1 GENERAL INFORMATION

1.1 Product description

miXart is a unique platform, combining powerful Digigram onboard processing with comprehensive audio mixing functions. Three programming environments can be used individually or in concert for the rapid creation of sophisticated computer-based audio solutions.
miXart brings new possibilities to audio production and post-production, acquisition and archiving, broadcast, security, and other demanding professional applications.

Powerful hardware
We designed miXart as a future-proof platform with a wide range of options. The cards are based on Motorola's PowerPC processor for significant architectural and speed advantages over conventional DSP-based products. The PowerPC is designed to access external memory using standard, economical SDRAM. And unlike limited-use DSP families, the PowerPC continues to evolve, with commitments from major manufacturers including IBM and Apple.
miXart cards consist of a motherboard with CPU, memory, and a 32-bit PCI interface. Effects processing on every channel, routing and mixing, and all other audio functions are performed on the PowerPC… all without burdening the host computer.
As faster and more powerful processors become available, or there are requirements for additional memory, our intelligent design permits these to be readily incorporated into future miXart models. And as newer PowerPC versions are introduced, they will be backwards compatible so your applications will not become obsolete.

Audio processing
- Real-time routing, mixing and audio effects via VConsole Builder
- Multiple applications may share the resources of a single miXart card
- Balance, per channel panning of stereo image
- Precise fade-in, fade-out, cross fade, and punch-in/punch-out
- Variable playback speed (scrub)
- Merge of any number of audio files.
- Time stretch/shrink to increase or decrease the length of a recorded audio selection, without modifying its pitch.
- Parametric equalizer, up to ten bands, with shelving and cut-off filters
- Compressor/limiter with noise gate for dynamic control
- Expander with noise gate for dynamic control and noise reduction
- Open plug-in architecture to enhance miXart's capabilities with additional coding and effects algorithms.

Software environment
- Windows NT4 and Windows 2000
- Compatible with Digigram's Xtrack and other PCXedit-based digital audio workstations
- Digigram's VConsole Builder application is delivered with the miXart cards free of charge and runs in parallel with any standard audio application
- Applications using Microsoft's WAVE protocol run on miXart.

The initial miXart configurations are two PCI cards:
- **miXart 8** with eight mono (or four stereo) analog input/output paths, including four studio-quality microphone preamps on its input bank. MPEG coding and decoding is optionally available.

- An optional **AES/EBU** daughter card provides an easy path to the digital domain while effectively doubling the input/output capabilities. This module also adds Word Clock, LTC, AES/EBU and video synchronization capabilities.

For more information, see product's data sheet at section 1.6.

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**
MiXart8* (main card) *** ***MiXart8 AES-EBU* (Optional daughter card) *** ***(S/N : 00000006)	***IGTMIXART8***	***Audio PCI card***	***Breakout cables furnished with both cards (see detail in data sheet) All I/O extension cables are shielded (XLR, BNC, RCA or MIDI type)***
Hewlett Packard PC BRIO 7174 System/Nbr: D6769A (s/n: FR833332107)	Dec. Of Conf.	Personal Computer	All data cables are shielded Power cable unshielded
HEWLETT PACKARD D2846A (s/n : JP74001000)	Dec. Of Conf.	21" color monitor	Shielded video cable with two integrated ferrites
HEWLETT PACKARD C4739-60105 (s/n:C990949297)	Dec. Of Conf.	Keyboard PS2	Shielded cable
LOGITECH M/N: M-S48a (s/n: LZE00204726)	JNZ201213	Mouse PS2	Shielded cable
HEWLETT PACKARD 48GX (s/n: ID83802369)	None	Serial calculator	Shielded cable (Serial)
INTEL YC76 (s/n: 0045143)	EDUY76	USB WebCam	Shielded cable (USB)
TELEX (s/n: 700.373.000A)	None	Microphone	Shielded cable (connected on mother board of PC)
LABTEC LT100 (s/n: none)	None	Headset	Shielded cable (connected on mother board of PC)
HEWLETT PACKARD C6410A DeskJet 895Cxi (s/n: MY9761915T)	Dec. Of Conf.	Parallel printer	Shielded cable (Centronix) Unshielded power supply cable
DIGIGRAM Load box (s/n: none)	None	Load simulator for EUT audio inputs and outputs	Standard power cord only for earth connection.

*****Equipment Under Test

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-1992, CISPR22-1993/A1:1995/A2:1996 and EN55022:1994/A1:1995/A2:1997.
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 October 2sd and 3rd , 2001.

The test facility used to collect the radiated and conducted 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 C63.4-1992 in a letter dated August 04, 1999 (registration number 94821).
This test facility has also been accredited by COFRAC (French accreditation authority for European union test lab accreditation organization), accreditation number 1-0844 as compliant with test site criteria and competence in EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.

1.6 Data sheet of the product

OVERVIEW

Capabilities depend on the hardware configuration.

Main card alone

- Full length audio card for PCI bus
- 8 analog mono inputs
- 8 analog mono outputs
- 1 MIDI input / output
- Inter board synchronization
- 8240 Power PC processor running at 250 MHz
- 16 MB memory SDRAM

Optional AES/EBU daughter card

- 4 AES/EBU stereo inputs
- 4 AES/EBU stereo outputs
- 1 AES/EBU synchronization input
- 1 Word Clock synchronization input (Super Word Clock compliant)
- 1 Word Clock output
- 1 LTC (SMPTE) synchronization input
- 1 LTC (SMPTE) generation using one of the audio outputs
- 1 Video synchronization input (Black Burst)

SPECIFICATIONS

Main card

Analog inputs

- 8 balanced analog line inputs (can be used as unbalanced)
- XLR connectors
- 24 bit analog to digital converters (128 x oversampling delta-sigma)
- Input impedance: <10 kÙ
- Inputs 1 to 4 can be switched to microphone level
- Maximum input line level +22 dBu
- Analog variable mic gain: <61 dB (0.5 steps)
- Analog variable line gain: <25 dB (0.5 steps)
- Microphone phantom power supply available (+ 48 VCC, 5 mA on each of the four inputs)
- Nominal input line level (inputs 5 to 8): switchable, +4 dBu or –10 dBV

Analog outputs

- 8 balanced analog outputs (can be used as unbalanced)
- XLR connectors
- 24 bit digital to analog converters (128 x oversampling delta-sigma)
- Output impedance: < 100Ù
- Maximum output level: +22 dBu
- Analog variable gain: 0.5 dB steps

Other inputs / outputs

- 1 MIDI input on standard 5 pin DIN
- 1 MIDI output on standard 5 pin DIN

Sampling frequencies

- Adjustable by 100 Hz steps
- Includes the following standard frequencies : 22.05, 24, 32, 44.1, 48 kHz

Analog performance

Characteristics measured at 48 kHz sampling frequency, record and playback in linear:

- Signal / Noise ratio (un-weighted): better than +93 dB
- Total Harmonic Distortion + Noise (un-weighted): 0.004 %, less than -88 dB with 1 kHz signal
- Frequency response (20 Hz to 20 kHz): ± 0.2 dB
- Difference in phase (20 Hz to 20 kHz): 0.2° to 2°
- Interchannel isolation: Less than - 105 dB

Processing

Processing power is provided on board by a MPC8240 (Power PC core) at 250 MHz, associated with 16 MB SDRAM.

Power consumption

+5 V 2.4 A, +12 V 0.3 A, -12 V 0.2 A

Operating temperature range

0 °C to +50 °C with 5 % to 90 % humidity (non-condensing)

Storage temperature range

-5 °C to +70 °C with 0 % to 95 % humidity (non-condensing)

Dimensions

265 mm X 107 mm (full length PCI)

Optional AES/EBU daughter card

Digital inputs

- 4 AES/EBU stereo inputs
- XLR balanced connectors, transformer coupled
- Sampling frequency from 32 kHz to 48 kHz
- 24 bits available

Digital outputs

- 4 AES/EBU stereo outputs
- XLR balanced connectors, transformer coupled
- Sampling frequency from 32 kHz to 48 kHz
- 24 bits available

AES/EBU synchronization input

- XLR balanced connector, transformer coupled
- Sampling frequency from 32 kHz to 48 kHz
- AES11 compliant synchronization.

Word Clock synchronization input

- TTL level.
- BNC connector
- Word Clock or Super Clock (256 x Sampling frequency) signals

Word Clock output

- TTL level
- BNC connector
- Word Clock signal

LTC synchronization input

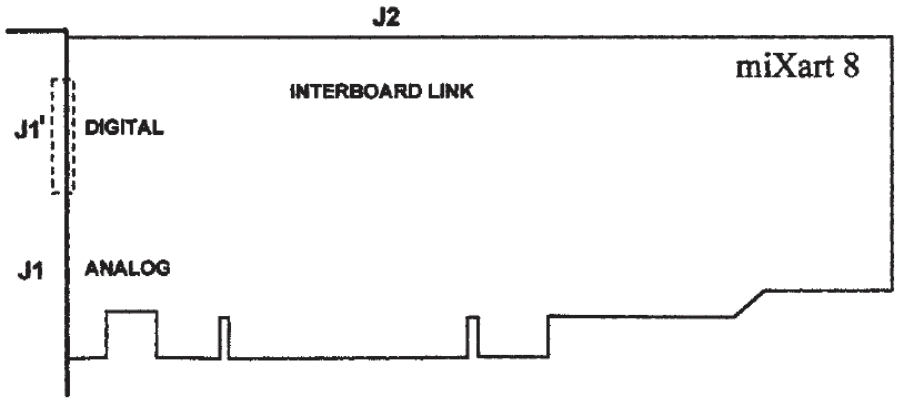
- Unbalanced CINCH connector
- Longitudinal Time Code signal (SMPTE LTC)
- Signal level limits: –20 dBu min to +6 dBu max
- Capture range: nominal speed ± 15 %

VIDEO synchronization input

- Female BNC connector, 75 ohms impedance
- 1Vpp video (Black Burst)

LAYOUT AND CONNECTIONS

Layout



Connectors

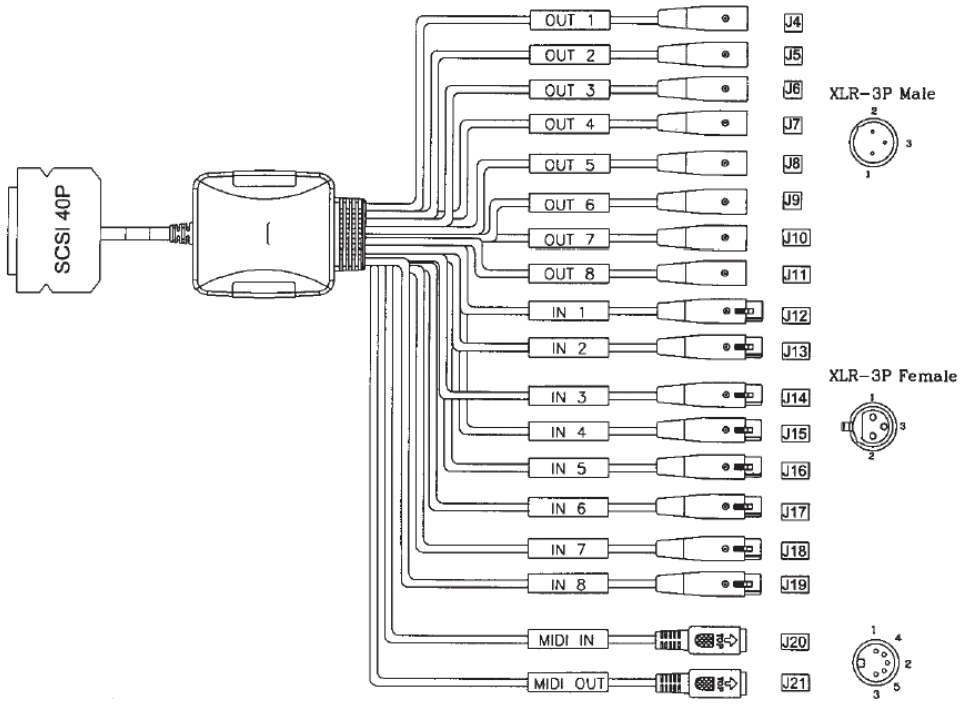
J1 – Analog Audio connector (High density SCSI2 type).
The matching cable is provided with the miXart 8 card.

J1' – Optional daughter card connector (High density SCSI2 type).
The matching cable is provided with the optional daughter card for miXart 8.
Replacement breakout cables are available on request. Please specify "Analog"

CABLE DIAGRAMS

miXart 8 breakout cable (main card)

This cable contents a passive circuit with a PCB in the central box (see internal photos)



miXart 8AES/EBU breakout cable (optional daughter card)

This cable is only for connecting purpose and has no components inside.