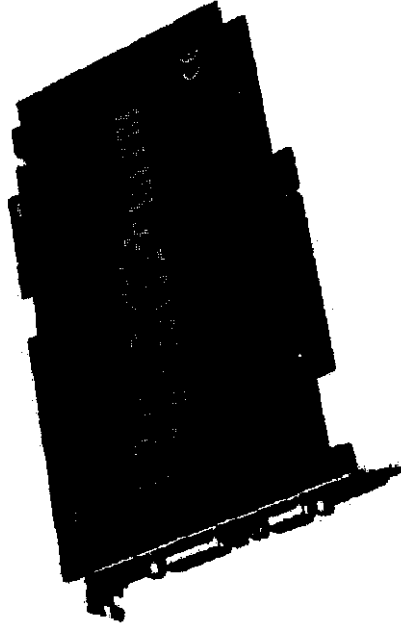
- Digital input/output module in AES/EBU and SPDIF format with separate synchronization input that does not require an additional PC slot (PCX11+ for PCI version)
- PCX Designer Kit (Windows)
- Application software
- PCXS or PCXC synchronization board

## ATTACHMENT A – PRODUCT DATA SHEET

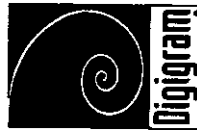
ATTACHMENT B – User Manual

# PCX11+ for PCI

Professional Digital Audio Card



User's manual



[www.digigram.com](http://www.digigram.com)



## INFORMATION FOR THE USER

Important notice: please make sure that there is a good contact between the bracket and the PC frame.  
This device complies with part 15 of FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a CLASS B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions contained in this data sheet, may cause harmful interference to radio and television communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- \* reorient or relocate the receiving antenna
- \* increase the separation between the equipment and the receiver
- \* connect the equipment into an outlet on a circuit different from that of the receiver
- \* consult the dealer or an experienced audio television technician.

**NOTE:** Connecting this device to peripheral devices that do not comply with CLASS B requirements or using an unshielded peripheral data cable could also result in harmful interference to radio or television reception. The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. To ensure that the use of this product does not contribute to interference, it is necessary to use shielded I/O cables.

**EMC:** The PCX11+ for PCI card complies to the following specifications:

International:

CISPR22 class B

Europe:

NF EN 50081-1 (June 1992)

NF EN55022 (December 1994) class B

NF EN 50082-1 (June 1992)

IEC 1000-4-2 (1995): 4kV contact discharge, 8kV air discharge

IEC 1000-4-3 (1995): 3 V/m

IEC 1000-4-4 (1995): 0.5kV

(I/O cables), 1kV (power supply)

### Additional Information

To guarantee compliance, the cables used with the PCX11+ for PCI must be shielded.

This product complies with the standards of the EMC 89/336/CEE specifications, modified in 1992.

## CONTENTS

Information for the user	1
Features	2 - 3
Hardware Installation	4
Software Installation	5
Cable diagrams	6 - 7
Digigram complete range of products	10 -11

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## **FEATURES**

### **General description**

- Two channel audio signal processing board for PC/AT built on the Motorola 56000 DSP family
- Recording, processing and playback of professional-quality sound
- Downloadable software driver allowing access to various types of processing
- For multi-channel applications, the system can be extended to several inter-synchronized PCX11+ for PCI boards
- Analog audio input/outputs
- AES/EBU SMPTE (LTC) time-code input

### **Audio specifications**

- Two mono channel or one stereo analog inputs/outputs (18-bit AD/DA) conversion
- Programmable sampling frequency: 48, 44.1, 32, 24, 22.05, 16, 11.025, 8 kHz, external frequency
- Frequency response at 48 kHz (record + play): 20 Hz - 20 kHz,  $\pm 0.25$  dB
- Signal/noise ratio (record + play):  $> 88$  dB
- Distortion + noise at 1 kHz (record + play):  $< -84$  dB (0.006%)
- Balanced line inputs: impedance  $> 18$  kOhms or 600 Ohms by switch
- Balanced line outputs and headphone output (600 Ohms)
- Programmable input and output levels: maximum + 22 dBu
- Analog internal CD-ROM input: maximum + 6 dBu

### **Resource Requirements**

- np driver 4.10 or higher

### **Minimum Hardware Requirements**

- one level sensitive IRQ.
- 64 bytes of I/O address
- one PCI slot.

### **Processing functions**

- Simultaneous real-time MPEG Audio compression / decompression (two channels), professional audio quality, reducing disk storage requirements in a programmable ratio of 1:4 to 1:24. At 128 kbps (1:6 compression at 48 kHz), 1 minute of mono sound (or 30 seconds of stereo sound) takes up only 960 Kbytes. PCX11+ supports Layer I and II of the MPEG Audio standard (ISO 11172-3) and the low sampling frequencies of the MPEG2 Audio standard (ISO13818-3)
- Simultaneous record/playback in PCM mode (no compression)
- Real-time mixing of several PCM or MPEG Audio files (up to 8 MPEG Audio Layer II stereo tracks at 256 kbps or up to 16 MPEG Audio Layer II mono tracks at 128 kbps)
- A large choice of software functions, such as time-stretching, pitch-shifting, format and frequency conversion.

### **Physical format and connections**

- PC/PCI bus board, one PCI slot, half-length format (180 mm x 99 mm)
- Connections:
  - one 15-pin SUB-D connector for analog inputs/outputs
  - one 15-pin HD SUB-D connector for SMPTE input and AES/EBU digital inputs/outputs (optional)
  - one connector for internal analog CD-ROM input
  - one connector for inter-board synchronization.
  - 1 headphone jack (stereo jack 3.5 mm)

### **Available on request**

- PCXtools np

### **Options**

- Digital input/output module in AES/EBU and SPDIF format with separate synchronization input
- PCX Designer Kit (Windows)
- Application software
- PCXS or PCXC synchronization board

### **Power Consumption**

- +12V: 0.15 A, -12V: 0.1 A, +5 V: 0.75 A

### **Operating Temperature Range**

- 0°C to 70°C.



## **HARDWARE INSTALLATION**

### **Inter board link cable**

Boards used in synchronous mode must be connected by an inter-board cable (pin to pin cable). The two switches near the connector must be set on one card in a set of cards linked by an inter-board cable. For one single PCX card, the 3 switches must be set.

### **Installing the AES/EBU option**

Remove the four screws located on the welding side, remove the protective cover, install the AES/EBU daughterboard. You may now set the protective cover back in place and rescrew it.

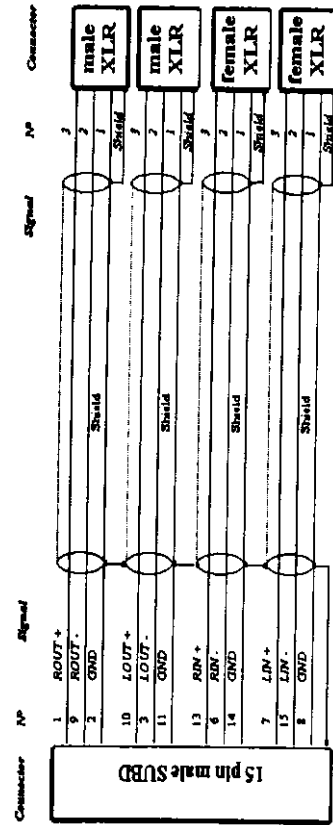
## **SOFTWARE INSTALLATION**

No driver floppy disk is delivered with the board. Please ask your supplier for an updated driver or download it from the Digigram Web site. Be sure that the driver has been approved by your supplier. Your supplier's application may request the use of a specific driver.

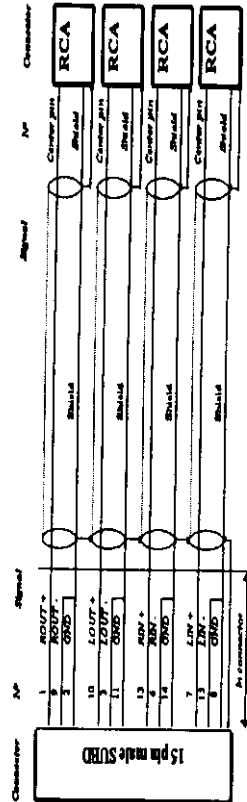
Please refer to the driver installation documentation, which is delivered with the driver. It details the installation procedure to follow under Windows 95/98 or Windows NT.



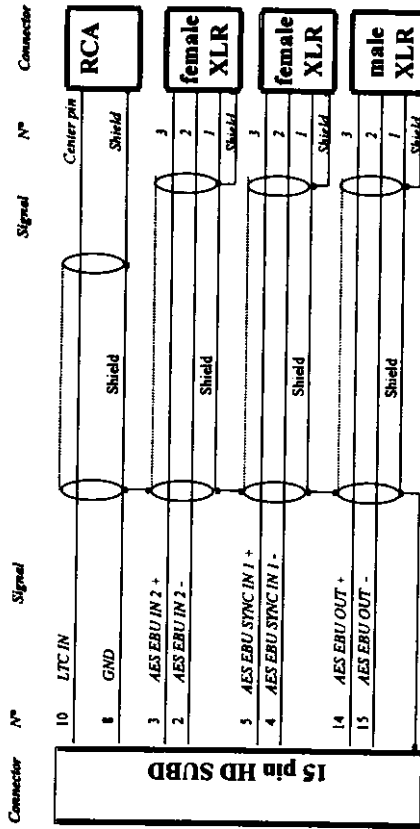
**ANALOG XLR CABLE**



**ANALOG RCA CABLE**



**DIGITAL XLR CABLE (FOR DIGITAL OPTION)**



**DIGITAL RCA CABLE (FOR DIGITAL OPTION)**

