

Key Benefits:

- *Intuitive design*
- *Seamless integration*
- *Powerful digital filters*
- *Spectrum analysis*
- *Maximum flexibility*
- *File & tape media handling*
- *ASCLD reporting*

Best Uses:

- *Forensic audio labs*
- *Multiple reference cancellation*
- *Real time noise reduction*
- *High profile casework*
- *Tactical surveillance*

Ideal Users:

- *Forensic audio examiners*
- *Technical investigators*
- *Intelligence and CI operators*
- *IG offices*
- *Prosecutors*
- *Accredited lab facilities*



GSA Advantage

Federal Supply Schedule

#GS-03F-4062B

For more information or to receive a price quote, visit the DAC website at www.dacaudio.com or send us an email at sales@dacaudio.com.



Digital Audio Corporation

CARDINAL

Tech Agent

Next Generation Forensic Audio Processor



CARDINAL takes forensic audio processing and analysis to the next level.

Fully integrating the capabilities of both hardware and software,

CARDINAL seamlessly handles forensic analysis and processing of all analog and digital media, including file-based digital media. CARDINAL represents productivity enhancement through a seamlessly integrated audio workstation environment capable of blending the merits of superb audio filtering with comprehensive speech and signal processing.

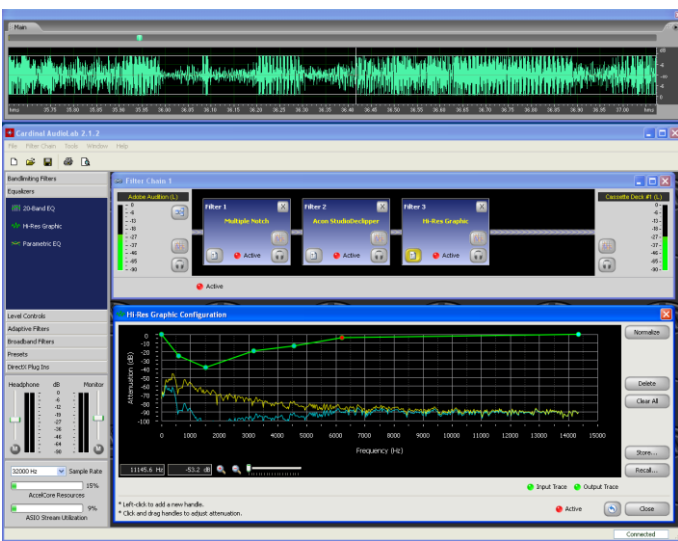
Key Features

- **Power, Power, Power:** The powerful AccelCore™ LE external processor hardware, with a 5-chip TigerSHARC® floating point DSP array, performs lightning fast .
- **Handles All Media:** Common analog and digital media formats, including file-based media, can be handled directly.
- **Seamless Integration:** Direct-X plug-ins are supported within the AudioLab environment.
- **Flexible and Intuitive Interface:** The easy-to-use graphical user interface facilitates navigation, allowing for quick filter setup, recall, and adjustment.
- **More Science - Better Results:** DAC's proven methodology and built-in scientific approach help produce results that win cases and survive legal challenges

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CARDINAL Graphical User Interface



CARDINAL employs both a hardware and software component for processing audio material in the highest quality. The powerful AccelCore™ LE external hardware component is connected via Firewire to an intuitive software interface inside the PC. The AudioLab software provides a flexible and efficient foundation for maximizing forensic audio analysis work.

Digital Processing:

Control Microprocessor

- One Wavefront Semiconductor DICE II, with ARM core operating at 50 MIPS, ASIC-based digital audio routing, and Firewire audio interface supporting up to 32 channels of simultaneous audio streaming between CARDINAL and host PC. Includes Windows ASIO driver for intercommunication of digital audio data between CARDINAL and third-party software

DSP Farm

- Five Analog Devices ADSP-TS201S TigerSHARC™ processors, each with 24Mbits of internal RAM and 491.52MHz clock speed

- Total processing throughput of 59K MIPS, or 14.8GFLOPS

Digital Filters

- Highpass, lowpass, bandpass, bandstop, comb, notch, multi-notch, multi-slot, and slot filters
- LMS 1CH, and Reference Canceller (2CH) adaptive filters
- Automatic Spectral Inverse, Spectral Subtraction, and NoiseEQ broadband noise reduction filters
- Graphic EQ, Parametric EQ, AGC
- Other special tools, including real-time clipped-peak restoration, multiband downward expander denoiser, and “de-clicker” modules included in DirectX plugins

Digital Analysis

- Real-time spectrum analyzer, single- or dual-trace, 920-line resolution
- Adaptive filter coefficient display

Construction:

Packaging

- 1.75" H x 8.5" W x 10.0" D, 5 lbs.

Power

- 12VDC @ 7A supplied via universal AC adaptor

Host Computer Requirement

- Recommended Intel Pentium IV 2.0 GHz (or higher) desktop or laptop PC with mouse, 1024x768 SVGA monitor (dual monitors recommended), 1GB RAM, CD-ROM, 80 GB HD, Windows XP SP2, and at least one free IEEE-1394a “Firewire” interface port available. Active matrix LCD display recommended if notebook used

Streaming Interface

- Standard “ASIO” audio driver interface, supporting up to 16 channels of playback and record simultaneously. Provides capability to process WAV or other file-based data through the CARDINAL hardware via the Firewire connection. Compatible with Adobe Audition 3.0 and Sound Forge 8.0 software. (one license of Adobe Audition included with purchase)

Digital Specification:

Audio Inputs (2)

- One rear-panel S/PDIF format RCA connector
- One rear-panel TOSLINK/ADAT format optical connector

Audio Outputs (3)

- One rear-panel S/PDIF format RCA connector
- One rear-panel TOSLINK/ADAT format optical connector
- One rear-panel TOSLINK format optical connector for connection of monitor speakers with digital input (for example, CAKEWALK MA-15D)

Control Interface (1)

- Single IEEE-1394a “Firewire” interface, 6-pin jacks

Analog Specification:

Line Inputs (3)

- Two rear-panel RCA connectors
- One 3.5mm stereo mini analog input jack
- $Z_{in} = 25k\Omega$, sensitivity -12 to +19 dBm

Line Outputs (2)

- Two rear-panel RCA connectors
- $Z_{out} = 100\Omega$, full-scale output = +9 dBm

Headphone Outputs (2)

- Dual front-panel 3.5mm stereo jacks with volume control

Bandwidth

- 20 kHz, maximum
- 35 Hz AC input coupling

Analog Conversion

- Five 24-bit stereo A/D converters; 128X oversampling, sigma-delta technology
- Six 24-bit stereo D/A converters; 128X oversampling, delta-sigma technology
- Supported sample rates of 32, 44.1, and 48 kHz

Dynamic Range / SINAD

- >110 dB