

Attachment B. User Manual
(5 pages)



PCX820np
Professional Digital Audio Card



www.digigram.com



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Information for the user

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 PCX820np card complies to the following specifications :

International:

CISPR22 class B

Europe:

NF EN 50081-1 (June 1992)

NF EN 55022 (December 1994) class B

NF EN 50082-1 (June 1992)

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

8kV air discharge (power supply)

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

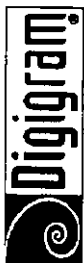
IEC 1000-4-4 (1995): 0.5kV

(I/O cables), 1kV

Additional information:

To guarantee compliance, the cables used with the PCX820np must be shielded and manufactured according to Digigram's recommendations.

This product complies with the standards of the EMC 89/336/CEE specifications, 1 modified in 1992.



Main Features

Principal features

- One stereo channel or two mono input and four stereo channel or eight mono output audio signal processing board for PCI bus built on the Motorola 56300 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 PCX820np or other Digigram boards.
- Balanced analog audio outputs.
- Word Clock synchronization.

Audio specifications

- One stereo channel or two mono analog inputs (18 bit)
- Four stereo channel or eight mono analog outputs (18 bit)
- Programmable sampling frequency: 48, 44.1, 32, 24, 22.05, 16, 11.025 or 8 kHz or external frequency
- Frequency response at 48 kHz: 20 Hz - 20 kHz, ± 0.20 dB
- Signal/noise ratio: > 88 dB
- Distortion + noise at 1 kHz: < -84 dB
- Balanced line outputs
- Maximum input level: $+22$ dBu
- Maximum output level: $+22$ dBu

Software requirements

- np driver 4.0 or higher

Resource requirements

- one IRQ and 64k memory space.

Processing functions

- Real-time MPEG Audio decompression (four stereo 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. PCX820np supports Layer I and II of the MPEG Audio standard (ISO 11172-3) and the low sampling frequencies of the MPEG2 Audio standard (ISO 13818-3).
- Playback in PCM mode (no compression) on four independent stereo channels.
- Real-time mixing of several PCM or MPEG Audio files on one or several outputs: up to 10 stereo PCM tracks or 8 stereo MPEG Audio tracks (Layer II at 256 kbps) on four stereo channels. On one stereo channel, 16 stereo MPEG audio tracks (Layer II at 256 kbps) can be mixed.
- A large choice of software functions, such as time-stretching, pitch-shifting, noise reduction, format and frequency conversion.

Physical format and connections

- PCI bus board, 1 slot, mid-length format (265 mm x 99 mm)
- Connections:
 - one 62-pin SUB-D connector for analog inputs and outputs
 - one connector for inter-board synchronization.
 - one connector for optional SMPTE interface.

Available on request

- PCXtools np
- WAVE driver (not available at printing time)

Options

- Additional board for SMPTE Time Code input (LTC).
- PCX Designer Kit (Windows)
- Application software

Power Consumption

+5 V : 0.6 A, +12 V : 0.45 A, -12 V : 0.25 A

Operating Temperature Range

0°C to 70°C.



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HARDWARE INSTALLATION

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 on only one card in a set of cards linked by an inter-board cable. For one single PCX card, the 2 switches must be set.

Interrupt request

The Interrupt Request number is set up at start-up by the PCI PnP BIOS.

Memory address

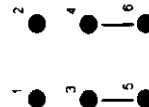
Addresses are set up at start-up by the PCI PnP BIOS.

Installing the SMPTE/MIDI option

When installing the SMPTE/MIDI option, connect the cable to the connector located at the bottom right end of the board. Make sure that the marked side of the cable is connected to pin1 located upwards.

Jumpers

Located at the bottom of the board close to the PCI bus, jumpers present on the board are reserved for factory service. If accidentally removed, their correct position shorts 3-5 and 4-6 as shown below.



SOFTWARE INSTALLATION (np driver only)

No driver floppy disk is delivered with the board. Please ask your supplier for an updated driver or visit 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.

Windows NT

Installation under Windows NT is conducted the usual way:
Insert the Windows NT driver disk.
Run A:Install.exe and follow the instructions.

Windows 95

Upon start-up, Windows 95 detects the insertion of the new board and starts the Plug and Play installation. Select Cancel to quit and install the driver as follows.
As any usual driver, installation is done from the Control Panel:

.Click Start, point to Settings, click Control Panel.
.Click Add New Hardware.

.Click Next.

.Click No when the installation wizard prompts you to search for new hardware then click Next.

.Select Sound, video and game controllers and click Next.

.Insert the driver disk and click Have Disk.

.Click Next.

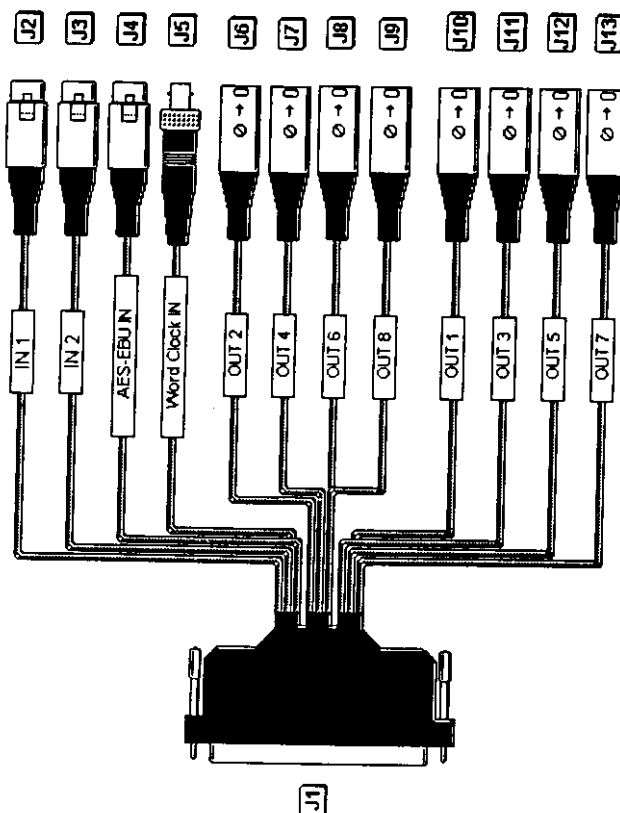
.Click finish.

At next reboot,

- The un_pcx.exe program is run if a PCX driver was installed previously.

- If no previous initialization file exists, Setup95 is run to set up options.

The following diagrams provide information about the required cables. J1 provides connections for all basic and optional functions.



This cable suits to PCX800np and PCX820np. IN1, IN2 and AES-EBU inputs are used only in conjunction with a PCX820np card.

