

1394 Trade Association Features Latest PC-Centric Home Entertainment Networking Demonstration at WinHEC; TA Rubber Band Rockets a Big Hit

At WinHEC 2007 in mid-May in Los Angeles, the 1394 Trade Association showcased the latest FireWire-equipped home entertainment network, demonstrating the expanding role of the PC in high-definition audio-video networking. It was a successful demo that drew plenty of visitors – helped along by the Trade Association's rubber band rockets, which were dubbed by many attendees as the 'best WinHEC giveaway' this year.

Texas Instruments Inc. developed the demo, which highlighted FireWire's ability to support multiple A/V streams and two-way traffic throughout a multi-room home entertainment network. It featured cable TV content from a set-top box streaming HD video over both CAT-5 and coaxial cable to a PC at the center of the network. Simultaneously, the PC broadcast a second HD stream to a high-definition STB connected to a "legacy" HDTV using a DVI connection. The final piece of the demo was an audio node receiving the same HD MPEG stream as the HD STB, from which it stripped off only the audio and decoded it to 7.1 channel audio.

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Executive Director's Report

An exciting new initiative is being discussed within the Marketing Working Group that I hope you will participate in. During the second quarter TA meeting in Santa Clara, Bill Rose, our Marketing Working Group (MWG) Chair, proposed that we hold a contest for the best new 1394 product idea of 2007. Bill's thinking was that there are many prototype products in R&D labs, proof of concept demos, and innovative product ideas developed by technology-savvy users that have never made it into production. We would like to encourage the 1394 community to bring out these ideas and show them off. Very likely there will be several that make great 1394-enabled products.

We're working out the details now with a formal announcement planned for the MWG session at the TA meeting in Woodstock, UK, in July. The scope of the contest is being expanded, and will probably include new ideas that do not have working prototypes and new ideas with working prototypes.

Your Executive Director also is working with MWG leadership to add a second, parallel contest which will cover the best and most fun applications of FireWire that utilize existing 1394 hardware and software. Over the past few months I've run across several innovative new 1394 applications. For example, by using the 1394 port on an HD STB, a 1394 enabled computer, and software from thegreenbutton.com, consumers can record HD content for viewing later. No PVR, DVHS, or Blu-ray necessary. There is also software available from istopmotion.com that lets consumers connect a camcorder over 1394 to a Mac for making stop-motion videos.

I am sure there are many more cool, exciting applications for 1394. The TA would like to collect these, and get the word out to the user community, building interest in and demand for 1394.

Now is a great time for you to find that product idea you started a couple of years ago and never finished. We will be offering great prizes to the winner and runners-up as well as posting the winning products in the "Featured Product" section of the web. More ideas are being developed and will be made public at the meeting in Woodstock.

Stay tuned,
James Snider

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Launch of 1394-Equipped Blu-ray Optical Products Demonstrates FireWire's Major Role in New High-Definition Revolution

1394 and Blu-ray are "Pivotal Parts" of the High Definition Equation

The introduction of 1394-equipped Blu-ray Disc products this year represents a significant new milestone for the IEEE 1394 (FireWire) standard, as consumer electronics leaders including Samsung Electronics, Sharp Electronics and LaCie have introduced HD-capable 1394-equipped Blu-ray disc technology. Other World Computing also is offering a new Blu-ray drive, and other organizations are expected to follow. Consumers will be able to use 1394 to transfer high-definition video to HDTVs or computers as Blu-ray drives record from video and digital broadcasting sources.

Sharp Electronics in February introduced a \$1,260 Blu-ray recorder equipped with 1394 connectivity that uses the tuner on Sharp televisions to record high-definition TV programs, which eliminates the cost of adding a separate tuner on the device. Sharp BD-HP1's hybrid recording function works with the 1394 connections on Sharp Aquos LCD TVs and Aquos HD Recorders.

Also launched was the 1394-equipped LaCie d2 Blu-ray drive, with 50 GB storage, a DVD/CD writer in a single drive. Compatible with both Windows and Mac, the d2 Blu-ray Drive comes with Roxio burning software and FireWire connectivity.

In late March, Samsung Electronics introduced the SE-B046, an external burner with a 1394 port designed to record from 1394-enabled set-top boxes or computers. The drive writes BD-R discs at 4X and BD-RE at 2x. It uses a second laser to handle DVD and CD burning.

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Latest 1394-Equipped Products Led by New PCs, Audio and HDTVs

With most of the major trade shows out of the way for 2007 – including International CES, MacWorld, NAB and the Frankfurt Music Messe – new product introductions have slowed down a bit. But just a little bit. The list of new 1394-equipped PC, CE, storage and industrial products rolled along during the second quarter. Hewlett Packard and Fujitsu led the list of new PCs with 1394, while Mitsubishi Digital Electronics introduced a new high end HDTV.

NextComputing, creators of the first flextop computer, announced the NextDimension portables family, featuring 1394a and the low voltage 50W version of the Quad-Core Intel Xeon Processor 5300 Series. By using open standards and a modular design, the portable can be configured and reconfigured to suit the end user or OEM. Other key features enhancing the functionality of the NextDimension Evo include an onboard hardware RAID controller for up to six SAS drives. Up to eight cores are available in the briefcase-sized supercomputer. Starting under \$3,000, it was shown for the first time at Networld Interop in Las Vegas, May 21-25.

HP is out with its newest Pavilion notebook, which includes four-pin 1394a connectivity. The HP Pavilion dv2500t measures 14 inches wide, 10.1 inches deep, and 1 inch thick – and weighs 6.2 pounds; if an AC adapter is included, total travel weight reaches just 7.2 pounds. The Pavilion dv2500t has a 15.4-inch wide-screen display with a native resolution of 1,280x800. The screen features a glossy finish that enhances colors and brightness. It's priced at about \$800.



Another new PC with 1394 is the **Fujitsu** E8410 Lifebook, which features the Intel Centrino Pro processor technology with the 64-bit Core 2 Duo Processor. Also on the E8410 is NVIDIA external graphics, a 15.4-inch SuperFine Wide XGA TFT screen, a maximum of 4GB memory and a 120GB hard drive. Pricing is about \$2,900.

And there's more. The 1394-equipped **Everex** StepNote XT5000T is a well-equipped 17-inch notebook, built around an AMD Turion X2 processor and Nvidia Go 7600 card, with 1394a, all for about \$900.

Gateway unveiled two new 1394-equipped laptops, the 15.4-inch E-475M and 14.1-inch E-265M, both of which come with the Santa Rosa platform and include: 800MHz front side bus and 64-bit capability, Intel GM965 chipset, Draft-n, and integrated Intel GMA X3100 graphics or Intel PM965 chipset paired with ATI Mobility Radeon X2300 HD dedicated video card. Both are powered by Core 2 Duo processors, and include up to 4GB of 667MHz DDR2 Memory using two 2GB modules and up to 120GB SATA hard drive with CD-ROM, combo drive or DVD burner. Pricing: \$1299.

Vigor Gaming Computers – which competes with Alienware – has announced the release of its 1394-equipped Force Recon QXN, the latest in its line of desktop gaming boxes. The system is built around the Intel Core 2 Extreme QX6800 quad-core processor; Asus P5N32-E-SLI motherboard

with NVIDIA nForce 680i SLI Quad Core ready chipset; Monsoon II TEC (Thermal-Electric Chip) CPU cooling system; and NVIDIA GeForce 8800 GTX video card with 768MB DDR3 575MHz and DVI and TV input. The FireWire port is 1394a. Pricing starts at \$2400 with many optional add-ons.

High End HDTV with 1394 from Mitsubishi

In mid-May, **Mitsubishi Digital Electronics America** introduced a set of new high end HDTVs in its Diamond Series, all with 1394, and available in the 57-inch WD-57833, the 65-inch WD-65833 and the 73-inch WD-73833. In addition to the 1394a interface the 833 Series includes Smooth120Hz – a Mitsubishi trademark - for more fluid and smoother moving images free from motion blur. The new models also have TV Guide On Screen 9.0, Game FX - 3D game capability, and an RS232C input. Each 1080p DLP HDTV includes Mitsubishi's unique 6-Color Light Engine, making these televisions the only HDTVs to produce images with six separate colors. All of these new 1080p DLP HDTVs are designed, engineered and built in North America. Prices range from \$3400 to \$5900.

Audio

Denon Electronics in May introduced the 1394-equipped DVD-5910CI DVD-Audio/Video/SACD Player, priced at \$3,800. The DVD-5910CI is designed to be the primary source for a high-end home theater or whole home distribution system and, as such, offers connectivity not often found on consumer level goods. The "CI" stands for Custom Integration. It comes with a pair of analog RCA cables, a composite video cable, a detachable two-prong power cord, a remote with batteries, a Denon Link cord and an IEEE 1394 cable, as well as the book-sized manual.

Apogee Electronics Corporation announced that its FireWire option card for the Mini-Me and Mini-DAC is now shipping worldwide through authorized dealers and distributors. The new FireWire option card allows users to connect Mini-Me and Mini-DAC units to a digital audio workstation at sampling rates up to 96 kHz or 192 kHz, respectively. The FireWire option card also allows for the aggregation of multiple units for those who want to expand beyond two channels.

Fast Optical Drive from Sony with 1394

The **Sony** DRX-830UL-T optical drive with 1394a is an external DVD+/- drive that features a maximum 18X dual format (DVD+/-R) burning capability. However, it may be too fast for media to keep up - there is no 18X media yet to match the speed of the drive. The drive itself connects to Windows or Mac computers via 1394 or USB. It can record DVD+R at 18X, DVD+RW at 8X, DVD+R DL at 8X, as well as DVD-R at 18X, DVD-RW at 6X, and DVD-R DL at 8X. The drive features Toast 6 lite for Macintosh and Nero 7 Essentials for Windows to get you burning CDs and DVDs. The rear of the drive holds the 4-pin and 6-pin FireWire ports. Cables for both connection formats are also included in the box. List price: \$120.00

More Storage

Right at the end of the first calendar quarter, **lomega** announced the new lomega Power Pro Desktop Hard Drive, a 2TB drive with both 1394a and 1394b connectivity, powered by four hot-swappable SATA hard drives with hardware-based RAID security features. The company said the Power Pro drive gives users a cost-effective and powerful storage solution for the large data and image files created in today's business environment. The lomega Power Pro Desktop Hard Drive is Windows and Mac compatible, including the new Vista operating system. Not cheap, at \$1,700.

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New 1394-Equipped Products Led by New PCs, Audio and HDTVs

Other World Computing announced the new OWC Mercury Elite-AL Pro Dual 2.0TB RAID solution, the highest capacity 2-drive array available. Based on the award-winning OWC Mercury Elite-AL Pro line of RAID drive solutions, the OWC 2.0TB RAID solution is A/V rated, specifically designed to meet the high-performance demands of audio and video production with data transfer rates of over 80 Mbytes per second.

The OWC Mercury Elite-AL Pro Dual 2.0TB RAID solution is a high-performance 7200RPM, 64MB RAID 0 Striped SATA-Equipped Drive Solution. The highest capacity top performance external drive available of its kind, the new OWC 2.0TB RAID solution features Plug & Play simplicity through FireWire 800, FireWire 400, and USB 2.0 interfaces via OWC's custom Oxford 924-based bridge solution. Data accessibility is completely transparent via the different supported interfaces, even when moved between different computers.

Priced at \$1,100, the OWC Mercury Elite-AL Pro Dual 2.0TB RAID solution is available through OWC and major retailers. 320GB to 1.5TB OWC models are also available from \$249.

Lindy Hub

U.K.-based **Lindy** in May announced its three-port FireWire 800 repeater hub that will allow users to connect two FireWire peripherals to a computer at up to 4.5 meters. The hub can be used to connect FireWire devices of any speed (100/200/400/800), and peripherals can be hot-plugged and hot-swapped, with additional hubs daisy-chained up to 63 devices. It can be bus-powered or self-powered, and comes with a 1m FireWire 800 9-pin beta cable. The hub measures 100 x 60 x 15mm and is available for \$89.

JVC Everio GZ-MG255 - camcorder - hard disk drive

Compact and convenient, the JVC Everio GZ-MG255 hard drive camcorder with 1394 cuts a small profile – it's less than three inches thick and wide and weighs less than a pound with its battery. The lightweight, palm-sized design makes the camcorder easy to carry around. With a 30GB hard drive, the MG255 can shoot up to 37.5 hours of MPEG-2 video – if used at the camcorder's lowest setting. At the higher-quality fine or ultra-fine modes, it can fit between seven to 10 hours of footage on the camcorder. MPEG-2 is simple enough to work with, and still offers plenty of recording time. Besides the hard drive, the MG255 can accept SDHC memory cards. A 2-megapixel sensor drives the MG255, capturing both 720 x 480 wide-screen video and 1600 x 1200 still image. No pricing listed.

In Japan IO Data 1TB High-def HVR-HD1000LE Uses 1394 for Recording

IO Data has released – in Japan – a relatively low price high-def recorder. The HVR-HD1000LE packs 1TB of storage space and costs 79,800 yen, or \$669. The major key to reducing the price was removing the tuner from the recorder. Instead, the HVR hooks up to a TV or satellite tuner whether the tuner is in a set-top box, another DVR or inside a TV set, over an IEEE-1394 connection. There's room to record 103 hours of Japanese terrestrial digital TV in full high-definition. IO Data has provided set-up guides for hooking it up to other DVRs – including Sony and Toshiba models – via the two FireWire ports.

Dropping the recording quality below full HD allows up to 260 hours of superior Japanese game shows to fit onto the drive. Should more 'compact' storage space suffice, users can select the 600GB model. No plans have been announced yet for sales of the HVR-HD1000LE outside Japan.

1394 and Fiber Optics

Firecomms in April introduced its new 1394 Fiber Optic Transceiver (FOT), a fully integrated RLED-based 650nm transmitter and highly sensitive receiver that conforms to the IEEE 1394 and IDB-1394 Wake-on-LAN specifications. The 1394/FireWire FOT is rated for modulation of 250 Mbps (1394 S200), and meets all 1394 low power and sleep mode operation characteristics – along with compatibility with SMI and IDB-1394 automotive connector form factors. Pricing on request, www.firecomms.com

Imaging and Machine Vision Using 1394b



Firstsight Vision of the U.K. has released five new AVT Guppy ultra-compact cameras for industrial and scientific OEMs, system integrators and resellers. Available in monochrome or color versions, the AVT GUPPY camera family uses the IEEE-1394 FireWire

serial digital interface. The new models are equipped with Sony Interlaced CCDs and are the only interlaced FireWire cameras currently available. Two of the new models feature sensors with Sony's EXview HAD CCD technology, which increases sensitivity, especially into the near infrared region (NIR) of the spectrum. All the Guppy models provide smart features such as lookup table, white balance, and selectable gamma. Pricing is not listed.

Jenoptik, based in Germany, presented a new digital IM 11CM-800 imaging module outfitted with 1394b for use in science and industrial applications. The module relies on a Kodak 11 megapixel CCD sensor of the latest generation, which is available as a monochrome or color sensor. With a sensor format of 24x36mm, the imaging module recommends itself as a future-proof digital replacement of analog image acquisition systems for 35mm photography.

It includes a 1394b port to provide fast image transmission; the FireWire 800 interface with data transfer rates as high as 800Mbit/s facilitates the acquisition of fast image sequences and high frame repeat rates as required for live image display on a computer monitor. Up to four frames per second can be taken at full sensor resolution. No pricing was available.

Northwire's DataCELL MVC-800 Extended-Distance FireWire cable is designed for machine vision, variable frequency drive control and other longer cable run applications in rugged industrial environments. New 800 Megabit/second 1394b specifications and the emergence of industrial applications for FireWire require longer cable runs. DataCELL MVC-800 Extended-Distance cable is engineered within the FireWire performance specification up to 10 meters end-to-end length. This longer cable maintains high oil, chemical and UV resistance; cut, abrasion and weld flash resistance; FT-1 flame-rating and a waterproof feature make it suitable for outdoor use.



VersaPHY Moves Ahead with New GPIO Profile Development; Services Coming in Apple Mac OS X Version 10.5

VersaPHY, launched last year as a new enhancement to IEEE 1394, is moving ahead with a new Task Group within the Industrial and Instrumentation Working Group (aka the Industrial Automation Working Group). The group – which includes Apple, Brooks Automation, Fraunhofer IPMS, Oxford Semi, Quantum Parametrics, Symwave and Texas Instruments – will develop a General Purpose Input/Output (GPIO) profile specification. The GPIO profile will take the generic facilities given it by the VersaPHY specification and define specific functionality for GPIO implementations, according to Richard Mourn of Quantum Parametrics.

VersaPHY will also receive a boost when Apple ships Mac OS X version 10.5 with new services to enable developers to access VersaPHY devices.

VersaPHY uses an expanded physical layer (PHY) designed to enable low-cost, simplified implementations for aerospace, automotive, pro-audio, industrial, home networks, and other applications. It enables endpoint devices to operate at lower costs by receiving their configuration and operational direction from one or more full-service controller nodes. VersaPHY retains full compatibility with existing 1394 products.

Apple's Suite of Tools Highlights Demo Room at Q2 Meeting

At almost every quarterly meeting, the members of the Trade Association provide demonstrations of the newest 1394-equipped products – and sometimes, some old reliable standbys reappear for a fresh view. That was the case during the second quarter meeting, where the demo room highlighted updates of some of Apple's best known diagnostic tools and systems, including FireStarter, BusyBus and others from Software Developers' Kit 19, circa 2004.

- FireStarter lets users plug into a network topology in order to detail the kind of data that is moving on a bus. It can show where everything is in the topology, along with basic characteristics of a device, such as speed.
- BusyBus, which allows users to generate all kinds of different bus traffic, so they can see what kind of packet is headed to a specific address.
- FireBug, which allows users to see each individual packet as it moves over a bus. FireBug was written by a group led by Eric Anderson, now 1394 TA Chairman, and works in conjunction with FireStarter for testing development.
- Apple also demonstrated PHYTool, which is useful for silicon development, since it permits a designer to review an entire layout, and to read and analyze a PHY register.

Also demonstrated at the meeting were Fujitsu's IDB-1394 controller, designed as a single chip MCU for rear-seat entertainment applications in vehicles; Rosenberger's HDCS, showing a live camera with seven in-line connectors running over an 11-meter distance; and the FireNext Cat5 400 Megabit/second repeater from Newnex.

Comoss is Latest Company to Earn 1394a Cable Compliance Logo from the 1394 Trade Association

Comoss, a leading supplier of 1394-equipped cable and connector products, has become the latest company to earn the 1394 Trade Association's compliance logo for its 1394a cables. The logo indicates that specific products comply with the 1394 Trade Association's Cable and Connector Compliance Test Specification, which was established last autumn by the association.

Comoss joins Newnex Corporation to successfully complete the cable compliance test program on their 6-pin to 6-pin and 4-pin to 4-pin cables. "We are pleased to announce that Comoss has joined Newnex in meeting compliance and being awarded the compliance logo," said James Snider, executive director of the 1394 Trade Association. "This is a very good start to the program and we expect several other leading suppliers will have their products certified for the logo in the near future."

Based in Taiwan, Comoss specializes in making connectors, cable assemblies and PCB Assemblies and has more than 15 years of experience. With research, development and engineering support, Comoss concentrates on turnkey solutions and applies the principle of just-in-time manufacturing.

The Compliance Logo Program complements the IEEE 1394a standard, which specifies product design at the level of interfaces and mechanisms. Companies can submit their cables and connectors to one of three certified test organizations – ETC of Taiwan, and Contech Research and NTS of the United States – for certification.

"1394 Bottles of Beer on the Packaging Line"

The 1394 standard has found its ways into a wide and diverse range of applications worldwide, and is increasingly used in advanced vision systems for moving data quickly and reliably. One of the most exotic locations where FireWire now resides – and is performing a vital function – is Hite Bottling in South Korea, where 1394 is part of a complex vision system that inspects the labels, caps, and fill levels of more than 50,000 bottles of beer every day.

According to a detailed article published in Vision Systems Design Magazine, Stratec created a system built around its BV 3000W universal image-processing system and based on three Marlin series FireWire cameras from Allied Vision Technologies. It incorporates Stratec's high-brightness LED flashlamps, MVTEC Halcon image-processing software, and an image-processing platform that uses a Kontron ETX 3.0 computer-on-module board attached to a Stratec proprietary motherboard to handle the I/O along with a tracking-controller unit for real-time communications with high-speed programmable logic controllers that are used in bottling lines.

The system uses a 640 × 480-pixel F033B camera, which incorporates a 1394 output along with readout capabilities from a CCD sensor. The high-performance 1394 interface enables a reduced CPU load at high frame rates – much better than using USB. MVTEC Halcon image-processing software offers a universal frame-grabber interface, allowing the flexibility to use any available and supported frame-grabber/camera combination should the application require a change in hardware.

For the complete article, visit the Vision Systems Design web site: http://vsd.pennnet.com/display_article/274261/19/ARTCL/none/none/Tracking_system_eases_beverage_inspection/

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1394 Trade Association Features Latest PC-Centric Home Entertainment Networking Demonstration at WinHEC; TA Rubber Band

The demo illustrated FireWire's industry-leading capabilities, including near-Gigabit speeds, Quality-of-Service, long distance networking capability, using both CAT-5 and coaxial cabling, multi-cast HD MPEG streaming and legacy interconnect compatibility.



Daniel Mar of Texas Instruments Inc. describes the 1394 TA home networking demo to a visitor at WinHEC, which was May 14-17 at the Los Angeles Convention Center

"WinHEC was the latest in a successful series of demonstrations showing how 1394 empowers all kinds of exciting entertainment systems to work together," said James Snider, executive director of the 1394 Trade Association. "The PC is playing a vital and expanding role in the HDTV network as we transition to an all-digital home entertainment system. By connecting the PC to the FireWire port on HD-STBs using long distance cabling, users can record HD content on the PC, share the video with any display in the home, and archive the content for future use. This provides consumers with an alternative to expensive, single-purpose devices that are becoming available now. Technically savvy users are moving forward with all of these networking capabilities, as FireWire enables the PC to play an even more pivotal role in the entertainment system in the home."

In addition to Texas Instruments, other companies supporting the WinHEC demonstration include VividLogic, Inc., Eqcologic NV, Samsung Electronics, and Symwave.

The Trade Association booth demonstration featured both 1394a, with speeds up to 400 Megabits/second and 1394b, with speeds up to 800 Megabits/second. 1394b at 800 Mbps is faster at the application layer than typical gigabit networking technologies, due to FireWire's more efficient design, low overhead, and guaranteed QoS.

Upcoming Events:

Q3 Meeting, July 10-13, Woodstock, UK
CEDIA, September 5-9, Denver
Q4 Meeting, November 13-16, Taipei, Taiwan

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Launch of 1394-Equipped Blu-ray Optical Products Demonstrates FireWire's Major Role in New High-Definition Revolution

Also, Other World Computing released the 1394-equipped Mercury Pro 2x Blu-ray Panasonic SW-5582 external drive that also holds 50GB of data or high-definition video per disc.

The Blu-ray Disc records high-definition images from video software and digital broadcasting sources and delivers high-definition, high-resolution images and high sound quality. Blu-ray offers up to 50GB of storage capacity and enables playback, recording and rewriting of HD in all of the HD resolutions including 1080p. The format also supports HD audio formats and lossless audio. In addition to the greater video and audio quality, the extra storage capacity means there is room for additional content and special features.

The Blu-ray format has won support from leading consumer electronics, personal computer and media manufacturers worldwide, including Sony, Panasonic, Philips, Samsung, Pioneer, Sharp, JVC, Hitachi, Mitsubishi, TDK, Thomson, LG, Apple, HP and Dell. Content providers are also very supportive – major movie studios such as Warner, Paramount, Fox, Disney, Sony, MGM and Lionsgate have announced titles for Blu-ray. And the format will be available in the next-generation PlayStation 3 (PS3) video game console.



The Sharp BD-HPI AQUOS hi-vision Blu-ray HD recorder is one of the new breed of 1394-equipped Blu-ray products now available.

"Blu-ray is becoming an important piece of the high-definition architecture – and so is FireWire," said James Snider, executive director of the 1394 Trade Association. "There is no better way to move large volumes of high quality audio and video than by using 1394's superior quality of service, reliability and high bandwidth. The new 1394-equipped Blu-ray products deliver optimal recording and connectivity for the consumer, and they provide another excellent example of FireWire's enduring benefits. Also, the support from the consumer electronics manufacturers and studios makes Blu-ray a truly universal standard, and now we are seeing 1394-equipped products that can read and write CDs, DVDs and Blu-ray discs using a BD/DVD/CD compatible optical head," Snider said. "Both Blu-ray and 1394 are pivotal parts of the HD equation."