

[Back To The Home Page](#)

This "mirrored" page is published through the kind permission of MIX Magazine and PRIMEDIA Business Magazines & Media.

Visit MIX Magazine's WEB Site at: <http://www.mixonline.com>

[Mail A Link To This Page To A Friend!](#)

[Download](#) A Printer-Ready Copy Of This Article. You'll Need A [Free Acrobat PDF Viewer Plug-In](#) For Your Browser.

Representing millions of R&D dollars and more than two years of development, Fairlight's QDC (Quad Digital Channel) technology is designed to greatly enhance the performance, speed, audio quality, graphics resolution and DSP power of the company's digital audio workstations, editors and recorders. Much more than an upgrade, QDC literally transforms the architectures of Fairlight's MFX3plus, FAME2 and Prodigy2 systems into workstations with more tracks, more buses, faster disk access and real-time processing on all channels. QDC has been integrated into all new Fairlight systems shipped since September 2000, with the company's flagship Merlin being initially designed using the technology.



HOW IT WORKS

Essentially, the QDC card replaces the original Digital Channel Card (DCC) with 12 times the DSP performance. Each QDC has eight Analog Devices 21061 SHARC devices and 128 MB of Waveform memory. Real-time, 40-bit, floating-point math is used to maintain headroom during complex algorithms that involve many multiplication steps. A single QDC card has enough DSP for a 32-track workstation like the FAME1 or the largest configuration of the MFX3plus.

The system rack used in a QDC conversion holds up to four QDC cards but is built for (and the architecture firmware supports) up to eight QDCs. Each card is individually configured for the particular Fairlight product by way of plug-in "daughter" boards specified for the user's particular I/O and disk requirements. If required, then multiple rack systems of QDC cards can be supplied. Fairlight's philosophy is to provide a "future proof" platform for audio workstations that stay current for up to 10 years. To this end, QDC makes use of programmable logic from Altera and Xilinx. These devices allow electronic circuit designs to be expressed as software code and loaded on chips. Future significant changes and enhancements to circuitry can be made by way of software downloads rather than component or circuit board replacements.

MAIN FEATURES

Enabling huge gains in productivity, all QDC-enhanced Fairlight products operate the same as before with no perceptible changes in the operator's commands, work surface, tools or job process. QDC provides seamless, gapless punch-in/-out on all 48 tracks simultaneously at 48kHz sample rate and 24-bit depth. This would require playback of 96 tracks of audio from a single hard drive. Andrew Brent at Fairlight confirms that using QDC's new Ultra/Wide SCSI and the new 15,000 rpm hard drives, it is routine to play up to 145 audio tracks at a time from a single drive. Support for up to 18 SCSI devices is accommodated for.

QDC offers simultaneous, real-time crossfading of unlimited duration on all 48 tracks. Another advantage to real-time DSP is, unlike, say, Pro Tools, with Fairlight there is no rendering and therefore no waiting. There are also no delays waiting for audio to cache for playback after a worst-case Locate command, buffering 48 tracks of audio takes less than a second. Further, all waveforms are displayed instantly. A MFX3plus with QDC will show 48 tracks on a single high-resolution screen.

The new AD/DA converters use 128 oversampling and up to 96kHz sample rates. Frequency response is rated at 10 to 20k Hz, +0 dB/-0.25 dB. THD+N is less than 0.0008%, while thru noise is measured at less than -110 dB A-weighted. Other sonic enhancements include a sub-nanosecond, super-low jitter clock that exceeds AES-3 spec and a power supply that (after power-up) re-clocks to the session's sample rate clock. This clever design eliminates interference that can occur in computer-based audio systems, where the switching power supply's clock signal radiates throughout the cabinet. A sample-rate converter can automatically convert all incoming digital audio to the specified output sample rate up to 96 kHz, while maintaining correct timestamp or timecode information. Also, 16/20/24-bit files can be recorded and mixed freely in any project at any time.

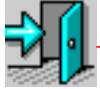
QDC systems are compatible with existing MediaLink systems, with all gear sharing the same network, projects and SFX databases. However, QDC-enhanced systems enjoy double the network bandwidth across the same 100 Base-T connection. Again, this is in keeping with one

of Fairlight's basic tenets: to provide the best possible products and a continual upgrade path as significant improvements and new technologies become available.

Fairlight USA, 844 N. Seward Street, Hollywood, CA 90038; 323/465-0070; fax 323/465-0080;
www.fairlightesp.com.

Barry Rudolph is an L.A.-based recording engineer. Visit his Web site at:
WWW.BARRYRUDOLPH.COM

Copyright © 1995 Through By [PRIMEDIA Business Magazines & Media](#) All Rights Reserved.



[Back To Home Page](#)

[Back Up To The Top](#) 

[All Web Page Design Is Copyright © 1995 through By Barry Rudolph](#)