



DAC DIGEST

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DIGITAL AUDIO CORPORATION

A DRI COMPANY

"Technology to Make Listening Easier"

PRODUCTS

DAC Launches QuickEnhance™ Products

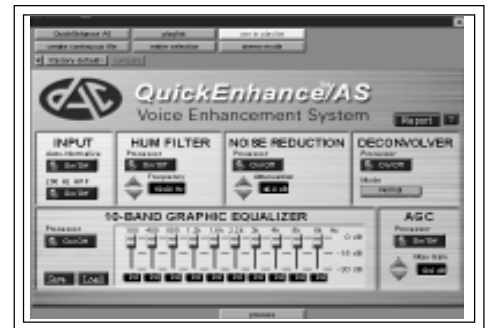
New product line provides powerful, easy-to-use, digital filtering

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Digital Audio Corporation is proud to announce the introduction of a new line of audio clarification products known as QuickEnhance™. The QuickEnhance product family enables powerful forensic audio signal processing with four essential qualities in mind – speed, simplicity, effectiveness, and affordability. The first two members of the QuickEnhance family – QuickEnhance™ QE-10 and QuickEnhance™/AS – will begin shipping in June 2002.

"The new QuickEnhance™ family of products marks an exciting new venture for DAC," said Craig Scates, DAC Vice President and General Manager. "The same powerful filter technology available in similar features of our premium products such as PCAP II and MCAP is now available in an affordable, easy-to-operate framework for users at all levels of experience."



QuickEnhance-AS, opening screen

QuickEnhance™/AS – or QE/AS - is a forensic AudioSuite™ software plug-in designed specifically to work with the Avid Xpress® video editing system or the Digidesign® ProTools audio editing system. Audio WAV tracks from video surveillance tapes can be quickly and easily processed to reduce common noise problems such as AC hum, wind, engines sounds, or reverberations. For the law enforcement market, DAC has teamed with Avid Technology and Ocean Systems to distribute a total turnkey solution complete

with a feature-rich set of audio and video filters. QE/AS will be available as a standalone new license from DAC or through Ocean Systems as a standard option to the Avid Xpress system along with the dTective™ video plug-ins.



QuickEnhance-10, front view

QuickEnhance QE-10 is a hardware-based system that offers five stages of robust, stereo digital signal processing. QE-10 is designed for both real-time surveillance support and laboratory post-processing. For real-time operations, QE-10 can easily be rack mounted in a surveillance van or set up at any listening post. QE-10 features both analog I/O and digital I/O, including S/PDIF and TOSLINK formats.

Both QE-10 and QE/AS offer a core suite of five digital processing stages including an adjustable 50/60 Hz hum filter, broadband noise reduction filter, adaptive deconvolver, 10-band graphic equalizer, and automatic gain control. These filter stages were selected to attack a wide variety of noises common to the law enforcement mission. **DAC**

**DAC PRODUCTS
ARE
AVAILABLE
THROUGH
GSA ADVANTAGE!**

**#GS-03F-4062B
GSA Advantage!**

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SOUND BYTES

Nashville Technical Seminar

On June 18, 2002, DAC conducted a seminar entitled "Audio Processing in Surveillance and Countersurveillance Operations." The event took place at the ROCIC training facilities in Nashville, TN. The seminar explored issues and techniques for the use of audio in collections, forensic analysis, and TSCM applications. DAC products were also available for hands-on demonstration after the class. If you would like to host a regional DAC seminar at your location, contact Bernie at the DAC office for more information. **DAC**

Comint Ltd. is DAC's Top Dealer in 1Q02

Congratulations to Eliezer Horowitz of Comint Ltd. Comint earned DAC's top international dealer award for first quarter. DAC has had a business relationship with Mr. Horowitz for many productive years and is pleased to announce this honor. We extend our best wishes to Mr. Horowitz and his staff. **DAC**

MCAP Featured on TV

DAC's Multi-Channel Audio Processor (MCAP) system has gone prime time in A&E Network's investigative series, "Behind Closed Doors with Joan Lunden." Episode #116 features the MCAP's audio enhancement capability in an inside look at the FBI's Engineering Research Facility in Quantico, VA. TV viewers can catch a cameo appearance of the MCAP software control screen. Listen in as MCAP successfully removes a 60 Hz hum to reveal the target speech! **DAC**

PCAP II Gets WIRED

The July 2002 issue of WIRED magazine features DAC's PCAP II audio processing system. In an article discussing the ongoing effort to recover the 18-1/2 minute gap in Nixon's infamous Tape 342, forensic audio specialist Paul Ginsberg describes the success he's enjoyed using the PCAP II in performing forensic audio analysis on surveillance tapes. **DAC**

NEWS



The faces of DAC School

April 2002 DAC School Raleigh A balance of theory and practice

Nine students formed a varied DAC School class for the April 22-26 session at Homewood Suites in Raleigh. They came from Germany, the United Kingdom, Canada, the United States federal government, and private industry. DAC Senior Research Engineer Dr. David Chappell, Chief Engineer Don Tunstall, and Staff Engineers Andy Jarrell and Michael Erwin presented the class with a mix of audio enhancement theory and practical application, including hands-on equipment training.

So that everyone could become better acquainted, the DAC staff hosted a cook-out at the office on Tuesday evening, April 23, featuring American classics such as hamburgers, hot dogs, baked beans, and ice cream sundaes. On Friday, the class members returned to their agency labs with new and expanded audio skills and an unexpected appreciation for the culinary skills of Digital Audio Corporation employees. **DAC**

2002 DAC School Schedule

Germany hosts September session, October session in US

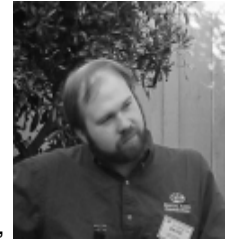
SIM Electronics in Neustadt, Germany hosts the next scheduled session of DAC School September 16-20. You can contact SIM by phone at 49 63 21 91270 or by e-mail at heimgaertner@sim-electronic.com. DAC plans a second US session October 21-25. **DAC**

DAC School Skills Pay Off

"My DAC experience was all very helpful ... "

DAC thanks former DAC School attendee Chip Brown of the Naval Safety Center for his report of on-the-job benefits:

"My DAC School experience last year was most informative. ... We had to do an audio spectral analysis ... on radio transmissions from an aircraft that crashed (killing the pilot). In addition to looking for noise lines as equipment malfunction signatures, ... we measured things like syllables per second, mic key to start of speech delay, and energy density/average amplitude of the signal to determine whether the pilot was impaired. ... My DAC experience was all very helpful in this." **DAC**



PRODUCT UPDATES

QuickEnhance™- Simple-to-Use, Yet Powerful Features

Clarification that You Can Put to Work Right Out of the Box!

Available either as the QE-10 standalone hardware box or as the QE /AS software plug-in for Avid Xpress®, QuickEnhance has the *right* features that you need for the vast majority of your audio clarification needs, all in an extremely easy-to-use form. Key features common to both products include:

◆ **HUM FILTER**, an adjustable-frequency digital comb filter for reducing the “hum” and/or “buzz” noise associated with AC power mains and fluorescent lighting. Settings include base frequencies of 50Hz or 60Hz, with fine-adjustment offsets over a +/-10% range of these values.

◆ **DECONVOLVER**, a one-channel LMS adaptive FIR filter, capable of automatically reducing time-correlated noises such as motors, engines, changing tones, hum, and sirens. In the “Complex” setting severe echo/reverb artifacts, common in “jail cell” recordings, are also effectively reduced.

◆ **NOISE REDUCTION**, an adjustable spectral-subtraction broadband noise filter, capable of reducing all types of non-speech noises, including random noises like wind, water, airflow, and RF static. A single control allows the user to set the desired amount of noise attenuation.

◆ **GRAPHIC EQUALIZER**, a 10-band FIR equalizer that allows the user to spectrally shape the output audio for best intelligibility and sound quality.



◆ **200 Hz HPF**, a highpass FIR filter that allows elimination of all sounds with frequencies below 200Hz where no speech intelligibility information exists. This is very useful for reducing low frequency rumble, engine and machinery noises.

◆ **AUTO GAIN**, a medium-speed AGC capable of providing a maximum of 10, 20, or 30dB gain to the final output, both to provide make-up gain after the signal processing and to correct for “near/far party” situations where one

talker is louder than the other.

◆ **REPORT** generator, allows complete clarification settings to be printed out for inclusion in the forensic examiner’s case notes.



Features unique to the QE-10 hardware product include real-time filtering, 24-bit analog input and output, both TOSLINK optical and CO-AXIAL digital input and output, and direct connection to most printers for the REPORT print function.

For QE /AS, unique features include Auto-Normalization to make the processed WAV file as loud as possible, and filter Preview to allow the user to make adjustments to the filters and hear the effect while looping a small segment of the audio.

Contact DAC today for more information on these exciting new products! **DAC**

It's
SHOW
TIME

LOOK FOR DAC AT THESE SHOWS:

- NSA CONFERENCE

JUNE 23 ~ 26, 2002,
TULSA, OKLAHOMA

- NATIA 2002

JULY 15 ~ 19, 2002,
PHOENIX, ARIZONA

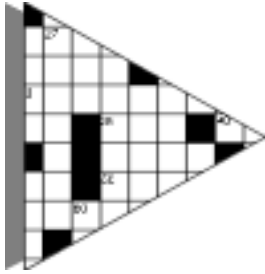
- LEVA 2002

OCTOBER 16 ~ 19, 2002,
MIAMI, FLORIDA

DAC

What's in a Word?

For 23 years DAC and its customers have used the term *audio enhancement* to describe the process of using digital signal processing to make the speech content of an audio signal more intelligible. Today, a new term – *clarification* - is gaining popularity due to the fact that the word *enhancement* could be perceived as implying that the audio signal has been doctored or altered in some way.



From a technical standpoint, it is important to understand that this is certainly not the case with DAC products. DAC's digital audio processing techniques only have the ability to *attenuate the background noises in a signal*, not fundamentally alter the speech content in any way. Only someone who is really clever with a sound editor could possibly do this, but even then another expert would likely be able to tell that it has occurred. That said, the old axiom "perception is reality" can be a powerful agent of change; so we at DAC are beginning to adopt the term *clarification* to describe the category of products that perform what we traditionally have called, *enhancement*.

Don't be surprised if we use both terms for the foreseeable future – old habits die hard! In the meantime, just remember that when it comes to *audio enhancement* or *clarification*, the first word is still DAC! **DAC**

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