



March 1999 Meeting Notice

"Design of a 24 bit multi-track digital recorder: the Euphonix R-1"

Mark Doenges and Dana Bourke, Spectral div. of Euphonix
Richard McKernan, Euphonix

DATE/TIME: Tuesday, March 30, 1999 - 7:30 PM

PLACE: Jack Straw Productions Studio, 4261 Roosevelt Way NE, Seattle, WA

DIRECTIONS: From I-5, take the NE 45th St. Exit (Exit 169). Go Eastbound on NE 45th. Turn right onto Roosevelt Way NE (one-way Southbound). Jack Straw is on the right, at the corner of NE 43rd. Limited parking in the lot on the south side of the building, plus street parking.

Historically, analog and digital multi-track tape machines have served as the most effective tools for high performance professional multi-track recording, but tape machines have always placed limits on the recording process: slow and inaccurate locating, the inability to provide efficient editing capabilities, generation losses for analog machines and less than perfect sound quality.

Euphonix Inc. created the R-1 Multi-Track Recorder, a product that offers a user-friendly transition from analog or 16-bit digital tape recording to 24-bit disk recording. The R-1 significantly improves sound quality, reliability, and operational efficiency while maintaining a user-interface that has remained an industry standard since the early 1970's.

The R-1 recorder was designed and built through a collaboration of Spectral and Euphonix engineering. Spectral, a local PNW company, has designed and manufactured digital audio workstations since 1987. Purchased by Euphonix in 1996, Spectral was responsible for the product management and the digital core of the R-1 recorder. As the system is modular, certain modules and the product's physical appearance were developed in Euphonix's Palo Alto offices.

The R-1 multitrack recorder was developed with specific feature goals which fall into quality and ease of use categories. Quality includes not only the sound (both the analog and digital), but also includes the physical construction, the reliability of the product generally, and the stability (non-degradability) of the

storage medium. Ease of use features are highlighted by the R-1's operational "reel feel" which largely emulates the convention tape machine. Beyond the capabilities of tape machines the R-1 also has non-destructive (as well as destructive) and randomly accessible recording and editing.

The system architecture is a mix of new technologies, time tested workstation technology, adherence to standards, and parallel functionality. MADI (Multi-channel Audio Digital Interface) is used as the real-time digital audio bus and can be routed in a 4X4 matrix within the recorder. It is the only transmission standard set by the Audio Engineering Society (AES) for carrying up to 64 streams of 24-bit digital audio over a single wire. The R-1 is also one of the first professional audio products to use the IEEE 1394 communication system as its control and data transfer bus. This allows functionality to be separated into modules that attach to a centralized control computer called the Pilot, which itself can be connected to conventional networking. SHARC digital signal processing chips from Analog Devices provide the 40-bit floating point audio processing.

The presentation will be given by Mark Doenges, a Spectral founder and R-1 product manager; Dana Bourke, Spectral Quality Assurance Engineer/Studio Hub product specialist, and Richard McKernan, Euphonix R-1 west-coast sales manager. The emphasis of this presentation will be to highlight the design philosophy behind the R-1 and examine some of its core technologies.

NON-MEMBERS ARE WELCOME TO ATTEND

Of Possible Interest

While the Audio Engineering Society and the PNW Section do not endorse any commercial products or endeavors of any sort, from time to time our meeting notices like this one will be used to inform you, the regional AES membership, of special events and educational programs coming to the area that may be valuable to you in your audio profession.

Job Listings-

Rockford Corporation, Tempe, AZ

Title: Product Design Engineer
Responsibilities: Research, design and develop new audio amplifier products, as well as redesign and improve existing products.
Requirements: Experience in audio power amplifier design; working knowledge in operation, feedback, efficiency and classes of operation; facility with CAD and circuit modeling; bachelor's degree in electrical engineering or equivalent, and five years of related experience.

Title: Mechanical Design Engineer
Responsibilities: Design mechanical packaging for new products and revised products including thermal and EMI analysis, as well as research new materials and methods.
Requirements: Experience in electronics packaging and design including cosmetics and thermal analysis; proficient in 3D product design software and FEA tools; bachelor's degree in mechanical engineering or equivalent, and five years of related experience.

To recommend a candidate or for additional information contact:
Nancy Palmer, Voice: 602-604-9050, Fax: 602-604-9045, Email: <palmercom@compuserve.com>

Web Sites: <rockfordcorp.com>, <hafler.com>, <rockfordfosgate.com>

Rick Smargiassi, ILS, 360-668-7016 - Barry James, Puget Sound Recording, 206-650-6554
Dan Mortensen, Dansound, 206-525-2113 - Bob Moses, PAVO, 206-682-7223
Sam Fontaine, 425-513-2451 - Raul Gonzalez, Concert Sound, 206-855-9576
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PNW SECTION
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FIRST CLASS