New 3.2 Gigabit per Second Speed Specification On the Way

*FireWire S3200 to deliver ultra high speed with no changes to connectors or cables*

The 1394 Trade Association is set to quadruple the speed of FireWire to reach 3.2 gigabits per second.

The TA’s new electrical specification, known as S3200, is ready for ratification. It builds upon the IEEE 1394b standard, preserving all the advantages of FireWire while offering a major and unprecedented boost in performance. S3200 also uses the cables and connectors already deployed for FireWire 800 products, making the transition forward easy and convenient for 1394 product vendors and their customers. The 1394 arbitration, data, and service protocols were not modified for S3200, so silicon and software vendors can deploy the faster speed FireWire quickly and with confidence that it will deliver its full potential performance.

There are also new 1.6 Gigabit/second devices on the horizon, which will boost 1394’s capabilities immediately in a wide range of products. First Ics at 1.6 Gigabit/second are due by spring.

S3200 builds on the FireWire 800 standard that has led to the development of so many outstanding products since it was first deployed in 2003. S3200 preserves 100 percent of the 1394b design efficiency and will deliver very high payload speeds to the end user - nearly 400 megabytes per second.

continued on page 4

1394 TA Joins HANA in New Product, Tech Demos at CES 2008

*Four-Room Network, Pulse—LINK 1394-to-Coax Demo, Highlight Exhibit*

The Trade Association and a group of its mutual member companies joined the High-Definition Audio-Video Network Alliance (HANA) at International CES in Las Vegas to host a four-room “HANA Home” demonstration of its HD home networking solution.

HANA showcased the HANA Home, a four-room demo that simultaneously distributed 5 UWB streams over various media, including copper and plastic optical fiber and over in-home coax cabling. Using the HANA network, consumers are able to access HD content on any device in the house and watch it on any networked device in any other room.

The HANA Home at CES 2008 was sponsored by Samsung, Pulse—LINK, Oxford Semiconductor, Newnex, Firecomms and the 1394 Trade Association.

“HANA is delivering on the promise of a standards-based home networking solution that we envisioned when we launched two years ago,” said Jack Chaney, HANA Technical Work Group Chair. “With a sole focus on HD content, we are committed to combining simplicity with premium quality and content protection. The HANA “one remote - one cable” solution makes it easy for anyone, regardless of their level of technical prowess, to immediately enjoy HD in any room in their house.” Attendance in the HANA area was good, and several cable company executives spent time reviewing the demonstrations.

In the HANA Home, visitors watched TV, were shown how to time-shift their viewing, record live TV and push content from room to room within continued on page 4
New Coax UWB Specification Heading Toward Prime Time

Breakthrough Standard Will Provide Complete Networking Using 1394 Via Coax

The 1394 TA is moving steadily toward approval of the new specification for delivering 1394 over coax using ultra wideband, entitled “Networking IEEE 1394 Clusters via UWB over Coaxial Cable.” Designed to enable content stored on any device in the home to be networked to any HDTV in the home across the existing in-home coax cabling, the four-part specification will be ready for application soon.

There are four parts to the specification. The first is the Continuous Pulse (C-UWB) PHY (physical layer) portion, which specifies a PHY that combines with the Medium Access Control (MAC) sub-layer specified by IEEE Std 802.15.3b-2006 to support the coaxial cable portion of the residential network. The second part consists of an L3 IP Bridge section, which specifies layer 3 (L3) bridges capable of connecting isolated 1394 clusters into a residential network via Internet protocol (IP).

The third part, FCP and CMP over IPv4, specifies methods to transport command and response frames by packaging and moving them to a receiving station using IPv4 instead of via 1394-specific methods. This section also provides methods for programming plug control registers via IP messages.

The fourth part focuses on linking legacy systems and is now in its final phase of development. This section defines a relay agent as a controller surrogate that can be used to control legacy targets such as existing AV/C televisions.

The Trade Association also is working on a baseband over coax specification, which operates at baseband and uses a simple interface between the 1394 and the coax cable.

New Products and Technologies Built with FireWire

FireComms’ New Gigabit Transceiver Highlights the HANA booth at CES

At CES 2008, Firecomms Ltd. introduced its new fully-integrated gigabit transceiver that will enable low-cost, gigabit links over Plastic Optical Fiber (POF). Based on the company’s proprietary VCSEL (Vertical Cavity Surface Emitting Laser) technology, the low power transceiver -- the first on the market to emit visible light - can deliver data over POF at rates up to 1.25 Gbps, and is pin compatible with 1x9 optical transceivers for glass fiber.

Fitted with OptoLock(TM), a plugless interconnect that allows for quick connection of bare POF, Firecomms’ new transceiver is composed of a red VCSEL and a receiver designed specifically for POF applications. Because it emits visible light, this new transceiver enhances safety and simplifies set-up and test procedures.

POF is as easy to work with as speaker wire and is immune to electrical interference, so it is ideal for FireWire networks. Pricing on request via www.firecomms.com

Oki Electric Cable Co., Ltd. achieved an industry first with its new eight-meter 1394b Long Cable, which the company claims complies with 1394b. The cable provides an 800 Mbp/s transmission speed over an eight-meter high-performance cable. Oki plans to provide the new cable to users for various applications in industrial equipment to serve the demand for speed increases in industrial equipment and robots. It also serves the requirement for noise-resistant cables. By adopting a proprietary cable structure and reviewing the materials used, Oki Electric Cable succeeded in developing the 1394b Long Cable, Oki said. For details, visit www.okidensen.co.jp/english/catalog/1394longcable.htm

Board of Directors Elections Set for January 30th in Hawaii

The 1394 Trade Association will elect its 2008 board of directors January 30th at the first quarter meeting. A total of nine board members will be selected by TA vote.

Nominees include Eric Anderson of Apple; Hans van der Ven of AV Connections; Peter Helfet of Ecologic; Dave Thompson of LSI; Max Basser, who represents Littlefuse; Mark Slezak of Microsoft; Don Harwood of Oxford Semiconductor; John Sanhoff of Pulse-Link; Burke Henehan of Symwave; Will Harris of Texas Instruments; and Bill Rose of WJR Consulting. Proxy ballots must be completed and returned no later than January 25, 2008 using either overnight or similar method with proof of delivery. Any ballots received after January 25, 2008 will be considered invalid. Proxy ballots will not be accepted onsite at the meeting.

Notebooks and Peripherals

Introduced in early January, the new 1394-equipped Vaio LM (VGC-LM18G) from Sony Electronics is a panel PC that can be placed on top of a table or mounted on the wall for ease of use, and can be used to watch or record TV shows with its integrated TV tuner. The PC sports a 19-inch wide WXGA monitor with a native resolution of 1440 x 900. There are no buttons found up front as the power button and display off button is located on the top right portion of the screen.

Upcoming Events:

Q2 Meeting, April 7-10, Shenzhen, China

continued on page 3
New Products and Technologies Built with FireWire

Sony has placed all of the ‘computer’ aspects of the Vaio behind the screen. The Vaio’s PC Card slot, Express Card slot, Memory Stick Pro Card reader, SD card reader, headphone jack, and Wi-Fi indicator are placed on the left side of the unit. The FireWire port, microphone in, audio in, and optical out, are located at the back, with a hybrid TV tuner, A/V Input, S-Video in, AC port, Ethernet port, Modem port, and Wi-Fi toggle (On/Off) hidden behind the removable back casing. Prices start at $3,500. http://www.sony.com/index.php

Toshiba’s new 1394a-equipped 13.3-inch Satellite U305 notebook delivers mobile friendly features in a smart design with full performance built around advanced Intel® processing technology and connectivity with an integrated DVD Super Multi drive for burning DVDs and a Webcam. High-speed hard drives and lots of memory deliver enhanced performance. Select models feature a biometric fingerprint reader, which provides one-swipe security. The U305 is smaller than the traditional 15.4-inch notebook, falling in the ‘thin and light’ category.

Toshiba’s new Portege R500 series also incorporates 1394a. The lightest R500 weighs no more than 1.72 pounds, with a 12.1-inch screen, and can run Vista. Despite its thinness and light weight, it has a built-in SuperMulti DVD-RW drive, an RJ45 plug for its gigabit LAN, both a PC Card Type II and an SD Card slot along with the FireWire port. Prices start at $900. Another 1394-equipped notebook from Toshiba, the Portege M700 Tablet PC, comes with a 12.1-inch LED-backlit display and antiglare coating. Named by a large group of PC reviewers as one of the top new products of 2007, it detects the presence of a digital pen or a user’s fingertip, automatically switching between the different input methods. The M700’s 12.1-inch screen offers 30 percent more resolution than the standard 1024 x 728 display by packing in resolution of 1280 x 800. A shock-absorbing design and fall-detecting hard drive also help keep it safer from accidents. The M700 also comes with an integrated dual-layer DVD burner. The drive is modular, so users can substitute the optical drive with a second hard drive. Equipped with 1394a, the M700 is priced at $1,700.

The LG R200 notebook PC was introduced before the 2007 holidays. It has a 2.5-inch QVGA display used for its Microsoft SideShow function. The 12.1-inch notebook has a lot of connectivity options. Along with 1394a, there is a 5-in-1 multimedia card reader, a PC Express Card slot, an S-video and D-Sub output, a gigabit Ethernet and 56kbps modem port, a Line-in, Mic-in, and S/PDIF jack, and a cable PR port. The R200 also has an Intel 802.11b/g module and Bluetooth v2.0. The unit is powered by an Intel Core 2 Duo T7500 (2.2 GHz) processor and uses an ATI Radeon HD 2300 graphics card, making it suitable for gaming so long as the RAM is upgraded. Prices start at $2,600.

The FireWire-equipped Acer 15.4-inch TravelMate 6592 is powered by new Intel® Centrino® Pro mobile processor technology, with manageability, hardware-based security and energy-efficient performance. Data security is bolstered by the innovative Acer Bio-Protection fingerprint solution, and the notebook has integrated TPM support, enhanced Acer DASP and Intel Active Management Technology (AMT) 2.5’s remote management and diagnostic capabilities along with a full range of connectivity capabilities including 1394a. Pricing starts at $1,900.

New Consumer Electronics Products

Sharp’s new series of 1394-equipped AQUOS Blu-ray disc recorders, the BD-AV1 and AV10, enable recording and playback of digital broadcasts of HDTV programs that capture the high-resolution image quality of broadcast TV, AQUOS also offers full compatibility with 24 movie frames per second playback, matching the native filming format for most movies as well as HDMI output support of 1080/24p video and Dolby TrueHD, and a 1394 input for connecting to a Sharp AQUOS High-Vision recorder. http://sharp-world.com/corporate/news/070925_2.html

The new 1394a-equipped Polaroid DVD recorder with 160 GB storage and ATSC tuner records up to 204 hours of media on the 160GB built-in hard disc drive and includes YesDVD Software to create DVDs at the touch of a button. It also has built-in ATSC digital and NTSC analog tuners; YesDVD enabled indexing, auto chaptering, organization, and sharing of multi-media content, and comes with simultaneous DVD playback and record movie on hard disc. Users can record in different quality and length (HQ, SP, LP, EP, SLP), use one-touch recording with auto index creation, and take advantage of 30-second skips that jumps over commercials for commercial-free viewing. Prices are under $300.

Gaming and Motherboards

Advantech has introduced a new Intel Q965-based industrial microATX motherboard – the AIMB-564 – equipped with two 1394a ports that supports Intel Core2 Duo processors, and implements Active Management Technology (AMT) to enable remote management. Ample drive connections for up to seven SATA II and an eSATA HDD are designed with software RAID 0, 1, 5, 10 support, which make the AIMB-564 an ideal platform for storage-demanding applications such as surveillance. Good media performance and I/O and support for Trusted Platform Module (TPM) for enhanced security make it ideal for gaming as well as digital signage, kiosks, and point-of-sale terminals. Fast processing and good graphics are ideal for gaming applications. Systems built on this board can deliver high-end graphics, 8-channel HD surround sound, motion control, and joystick feedback. LAN connectivity is covered by one 10/100/1000 Base-T Intel 82566DM Gigabit Ethernet port. Prices start under $3,000. http://www.advantech.com/NetWork/Motherboards/

Gigabyte’s new GA-MA69GM-S2H motherboard, equipped with 1394a, provides complete multimedia support, onboard graphics, light power envelopes, and low prices. The north and south bridge chipset heat sinks are also easy to clear, and are just slightly taller than the PCI-Express slots, leaving a millimeter or two for any card above them. The short north bridge heat sink also makes it compatible with virtually any AM2 heat sink. The board has PCI-Express x4, PCI-Express x16, PCI, and PCI for the expansion slots. Gigabyte also includes a few of their utilities such as @BIOS, which updates the motherboard’s BIOS from Windows by grabbing up-to-date BIOS information from Gigabyte’s servers, without ever touching a floppy. Prices start under $100. www.gigabyte.com
New Products and Technologies Built with FireWire

**ADS Tech.** a leading-edge video conversion and capture solution provider for digital video professionals and enthusiasts, today announced Pyro Kompressor HD(R), a PCI Express(R)-based accelerator solution that accelerates HD MPEG-2 and HD H.264/AVC encoding up to eight times faster than software-only video compression. This provides a rapid authoring workflow. Integrated with Adobe(R) video software with support for Windows(R) XP and Apple(R) Mac OS(R) X Leopard platforms, the solution is designed for video professionals and prosumers.

The single-slot PYRO Pyro Kompressor HD board is powered by the Ambric Am245(TM), a parallel processor with 336 RISC processors, delivering 1.2 teraOPS-class of video horsepower for consistently high throughput encoding, even for difficult, high-motion video content. A dynamic and affordable solution, Pyro Kompressor HD’s high quality MPEG-2 and H.264/AVC codecs enable compression for DVD, HD DVD, Blu-ray Disc, web streaming media, archival storage, IPTV, and VOD. It is based on programmable chip technology, so that Pyro Kompressor HD hardware is “future-proofed” and can be updated as video compression standards evolve and other types of video processing become available. Pyro Kompressor HD for the PC and Pyro Kompressor HD for the Mac platform will be available for $3,495.00. www.ads.com

Audio

Yamaha Corporation of America has released new drivers and firmware updates for their G046 Mobile FireWire Audio Interface, MOTIF XS Synthesizer Workstation, and n Series FireWire Digital Mixing Studios. Available for download at www.yamahasynth.com/download/index.html, new drivers make the G046 compatible with the new Windows Vista operating system while new IEEE1394 firmware for the MOTIF XS, n8, and n12 improve network capability over mLAN.

1394 TA Joins HANA in New Product, Tech Demos at CES 2008

the home by using the HANA menus on any wired or wireless connected HDTV – all at 400 Mbps and with guaranteed quality of service. The demo illustrated how HANA uses any type of cabling, including coax, CAT-5 or plastic optical fiber (POF), to interconnect entertainment systems. The exhibit’s four-room demo showed video going across the network from any source to any TV. In the first room, the living room, video moved from a Samsung PVR across a Pulse–LINK 1394-to-coax bridge. Video also was sent across a Pulse–LINK wireless HDMI to the TV in the kitchen as an example of how wireless works in locations where it is not easy to run a wire to the TV. In the home theater or family room, video came in on coax and moved across a 1394-to-CAT-5 repeater from Newnex. Also, a Scientific Atlanta set top box took in live video, which could be played on the TV in the family room with no interference from the HANA demo video that was moving across the same network at the same time.

The HANA home demo partners include Cablevision, Firecomms, IntellaSys, Newnex, Pulse–LINK, Samsung, Texas Instruments and VividLogic. Along with the demo, HANA also announced that Firecomms Ltd. and Newnex Technology Corporation have joined HANA as adopter members.

S3200 Enhances 1394’s Position in Storage, Consumer Electronics Markets

One of the strongest markets today for FireWire is storage for computers. The best hard drives with FireWire 800 can move data almost three times as fast as the best hard drives with USB 2.0. Also, FireWire provides much more electrical power than USB, so hard drives with FireWire can operate without an AC adapter, and at high rotational speeds for higher performance. USB hard drives can fail to work from USB power, or require a second USB cable for power, or use the lowest-performance drive mechanisms because so little power is available.

With S3200 this power advantage for FireWire is fully preserved. S3200 also makes FireWire so fast that customers will see no advantage from eSATA. Both interfaces are much faster than any modern hard drive mechanism, and eSATA does not provide electrical power to operate a drive. On a computer, an eSATA port is far less flexible than a FireWire port, because many more devices can connect to FireWire. For these reasons, S3200 makes FireWire the superior choice for future external storage products.

S3200 will also enhance FireWire’s strong position in consumer electronics A/V devices such as camcorders and televisions. Today, 100 percent of HD set top boxes provided by cable companies have FireWire ports. So do 100 models of HDTV. FireWire is the only separable interface today that can record HD programs in their full digital quality while also meeting the content protection requirements of copyright holders. Many companies are pursuing whole-home HD network solutions using FireWire - notably the members of the HANA Alliance.

Technology development is also nearing completion to permit FireWire to operate over cable television coaxial cables, without disrupting the existing program content. With S3200, FireWire becomes fast enough to move even uncompressed HD signals over long distances at much lower cost than solutions such as HDMI.

The Silicon Working Group developed the S3200 specification within the 1394 Trade Association, with participation by industry leaders including Symwave, Texas Instruments, LSI Corporation, and Oxford Semiconductor. S3200 specifies the electrical operation of the 3.2 Gigabit mode first specified by IEEE 1394b-2002, without changing any connector, cable, protocol, or software requirements.

Products Built on S1600 Specification Due Soon

Even while the Trade Association is moving towards approval of S3200, many member companies are at work on products that double the stated bandwidth of S800. Announcements should be coming during the late winter and early spring.