

## 1394 Trade Association Launches New Website Featuring “Connect with FireWire” Theme

The 1394 Trade Association has launched a new website featuring a vibrant and easy-to-use layout that helps readers quickly find information on the latest FireWire products, applications and development tools. The “Connect with FireWire” format also helps readers find information on 1394 Trade Association standards, activities, and events.

The new website reflects the significant advances in speed, bandwidth, distance, and overall capabilities now provided by the world’s ultimate connectivity standard. For a complete view, visit [www.1394ta.org](http://www.1394ta.org)

“This is an exciting time for the 1394 standard, and our new 1394 Trade Association website reflects industry dynamics,” said James Snider, 1394 Trade Association executive director. “In addition to demonstrating 1.6 Gigabit/second chips, we have a strong group of new FireWire-equipped PC, consumer and industrial products. Plans are also underway to develop the first 3.2 Gigabit/second devices. In addition, there are a number of new specifications, including new versions of 1394 Automotive for copper cabling, and another covering 1394 over home coax cabling, both of which

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## 1394 Trade Association’s New 1394 Copper Automotive Standard Set for Vehicle Entertainment, Navigation, Environmental, Camera Systems

The new 1394 Automotive specification for copper cabling media is ready, designed to optimize the use of the 1394 standard in entertainment, environmental control, camera, and other in-vehicle applications.

The new specification extends the IDB-1394 Automotive Specification to include operation over cost-effective, automotive-grade, high-performance copper cabling media. All of the features and mechanisms are provided for high-speed extensions with forward and backward compatibility. It also enables the ability to signal over single-hop distances of up to eight meters using five in-line connectors or more. The specification covers the use of coaxial cable, shielded twisted pair, and shielded twisted quad media for critical non-safety vehicle functions such as multimedia and telematics applications at data rates of 400 Megabit/second or 800 Megabits/second.

The new document, which will be available from the 1394 Trade Association soon ([www.1394ta.org](http://www.1394ta.org)), includes details on ICs for copper cabling that are compatible and supplemental to the original IDB-1394 Plastic Optical Fiber (POF) products used in hybrid optical and electrical networks. It also applies to ICs for use in embedded vehicle systems networks and ICs to attach clusters of embedded 1394 devices. The new specification also incorporates a comprehensive section on power management improvements.

The original IDB-1394 Automotive standard is an international data networking standard for transmitting video, audio, and other multimedia data over an in-vehicle network. It enables

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## Executive Director’s Report

This past spring has been a busy and productive period for the 1394 Automotive Working Group. Les Baxter has recently completed work on the 1394 Automotive Copper Specification, which was a major undertaking. On July 25, a group of us will be giving automotive presentations at the Automotive Technology International 2008 seminar at the Makuhari Messe in Tokyo. The list of presenters includes Ricardo Wong of Nissan, Max Bassler of Littelfuse, Richard Mourn of Quantum Parametrics, Michael Wollitzer of Rosenberger, Mike Gardner of Molex, Debashis Mukherjee of Wipro, and myself. Also joining us will be Professor Kenya Sato of Doshisha University. Some of you may remember Professor Sato from our Yokohama meeting two years ago. I am hearing more and more industry “buzz” on automotive 1394, and anticipate some very exciting developments over the next few quarters.

In early September, the 1394TA will be returning to the CEDIA Expo in Denver. CEDIA is the largest home network and home theater show in the US. It targets the companies that implement these systems. Each year the installers at CEDIA tell us they are very interested in installing 1394 home networks. Under the leadership of Bill Rose, Marketing Working Group chair, the 1394TA will be showing systems they could install today. Bill is collecting products from a broad range of TA members, including the TC Group, Unibrain, and others. This is the last CEDIA Expo before the February 2009 “Digital Transition,” at which time broadcast TV in the US goes digital. We anticipate growing interest in the 1394 High Definition A/V Network as system installers look for digital networks to replace analog networks.

Even with some of the economic challenges we’re all facing right now, there’s good news from the 1394 Trade Association – and the place to find it all is on our newly-redesigned website. Visit [www.1394ta.org](http://www.1394ta.org) for a look.

-- James Snider

## 1394 Trade Association Announces IEEE Standards Board Approval of IEEE 1394-2008 Specification

The IEEE Standards Board has approved the 1394-2008 specification, which combines all IEEE-1394 specifications developed since the world's leading audio-video multimedia standard was founded in 1994.

The 1394-2008 High Performance Serial Bus Standard updates and revises all prior 1394 standards dating back to the original 1394-1995 version, and includes 1394a, 1394b, 1394c, enhanced UTP, and the 1394 beta plus PHY-Link interface. It also incorporates the complete specifications for S1600 (1.6 Gigabit/second bandwidth) and for S3200, which provides 3.2 Gigabit/second speeds.

Known commercially as FireWire™ and i.LINK™, 1394 has been designed into a wide range of consumer, computer, industrial and other products since its inception, and is emerging as a powerful new standard for use in automotive entertainment systems.

"The consolidated 1394-2008 specification effectively allows one single document to serve all," said Les Baxter, a long-time 1394 Trade Association leader and director of Baxter Enterprises, who supervised the process. "It provides one consistent document that provides everything a designer or developer needs in order to work with 1394 in any application. We assembled an experienced team of experts from consumer electronics, computer, and semiconductor companies who have worked diligently to complete this task on time."

The team dealt with errata remaining from prior specifications, and harmonized all message types, including fields that had been used in related specifications such as the 1394.1 bridging specification, and IDB-1394, which was developed as the original automotive entertainment standard. Not incorporated is work currently underway within the 1394 Trade Association working groups, including 1394 over coax and the new 1394-Automotive specification due later this summer.

Members of the revision team who worked with Baxter include Eric Anderson and Colin Whitby-Strevens of Apple; Peter Johansson of Congruent Technologies; Dave Thompson of LSI; David Instone from Oxford Semiconductor; Richard Mourn of Quantum Parametrics; Chris Thomas from Symwave; and Will Harris and Win Maung from Texas Instruments.

The official date of issue for 1394-2008 is June 12; IEEE and 1394 Trade Association copy editors will review the document over the summer and finalize it no later than mid-October.

### Upcoming Events:

Q3 Meeting, July 27-30, Tokyo, Japan  
CEDIA, September 3-7, Denver, CO  
Q4 Meeting, October TBD, Austria

## DTLA Enhancement of Copy Protection for 1394 Localization Marks First Anniversary

The 1394 Trade Association this spring cited the first anniversary of the Digital Transmission Licensing Administrator's enhancement of the DTLA's Digital Transmission Content Protection technology, which fully supports localization over 1394. The enhancement has made the content protection standard for IEEE 1394 – known commercially as FireWire™ – more secure than ever.

Digital Transmission Content Protection (DTCP), also known as '5C,' defines a cryptographic protocol that protects audio and video content from unauthorized copying or tampering while it traverses high-performance digital networks. 1394 content protection using DTCP has been deployed in HDTV products for nine years. This continuously successful system was enhanced with the addition of "localization," a capability that ensures that two 1394 devices are in relatively close proximity to each other prior to sharing premium content across the network. Localization allows consumers to use 1394 devices freely in their homes and vehicles, while simultaneously preventing forwarding of protected content over long distances - such as across the Internet.

"This advance has been a major benefit to consumers using FireWire, because it improves the security of protected content moving via FireWire from set-top boxes, DVD and Blu-ray players, and recording devices such as PVRs," said James Snider, executive director of the 1394 Trade Association. "IEEE 1394 provides an unbeatable combination of features for the distribution of multiple streams of HDTV content, including higher quality of service, longer distances, and more capable peer-to-peer operation than other technologies."

The DTLA specification on localization in DTCP 1394 ensures that 1394 can be used reliably and safely to transmit all forms of digital content. The DTLA localization plan is completely transparent to users and prevents unauthorized use. "We're very pleased that localization has provided greater security to high-value content on high-speed digital network interfaces, such as IEEE 1394, and look forward to even greater adoption of DTCP-enabled transport technologies," said Michael B. Ayers, president of DTLA.



Richard Mourn of Quantum Parametrics presenting at the AT International Conference in Japan, discussing the new 1394 Auto CU standard. (photo courtesy Kenny Sato)

Read more about this new standard in the article on the front page.

## New Products

### Notebook PCs

**Sony** in mid-July introduced a new line of professional PCs equipped with 1394 -- the VAI@ BZ Series notebooks. Built for business, the lightweight PCs feature a 15.4-inch widescreen display and full-size keyboard while weighing less than six pounds. An optional anti-glare screen featuring Sony's patented XBRITE-ECO LCD technology provides a crystal-clear picture.



The PC incorporates G-Sensor Shock Protection technology to counteract sudden movements. A spill-resistant keyboard panel has been added to help protect the internal components of the computer against accidents. The BZ notebook is powered by new Intel Centrino@ 2 technology, the chipset designed for top performance and system responsiveness, and energy efficiency. Along with its 4-pin i.LINK@ port, the PC is equipped with plenty of slots, ports and jacks, including a Memory Stick(R) media/SD card slot, microphone, headphone jack and a PC Card (type-II) slot.

**Dell** has introduced its new Studio line of notebooks, featuring a 4-pin 1394 connector.



Available in a wide range of configurations, the Studio line offers up to Intel Core 2 Duo processors, an integrated Web cam, a new Dell dock that can keep applications organized, and an optional Blu-ray link. Prices for the Studio 15 start at \$799; for the Studio 17, \$999. [www.dell.com](http://www.dell.com)

**Lenovo** has introduced a 1394-equipped ThinkStation S10, the company's entry level mid tower workstation featuring a 2.66GHz Intel Core2 Quad 6700 CPU, 2GB RAM (8GB maximum), 250GB hard drive, and graphics powered via the NVIDIA QuadroFX 4600 graphics adapter. The S10 features a pair of 1394 ports, one on the front and one on the rear. Prices range from \$1,300 to \$2,300. [http://shop.lenovo.com/SEUILibrary/controller/e/na/LenovoPortal/en\\_US/special-offers.workflow:ShowPromo?LandingPage=/All/US/Portals/Products](http://shop.lenovo.com/SEUILibrary/controller/e/na/LenovoPortal/en_US/special-offers.workflow:ShowPromo?LandingPage=/All/US/Portals/Products)

Taiwan-based **Lian-Li Industrial** has released a new PC chassis designed to be one of the most unique gaming cases on the market. It is also intended to compliment home entertainment equipment. Its top-mounted multimedia ports include FireWire. The Tyr X2000 also contains two side panels, which can house two 5.25-inch optical device drives and one 3.5-inch drive. Pricing starts at \$500.

### FireWire Hubs and Extenders

**Network Technologies Inc** has added the XTENDEX™ 1394 FireWire Extender via CAT5e/6 to its popular line of extenders. The ST-C51394-250 1394 FireWire Extender extends one FireWire device up to 250 feet using CAT6 cable and 150 feet using CAT5e cable.



The ST-C51394-250 Extender works at speeds of 400, 200, and 100 Mbps. Each extender consists of a local unit that connects to a computer and a remote unit that connects to a FireWire device. The local and remote units are connected via Cat5e/6 cable. No software or drivers are needed to use the 1394 FireWire Extender.

It supports Plug-n-Play specifications. Pricing starts at about \$400. [www.networktechinc.com/1394-extender.html](http://www.networktechinc.com/1394-extender.html)

**FirmTek, LLC**, a leading developer of Serial ATA solutions for Apple Macintosh and PC computers, announced the 1394-equipped SeriTek/SpyderHUB. Perfect for notebooks such as the MacBook Air, the SeriTek/SpyderHUB converter provides FireWire host connection options plus Hardware RAID, eSATA Mac OS boot capability and FireWire daisy chaining in an ultra-small external design. Pricing on request.

<http://www.firmtek.com/seritek/seritek-spyder/>

### Peripherals

**Western Digital** announced a new line of hard drives called My Passport featuring a pair of 1394 interfaces. The portable hard drive product line is being specifically marketed towards Mac users. It comes pre-formatted out of the box in Mac OS X's HFS+, and is compatible with Leopard's Time Machine backup technology. The hard drive weighs five ounces.

The drives are available in either 320GB, 250GB, or 160GB capacities, and come with a drawstring carrying bag. The line also features a "capacity gauge" that shows users how much room is left on their drives. The enclosure is shock-resistant. The 320GB drive is priced at \$219.99. [www.westerndigital.com](http://www.westerndigital.com)

**LaCie's** Little Big Disk Quadra has been around for a year, but it now has a major capacity boost. Now the external eSATA/Firewire

800 drive supports up to 1 terabyte of storage by utilizing two 2.5-inch 500GB drives in a RAID 0 configuration. The Little Big Disk can fit in a hand (weight is 1.4 lbs). The Little Big Disk Quadra is priced at \$660. <http://www.lacie.com/us/products/product.htm?pid=11087>



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## New Products

**Ricoh Americas Corporation** has launched the new Ricoh Pro 906EX/Pro 1106EX and Pro 1356EX Digital Imaging Systems, featuring a wide variety of networking connections, including 1394. Speed is a critical component of the systems' performance capabilities. The Pro 1356EX is the fastest MFP on the market today, printing at the speed of 135 pages per minute. The Pro 906EX and the Pro 1106EX print at impressive speeds of 90-ppm and 110-ppm, respectively. In addition, the Pro 906EX/Pro 1106EX and Pro 1356EX series incorporates high-speed color and black and white scanning. In regards to durability, performance is enhanced with a duplex inverter and stapling performance is improved with a triple pre-stack capability. The Pro 906EX/Pro 1106EX/Pro 1356EX is available at a suggested retail price of \$39,000, \$50,000 and \$60,000, respectively. [www.ricoh-usa.com](http://www.ricoh-usa.com).

## Consumer Electronics

**Sony's** top-end HDV(tm) videotape recorder, model HVR-1500A, now includes HD-SDI input capabilities, broadening the deck's potential applications to a wider range of production environments. In addition, the enhanced HVR-M15AU and HVR-M25AU models now support native progressive recording. All models include six-pin 1394 interfaces.

With HD-SDI inputs, the HVR-1500A model can be used as an HD recording deck for cameras with HD-SDI outputs, such as Sony's HDV, XDCAM EX(tm) and BRC models. It can work with live production tools such as the Sony Anycast Station(tm) system, and is NTSC/PAL switchable, with support for HDV1080/50i and 1080/59.94i. The deck records HDV, DVCAM(tm), and DV, while playing back HDV, DVCAM, DV, and DVCPRO(tm) 25.

Along with the six-pin i.LINK interface, the deck has HD-SDI output, SDI and AES/EBU input and output through optional boards, and RS422A nine-pin control. The HVR-1500A VTR is expected to be available at a price of \$8,290. The HVR-M25AU and HVR-M15AU models are priced \$4,300 and \$2,480, respectively.

## Data recovery systems, motherboards, and other products

**Chengdu Yiwo Tech Development Co., Ltd.** has announced Data Recovery Wizard 4.36, a FireWire-enabled system to recover lost data. Designed for Windows OS machines, Data Recovery Wizard has been upgraded to add support for Windows Vista. Other important new features include an ability to recover from disk image, restore compressed and encrypted NTFS files, and perform intelligent search for lost data.

Data Recovery Wizard will recover deleted files or folders even when they have been emptied from the recycle bin. Unlike most other products, it restores files from deleted, lost or missing partitions or formatted logical disks. The program supports FireWire, among other connectivity standards. Prices for a single user license start at \$70. [www.easeus.com/datarecoverwizard](http://www.easeus.com/datarecoverwizard).

**Gigabyte** has launched its G31 Series of motherboards based on the Intel G31 chipset. Armed with Dynamic Energy Saver technology and equipped with 1394, the motherboards deliver up to 70 percent improved power efficiency. The G31 series comprises the GA-EG31M-S2 and the GA-EG31MF-S2.

The motherboards are compatible with high-end processors such as Intel Core 2 multi-core and 45nm processors. They come equipped with dual-channel DDR2 800 memory and an Intel Graphics Media Accelerator 3100 that supports Microsoft DirectX 9.0 and the Windows Vista Aero experience. These motherboards boast high-speed LAN connections with data transfer rates up to 1000Mb/s, and support a four-pin FireWire interface from Texas Instruments. The GA-EG31M-S2 motherboard model is priced at \$110, while the GA-EG31MF-S2 model is priced at \$122. [www.gigabyte.com](http://www.gigabyte.com)

**Tektronix, Inc.**, a leading worldwide provider of test, measurement and monitoring instrumentation, announced the first Methods of Implementation (MOI) for the new Ultra-Wideband (UWB) WiMedia PHY Test Specification Version 1.2 and released a new version of UWB Analysis software for DSA/DPO70000 series oscilloscopes that provides additional measurements for UWB WiMedia 1.2 <http://www.tek.com/wimedia>.

With the new WiMedia PHY Test Specification Version 1.2 adding more receiver testing, the Tektronix AWG7102 Arbitrary Waveform Generator and RFXpress signal creation software are the best choices for engineers working with v1.0 and v1.2 and planning for v1.5. Tektronix provides toolsets for debugging and analyzing complex UWB waveforms while running on the industry's highest performance hardware. The implementations are valid for UWB WiMedia radios using MB-OFDM technology for Certified Wireless USB, next generation Bluetooth, WiNet and Wireless FireWire applications.

**Texas Instruments** has expanded its broad, high-performance 1394 portfolio with a new flexible PCI Express (PCIe) to 1394b open host controller. Packet throughput exceeds 87MB/s, making the XIO2213A the fastest 1394b controller on the market today. The device's 'unique' architecture creates a one-chip solution for 1394b for ExpressCards, PC add-in cards and motherboards or docking stations, says the company. The XIO2213A provides interoperability by supporting three bilingual 1394 A/B cable ports at 100Mbps, 200Mbps, 400Mbps and 800Mbps. The device's internal dedicated PCI bus operates at 32-bit, 66MHz and includes a pre-fetch agent to optimize PCIe packets for maximum 1394 performance. The translation bridge is fully compliant with the PCI Express Base Specification and supports the standard PCI-to-PCI bridge-programming model. Eight 3.3V general-purpose inputs and outputs allow for further system control and customization. The XIO2213A is available now in a 167-ball MicroStar BGA package. [www.ti.com](http://www.ti.com)

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### 1394 Trade Association Launches New Website Featuring “Connect with FireWire” Theme

“The new site has been completely redesigned and reorganized to make it easy for FireWire users and manufacturers to quickly find the information they are looking for, be it products, developers and suppliers, standards, industry activities or simply to learn about what FireWire can do for them,” said Bill Rose, Marketing Work Group chair for the Trade Association. “It also encourages active participation by 1394 Trade Association members and users, as well as bringing readers the latest updates from the many bloggers who write about and comment on the industry.”

The home page of the site features six main sections including “Connect with FireWire,” which helps readers find recent products, solutions and answers to questions, plus handy tips about using 1394-enabled products. “Connect with Developers,” focuses on design and development tips, working group activities, and 1394 compliance. “Connect with Activities” links readers with recent news, articles, and events, while “Connect with Products” delivers a comprehensive listing of all the 1394-enabled consumer, computer, storage, industrial and component products developed by companies around the world.

“Connect with the 1394TA” focuses on the association’s development and promotional work on the 1394 standard, while “Connect with Industries” provides a set of links to niche and specialty markets where 1394 is playing a prominent role beyond the computer and networking, including aviation, industrial control and audio, among others.

“The new site is focused on the customer. Whether you are a consumer, OEM, or a software developer, you will find it easy to locate the information you are looking for. You’ll also see where 1394 fits in markets and applications around the globe, and the work that the 1394 Trade Association is doing to enhance and advance FireWire in your area of interest,” said Rose.



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### New Products

**Electronic Links** has introduced two new 1394b optical converters, intended to facilitate installation of plastic optical fiber for home networking. The two converters can deliver data from a 1394b copper port over POF at rates up to 250 Megabits/second over 50 meters. The interface is based on the legacy 1394b copper nine-position port. Using a standard SMI connector, the

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### 1394 Trade Association Introduces New 1394 Copper Automotive Standard for Car Entertainment, Environmental, Navigation, Camera Systems

entertainment systems that can play DVDs, show digital TV programming, and offer access to the vehicle navigation system.

“Our new 1394 copper specification allows automakers to use copper media alone or in combination with optical fiber, depending on their requirements,” said Max Bassler of Littelfuse Inc., one of the leaders of the standards project in the Automotive Work Group. “It is a significant breakthrough in automotive technology, enabling information, entertainment and safety features to be implemented over a single extensible network with excellent performance. Other, slower automotive network technologies work in specific niches, but only the 1394 Automotive standard offers a single, affordable solution for all requirements and applications.”

Bassler added that the new specification resolves the electromagnetic challenges that have previously limited copper’s application, in addition to extending distances – conservatively – to eight meters and speeds to 800 Megabits/second. Future versions of the specification are expected to extend operation to higher data rates such as 1.6 Gigabits/second and 3.2 Gigabits/second.

“This new specification truly emphasizes the value of FireWire in the vehicle,” said James Snider, executive director of the 1394 Trade Association. “It can be used for a wide variety of different applications including entertainment systems, seat and mirror positioning, and heating/air conditioner settings, lane-change cameras, and rear-view cameras. We are at the threshold of a new generation of in-vehicle systems now, and 1394 will be playing a major role in their development.”

According to Ricardo Wong, assistant manager for multimedia planning at Nissan Corporation’s Advanced Engineering Center, “The new specification provides practical examples of attenuation budget with explicit indication of required electrical signal levels on the transmitter side. The standard addresses noise evaluations at the system level and the component level. Its proof of concept played a very important role in the evaluation and understanding of the main features of each of the connector and cable technologies.” Auto manufacturers who contributed to the development of the new 1394 automotive specification include Ford, Honda, Nissan, PSA, Renault and Daimler. Suppliers and component manufacturers include AutosplICE, Delphi, Eqcologic, Electronic Links, Foxconn, Fujitsu, Honda, Hosiden, Littelfuse, LSI, Molex, Quantum Parametrics, Rosenberger HF Technik, Texas Instruments, Tyco, and Yazaki along with Baxter Enterprises and WJR Consulting.

configuration can mate with an SMI plastic optical plug cable assembly already terminated and offered by Electronic Links.

An Optolock connector configuration can be field terminated to the bare POF provided by ELII.

Adapters are available with US, UK and Euro adapters. For more information check [www.electronic-links.com](http://www.electronic-links.com)