

TV

THE DIGITAL TELEVISION AUTHORITY

TECHNOLOGY

Serving the Broadcast, Cable, Production, Post Production, Business and New Media Markets

WWW.TVTECHNOLOGY.COM

VOLUME 22, NO. 6 • MARCH 26, 2004

WHAT'S INSIDE

FEATURES

The Masked
Engineer

page 22

NAB NEWS

Vo's Shadow
page 30

Company News
page 32-46

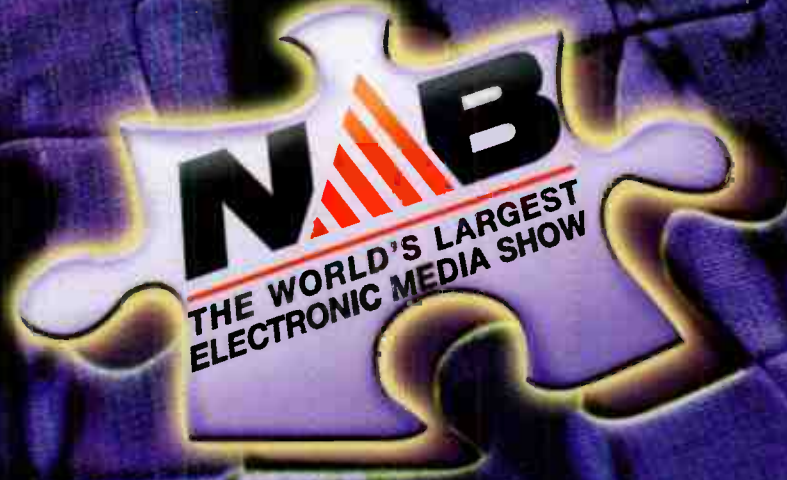
PRODUCT PREVIEW

What's New On The
Show Floor
pages 48-113

EXHIBITOR DIRECTORY

Listing of Exhibitors,
Products and Services
pages 114-162

NAB PREVIEW



Completing the digital puzzle

Gone fishing?
Not this Saturday morning.

You're
on the hook.



Remote, in-depth transmitter, transmitter facility and studio analysis and management...anywhere, anytime...from Harris!

Tired of the personal sacrifices you make every time something's not right at the transmitter? Tired of watching your 50-hour week turn into 80?

We understand. And we've got the solution: **Harris Remote Management**. Now, take advantage of a fully integrated suite of remote tools that offer complete studio monitoring and control, transmitter monitoring, and transmitter facility monitoring. With an unmatched history as the technology leader for broadcast facility management, Harris provides the ultimate IP-driven control and intelligence products, products you can integrate as separate components (with later upgrades) or as complete solution. You'll enjoy web-based monitoring available through wireless laptop, cell phone, and PDA. You'll be able to solve problems with your counterparts dozens... or thousands of miles away. Best of all, you'll work more efficiently...and get your life back.

For more information about Harris Remote Management and ReCon, eCDi™ and HBM, contact your local District Sales Manager or visit us online at www.broadcast.harris.com.

www.broadcast.harris.com

HARRIS

#BXNNTRG *****AUTO**3-DIGIT 105
#1602742/1# 0304/A/C 80/200
PHILIP CIANCHI
191 TANGLEWYDE RD
LAKE PEESKILL NY 10637-1032

instant access



In our "get the news first...and faster" world, Panasonic's DVCPRO P2 Series provides the instant advantage, with no moving parts, no consumed media and no need for digitization prior to editing. P2 solutions offer low operating costs and seamlessly connect original-quality DVCPRO data to laptop editors, servers and IT media. Just what you'd expect from DVCPRO. To find out how Panasonic can improve your news operation, call 1-800-528-8601 or visit www.panasonic.com/p2

DVCPRO

Panasonic ideas for life

IN THIS ISSUE

FEATURES

- 12 Whatever Happened to Reruns?**
Tuning In, *Gary Arlen*
- 14 Dolby, The Chipmunks and NAB2004**
Audio Notes, *Tim Carroll*
- 16 A Big "What If" for Local Broadcast Stations**
The Big Picture, *Frank Beacham*
- 18 The Aesthetics of Super Bowl Ads**
Focus on Editing, *Jay Ankeney*
- 20 IT in Broadcast: Dispelling the Myths**
Count on IT, *André V. Mendes*
- 22 MPEG-2 Is Alive and Well And Living in China**
The Masked Engineer, *Mario Orazio*
- 24 Getting Real About DTV Receivers**
Digital TV, *Charles W. Rhodes*

NAB NEWS

- 28 New Attractions Coming to NAB2004**
Hands-on pavilions, mini-conferences provide something for everyone
- 30 TiVo Turbulence Casts Shadow Over NAB**
DVRs become the wire hangers of the industry
- 32 Thomson Touts HD & IT**
Equipment maker focuses on streamlining station operations
- 34 SBE Explores The IT World at NAB**
Engineering association's Ennes Foundation sponsoring day-long focus on IT future
- 38 Sony Drives Forward With Optical Disc**
Equipment giant gets behind MXF media wrapper initiative
- 40 Panasonic Bets on P2 in Las Vegas**
Price of the flash memory storage medium remains steep

- 42 Avid Boasts Tighter Integration**
Company had a banner 2003
- 43 Harris Builds on Strength of Divisions**
Broadcast business benefits from corporate siblings
- 43 Leitch Takes High-Definition Action**
Company has new CEO and new focus on modular and HD products

EQUIPMENT

- 146, 147, 153, 155, 159, 161 Product Showcase**
- 164-168 Classifieds**

WHAT YOU'LL FIND IN HERE...

- | | |
|------------------------------------|---------------------------------------|
| 48 Cameras | 76 Storage & Recording |
| 50 Batteries & Lighting | 79 Cable, Fiber & Networks |
| 54 Lenses | 80 Satellite & Remote |
| 59 Camera Support | 82 Signal Processing |
| 64 Editing | 98 Audio |
| 66 Monitors | 102 Test & Measurement |
| 68 Asset Management | 110 Transmission |
| 70 Automation | 112 Graphics |
| 75 Routers & Switchers | |

CONTRIBUTING WRITERS

NAME:
Tim Carroll

COLUMN:
Audio Notes

This time we will briefly wrap up our somewhat detailed look at audio compression by covering areas that some readers have submitted questions about. We will then take a look at a technology that changes the relationship between pitch and time...Page 14

NAME:
Frank Beacham

COLUMN:
The Big Picture

As we approach NAB2004, I'd like to propose a "what if" question for local broadcast stations. It's a question that will strike many as extremely negative, but one that every broadcast station owner with a survival instinct had better be prepared to answer...Page 16

NAME:
André V. Mendes

COLUMN:
Count on IT

It never ceases to amaze me how certain ideas and misconceptions manage to survive and even thrive amid large segments of any population, despite the existence of copious amounts of information to the contrary. Our willingness to accept...Page 20

©2004 Avid Technology, Inc. All rights reserved. Product features, specifications, system requirements, and availability are subject to change without notice. Avid and make manage move I media are either registered trademarks or trademarks of Avid Technology, Inc. in the United States and/or other countries. All other trademarks contained herein are the property of their respective owners.

Across

6 continents

In more than

35 countries

Provided in more than

125 end-to-end installations

Found in more than

750 broadcast facilities worldwide

Used daily by more than

70,000 broadcast professionals

Custom set design by BROADCAST DESIGN INTERNATIONAL, INC. www.broadcastdesign.com

Telephone: (703) 998-7600
Editorial fax: (703) 820-3245
e-mail: tvtech@imaspub.com
Online: www.tvtechnology.com

The staff can be contacted at the phone extensions listed or via e-mail using first initial, last name @imaspub.com

Publisher: Eric Trabb
732-845-0004
Associate Publisher: Marlene Lane
ext. 128

Editor: Tom Butts
ext. 122
News Editor: Deborah McAdams
ext. 177
Technology Editor: Bob Kovacs
ext. 150
Assistant Editor: Kelly Brooks
ext. 136

News Correspondents: Frank Beacham, Art Daudelin, Claudia Kienzie, William T. Hayes, Naina Narayana Chernoff, Mary Gruszka, Craig Johnston and Susan Ashworth.

Production Director: Annette Linn
ext. 125
Publication Coordinator: Carolina Schierholz
ext. 106
Ad Traffic Manager: Kathy Jackson
ext. 134
Classifieds/Product Showcase Coordinator: Milagros Castañeda
ext. 109

Ad Coordinator: Caroline Freeland
ext. 153
Circulation Manager: Kwentin Keenan
ext. 108

President/CEO: Stevan B. Dana
ext. 110
Vice President/
Group Publisher: Carmel King
ext. 157
COO/Edit. Dir.: Marlene Lane
ext. 128
Chief Financial Officer: Chuck Inderrieden
ext. 165

TV Technology (ISSN: 0887-1701) is published semi-monthly by IMAS Publishing (USA) Inc. 5827 Columbia Pike, Third Floor, Falls Church VA 22041. Phone: 703-998-7600. FAX: 703-998-2966. The international edition is published monthly along with the month's second domestic edition. Periodicals postage paid at Falls Church VA 22046 and additional mailing offices. POSTMASTER: Send address changes to TV Technology, P.O. Box 1214, Falls Church VA 22041. Copyright 2004 by IMAS Publishing (USA) Inc. All rights reserved. For reprints contact the author and TV Technology.

For address changes, send your current and new address to TV Technology a month in advance at the above address. Unsolicited manuscripts are welcome for review; send to the attention of the appropriate editor. REPRINTS: Reprints of all articles in this issue are available. Call or write Joanne Munroe, P.O. Box 1214, Falls Church, VA 22041, (703) 998-7600 ext. 152 Fax: (703) 671-7409. Member, BPA International.



FROM THE EDITOR

The Main Event

Let's face it, for broadcasters the year is not measured from January to December; the calendar is from April to April. NAB is the industry's "new year."

The annual April show stands out above all other events as the bellwether of new professional broadcast technology. Manufacturers plan their whole product development and release schedule around the show. And like accountants, all of us—manufacturers and publishers—alike see the busiest time of the year right now as we prepare for the main event.

A lot has happened over the past 12 months since the industry last gathered in Vegas. Last April, we were in the middle of the Iraq war, the SARs crisis and uncertain economic conditions, which reduced attendance at the show for the third year in a row. Despite all of this, the

new technology and products introduced at NAB2003 were incredibly vast and innovative, with new tapeless production systems, "intelligent" recording devices, low-cost HD camcorders and CMOS-chip cameras becoming a reality. We had our hands full when we gave out the STAR and Mario Awards!

Last year we were preoccupied with media ownership and copy protection; this year, a millisecond view of a star's breast has the country in an election year uproar over decency standards, which some pundits say are connected to media concentration.

Meanwhile, in the background, the industry has been working to tidy up some of the lingering issues that had remained unresolved, namely cable ready and content protection standards.

So what should we be looking for on the show floor this year? Based on

the NAB preview news coming from the manufacturers this year, not as much as last year; it's as if so much new technology was introduced at NAB2003 that we're seeing incremental improvements and enhancements to existing products—a "product hangover," if you will.

Some of the trends you'll see on the show floor will focus on products compatible with MXF, an important component in the IT transition taking place in broadcast. Lower-cost HD gear, including camcorders and editing systems are expected, as well as new products for the emerging HDV format—and technology that will help make all this gear work together.

See you at the show!

Tom Butts
Editor
tbutts@imaspub.com

LETTERS

Send to Editor, TV Technology at e-mail tvtech@imaspub.com

Here's To Larry

Dear Frank Beacham,

Thank you for your always informative and thought provoking articles. I always learn something from your column and find your information to be honest, candid, and to the point without significant editorial comment. Bravo!

In particular I felt it appropriate to write to you regarding your tribute to Larry Thorpe. ("A Toast to Larry Thorpe," Jan. 21) I was part of the Sony Broadcast team as a Broadcast Account Manager for over 11 years. Among the many fond memories of that time was the technical knowledge imparted to the sales force. Larry's energy and incredible technical knowledge always resulted in a stimulating and informative event, whether it was a training session or a presentation to a major broadcaster at NAB. We all know that Larry has only one speed, which is 120 percent faster than the rest of us. Given Larry's energy it goes without saying that he wasn't retiring, and in fact I hear he's already taken a position with another industry manufacturer. [Editor's note: See p. 10 to see where Larry ended up.]

Larry has been through the many ups, downs, and twists our industry has seen over the years, but one thing is sure: We will someday look back and thank Larry for carrying the HD torch when others were afraid or unwilling to follow. Thank you, Larry, for all you've done and thank you, Frank, for paying tribute to this industry genius.

Dave Westermann
Sr. Sales Representative
Duncan Video, Inc.
Carmel, Ind.

Dear Editor:

Regarding your editorial of Feb. 4 in which you mention that my quote at CES about consumers not needing to be "educated" about HDTV may have been taken out of context.

My words were not taken out of context. I'm sure you, like most other consumers have no idea how your cell-phone, e-mail, virus protection, PC, etc., work, and you don't need to.

Do you think any satellite customer understands how their dish, Inb or receiver works?

Nope. The price is right, and they will trust vendors because at a low enough price, it still works like an old fashioned TV, only it looks better as a plasma on the wall.

Price points cure all.

Mark Cuban
HDNet
Dallas

Dear Editor:

With great dismay, Randy Hoffner's column concerning audio (lip sync) was right on the money ("ATSC Recommends AV Sync Rules," Jan. 7).

As a consumer, I made the big mistake of spending my money on a worthless HTDV set with integrated tuner—nothing like viewing NBC's E.R. or Fox's postseason football with lip sync way off.

E-mails to local stations and networks get no response or acknowledgement of this problem, so the best this consumer can do is tell everyone "don't buy into HDTV," and ask the FCC and Capitol Hill to delay the analog channel shutdown until major HDTV quality issues are resolved. Don't waste your money!!

D. Mason
Dallas



The numbers are in.

In an industry where numbers mean everything, Avid has delivered more all-digital, end-to-end news production systems than all of its competitors combined. Avid helps broadcasters improve the number that matters most – the bottom line.

Networks. Affiliates. Cable. Large, medium, and small markets. Around the world, more and more broadcasters are turning to Avid for a competitive advantage through integrated media asset management, editing, storage, and newsroom solutions.

- Designed to deliver true, real-time collaboration through seamless connectivity
- Integrated through an open, high-performance media network architecture
- Trusted by the people who make news happen
- Available today, engineered for tomorrow
- Find out more at www.avid.com/broadcast

make manage move | media™

Avid



**In 2003, of 13 HDTV
trucks, 93% chose
Canon HDTV lenses.**

**The Broadcast industry
gets on-board with
Canon HD lenses.**

DOMESTIC PRODUCTIONS

GAME CREEK VIDEO

NATIONAL MOBILE TELEVISION

NEP SUPERSHOOTERS

NEW CENTURY PRODUCTIONS

WESTERN MOBILE

Find out more at canonbroadcast.com

1-800-321-HDTV (Canada: 905-795-2012)

Maximize Your Camera's Performance.

Canon KNOW HOW®

Canon and Canon Know How are registered trademarks of Canon Inc. © 2004 Canon USA, Inc.

See us at NAB booth #SU9649

World Radio History

PBS Launches HD Channel

ALEXANDRIA, VA.

PBS is now broadcasting a widescreen, hi-def channel around the clock. The PBS HD Channel, launched March 1, was made available to the 236 (at press time) local PBS stations with digital broadcast capabilities, and through local cable systems that have agreed to retransmit the digital signal of their local public broadcaster.

PBS HD Channel programming consists of a mix of new and library HD and 16:9 material. New programs will be simulcasted with their analog national PBS premiere, and will repeat on the PBS HD Chan-

nel during the week following a premiere.

Among early fare, a "Nova" episode entitled, "Hunt for the Supertwister," in which viewers go along for a high-def ride with a group of tornado hunters; plus episodes of "American Experience," "Great Performances," "Masterpiece Theatre" and other PBS stalwarts.

Other PBS digital services include PBS Kids, PBS YOU ("Your Own University") and the VOD cable package,

PBS Kids on Demand.



Programming

Optibase Steps in to Buy Media 100

HERZLIYA, ISRAEL

Israeli encoding and streaming equipment maker Optibase Ltd. took preliminary steps that would allow it to purchase the assets of Media 100, the Marlboro, Mass.-based company that introduced desktop editing to the video business.

Just days after Media 100 announced that it needed a cash infusion to stay alive, Optibase executed a non-binding term sheet providing for negotiation of a debtor-in-possession \$1 million loan to Media 100, and the right for Optibase to buy all of Media 100's assets in a pre-packaged Chapter 11 bankruptcy proceeding, for \$2.5 million (less the \$1 million loan).

At the time of the announcement, the agreement was not binding. Should the transaction be consummated, it would allow Media 100 to continue to develop, sell and support its 844/X editing-compositing systems, newly-introduced Media 100 HD system, Media 100 i, and other content design products.

Tom Wyler, chairman and CEO of Optibase said his company was ready to turn Media 100 around.

"Media 100 has created differentiated and valuable technology that

we believe can flourish with the right backing. The advanced products that Media 100 has developed represent a growth opportunity for Optibase."

John Molinari, president and chief executive officer of Media 100, agreed that Optibase had the resources necessary to revive Media 100.

"With an extremely strong balance sheet, Optibase gives Media 100 the financial wherewithal to continue engineering and marketing 844/X and Media 100 HD and compete aggressively in the market," Molinari said. "The deal is timed well to support us just as we begin first shipments of our new 844/X Vers. 3 release and prepare to deliver our first implementation of 844/X technology on the Apple Power Mac G5 platform—Media 100 HD."

The \$1 million debtor-in-possession loan was to be used to meet payroll, vendor obligations and assure uninterrupted business operations.

Any final agreement between Optibase and Media 100 was subject to the approval of the bankruptcy court. Media 100 reiterated, at the time of the contingency agreement that "in the event the transaction is not completed, [Media 100] may be required to cease operations."

Business

Sony Unveils New HDTVs

PARK RIDGE, N.J.

Almost two months after CES, Sony Electronics had its own unveiling of new consumer electronics products, including its first new POD-enabled HDTV sets.

Twelve new fully integrated sets were introduced at an Open House in its Park Ridge, N.J. headquarters. The sets are compliant with CableLabs' CableCARD encryption standard (formerly referred to as a POD), designed to give viewers who purchase cable-ready DTV sets access to premium HD cable programming. The models range from 30-inch to

60-inch screen sizes and encompass Sony's FD Trinitron WEGA CRT models, Grand WEGA micro-display LCDs and CRT rear projection TVs. The CableCARD-enabled sets will begin shipping in August.

Also scheduled to ship later this year is Sony's DHG-HDD2—HD digital cable recorder, featuring a 250 GB hard drive for storing more than 250 hours of SD content or 25 hours of HD. A 120 GB version, the DHG-HDD100 offers 120 hours of SD and 25 hours of HD as well. The recorder also includes a chip for over-the-air digital and analog reception.

HDTV



USDA TO ASSIST RURAL PUBLIC BROADCASTERS' DTV CONVERSION

WASHINGTON

Sixteen public television stations in 13 states were selected last month to receive \$15 million in digital conversion grant funds from the U.S. Department of Agriculture. The money was specifically aimed at assisting small rural public television stations make the digital transition.

Agriculture Secretary Ann M. Veneman, who announced the grant, said those stations selected demonstrated significant service to their communities.

In Kansas, Smoky Hills Public TV will receive \$1.4 million for a new tower, building and digital transmission equipment, and associated processing, monitoring and test equipment. Prairie Public Broadcasting in North Dakota and St. Lawrence Valley Educational TV in New York will receive roughly \$2 million.

Other recipients include Tennessee's Upper Cumberland Broadcast Council and West Tennessee Public TV Council; and South Dakota Educational stations KPSD and KZSD.

The grant program was initiated by Congress last year when it set aside \$15 million for DTV development from \$52 million in distance learning/telemedicine funds in the USD Rural Development appropriation bill.

BARTON TAKES TAUZIN'S CHAIR

WASHINGTON

Rep. Joe Barton (R-Texas) has formally taken the gavel of the House Energy and Commerce Committee, where broadcast policy was frequently shaped under his predecessor, Rep. Billy Tauzin (R-La.), who is in his last term in the House.

Barton indicated at the time he intended to restructure the powerful committee.

"This committee has a long, distinguished history and I will work hard to be true to both where I come from and where the committee must go to accomplish its great work. I will have additional announcements as to new committee structure and placements next week, and look forward to continuing an active agenda," he said in a statement.

Federal Frequency

© 2004 policarpo | visual designer

> it's in our blood <

STOP worrying about your hardware. At BOXX®, delivering technology to the innovators in the digital media community is in our blood. Our workstations and bundled solutions keep you focused on being creative and meeting deadlines.



BOXX workstations with AMD Opteron processors allow you to operate 32-bit applications while you migrate to 64-bit computing.



BOXX

BOXX Technologies, Inc. | 1.877.877.BOXX
www.boxxtech.com | sales@boxxtech.com

BOXX is a registered trademark of BOXX Technologies, Inc. registered in the U.S. Patent and Trademark Office.
AMD, the AMD Arrow logo, and the Opteron, and combinations thereof, are trademarks of Advanced Micro Devices, Inc.

**BOXX
DELIVERS.**



Workstations

Latest dual AMD Opteron™ 200 series processors offer simultaneous 32-bit and 64-bit computing for outstanding flexibility, performance and compatibility assurance

Storage expansion of up to 12 hard drives

Up to five optical drive slots

Powered by NVIDIA Quadro FX by PNY Graphics boards

Optimized for all popular 3D and animation software like 3ds max, Maya and LightWave 3D

Go DV

Add Adobe® Premiere® Pro

See us at NAB Booth #SL1755.

BOXX systems are engineered to help you keep the competitive edge. Whether your needs call for a custom-designed workstation, an optimized rendering system or a turnkey DV, SD or HD system, BOXX has exactly what you need to get the job done.

Canon Snaps Up Thorpe

LAKE SUCCESS, N.Y.

The folks at Canon U.S.A. could barely contain themselves after scoring one of the most well-known veterans of the broadcast television engineering industry, Larry Thorpe.

"Thorpe is a renowned expert in the field of video acquisition, and is a leader of the HDTV movement in the U.S. His impressive list of accomplishments includes pioneering HDTV market development in the U.S. Thorpe also holds ten patents in the field of broadcast development," Canon's announcement read.

And indeed, in snagging Thorpe to be its national marketing executive for the broadcast and communications division, Canon has landed one of the architects of the first automatic color studio camera and the man who ushered several

Sony camera formats into fruition. Thorpe recently left a senior vice president position at Sony Broadcast during a restructuring in which several senior executives took early buy-outs.

More recently, Thorpe told a TV Technology correspondent that he was thinking of writing a book.

Thorpe joined Sony in 1982 after working for RCA's Broadcast Division from 1966. In 1981, he won the David Sarnoff Award for his innovations in automatic studio color cameras.

From 1961 to 1966, Thorpe worked in the designs department of the BBC in London, where he helped develop a range of color television studio products.

Thorpe graduated from the College of Technology in Dublin, Ireland and the Institution of Electrical Engineers in London.

People

CIT Group Designs Transceiver Chip

PASADENA, CALIF.

A group at the California Institute of Technology has come up with a chip that it claims could very well replace roof antennas, DBS dishes and even cable modems.

The High-Speed Integrated Circuits group at Caltech has designed what they're referring to as a "radar on a chip," or more specifically, an eight-path, 24 GHz transceiver, complete with inputs for a phased-array antenna, all on a single silicon chip.

"The chip can, for example, serve as a wireless, high-frequency communications link, providing a low-cost replacement for the optical fibers that are currently used for ultrafast communications," said a statement from Caltech.

In addition to television reception and high-speed data transfer, the chip could be used for anti-collision radar for automobiles and sensors for robots like the Roomba, the self-directing vacuum cleaner.

The chip contains both a transmitter and receiver and works like a

conventional array of antennas, according to CIT. But unlike, say, conventional radar with moving hardware, this chip "uses an electrical beam that can steer the signal in a given direction in space without any mechanical movement."

For communications systems, the ability to steer a beam would provide a clear signal without cluttering the airwaves like

omni-directional cell phone signals, according to CIT.

"But with this technology you can focus the beams in the desired direction instead of radiating power all over the place and creating additional inter-

ference," said Ali Hajimiri, associate professor of electrical engineering at CIT and the leader of the group. "At the same time you're maintaining a much higher speed and quality of service."

The innovation of Hajimiri's chip, CIT said, was that it contains multiple, parallel, harmoniously functioning circuits. Most silicon chips contain a single circuit or signal path.



Technology

Tower Transactions

RAYMOND, MAINE CARY, NC

While one antenna company recently announced the acquisition of a tower company, another well-known tower company announced it was getting out of the broadcast tower building business.

Dielectric has acquired the assets of Kline Towers, a division of Kline Iron & Steel Co. Based in Columbia, S.C., Kline had annual revenues last year of more than \$10 million. Terms of the deal were not disclosed.

Kline has a 40 year history in the broadcast tower business, particularly in the engineering of tall and multi-array towers and platform structures.

"Kline Towers' quality reputation in the broadcast market will not only expand Dielectric's market presence, but will also provide customers with a more complete systems package," said John Capasso, Dielectric president. "Dielectric and Kline Towers have worked together on several large projects over the years and we are delighted to have them join the team."

Dielectric's parent, SPX Corp. recently reported that broadcast and

communications organic revenues declined 23.5 percent in the fourth quarter compared with 2002, "due to regulatory delays in the HDTV roll out and a decline in demand for telecommunications line management systems."

Another tower company, Cary, N.C.-based SpectraSite recently sold its broadcast services business to its own investment arm, Doty Moore & Hoenninger, LLC. Company officials said they wanted to concentrate on leasing and licensing towers for broadcast and wireless.

"The sale of our broadcast services division represents the final step in a multi-step process whereby SpetraSite has successfully transformed itself into a pure play, recurring revenue-based company focused entirely on revenues derived from site leasing and licensing," said SpetraSite president/CEO Stephen H. Clark. "As part of this transaction we have retained the high margin broadcasting site leasing business which produces very predictable revenues and cash flow."



Towers

HD-DVD Standard Approved

TOKYO

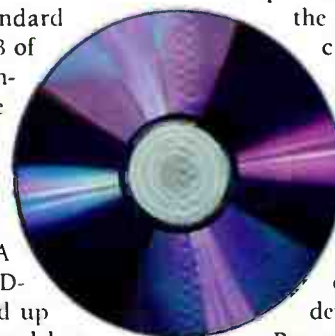
The 20 member steering committee of the DVD Forum recently voted to approve a compression standard from Toshiba and NEC to develop HD-DVDs.

The approved standard will store up to 20 GB of data on a rewritable single-sided disc, more than four times the 9 GB on current DVDs on the market (rewritable DVDs can hold up to 4.7 GB). A read-only version of HD-DVD, which can hold up to 15 GB was approved last year. Toshiba and NEC said they expect to introduce HD-DVD recorders on the market by 2005.

The forum also approved several encoding schemes for HD-DVD, including MPEG-2, MPEG-4, Pt. 10 (also known as "H.264") and most notably, Microsoft's Windows Media

9 compression standard. The consensus among the technical community is that one of the factors weighing in Microsoft's favor is its strong digital rights management capability, a major plus in the skittish Hollywood community. Microsoft has already submitted its WM9 codec to SMPTE.

The approval pits Toshiba and NEC against a competing standard developed by the Blu-Ray group, a 12-member consortium led by Sony, Matsushita Electric Industrial (Panasonic), Philips and Thomson. According to the Blu-Ray group the only Blu-ray recorder currently available is the Sony BDZ-S77 in Japan at \$2,700 with writable discs costing an average \$23.



HD-DVD

Come visit us at booth C11539



Go further.
Expand your coverage and
capture new audiences.



Video Solutions: *Distribute content to new viewers and new markets, opening up new opportunities the world over.*

Delivering content has never been easier. With Intelsat's Video Solutions, you can grow your audience by distributing programming anywhere in the world. Our state-of-the-art network gives you the flexibility and reliability you need to access new markets and new audiences. After all, Intelsat has been creating global content delivery solutions for broadcasters for 40 years. So whether you're distributing world news, cable feeds or DTH programming, Intelsat can help.

Go further. Connect with us at +1-202-944-8545
or email videosolutions@intelsat.com

www.intelsat.com

 **Intelsat**
inspiring connections



TUNING IN

Gary Arlen

Whatever Happened to Reruns?

Ever since TiVo and ReplayTV blasted into the television environment, Madison Avenue and broadcasters have lamented that these devices will murder advertising, as users of these Digital Video Recorders (DVRs) skip through commercials.

More significant, however, is what DVRs and their transportable cousins, recordable DVDs—in all variations—may do to the syndication business, the off-hours lifeblood of local broadcasting. Indeed, Hollywood is already cannibalizing its own syndication opportunities as it releases DVD versions of recent TV series. The DVR and DVD-R double punch is merely an accessory to that process.

Of course, an array of other factors is changing the world of reruns. Most notably, the current popularity of short-run reality series supplies the networks with inexpensive, disposable programs—often displacing scripted situation comedies, which have been the mainstay of the syndication aftermarket.

It is widely assumed that reality shows have relatively little afterlife—especially series that focus on a competition, such as “Survivor,” “American Idol” or the various matchmaking programs. To be sure, Reality Central, a nascent cable channel, plans to pick up and rerun some of these series, but that network’s debut is still at an unspecified future date.

COPY ME NOW

More pertinently, “The X-Files” experience presages the home video future of syndication. Broadcast channels carrying reruns of the popular Fox sci-fi show could not at first figure out why local ratings suddenly tanked last year. Then someone pointed out that Fox had released full-season bundles of “The X-File” DVDs. The show’s aficionados—and there are millions, according to sales figures—could buy boxed sets at prices ranging from \$100 to \$150 per year. And they watched the shows whenever they wanted—not according to a station’s time schedule.

The X-Files situation was hardly unique. TV shows generated about \$1.5 billion in DVD sales last year, nearly triple the 2001 figure. More than 525 TV titles were released in 2003, including many classic episodes from studio and network vaults; those oldies-but-goodies are less likely to affect current syndication. But

Amazon’s tally—11 of its 30 top-selling DVDs last year were TV series—is a harbinger of what may happen next. Among those Amazon sales hits were “Friends” and “Sex and the City,” both just completing their final seasons and ready for syndication albeit with reduced appeal if their dedicated fans buy the DVDs before those shows hit rerun schedules.



A SEASON OF DVDS

Some studio number crunchers have determined that there’s more revenue in a seasonful of DVDs than in the lifetime value of households’ viewing ad-supported presentations of those shows. One studio recently acknowledged that DVDs from its TV shows account for only six percent of its total DVD sales, but the category generates at least seven percent of its revenue. That advantage is expected to expand.

Other studios are already implementing direct-to-DVD release for some of their original TV programming, especially in foreign markets where the shows may never find broadcast or satellite slots.

Such choices about distribution decisions recognize DVD’s vast global success as a playback medium.

HOME RECORDING DILUTION AHEAD, TOO

Next comes the DVR factor and more pertinently the recordable DVD-R opportunity. Right now, early adopters are figuring out the differences between

formats; for example: DVD-R offers permanent storage that cannot be erased, while DVD-RW can be erased and written over many times.

As DVRs and the new DVD-recordable devices fall toward the \$200 range, usage continues to grow. Aficionados can easily pluck their favorite shows during first run, network reruns or first syndication

cycle—never again needing to tune into syndicated reruns.

New combination models that include hard disk drive (HDD) DVRs and a recordable DVD drive are coming to market from JVC, Pioneer and other manufacturers—some versions include up to 300 hours of storage capacity. The DVD recorder makes it easier to offload the shows from the HDD onto a portable medium for use on DVD players elsewhere in the house, at vacation homes and via the backseat DVD display monitor in your car.

Although today’s versions of these DVR/recordable DVD devices are pricey—typically \$1,200 to \$2,300—the prices are likely to drop into the \$300 range. At that point, look for greater interest in setting up such off-air or off-cable capture despite the barriers to be erected by copyright police.

Critics contend that such recording requires too much effort for couch potatoes. Their expectation is that such off-air recording will go no further than the time-shifting gambits in the early home videocassette recorder days. That is, fans may try to capture

and keep their favorite shows, but ultimately they will wind up with boxes full of recordings they never view.

Moreover, the copy protection schemes being implemented to prevent such home recording may limit the usefulness of such duplication for sharing among friends.

On the other hand, the ability to have a “fair use” copy of favorite shows or specific episodes appeals to the young audience that has embraced music downloading services. That is why Hollywood is trying to establish copy protection rules for movies as well as TV shows.

It is also the reason that station technicians may find evermore complex components within their video

Hollywood is already cannibalizing its own syndication opportunities as it releases DVD versions of recent TV series.

feeds as various watermarking, encryption and other anti-piracy tools are embedded in shows.

Other factors—including networks’ current trend in ordering short-form series (eight to 13 episodes)—further affect the nature of syndication, which has relied on inventories of 100 or more segments to enable daily stripping. The reduction of off-network syndicated fare may augur the introduction of more original or even local productions that avoid the home recording distraction.

Nonetheless, home recording and playback—whether via DVR, recordable DVD or other technology threatens to change the program patterns far more significantly than what we saw when VCRs were added to the home viewing equation more than 20 years ago.

Gary Arlen is president of Arlen Communications Inc., a Bethesda, Md.-based research firm that has tracked the convergence, emergence and divergence of media technology since the days of two-inch videotape. You can reach Gary at GArlen@columlist.com.

**Just got
better!**

The amazing cash flow machine.

New Energy Saving
Collector IOT slashes
utility bills up to 70%

Highest depressed
collector analog
power available

Simple conversion from
analog to digital



Trim maintenance costs;
free highly-skilled
engineers from
babysitting the transmitter

Improved cash flow
means a higher station
valuation and larger
end of year bonus

Reduce taxes — new
temporary regulations let
you accelerate depreciation
— deducting over 40%
in the first year

The Ai Quantum QDC Depressed Collector Transmitter. High Power in Analog or Digital.

These days every dollar counts. Don't throw another dollar out the window on transmitter utilities.

Using water cooled depressed collector IOT technology, the new QDC series is the most efficient analog transmitter available. Transmitter utility bills could be reduced by 70% — moving as much as \$25,000 per month directly to your bottom line. That's an immediate cash flow boost TODAY. And, because the QDC easily converts to digital, you'll enjoy this same efficiency advantage well into the future.

How much can you save? Every station is different, but many could enjoy an investment payback in as little as three years. Contact us today for a free analysis at 1-800-523-2596 or email mark.polovick@acrodyne.com.

See us at NAB2004 Booth #C3836

Acrodyne Industries, Inc. 10706 Beaver Dam Road, Cockeysville, MD 21030
p. 410-568-2105 f. 410-568-1546 www.acrodyne.com

© 2003 Acrodyne Industries, Inc.

Satisfaction. Engineered.



World Radio History



AUDIO NOTES

Tim Carroll

Dolby, The Chipmunks And NAB2004

This time we will briefly wrap up our somewhat detailed look at audio compression by covering areas that some readers have submitted questions about. We will then take a look at a technology that changes the relationship between pitch and time. Finally, I'll tell you about what I will be on the lookout for on the NAB show floor and what I will be stopping by to ask manufacturers.

NO GLUE HERE

You might think that the way to encode 5.1-channel audio is to glue six mono or three two-channel codecs together. I certainly thought this would be a reasonable approach, but as is often the case, what did I know? It turns out that in the case of Dolby Digital (AC-3), Ray Dolby

suggested to his codec development team that the better and more efficient way to do things was to code multichannel audio as a complete whole. This allows the technique of high-frequency coupling that we described last month to act across multiple pairs of channels simultaneously to save even more data. Note that this technique is not employed in Dolby E where the channels are coded independently. Because the Dolby E system can actually carry unrelated programs in each channel, high-frequency coupling between channels could create some strange sounds.

Treating multichannel audio as a whole also allows channels that are not demanding as many bits for coding a given section of audio to deposit the extra into a common "bit

pool" where they can be applied to other channels to improve quality. These two techniques, while somewhat useful in a two-channel coder, become critical tools in successfully balancing quality and efficiency.

Probably the best introduction to Dolby Digital (AC-3) coding was written by Mark Davis as an article for the now out-of-print July 1997 issue of "Audio Magazine." I saved a reprint of the article because I found it so readable and understandable. Further, it describes a very interesting technique borrowed from analog noise reduction that further improves system performance. Although focused on Dolby Digital (AC-3), it is still an invaluable introduction to many aspects common to most all audio coders.

TIME AND PITCH

I was very lucky to have worked with the research and engineering teams at Dolby Laboratories for several years. One of the most interesting technologies I encountered was one that is embodied in the company's Model 585 Time Scaling Processor. This unit allows the duration of a given audio selection to be stretched or condensed (i.e. time-scaled) with no change in pitch, or to be pitch-shifted with no change in duration. Although not a new idea, there are products that have been around for awhile that can do this. One product that immediately came to mind during the development of this technology was a unit manufactured by Lexicon many moons ago that interfaced to Studer analog tape recorders and allowed a user to vary-speed the machine while it automatically corrected the pitch. It was used

Every year I go

hunting for

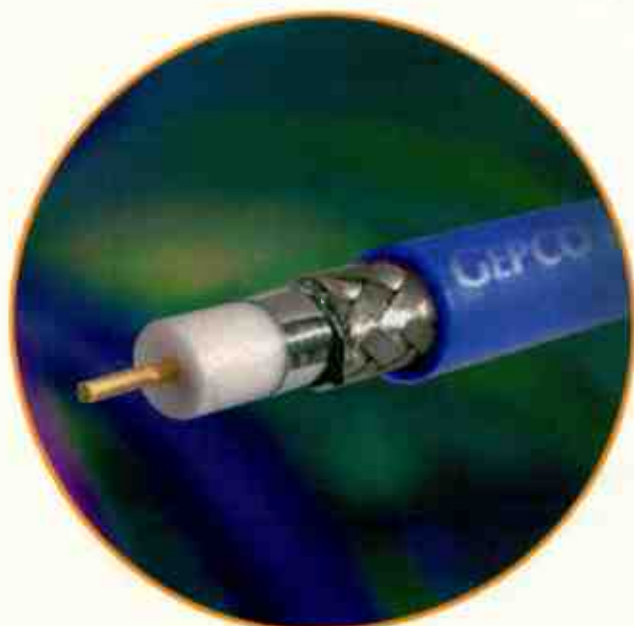
something at NAB.

I figure you have to have at least a couple of goals or the days just turn into a blur of endless walking and collecting swag.

quite a bit in commercial production to get spots to exactly 30 or 60 seconds, but it didn't really catch on too far beyond this application.

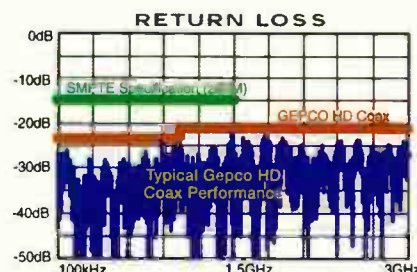
I bring up the analog tape recorder application because it is probably the easiest way to explain how time-scaling and pitch-shifting are integrally related. If you increase the playback speed of a spoken commercial (for example) on an analog tape machine, the pitch of the audio is increased and so is the speed of the spoken words. If you were then able to shift the pitch down by the same percentage that you increased the playback speed, the result would be that the pitch is the same, but the speech remains faster—you have just time-scaled the audio. A fine example of the reverse situation (pitch-shift) is from my childhood. Remember Alvin, Simon and Theodore? They were from the holiday record "Alvin and the Chipmunks" created by Ross Bagdasarian Sr. (aka David Seville). Here is how he did it: he spoke the words in normal pitch but did so s-l-o-w-l-y and recorded it at one speed

MEASURING THE DIFFERENCE in Video Cable Design...



The innovator and leader in video coax technology, Gepeco continually advances and develops high-resolution video coaxial cables that ensure optimal picture quality and exceptional reliability in today's demanding High Definition, multimedia and broadcast video applications.

- All Reels 100% Swept Test & Certified
- 3 GHz Bandwidth for HDTV
- Gas-Injected, Crush Resistant Dielectric
- Zero Center Conductor Migration
- Exceeds SMPTE Specifications



See us at NAB Booth C1429

TRANSMITTING CLARITY

GEPCO
INTERNATIONAL, INC.

www.gepeco.com email: gepeco@gepeco.com

800.966.0069

on an open reel recorder. Then he played the recording back at a higher speed, and voila! The Chipmunks were born (they had high-pitched voices but spoke at a normal pace). Yup, it works (I tried it in high school once; I forget what I was really supposed to be doing), but it is (and was) tedious and will not work on anything that has been pre-recorded because the pitch will shift and so will the speed.

Since the Lexicon product, modern digital products and software plug-ins have been developed. By various methods, they are all able to change the speed of the audio and thereby the pitch. Usually it is by adding or repeating small sections to make a selection slower (then playing it out at a higher sample rate to restore the timing but enable the pitch to increase), or by removing small slices of the audio where they think it might be inaudible to make a selection's pace faster (then playing it out at a lower sample rate to restore the timing but enable the pitch to drop). Sometimes it works, and sometimes it does not. For example, how do you slice up a sustained violin note?

Unfortunately, in addition to sometimes being very audible in their actions, most all seem to have the drawback of needing to be told what kind of audio they will process. If I have to tell a unit to optimize for speech or music, it is probably going to get into some serious trouble handling a typical film soundtrack that has both speech and music and switches back and forth without prior notice. The Holy Grail then is a technology that handles both equally well, doesn't need to be told anything about the source material, and knows where to slice or add.

Brett Crocket, the primary inventor of Dolby's time- and pitch-scaling algorithm set out to develop a process that worked independently of the type of audio presented to it. His work stems from research into Auditory Scene Analysis (ASA), or how the human auditory system (i.e., the ear to the brain) breaks apart the continuous stream of different sounds it is presented with into separate perceptual events. What was that? After much discussion with Brett, my simplified take on ASA is that it is the study of how we differentiate between the different components of what we hear: the sound of a piano, cello and two violins plus a conductor's baton being dropped will all be grouped in certain ways into so-called "events." It may mean that a group of sounds are perceived as one event, or possibly in the case of the baton a single sound equaling a single event. This is critical because unlike other processes that may simply rely on the ampli-

tude of a signal for determining where to act, knowing how sounds will be perceived helps the Dolby algorithm make much better informed judgments about where and when to add or drop sounds. The result is extremely natural sounding audio, just faster/slower or pitched up/down. For the complex details of what is going on, I highly recommend Brett's paper from the

AES 115th convention (paper 5948), which I am sure will be published in the *Journal of the Audio Engineering Society* soon.

Some interesting applications arise for a product such as this. One obvious one is the video transfer of 24fps film for 25fps PAL countries. Amazingly, until now this process has simply delivered films with the audio 4 percent higher in pitch.

Now, with the timing being increased by playing the 24fps film back faster, the audio can be corrected back down 4 percent and will sound normal. (Well, it will sound normal to us but perhaps not normal to PAL viewers who have become accustomed to Arnold Schwarzenegger sounding a little bit squeakier.)

AUDIO, PAGE 24

On the Road with System 5-B

Digital Audio Mixing Systems for Broadcast

One of three System 5-B installations in Western Mobile Television's HD capable remote trucks

Western Mobile Television

USA • Doug Clark, Director of Operations

Phone: (303) 331 8584 • E-mail: doug@coloradostudios.com

Web: www.WesternMobileTV.com

Be Sure

www.euphonix.com

Euphonix
digital emotion

Euphonix Inc., 220 Portage Ave., Palo Alto, CA 94306 Tel: (650) 855 0400 Fax: (650) 855 0410

©2003 Euphonix, Inc.

See us at NAB2004 Booth #N3616

March 26, 2004 • TV Technology • www.tvtechnology.com

World Radio History

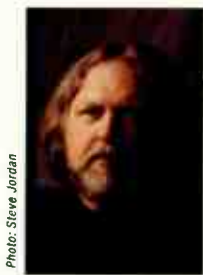


Photo: Steve Jordan

THE BIG PICTURE

Frank Beacham

A Big 'What If' for Local Broadcast Stations

As we approach NAB2004, I'd like to propose a "what if" question for local broadcast stations. It's a question that will strike many as extremely negative, but one that every broadcast station owner with a survival instinct had better be prepared to answer.

What if a court overturns "must carry" and simultaneously the broadcast networks move away from the affiliate system to become exclusive content producers for pay television? Under these twin circumstances, how would your television station prosper in the future?

Before you say it can't happen, think again. Former FCC chairman William Kennard, who as a young attorney argued the original analog "must-carry" case before the U.S. Supreme Court, can tell you how close that original decision came to not requiring cable operators to carry the signals of all broadcast stations.

In a media environment of endless choices and constantly changing technology, it is dangerous to assume a government policy forcing one media distribution system to re-deliver another will be here forever. It's a thin assumption on which to establish a solid business.

As for the networks, the network-affiliate system was built in an era when the networks needed local stations to distribute their content to homes. That distribution is no longer required in an era when the vast majority of viewers receive their television via cable or satellite providers.

Also, the traditional network economic model no longer works. Sure, the network O&O stations are important money-making local brands. But the networks themselves are fast moving away from being program distributors to becoming "studios" for premium television content.

The income from commercial advertising alone is no longer enough to sustain this level of production. In the future, each network is expected to do what's necessary to generate as many revenue streams as possible for the programs it creates and owns.

GOING IT ALONE

Back to the "what if" question. I expect most will say the future of television stations is rooted in localism. Some will proudly point to their local news programs as examples of how they are already embracing the future. Others will argue that their local news

is so good that it serves the public interest and justifies their use of free spectrum.

Now, ask how many of these stations are actually good enough to survive without "must carry" and some network affiliation? How many of these broadcasters offer original local information and entertainment that's so compelling that it would warrant viewers to reacquire themselves with the basics of antenna installation 101?

Maybe there's a station somewhere, but I can't name it. I find that what passes today as local TV news is mostly fluff without substance—a combination of accidents and police blotter stories combined with vapid "lifestyle" pieces about consumerism and the exaltation of celebrity. The powerful technology that enables live remotes during newscasts is too often reduced to a "stand-up" by a blow-dried talking head in front of a static backdrop.

Since today's local TV newsrooms tend to be made up of 20-somethings, I can't expect these aspiring journalists to know that it wasn't always that way. One only has to go back to the post-Watergate years in the 1970s—after the fall of Nixon—when stations all over the country wanted to create their own Woodwards and Bernsteins.

I was lucky enough in that era to work as an investigative reporter in the newsroom at one of the best—the Washington Post-owned WJXT in Jacksonville, Fla. On my first day of work I was personally greeted by Post publisher Katherine Graham and encouraged to be aggressive and fearless in doing stories that involved powerful members of the community.

Her pep talk came just after the revelation that the Nixon administration had plotted to rescind the Post's TV station licenses due to her newspaper's aggressive reporting of Watergate. Mrs. Graham was in a "take no prisoners" mood. I was told there were no sacred cows and if any emerged, I was to call her directly.

For the next year or so, before being hired away by the Miami Herald, I worked in the best television news operation I've ever experienced. Yes, the news department reported the routine police stuff, but we were encouraged to "follow the money" to report substantive stories of corporate and political corruption, one of which led to the resignation of a U.S. senator.

Never once was I cautioned not to offend an advertiser. If I needed

expert help, the station had accountants and lawyers on retainer that we could call at any time. If we had a breaking story, we'd do instant live specials.

After the indictment of a prominent politician, I remember leaving the federal courthouse with a carload of witnesses en route to the studio. Within minutes, we were all hustled onto a set to discuss the case on-the-air. The memory is especially vivid because no anchor was available at



Frank (seated center, facing the camera) conducts an interview during a three-camera news shoot for WJXT, Jacksonville, Fla. in 1973.

the moment and I was thrown in front of the camera live and told "to handle it."

Of course, those freewheeling days ended by the early 1980s. The bean counters took over television. Real investigative reporting was deemed too expensive. Soft, innocuous "lifestyle" content replaced it. The ratings were good, the risks far less, and no one was offended. That's essentially where we are today.

HYPER-LOCALISM

Back to that "what if" question. Since most agree the answer is for a station to become a key brand for local content, this leads to the follow-up question of whether the status quo in local content is good enough.

As you can probably tell, I have my doubts about "news lite." I suspect the viewers might eventually overdose on too much sugar. I'd bet the ultimate winners in local television will specialize in "hyperlocalism," a more sophisticated form of local news and information that goes far beyond today's typical formulaic local newscast.

The reporters in a hyperlocal newsroom would have specialties that provide an expertise in stories important to the station's community. For

example, trained environmental experts would serve as reporters in an area threatened with environmental problems.

The hyperlocal newsroom would still have general-interest reporters but would also employ lawyers, accountants, doctors and professional educators to cover their areas of expertise in "beats." Only through routine beat reporting can journalists gain the depth of knowledge to dig out the difficult stories. Serious newspapers learned this long ago. TV's time has come.

Finally, it's time to bring visual storytellers back into the newsroom. Live remotes should tell a story with pictures and be about something, not just a chance for a reporter to perform on camera outside the studio. Using colorful, complex graphics as a visual

crutch should be restrained. Compelling images from surveillance cameras and cellphones are better than canned, after-the-fact video of "the scene."

And who said high-definition video and surround sound doesn't matter in news? Of course it does and the first station to use it in

a forceful, meaningful way will leap to the top with the deep-pocketed, most influential viewers who have invested in HD sets.

Such ideas, you say, are too expensive. Yes, very expensive, especially if well executed. It would require—as they put it—a paradigm shift in the strategic thinking of the broadcast accounting functionaries. Good people always cost money, and no technology can fully replace them.

But then if your station becomes the number-one information brand in its market, think of the new revenue models emerging for your exclusive content. To modify an old slogan: "It Ain't Just About Television, Anymore." It's also about DVD, print, Web, syndication and other outlets and services limited only by the imagination.

Each broadcaster will have his or her own answer to our "what if" question. That's the idea. Since none of us really knows how the future of the medium that we now call television is going to play out, we should at least start to think through the scenarios. Those solutions might be needed sooner than we think.

Frank Beacham is a New York City-based writer and producer. You can reach him via TV Technology.

SONY

ANSWERS THAT WORK...



TODAY

Today's viewing habits. Today's patterns of media consumption. Today's broadcast realities and opportunities. These issues are much too important to leave to some indefinite future. That's why Sony is providing answers you can actually order at NAB for immediate delivery. On the next eight pages, you'll find answers that work today.

Redefine your workflow with Sony's incredible XDCAM™ optical disc system. Ride the HD Wave with Sony's HDCAM SR™ 4:4:4 recording, with Xpri® HD nonlinear editing and HD-capable switchers that keep you out in front of the curl. Experience a full set of Sony tools to help you work smarter, faster, and better. Including 16:9 switchable Sony DVCAM™ cameras for the field and the studio. Space-saving Sony LUMA™ LCD monitors. And new Sony Pro Media that proves that today, media matters more than ever.

Sony NAB 2004. Answers that work today. So you can *Work Smart. Work Sony.*



VISIT SONY AT WWW.SONY.COM/NAB04



FOCUS ON EDITING

Jay Ankeney

The Aesthetics of Super Bowl Ads

For the first time in long memory, this year's Super Bowl XXXVIII was actually worth watching for the game itself. You know, that's the fussing around on the field that happens between the high-priced commercials that this year averaged \$2.25 million for a 30-second spot. But despite Adam Vinatieri's 41-yard cliffhanger field goal in the final four seconds that put the Pats over the Cats 32-29, much of this year's post-game chatter concerned aesthetics, which my American Heritage dictionary defines as "Guiding principles in matters of artistic beauty and taste." No, I'm not yet referring to Janet Jackson's peek-a-boob flashdance but its relevance will come into play shortly.

Let's kick off our annual analysis of the most striking of this year's Super Bowl ads by celebrating the editing principles behind these mixtures of entertainment and hype. This column has always defined "editing" as the creative act of combining two discrete ideas to create a third, disparate concept in the mind of the viewer. This can be expressed in the formula $B + C = A$, where "B" and "C" are the audiovisual elements being juxtaposed and "A" is the intended impression the audience is supposed to receive.

Of course, being an art form, it is not always guaranteed that the intended "A" imprint will result. And being a commercial art form, everyone involved has to recognize that the audience views the video fireworks through the filters of their own life experience. So editors, or whoever is responsible for hanging "B" and "C" together, have to be aware of the higher level of aesthetic appreciation expressed as $B2 + C2 = A2$, because in addition to nachos and chicken wings, every Super Bowl partygoer brings his or her own preconceptions to the game.

Fortunately, editors have three overarching communication tools that guide their aesthetic alchemy, our Holy Trinity of *context*, *contrast* and *rhythm*, and the ads of Super Bowl XXXVIII provided prime examples of each.

THE IBM SPOT

"Contrast" refers to the intentional difference between shots in a sequence, and nowhere was this more effectively used than in IBM's minimalist spot touting the Linux operat-

ing system that ran right after the Carolina Panthers' Shane Burton blocked the Patriot's field goal with 6:08 left in the second quarter. In a visual style that emulated George Lucas's "THX 1138" as closely as the classic 1984 Macintosh ad borrowed from Fritz Lang's "Metropolis," it started with a pullback from a blank-faced kid in a featureless white room. As we hear Muhammad Ali's voice shouting, "They'll never make me an underdog. They'll never stop me," the ad cuts to an overhead wide shot and we see the child is looking at archival footage of the famed heavyweight on a black-and-white TV set perched atop an isolated table. All the visual elements of the spot have been established in the first five seconds, and its message is conveyed by the contrast of cutting between the kid (a computer geek or ghost of the future?) and the rebellious Ali yelling, "I shook up the world! I shook up the world!"

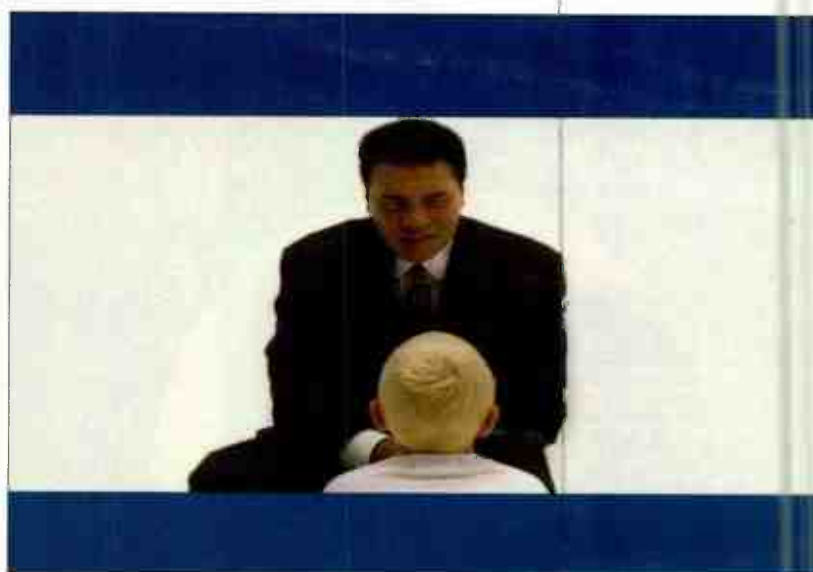
Suddenly a modern Ali is sitting in a chair opposite the child, telling him personally to "shake up the world." The boy looks up, smiling, and we cut to a simple graphic: "Linux" that dissolves into the phrase "The Future is Open." Without fancy graphics or digital effects, IBM's pitch about not letting established prejudices block out maverick possibilities is conveyed through the simple contrast between shots of an old warrior and a new seeker.

SUPER MACHO

"Rhythm," or the temporal element of editing's pace, became the primary element in Gillette's super macho 60-second ad during the third quarter with New England up 14-10 over Carolina. This spot's monochrome imagery had an even greater impact since it followed a colorful trailer for the film "Hidalgo," but if you viewed this ad silently without knowing its sponsor the stream of images would be almost baffling.

Triumphal quick cuts of men scoring in various sports are intercut with sensual close-ups of male faces and female eyes admiring them driven by a constant rhythm as unrelenting as a primordial chant. A voiceover intones, "You know the feeling. You're unstoppable. Unbeatable."—while the Cut! Cut! Cut! editing pendulum marches on. About 20 seconds into the ad we start to see shots of Gillette shavers quickly fol-

lowed by passionate kisses accelerating into touching and fondling as a men's choir proclaims, "The feeling that you get when you're at your very best." The incessant beat propels us toward the climactic line, "I never want to lose that feeling. It's the best, man!" as the logo "Gillette: The Best a Man Can Get" burns across the screen.



A modern-day Ali implores a young prodigy to "shake up the world," illustrating the contrast between old and new in conveying revolutionary ideas.

The amorphous content of the images becomes almost irrelevant to the reassuring propulsion of that indefatigable rhythm. Like an urban drumbeat, rhythm becomes the central impetus thrusting the message forward, telling all men that they can be winners if they shave with the proper razor. As much as I admired the totality of the ad's production, I found myself scratching my beard in wonder at its confluence of images.

"Context" has been saved for last since it involves the whole mystique of the Super Bowl. One of the ads that most effectively played off the audience's expectations of commercial cacophony aired with 6:53 left in the fourth quarter and the Cats up by a point. We see a fairly conventional shot of a Cadillac SRX VG careening along mountain roads, but there is no sound. Even a tight close-up of the driver mouthing "Wow" was M.O.S. (an old film term for a take without mikes, or "mit out sound"). The Caddy Daddies had caught us unawares by double-crossing our expectations of boisterous Super Bowl ads, and just to show it wasn't a fluke, they repeated the silent treatment 14 minutes later by rerunning

the same spot with 2:51 left in the game—a clever and effective ploy.

But the strongest invocation of editorial context came toward the end of the first half when Budweiser opened a commercial with a beautiful winter forest scene. We crane down on a horse-drawn sleigh nestled in the snow as the woman says, "This is so romantic." Her beau replies, "Well, it's about to get a little bit more romantic," and hands her a candle to hold. While he digs some Bud Lights out of a cooler we are presented with a sequence of some of the most unforgettable shots in the context of family entertainment: 1) The horse's tail arches up; 2) the woman's eyes widen in horror; 3) from the side we see a "mighty wind" accompanied by

familiar SFX blow the woman backward; 4) the candle's flame is caught in the blast; 5) cutaway to the horse looking over its shoulder. 5) the man joins his now charred and windswept date asking, "Do you smell barbecue?"

Just as a topper, some passer-by chime in, "Cool. A rocket sled."

Yes, the context of the calm pastoral winter scene juxtaposed against fast-cut editing to stun the estimated 90 million Sunday evening viewers sure was effective. In fact, if Janet Jackson had not had her "wardrobe malfunction," Bud Light's irreverent bon mot along with other ads filled with horny chimps, crotch-biting dogs and that bikini wax gag probably would have prompted an even greater discussion of Super Bowl aesthetics. That is $B2 + C2 = A2$ implemented to the max, and in some people's minds we now know what kind of a "bowl" to which they are referring.

Jay Ankeney is a free-lance editor and post-production consultant based in Los Angeles. Write him at 220 39th St. (upper), Manhattan Beach, CA 90266 or at JayAnkeney@aol.com.

SONY.

THE XDCAM SYSTEM. AN INNOVATION THAT COMPLETELY REDEFINES THE WAY WE WORK.

After decades of recording on tape, professionals are discovering the sweeping significance of the XDCAM™ Professional Disc™ system.

XDCAM recording redefines speed, rushing low-res "proxy A/V" into an editor at up to 50x real time. Not to mention the ability to edit on the spot in the camcorder. The XDCAM system redefines video by recording your clips as MXF data files, inherently friendly to IT networks and IT storage. And XDCAM recording redefines robust with a bump, jolt and shock-resistant laser transport protected by Sony's 7-year "Powertrain" warranty. (See actual warranty for details).

There's so much more to the story. You'll be amazed by the revolutionary, affordable, reusable Professional Disc media. You'll choose from DVCAM™ or MPEG IMX® codecs, shooting in interlace, progressive or 24PsF. And you'll command multi-megabytes of metadata.

You owe it to yourself to experience the XDCAM system, an innovation so powerful, it's a whole new way to *Work Smart. Work Sony.*

Edit in camcorder

Finish faster with Proxy A/V

video as data files

MXF

0 Dollars Down
Percent Financing
Payments

Until January 2005 (on approved credit)*

To be eligible for the 0% program, purchase any XDCAM PDW-series model between March 1, 2004 and June 30, 2004.*



FOR DETAILS, VISIT WWW.SONY.COM/XDCAM

© 2004 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features and specifications are subject to change without notice. Sony, DVCAM, MPEG IMX, Professional Disc, XDCAM and their respective logos are trademarks of Sony. *Offer is subject to credit approval by Sony Financial Services LLC. Applies to shipments of qualified Sony BPSD equipment made between March 1 and June 30, 2004. No interest charges assessed, if amount is paid in full. If payment in full is not received by January 2nd, 2005, the unpaid balance will be converted to a 24-month principal and interest term loan.



COUNT ON IT

André V. Mendes

IT in Broadcast: Dispelling the Myths

I never ceases to amaze me how certain ideas and misconceptions manage to survive and even thrive amid large segments of any population, despite the existence of copious amounts of information to the contrary. Our willingness to accept facile explanations, especially when the conclusions drawn neatly fit into our preconceived ideas and personal biases, can quickly become the gating factor in our careers and worse yet, a burden to the companies that employ us. Such is the case in a lot of broadcast environments today where there still exists a book of "knowledge" about what IT is and what it brings to the table that deviates from real-life experience everywhere else.

RELIABILITY

You don't have to look very hard to find folks that will tell you that IT

technology cannot be counted on to display the reliability necessary in broadcast. But a close look at reliability in any technical environment will quickly reveal a direct correlation between proper funding, professional administration, exacting workflow processes and the high availability numbers that we all seek.

It is easy to confuse the ease of setup for baseline systems with a proper professional installation dedicated to support mission-critical applications. Take for example a simple switched Ethernet network with Internet connectivity. Nowadays, just about anybody can march down to a consumer electronics store and purchase everything necessary to set up a high-performance, wired 100 Mbps switched network with wireless connectivity at 54 Mbps and with a 3 Mbps broadband connection via cable

modem for a relatively paltry \$200 and with some luck, it can be accomplished in less than an hour. Never

ware and software suppliers. Although we applaud and appreciate the speed with which these vendors are incorporating IT "think" in the form of Ethernet connectivity and TCP/IP-based communications and control, there are still far too many examples of what could be called "island thinking." The concept that an application will be installed in its own dedicated server and run in its own playground without regard to its

You don't have to look very hard to find folks that will tell you that IT technology cannot be counted on to display the reliability necessary in broadcast.

mind that those specs would have made most IT managers (not to mention their CFOs) go weak in the knees just four or five years ago. Would you trust your on-air automation to run on it? Probably not and you shouldn't. It is almost a trivial task to set up a file and database server combo—a couple \$2,000 servers and a few hours and you are up-and-running. Should you trust your ad sales package to run on it? Not if you want to keep your job.

IT-based systems will continue to offer dramatic improvements in price performance ratios, but they must be treated as the mission-critical infrastructures that they have become. The same holistic perspectives that have historically kept banking systems, stock markets, telecommunications networks and ICUs humming 24/365 must be deployed commensurate with the risk profile of a particular application. Maybe your station's e-mail can be down for a couple hours a month for maintenance in the wee hours without major upheaval, but that certainly is not true of your IT-based digital media archive.

CARE AND FEEDING

As we continue to migrate to IT-based systems, the anonymous components that provide the glue in our plants become part of an ecosystem where the weakest link can be your downfall, and as such they must be handled in a thoughtful and professional manner. From your authentication server to DNS, from your high availability load-balanced database cluster to your IDS-protected DMZ, these systems require a care and feeding that we are accustomed to deliver in our broadcast facilities, but that we often overlook in what we call the "IT" environment in many broadcast facilities.

The same goes for broadcast hard-

neighbors and the world at large is quickly becoming anathema to IT's best practices. In this day and age of global connectivity and streamlined supply chains, our mission-critical application has to be aware of its surroundings and capable of taking advantage of resources beyond its immediate horizons. As the price-points continue to change, we are likely to see the emergence of truly hybrid push/pull systems that leverage cheap-edge storage where needed with centralized historical archives where latency thresholds allow it. And that interplay necessitates a high level of integration that is not easy to create in "network unaware" applications. Cluster awareness, XML-enabled touch points, the ability to leverage integrated security for single sign-on capability, Web services orientation and eventually the ability to use network resources like computing, storage, bandwidth and "least cost" routing to continually optimize its operating characteristics will become the hallmark of future generations of broadcasting systems as we adapt to the rise and demise of different content distribution channels.

So when we take our annual pilgrimage to Las Vegas and the NAB, let's keep our eyes and ears open as we search for those vendors that did not just incorporate RJ-45 connectors in their backplanes and TCP/IP in their protocol stacks but have embraced the thought processes, advances and methodologies that keep mission-critical IT infrastructures operating at those near mythical "6 nines" of reliability—because after all if IT works for them, IT can work for you. Count on IT!

André V. Mendes is the Chief Technology Integration Officer for PLS, based in Alexandria, Va. He can be reached c/o TV Technology.

Small Package Superior Quality

MEDIA LINKS

MD-101 Series

The compact, rugged design is ideal for remote production use with quality suitable for studio and broadcast use.



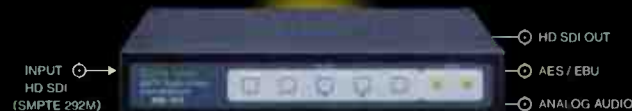
MD-101 DN HDTV Down Converter

Inputs: 1080i, 720P, 24Psf.
Outputs: SD SDI, NTSC composite, S video



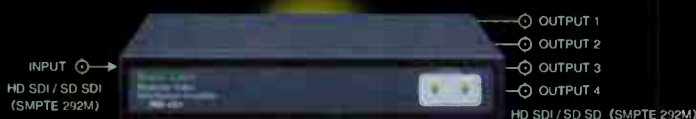
MD-101 VS Multi-rate 4x1 Video Selector

Supports SMPTE: 259M, 292M, 270Mbps, 1.485 Gbps
Switching point: 7H, 569H (HD SDI) 7H (720P) 10H, 273H (SD SDI)



MD-101 AV HDTV Audio Mux/Demux

Demuxes the HD SDI embedded audio signal
Outputs analog audio, digital audio and HD video signal



MD-101 DA Multi-rate 1x4 Distribution Amplifier

Supports SMPTE: 259M, 292M, 270Mbps, 1.485 Gbps
1 input x 4 rebuffered outputs

MEDIA LINKS SYSTEMS

Toll Free: 1-800-608-8802

www.medialinks-systems.com info@medialinks-systems.com

Visit us at NAB
Booth #SU6575

SONY.

THE HDCAM SR SYSTEM. HIGH DEFINITION RE-DEFINED.

124 40

SONY

SONY

SONY SRW-5000 Studio VTR

Circle of Maximum Protection

HDCAM SR

Since 1997, directors and DPs have been depending on Sony HDCAM® equipment to realize their creative vision. Now Sony takes the next giant step. Presenting the HDCAM SR™ system: Sony's HDC-F950 4:4:4 RGB camera and the SRW-5000 RGB studio recorder.

Here is the world's first tape recorder to deliver the staggering beauty of the full-bandwidth 4:4:4 RGB camera signal for all-new possibilities in blue-screen composites, CGI imagery and Digital Intermediate. You also get the luscious depth of 10-bit sampling. And you'll be using half-inch videocassettes that you can afford to send to clients, post houses and distribution outlets.

The SRW-5000 recorder provides robust archival quality. Plus spectacular 4:2:2 recording. Plus 1080i, 1080p and 720p. Plus three lines of metadata per field. Plus 12 channels of digital audio. Plus, plus, plus...

Welcome to the new world of HD. It's yours when you *Work Smart. Work Sony.*



VISIT SONY AT WWW.SONY.COM/NAB04

© 2004 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features and specifications are subject to change without notice. Sony, HDCAM, HDCAM SR and their respective logos are trademarks of Sony.

THE MASKED ENGINEER

Mario Orazio

MPEG-2 Is Alive and Well And Living in China

You might not have noticed that it wasn't just Mark Twain who got a premature obit. At least once in your life you probably saw the picture of a beaming Harry S. holding the newspaper headlined "Dewey Defeats Truman."

Good old analog NTSC is supposed to die one second after 11:59:59 p.m. on Dec. 31, 2006 (and, if the FCC had its way, it would be a year earlier than that). Will it?

Hey, go ahead and assume that a dictatorial anti-NTSC regime takes over the United States between now and then and bans analog TV broadcasting. Well, there'd still be something like 300 million NTSC TV sets in the country, perfectly able to be used with cable and satellite. Ban analog cable and satellite outputs, and there'd still be a couple-hundred million VCRs and DVD players with (quasi-) NTSC outputs. It ain't easy to kill a technology, which is why I'm so amused by the reports that MPEG-2 is dead.

Allow me to be among the first million or so to acknowledge that there are more efficient squeezers than MPEG-2. So what? We live in the age of thousand-line HDTV. About a femtosecond after the first NTSC proposed 525-line TV in 1940, there were folks yelling to change it to a thousand lines. Now it's 64 years later, and there's still one whole heck-and-a-half of a lot more 525-line TVs out there than thousand-line TVs—and it's going to stay that way for a good long time.

TWO KINDS 'O FIGURES

That reminds me of something I saw recently (and at my age, it's a thrill to be reminded of anything). There's an association of radio and television manufacturers—it used to be called the "Radio and Television Manufacturers Association." Now it's called the Consumer Electronics Association, which is fair enough on account of there being more consumer electronics than just radios and TVs these days.

Anyhow, CEA releases two kinds of figures. One is the figures for U.S. factory sales to dealers; they get these as reports from their member manufacturers. The other is penetration of U.S. households based on a telephone survey. If they call a thousand people and 980 of them say they own a TV set, that gets listed as 98 percent penetration.

So far, so good. But what I read is

that there's a third figure.

CEA has been reporting astonishing increases in the penetration of "digital televisions":

January 2001 - 1%
January 2002 - 2%
January 2003 - 4%
January 2004 - 8%

It's a nice, neat, binary progression. Our Beloved Commish, aka the FCC, proclaims the figure as often as possible as proof that the digital television transition is zipping along apace.

There are two problems with that—methinks I've ranted about one of them before. It's CEA's definition of a "digital television."

It could be something that's capable of receiving broadcast digital television signals, in which case Our Beloved Commish would be right to point to the figures. But it could also be something that not only can't receive digital broadcasts but also has not a single digital circuit in it (not counting the on/off switch)—just the capability (in a non-computer product) to display at least a 480p signal.

As a matter of fact, the vast majority of those "digital televisions" (a bunch more than 80 percent of them) ain't got any capability of receiving digital TV signals. So the 8 percent would be really more like 1 percent, except for the second problem.

The second problem is that, although CEA says its figures for "U.S. Household Penetration of Consumer Electronics Products" are "Based on Telephone Surveys Conducted by CEA," at least one of them ain't. Guess which one. Oh, yes. It's the one for "DTV." Instead, the number is fudged based on the factory-sales figures.

"But, Mario, why don't they report the figure they get from their telephone surveys?"

That's easy. They don't want to be laughed out of Washington.

Their telephone surveys report

upwards of one-in-five American households owning a DTV. That would be pretty great news except for one thing. Factories ain't yet cranked out that many products that meet either part of CEA's definition.

What was it that a great, prematurely obituated American writer said—something about lies, more lies, and statistics? Hey, I just got reminded of something else: China.

A FOURTH WAY?

China, you may recollect, is a big country. It's also highly populous, the most populous place on earth.

While America, Europe, and Japan were battling over ATSC, DVB-T and ISDB-T, China was dropping hints that it might pick a fourth way. Oh, horror! One-and-a-half billion digital TVs not matching anyone's patents—ouch! And it ain't just digital TV.

China might pick a digital-cinema system unlike anyone else's. Or it might choose its own version of DVD.

Let's see. How does it go? Next to myself, I like BVDs? Well, next after DVDs, China likes EVDs—and Taiwan FVDs. Those are the enhanced versatile disks and the finalized versatile disks.

You might think those are mechanisms for avoiding royalties to DVD interests, and you might be right. But that's not all. They also promise HDTV on a DVD-sized disk.

'THERE IS ANOTHER SYSTEM'

Here's where I get back to the death of MPEG-2. Warner Bros. says that, with some compression technology more advanced than MPEG-2, they could maybe stick HDTV onto a red-laser disk.

Lo, and behold (I think that means "Hi, please stay on the line"), there is a more advanced compression technology! It's called the advanced video codec (AVC). It's also called the JVT (joint video team) algorithm. It's called H.264, as well, and it's also called MPEG-4 Part 10. It's probably called a whole bunch more stuff, but, with Our Beloved Commish and Congress in a huff over indecency, I ain't going to reproduce that here.

Some tests show that sometimes AVC beats the pants off of some MPEG-2 codecs, especially if they're somewhat old. But wait! As Colossus told Dr. Forbin, "There is another system."

It's called Windows Media Video 9. The way I hear it, WMV9 is approximately equal to AVC/JVT/H.264/MPEG-4 Part 10/M.O.U.S.E. I'm just kidding about the last five letters, of course. The Mouse made a deal with Microsoft last month to use Windows digital rights management.

But wait! As I just said, Colossus told Dr. Forbin, "There is another system." JPEG2000 surely ain't MPEG-2.

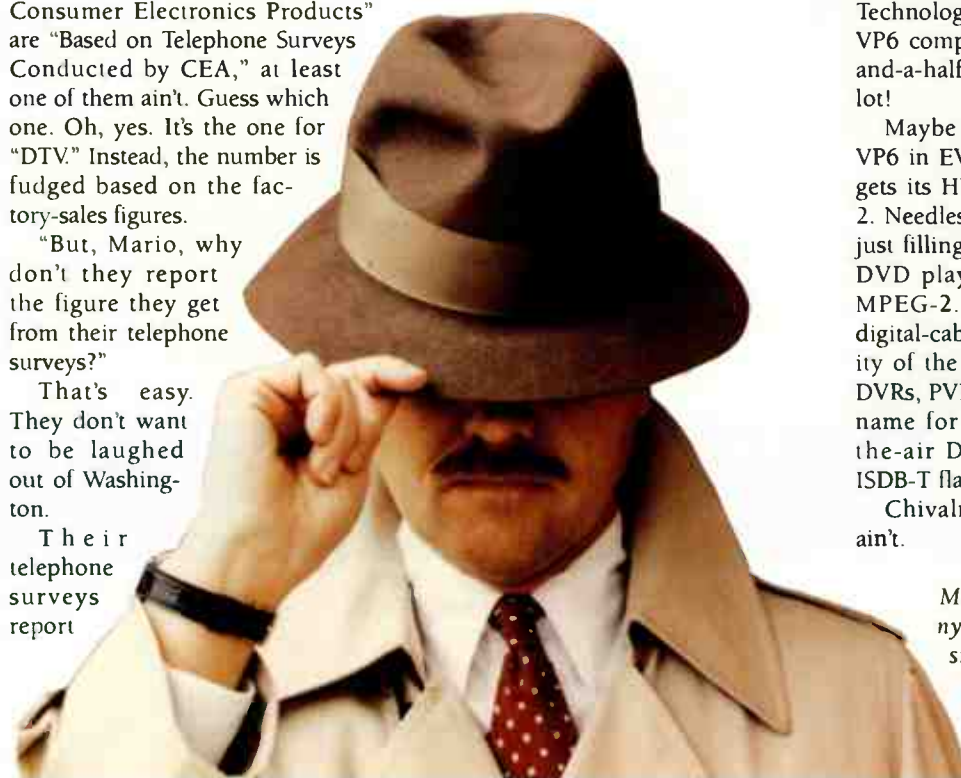
But wait! As I just said I just said Colossus told Dr. Forbin, "There is another system." DV compression can be used for HDTV (D-9 HD and DVCPRO HD). It ain't MPEG-2, either.

But wait! As I just said I just said I just said Colossus told Dr. Forbin, "There is another system." On2 Technologies says China is using its VP6 compression in EVD. And one-and-a-half billion EVD players are a lot!

Maybe China will, someday, use VP6 in EVD. In the meantime, EVD gets its HDTV via LSI Logic MPEG-2. Needless to say (which means I'm just filling up space), each and every DVD player on Planet Earth uses MPEG-2. So does each and every digital-cable box and the vast majority of the world's satellite receivers, DVRs, PVRs, or whatever the generic name for TiVo is? MPEG-2. Over-the-air DTV in ATSC, DVB-T, or ISDB-T flavors? MPEG-2, again.

Chivalry may be dead. MPEG-2 ain't.

Mario Orazio is the pseudonym of a well-known television engineer who wishes to remain anonymous. You can e-mail him at Mario_Orazio@imaspub.com.



SONY.

THE LATEST XPRI NLE. THE SD/HD EDITOR YOU'VE BEEN ASKING FOR.

Sony's Xpri™ system is quickly becoming the professional editor's choice. This is the world's first NLE to take advantage of the "native" HDCAM® and MPEG IMX™ codecs. And that opens up creative possibilities and practical advantages you always wanted. Like real-time HD effects and economical HD storage. And digitizing SD at up to 3x real time with dual digitizing capability.

The Xpri system also has the ergonomics you always wanted, a combination of an instantly-familiar user interface plus tactile controllers that work the way you do. The system handles uncompressed SD/HD signals, and offline resolutions, not to mention AVI and QuickTime™ formats. And you can configure either stand alone or shared systems with unmatched Storage Area Network (SAN) performance.

From the cutting room to the finishing suite, from television to motion pictures, Sony's Xpri system delivers what more of today's editors want. Which is all the more reason to *Work Smart. Work Sony.*



VISIT SONY AT WWW.SONY.COM/NAB04

© 2004 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features and specifications are subject to change without notice. Sony, HDCAM, HDCAM SR, MPEG IMX, Xpri and their respective logos are trademarks of Sony. Quicktime is a trademark of Apple Computer Inc.



DIGITAL TV

Charles W. Rhodes

Getting Real About DTV Receivers

In our last column, we showed that Intermodulation Products (IMP) of two undesired signals will fall into other channels, one of which may be the desired channel. In this case the IMP rides through the receiver IF filter and can be considered as co-channel interference. If the co-channel IMP is 15 dB below the desired signal, DTV reception is impossible. If the co-channel IMP is 35 dB below the desired NTSC signal, the NTSC picture will be "snowy."

Intermodulation products may be generated in the receiver by overloading the RF amplifier and/or mixer with undesired signals on any of the channel pairs listed in my last column. I noted that RF amplifier devices and mixers with high third order intercept power ratings can be effective against this form of interference, but they must be operated at very high DC current levels. There are three other receiver design strategies to reduce intermodulation in receivers: Wideband RF automatic gain control circuitry as previously discussed; an automatically switched RF attenuator at the antenna terminals, also previously discussed; and RF selectivity ahead of the RF amplifier and/or mixer.

It is relatively easy to provide good RF selectivity at VHF, and much harder at UHF (where the DTV signals are tightly packed). This is why we have Channels 7, 9 and 11 for example in one community, all carrying powerful NTSC signals, while heretofore, Channels 17, 19, and 21 were never allocated to the same community. High RF selectivity at UHF was hard to achieve in the manually tuned tuners back in the 1950s,

and it is even harder today with varactor-tuned tuners used in all tuners today. Varactors are actually voltage variable capacitors and these are simply back-biased diodes in the signal path. To get maximum capacitance (to tune down to Channels 2, 7 and 14) their back bias is reduced nearly to zero. At zero bias, their "Q" factor drops and selectivity suffers. Extremely strong undesired signals on such channels as 2, 7 or 14 can drive the varactors into conduction, which would ruin selectivity and generate IMP.

TUNER PROBLEMS

The life of a tuner design engineer is difficult indeed these days. All

these technical problems can be solved but can the cost be justified in a world where nearly all consumers are being fed their entertainment via a cable or DBS system? The only programming sources for which tuner performance is important to the consumer is over-the-air broadcasting.

In addition to intermodulation distortion, which by definition must involve two or more undesired signals, there is cross-modulation distortion (X-M). This form of interference can result from one undesired signal. Cross modulation is what causes the white vertical "NTSC sync bar" seen on some channels on some cable systems. The actual cause of X-M and IM is the

same—overloading of the RF amplifier and/or mixer. X-M transfers the modulation of an extremely strong undesired NTSC channel onto the sidebands of the desired NTSC signal. As DTV signals are usually radiated with much lower power than NTSC signals, X-M from undesired DTV signals is unlikely; from undesired NTSC signals, it is likely, but it will not cause the familiar "NTSC Sync Bar." The only remedy is to attenuate the RF signal to the victim receiver.

At CES in January, dealers showed the latest model DTV sets. Perhaps some of these had the CEA Smart Interface to allow automatic antenna parameter selection under receiver control. This CEA standard was developed several years ago to facilitate DTV reception. I wonder if it will be commercially implemented in 2004? This column would be very happy to hear of it. DTV receivers that have this interface standard could automatically control the signal level to the receiver with a pro-

DTV RECEIVERS, PAGE 26

Audio

CONTINUED FROM PAGE 15

NAB NOTES

Every year I go hunting for something at this show. I figure you have to have at least a couple of goals or the days just turn into a blur of endless walking and collecting swag. I will of course stop by the Dolby booth and hope that the folks are showing the Model 585. I recommend that you stop by to take a listen—it simply must be heard to be believed. I will be visiting Pixel Instruments to see what they have cooked up for fixing lip-sync issues with certain video switchers. It turns out it was not an audio problem after all, but it took some audio guys to fix it—we'll

reveal details in an upcoming column. I will also try to visit all the distribution encoder and decoder/IRD manufacturers to see how they are coming along with properly passing compressed audio formats like Dolby E. Companies like Aastra Digital Video and Tandberg Television have it working now, but some still do not (and you know who you are). Of course I will stop by the Wohler booth to see what they have cooking. Carl Dempsey and crew never cease to surprise and impress the broadcast industry (and me), and I look forward to seeing what they will have this year.

Also, I will join Nigel Spratling, Joe Wellman and friends at the Sigma Electronics booth where there will be several interesting things to see including some potential in-service lip-sync test and cor-

rection technologies. Please stop by for some swag, to say hello, or to get a question answered faster than e-mail.

Special thanks again to Dr. Deepen Sinha of Audio Technology and Codecs (ATC), and to Brett Crockett from Dolby who is the primary inventor of the time-scaling process we discussed this month.

For more information on Alvin Simmon and Theodore, visit www.thechipmunks.com where you can even listen to some hilarious samples.

Tim Carroll is a consultant based in New York City. He is presently the chairman of the audio section of the Systems Evaluation Working Group of the ATSC. He enjoys his LM100 and answering e-mail sent to him at: tjcarroll@ieee.org.

FREE Online Seminar IT For Broadcast March 31st 12-1 pm EST



André Mendes
Chief Technology Integration Officer
Public Broadcasting Service

Join Omneon experts, PBS' André Mendes and TV Technology Editor Tom Butts for a free online seminar about using Information Technologies (IT) to optimize your broadcast operations.

Learn how you can implement standard technologies and practices to improve efficiency, reduce costs and guarantee reliability at your station or network.

Register today at www.tvtechnology.com/webinar1

No special software needed, just an Internet browser & advanced registration.

Don't delay! Reserve your slice of bandwidth—get the best seat in the house!



SONY.

THE SONY SWITCHER FAMILY. #1 IN LIVE HD PRODUCTION.



Flexible SD/HD production

Why are so many switching to Sony? Because with Sony's family approach, you get a proven, no-nonsense solution for today's SD needs into the HD future. No one else comes close.

Start with our DVS-9000 SD switcher, and upgrade to HD without changing your control surface or method of operation. Or start with an MVS-8000 and switch between SD and HD today or until the day you switch to HD forever. Even the new, compact MFS-2000 enables you to start in SD and move up to HD with a simple software upgrade!

Thanks to our family, all three switchers offer the ergonomics that Technical Directors have embraced. The library of effects you build on one Sony switcher can run on all three. You'll even enjoy two years of SupportNet™ service, standard with the DVS-9000 and MVS-8000! (See actual warranty for details). Proof that it pays to *Work Smart. Work Sony.*



A family of switchers



VISIT SONY AT WWW.SONY.COM/NAB04

© 2004 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features and specifications are subject to change without notice. Sony is a trademark of Sony.

DTV Receivers

CONTINUED FROM PAGE 24

grammable RF attenuator external to the receiver. Relays suitable for use in 75-ohm circuits up to 1 GHz are commercially available. Those with 75-ohm attenuators made with surface-mounted resistors would be effective in preventing receiver overload by the myriad undesired signals floating in our ether. My friends at Z Technology Inc. were kind enough to layout and fabricate such a relay-controlled RF attenuator for me recently. Mine has 2 dB steps to 20 dB maximum attenuation. For TV receiver signal level control, two relays and attenuators should suffice. The relays were kindly furnished by to me by Aromat Corp. US Distributor for Matsushita Electric Works. Although there are other options such as use of PIN diode attenuators, I wanted to be certain that the attenuator did not generate any IMP so I sought to evaluate commercially available relays and 75-ohm stripline wiring for the surface-mounted resistors in passive 75-ohm attenuators.

ALL THAT GLITTERS

Speaking of my experimental work, I measured the power reflected by the RF input port of some NTSC receivers with several interesting results. Most RF instrumentation is designed to work in a 50-ohm environment, not the 75 ohms we know and love in TV. Someone suggested that because of this, TV tuners may actually be designed using 50-ohm test equipment. I created a 50-ohm reflection test bed with my HP 612-A UHF generator and 8405-A Vector voltmeter, with its 50-ohm precision

accessories and a Narda dual-directional coupler. This permits measuring the forward power and the reflected power for the 50-ohm device under test. That much was simple and worked well; the problem was to create a 75-ohm environment in which to test TV receivers. I could not use minimum loss pads for this so I used 50-ohm to 75-ohm transformers. The 75-ohm end of these transformers has a "F" connector. No problem (I thought), as I have all sorts of "F" connectors and "F" to BNC adapters. When I hooked these up back-to-back, I discovered that I was in trouble. The power reflected at 600 MHz should have been small compared to the incident power—that was the way my 50-ohm test setup worked. I knew the 50/75-ohm transformers were suitable. Could the "F" to "F" barrels be the source of the reflection? Yes, those shiny gold-plated male "F" to male "F" connectors proved to be highly

Channel	75 ohm test	50 ohm test
33	- 44.7 dBm	- 44.6 dBm
34	- 46.2 dBm	- 45.8 dBm
35	- 48.9 dBm	- 57.8 dBm
36	- 57 dBm	- 62 dBm
37	- 48.5 dBm	- 53 dBm
38	- 46.4 dBm	- 48.9 dBm
39	- 45.3 dBm	- 46.8 dBm
40	- 49.7 dBm	- 45.4 dBm

Table 1

enough to provide a 75-ohm transmission device with the inductance of the connector. But that was the problem. The gold-plated units tested at 4.3 picofarads; the low VSWR (Jerrold) connector measured about 1.35 picofarads. Perhaps the designer of those shiny male "F" to

Power reflected is power that was rejected by the receiver, so ideally the receiver would reflect power on undesired channels while accepting all power in the desired channel. As you can see, this receiver reflected almost none of the desired signal in a 50-ohm environment. This minimizes VSWR and that can improve the noise figure as well as increasing Signal-to-Noise ratio. I found some other receivers that showed the minimum reflected power in the desired channel in a 50-ohm environment. One receiver seemed to be equally reflective in both 50- and 75-ohm tests, and another was clearly designed for 75-ohm input.

From this admittedly limited experiment, I hope that those drafting minimum performance specs for DTV receivers will include realistic specs for noise figure and the reflection coefficient, or VSWR of DTV receivers. I also hope that engineers developing products for TV will understand that we live in a 75-ohm environment and test accordingly.

While I'm in this hopeful mood, I hope that realistic tests will be devised for DTV receiver interference rejection at high undesired signal levels. It is time we stop thinking of D/U ratios that are meaningless in nonlinear systems such as TV sets are under moderate and strong signal conditions.

Charles W. Rhodes is a consultant in the field of television broadcast technologies and planning. His career includes work for Philips Laboratories, Scientific-Atlanta, Tektronix and the ATTC. In addition, he is a SMPTE and IEEE fellow and was awarded the David Sarnoff Gold Medal by SMPTE. He can be reached by e-mail at charleswrhodes@worldnet.att.net.

I hope that engineers developing products for TV will understand that we live in a 75-ohm environment and will test accordingly.

reflective. I found a Jerrold-branded male "F" to male "F" connector that provided what I expected in the way of low reflection.

So, what can be wrong electrically with a simple device like this at 600 MHz?

I measured the capacitance of the Jerrold connector and the gold-plated connector that had shown a high VSWR. Their capacitance should have been equal and just

Male "F" connectors worked with a 50-ohm test setup. All that glitters is not gold.

Tests proceeded with the NTSC receivers in my home. Table 1 compared the reflected power from the antenna "F" connector of the receiver under test in 50-ohm and 75-ohm environments. I manually tuned the signal generator to approximately the visual carrier frequencies of Channels 33 to 40.



Are You HDTV Ready?

The viewers at home sure are.

Broadcasters now face the daunting challenge of modernizing their broadcasting infrastructure to deliver digital.

One design, consulting and integration firm is leading the way. Venue Services Group's roster of top broadcast engineering professionals are experts in HD integration and infrastructure, delivering everything from the first all-HDTV sports broadcast to the world's first native 720p mobile truck.

When your organization is ready for HDTV modernization, call on the leaders with real HDTV experience since 1998.

RECENT PROJECTS

HD 4 Mobile Unit (NMT) used for ABC's Monday Night Football

Fox Sports Net New England control room and studio
HDTV Retrofit Cabling Infrastructure -- Fenway Park
Technology Consultant for the NFL

BOOTH #1213
NAB 2004
Booth #C1213
Central Hall



Venue Services Group

www.vsg.tv

914-682-2111



VSG is a wholly owned subsidiary of National Mobile Television.
© 2004 Venue Services Group

SONY.

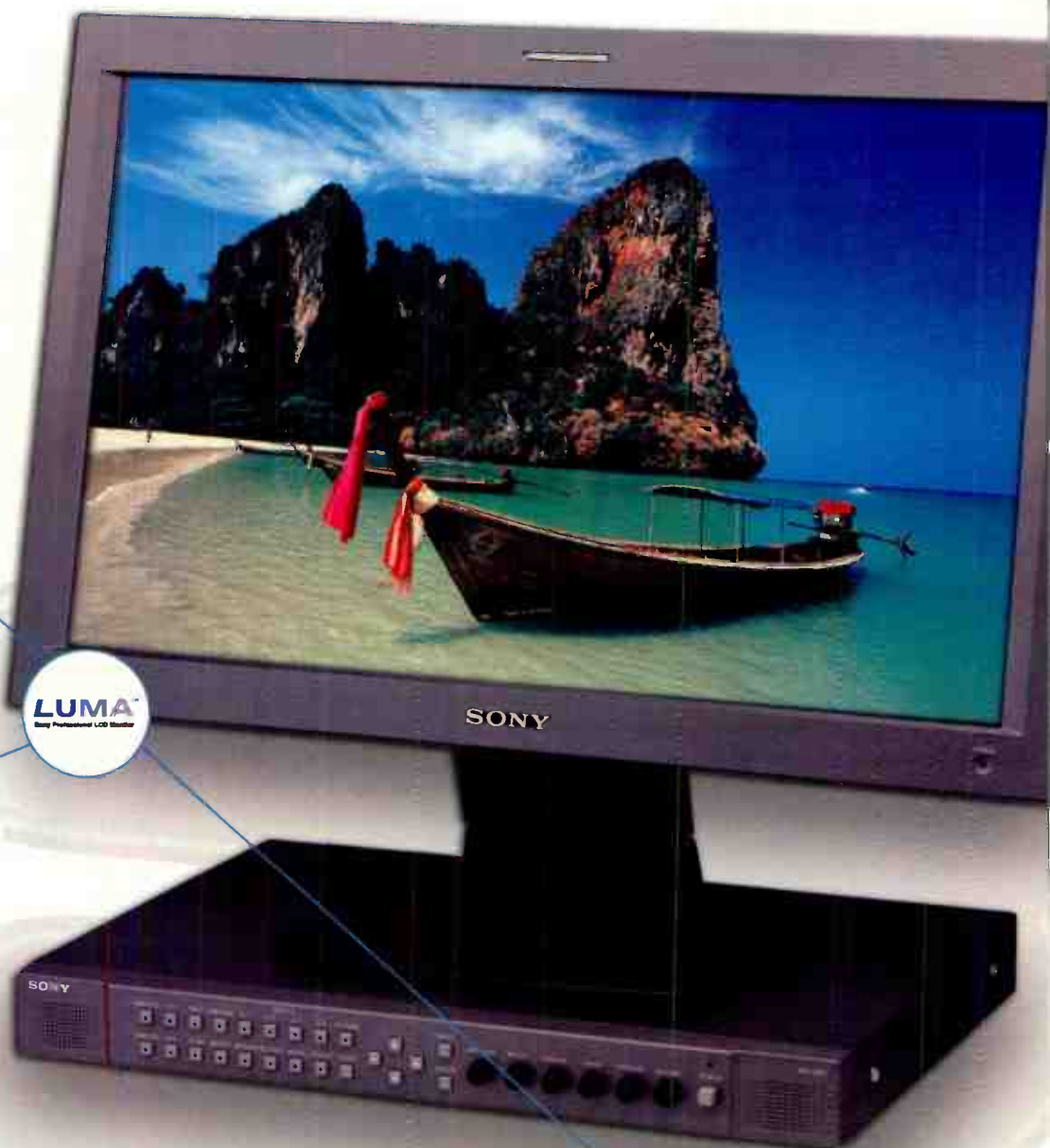
LUMA LCD MONITORS. BECAUSE PROFESSIONALS DEMAND MORE. AND LESS.



Client viewing



Field applications



More flexibility. More cost-effective. And now more models to choose from!

Sony adds a 32" widescreen monitor* and a 21" 4:3 monitor* to our LUMA family. Like our industry-leading 23" and 17" models*, they feature an innovative two-piece design: spectacular high-resolution panels, driven by signal-processing Multiformat Engines. With processing optimized to handle the demands of moving video. Plus inputs so diverse, it's hard to find a signal the monitor will not accept! Opening up more applications where video professionals can enjoy the benefits of LCD technology.

Along with more, we also give you less. Less space requirements. Less power consumption. Less heat build-up. Less weight. No wonder more pros are making Sony LUMA monitors their professional choice to *Work Smart. Work Sony.*



VISIT SONY AT WWW.SONY.COM/NAB04

©2004 Sony Electronics Inc. Reproduction in whole or in part without written permission is prohibited. All rights reserved. Sony, LUMA, and i.LINK are trademarks of Sony. Simulated pictures on monitors. Features and specifications are subject to change without notice. *Viewable area measured diagonally. i.LINK is a Sony trademark used only to designate that a product is equipped with an IEEE 1394 connector. All products with an i.LINK connector may not communicate with each other. Please refer to the documentation that comes with any device having an i.LINK connector for information on compatibility, operating conditions, and proper connection.

New Attractions Coming to NAB2004

Hands-On Pavilions, Mini-Conferences Provide Something for Everyone

by John Merli

Remember when the NAB show was only about terrestrial broadcasting? Attendees who might have missed the last couple of NAB extravaganzas in Las Vegas may be taken aback—and pleasantly surprised—by how much this evolving three-dimensional grid of ultra-timely conferences and exhibits has diversified into all-things-media in 2004.

Apart from the major conferences and exhibit halls that everyone has come to rely on for decades, this year's friendly takeover of the City in the Desert also will provide a number of new events to whet the appetites of even the most seasoned NAB troupers (who might remember when The Strip ended at Bally's—which used to be the MGM), to those who will participate in the world's largest broadcast convention for the very first time.

NAB2004 will prompt more than its share of brand new innovative features — not to mention the hottest in cutting-edge technologies within exhibit halls that are now all within easy reach by foot (preferably with rubber-soled shoes). Here's a glance at the new attractions that NAB2004 will offer, as the most important week in broadcasting unfolds. (All events are within the LVCC complex unless otherwise noted.) Check your on-site program book and the NAB2004 Web site www.nab.org, for last-minute additions and updates...

Post Production World Conference

April 16-21

Destined to be the world's largest conference dedicated solely to production and post production professionals, this six-day extravaganza features more than 160 special sessions. The conference will also feature the first annual Individual Creative Excellence (ICE) Awards.

Co-produced by Future Media Concepts, Avid, Adobe, Litch, and NAB



Digital Cinema Summit

April 17-18

This conference focuses on the transition from film to digital media—the creation and enhancement of works using digital media technologies, the distribution and display of these works via digital technologies.

Co-produced by NAB, SMPTE and the Entertainment Technology Center (University of Southern California)



Worship Technologies Conference

April 19-21

Targets technologies being used in houses of worship, and the necessary skills required to produce broadcast quality audio and video content. Visit the NAB Sound Mixing Pavilion, in association with this conference, to learn the basics of sound mixing.

Co-produced by Technologies for Worship magazine and NAB



Plug-In Pavilion

Exhibit hours
Booth SL5833

Ten companies will premiere their latest wares and demonstrate animated POV cameras and simulators, workflow enhancers, digital fusion, 3D mesh, motion blurs, and dozens of other refined plug-in capabilities.

Produced by Profound Effects, GonArts, RE-Vision Effects, Digital Anarchy, Trapcode, Layer Lab, Automatic Duck, Conoa, Synthetic Aperture, and DigiEffects



DAM Pavilion

April 19-21

South Hall-Booth SL2769
With more than 80 DAM (Digital Asset Management) companies attending last year's NAB, organizers decided the time was right to focus on technology issues such as network storage/security and solutions.

Sponsored by Global Society for Asset Management (G-SAM)



SONY

THE DSR-390/570WS. CAPTURE WHAT THE EYE CAN'T SEE.

The DVCAM™ format is the fastest-growing professional video format in history!

Now, we're growing even more. Powered by Sony's Power HAD™ CCDs, our new DSR-390 DVCAM camcorder is more sensitive than the naked eye. With F13 sensitivity and 65dB S/N ratio, you can record excellent images in as little as 0.4 lux. So even in dimly lit interiors or difficult twilight shooting conditions, your subject won't be left in the dark. Vertical smear is also reduced to -115dB. And it can be studio configured with a multicore studio CCU.

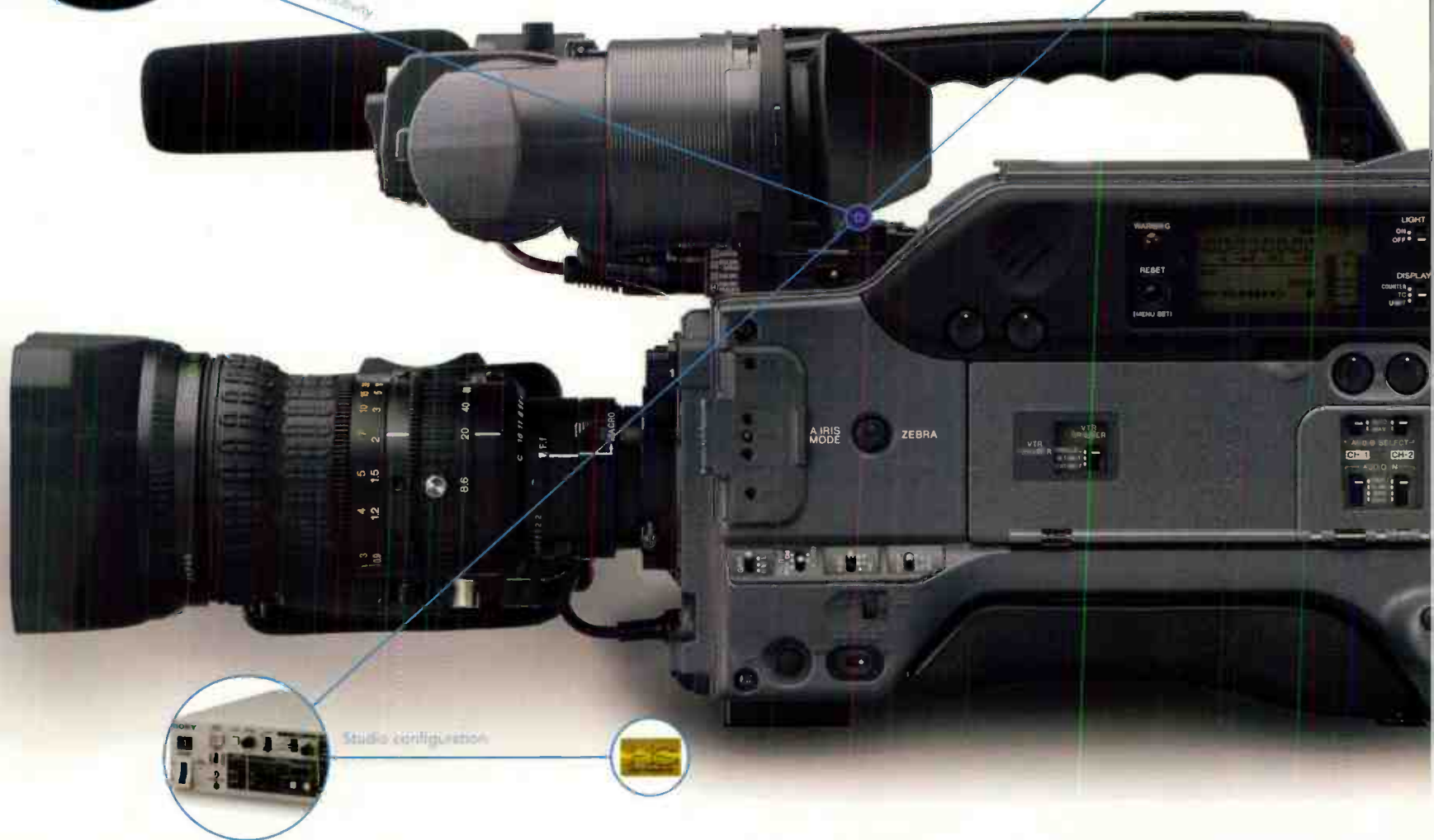
Need to capture widescreen DVCAM images? Sony's DSR-570WS can shoot in both native 16:9 and standard 4:3 aspect ratios. And it has a Hyper Gain function that boosts electronic gain to 42dB for superb low-light performance. Plus an i.LINK® interface for digital A/V output. Whichever model you choose, you'll get 3-hour DVCAM recording, generous warranty protection (see actual warranty for details) and more.

Take a look at Sony's DSR-390 and DSR-570WS DVCAM camcorders. Even in low light, any eye can see why Sony is the camcorder of choice when you need to *Work Smart. Work Sony.*



Low-light F13 sensitivity

DVCAM



Studio configuration



VISIT SONY AT WWW.SONY.COM/NAB04

©2004 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Sony, i.LINK, Power HAD, DVCAM and the DVCAM logo are trademarks of Sony. Features and specifications are subject to change without notice. i.LINK is a trademark of Sony used only to designate that a product contains an IEEE 1394 connector. All products with an i.LINK connector may not communicate with each other. Please refer to the documentation that comes with any device having an i.LINK connector for information on compatibility operating conditions and proper connection. For information on any device having an i.LINK connection contact Sony at 1-800-686-7669.

TiVo Turbulence Changes Broadcast TV

DVRs become the wire hangers of the industry

by Frank Beacham

NEW YORK

At a time when the business of television is undergoing accelerated and sometimes desperate change, uncertainty over new technology is leaving many broadcasters wary of the future, while technology companies wonder how to address the unpredictable broadcast market.

Networks, faced with a rapidly declining audience, are ripping apart traditional programming patterns and seeking ways to deal with the most explosive technology to emerge in years: The TiVo-bred digital video recorder (DVR).

Cable and DBS are also chomping away at network audiences. During the 2002-2003 season, broadcast television stations collectively held an average 49 primetime share of U.S. television households, compared to an average 74 share ten years earlier.

Pay television providers, also experiencing a shrinking number of tradi-

tional viewers, are banking on new digital technology to generate additional revenue. The lure of video-on-demand and VoIP telephony is attracting cable subscribers to broadband. At the end of 2003, there were more than 14.6 million cable modem subscribers. Some predict that number will reach more than 26 million within three years.

"Today's teens are growing up in a world where (conventional) television is less vital as a form of entertainment," said Tim Spengler, executive vice president, national broadcast, at Initiative Media, a global media management firm. "How we deal with that is a big concern."

A&E Network used focus groups to study the loss of young viewers.

"For most [adults], interactive television is a contradiction in terms," said William Corbin, A&E's vice president for interactive production. "We just want to sit down and watch passively. But when we looked at the younger age group—and it's a scary thought—we found out that television is a thing behind them. Their focus is on the com-

puter. They don't understand how their parents can be so boring as to watch only one thing at a time. They want instant message windows open, they want to be burning DVDs, and to be watching content—all at the same time."

Rick Mandler, vice president of Walt Disney Company's Internet Group and ABC's Enhanced TV, agrees that generational change is having a huge impact on TV viewership.

"Do I feel overwhelmed (by technology)? Yes, sometimes. Does my college-aged nephew feel overwhelmed?

"Today's teens are growing up in a world where [conventional] television is less vital as a form of entertainment."

—Initiative Media's Tim Spengler

Never," the 40ish Mandler noted. "At the end the day, the technology you grow up with is the technology that you're receptive to adopting later on. Those 34 and older may never break down. They get locked into the media patterns they consume and don't really have the mental bandwidth to break themselves out of that pattern."

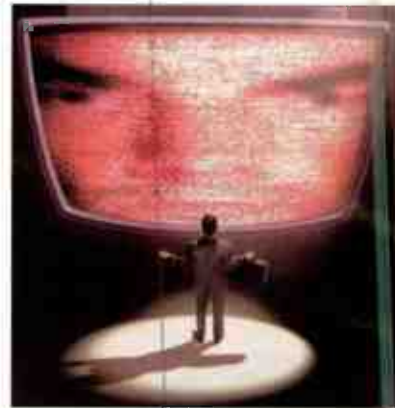
David F. Poltrack, executive vice president of research and planning at the CBS Network, notes that the television networks have transitioned from distributors to the leading producers of broadcast content. He is still bullish on the network television business and sees opportunity in the DVR.

OUR FRIEND, THE DVR

"We look at all of our television programs as brands," he said. "Once a television program establishes itself as a successful brand, we are looking at all kinds of different ways to exploit that programming and bring it to the consumer in all different forms."

That means, Poltrack said, selling DVDs directly to viewers, archiving and distributing shows in VOD and pay-per-view, and even creating traveling live staged productions based on popular shows.

"We have been tracking DVR use among people for two years," Poltrack said. "Yes, DVR users skip commer-



We don't need no TiVo-ization...

cials. Yes, they do watch a substantial amount of their television in the record versus live mode. But what are they recording? They are recording the top ten shows on network television."

Taking a positive view of the technology, Poltrack said DVRs allow people to rearrange their schedules and sample more new shows than ever. He doubts DVRs will damage the television business or high-quality advertising, which, he contends people like.

THERE AT BITTER CREEK

That view is shared by Jeff DeJoseph, vice chairman of Doremus, a leading branding agency.

"One of the reasons that entertainment branding is a hot topic is because people are scared of TiVo," DeJoseph said. "People are still going to watch commercials because they have always loved great commercials. They will use TiVo to eliminate most of the bad commercials."

That said, use of DVRs is creating change, DeJoseph said. Brands are becoming more aggressive with sponsorships of entertainers and in television content development.

"The sophisticated ones are going way beyond product placement," he said. "They are going to try to find a group of producers and get involved in story development early enough so that the brand message can be woven into the story in a credible way."

Networks are also considering the elimination of the traditional television season, the 35-week period from mid-September to mid-May. NBC has been especially aggressive with plans to introduce new shows year round and to have fewer repeats in the summer. There's also active consideration of eliminating the three yearly "sweeps" periods.

These changes have given rise to reality shows that cost little to produce and, when successful, garner high ratings and huge profits. The downside is the programs usually have no syndication, and little future earning potential.

"We are concerned about reality tele-

TURBULENCE, PAGE 36

ASTRO SYSTEMS, INC.

HD/SD 6" Waveform Vector Scope Monitors

Format & Scan Converter Between HD, SD, PC, and More with Supernatural Motion Compensation

ALSO ASK ABOUT OUR OTHER GREAT PRODUCTS INCLUDING HD DISPLAY MONITORS, SCAN CONVERTERS, SIGNAL GENERATORS, COLOR CORRECTORS AS WELL AS OTHER HDTV PRODUCTS.

www.astro-systems.com

P: 818-848-7722 F: 818-848-7799 info@astro-systems.com

See us at NAB2004 Booth #SU7831

SONY.



Power HAD™ EX CCDs

Subminiature

Studio configuration

THE DXC-D50 SERIES. WHAT IT TAKES TO MAKE A BETTER CAMERA.

What sets this camera apart? Its major parts. Every integral part of Sony's new DXC-D50 Series Digital Video Camera – the next generation in the DXC-series of cameras – is designed and built to work together by Sony. The result of this match is extraordinary picture quality and operational convenience in a camera packed with an array of performance features.

Available in two different versions: the DXC-D50 4:3 model and DXC-D50WS 16:9/4:3 switchable model, both feature the new high-performance Power HAD™ EX CCD sensor and precise 12-bit A/D conversion built into a highly sophisticated LSI for superb picture quality, high sensitivity, and low noise and smear characteristics. Excluding the lens, all these critical components contributing to quality performance are made by Sony. For the ultimate system versatility, these cameras are available in multiple packs or configurations, based on individual production needs and can be paired with Sony's new RCP-D50/51 Remote Control Panels.

Whether the application is studio or location, the DXC-D50 series cameras provide an ideal solution at an affordable price. *Work Smart. Work Sony.*



VISIT SONY AT WWW.SONY.COM/NAB04

© 2004 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Sony, Memory Stick, and Power HAD are trademarks of Sony. All specifications are subject to change without notice.

SBE Explores the IT World at NAB

Engineering association's Ennes Foundation sponsoring day-long focus on IT future

by Fred Baumgartner

LAS VEGAS

For broadcast engineers, the National Association of Broadcasters (NAB) spring convention in Las Vegas is the nation's largest toy show—and an opportunity to learn about, see and touch what is new and useful for keeping broadcast stations on the air and productive. But there is much more than the show floor—even before it opens, the Society of Broadcast Engineers, through its educational affiliate the Ennes Educational Foundation Trust, presents a day-long tutorial designed to bring broadcast engineers up to speed with advances in the technology and operations of broadcasting. In years past, the well-attended sessions have covered networking for broadcast engineers, centralization, digital radio and more.

This year, SBE members attending the Ennes/SBE program, "Converting Broadcast Operations to an Information Technology Platform," on Saturday April 17, will receive a \$200 discount off the NAB non-member, full conference registration fee (the form is available at www.sbe.org), saving roughly the cost of a well-bought plane fare to the show. Las

Vegas remains the most popular destination for NAB, in no small part because of the low cost of airfare, rooms, meals and entertainment.

NO LIMITS

Clearly the craft of TV broadcasting is changing from cameras and tape machines to computer-based playback, distribution and storage systems, in fact becoming an *application*. The hardware platforms are now—or fast becoming—interchangeable, and seldom does hardware limit what we can do with our broadcast applications running on them.



Chris Golson

The selection, setting up and modification of software, and even more important, the architecture of the data and storage networks and organization of content have more bearing on the usefulness and success of the broadcast station.

At one time, almost every station operated like every other station. Odds are that any

employee could move across the country to another station and plug into a very familiar world, whatever their specific skill is. Today, the workflow can be very different, as many of the tasks from traffic to on-air talent are more highly integrated and automated. Any task can be done by any number of people and in any

number of different ways.

This year, Ennes has invited inventors, broadcast engineers and manufacturers who are driving the IT conversion to talk about their successes and failures. Broadcast engineers have a good story to tell the industry, and the Ennes sessions are where it happens.

Al Kovalick, Pinnacle System's chief technology officer, starts off the day with a broad tutorial on storage architectures and connectivity, covering the often distinctive decision points that each broadcast operation must make. Kovalick worked for 25 years at Hewlett-Packard as a designer, system architect and technical strategist before joining Pinnacle, and he holds 18 patents.

Ted Mina will follow with a tutorial on the IT aspects of managing content from a service level perspective. Mina is a principal of the Technology Solutions Group (TSG) within EMC's Telco, Media and Entertainment division, delivering strategy and solutions development services to EMC's top media, telco and enterprise clients. He will focus on case studies and the best IT practices from his own experience.

Isilon co-founder Sujal Patel will describe the limitations and pitfalls of approaching a broadcast project with standard IT tools. Prior to founding Isilon, Patel spent nearly five years at RealNetworks, in part as chief architect behind the company's second-generation core media delivery system.

Considering the "what to do, and what not to do" of IT conversion, Lynn Rowe, CEO of One World Technologies, rolls up his sleeves and covers the edge where traditional IT infrastructure breaks down in the broadcast world. Rowe is well known in the broadcast industry for being on the leading edge of technology, which is where his company thrives.

Finishing up just before the lunch break, John Hoehn, from IBM's Business Consulting Services, takes up the topic of Middleware—the secret sauce that allows the islands to be combined in the IT conversion process.

AFTERNOON SESSIONS

As morning moderator Andrea Cummis, CBT, CTO, Oxygen Network Senior Vice President of Engineering and SBE board member, finishes her sessions, Bill Hayes, Director of Engineering and Technology for Iowa Public Television

and author of the "Digital Journal" column in *TV Technology*, takes over. The afternoon sessions turn to case histories and what several working broadcast engineers have experienced. But first we cover V-ISAN and the challenge of maintaining the "card catalog" in a purely digital world. Craig Finseth, Firwood Consulting, will speak of Universal Media Identification, and the next world where central registries catalog and define content.

Clear Channel Vice President of Engineering Mike DeClue will cover the new, more flexible and reliable modes of operation Clear Channel derives from its new IT paradigm. DeClue is a long-time broadcast engineer, well-rooted in the business of operating broadcast facilities.

Kevin Ivey, who is currently serving as BBC Technology's Project Director for ESPN's Digital Conversion Project, will follow. BBCT's project team at ESPN is building the pilot and full implementation of Media Asset Management and Command & Control systems to support ESPN's new digital production center and the network's high-definition television offerings. Ivey previously held the post of Vice President, Research and Development at



Bill Hayes

CNN.

Turner Entertainment, under Vice President of Engineering Clyde Smith, has made the IT move into a new 198,000-square-foot facility with an extensive IT infrastructure, and Smith has a lot to talk about with the many channels and media outlets supported.

Chris Golson, SGI's senior director of marketing strategy for the media industries, has a front row seat to the IT conversion and makes the perfect close to an IT-centric day.

SBE and the Ennes Trust provide several educational opportunities throughout the year, but NAB is an annual opportunity to gather a number of top-quality presenters together for a full day of education. We promise that you will have your share of "take away" points, making the trip to NAB and the Ennes program well worth the time and effort. ■

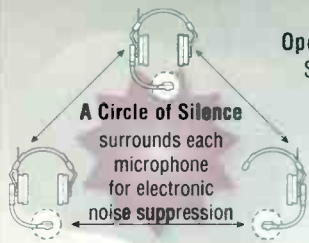
Fred Baumgartner is currently the Director of Engineering for Comcast Digital Programming Center in Denver.

NEW Hands-Free Triplex-X-WIRELESS INTERCOM!

Permits **three** headset users, up to 1,000 ft apart, to talk and listen simultaneously without the need for push-to-talk buttons, belt packs, base stations, or external wires. **System 903** consists of 3 headsets, single or double ear style, with molded carrying case. Each headset has a built-in transmitter, receiver, battery, and microprocessor which can select any one of 8 channel pairs available for interference avoidance.



NEW
"CIRCLE OF SILENCE"
EXCLUSIVE FEATURE THAT SHUTS OUT
DISTURBING AMBIENT NOISE



Operation is in the 900Mhz, license-free, ISM band. Sidetone lets the user know that transmission is taking place. An audible tone warns user of a low battery condition.

System 902: The same as the *System 903* above, except that it consists of a matched pair (two) wireless headsets for operation as a **full duplex** 2-way talking network. Choose single or double ear style headsets. Request catalog CZ-25.

- No buttons to push
- No belt packs
- No base stations
- No dangling wires

R-Columbia Products Co. Inc.

2008 St. Johns Avenue • Highland Park, IL 60035-2417
Ph: (847) 432-7915 • Fax: (847) 432-9181 • www.rcolumbia.com



It's Coming...

A new way to think about fiber optics.

Vipers and Adders and Cobras...oh my! Navigating the HD jungle requires careful planning and an experienced guide. Our products have supported your HD requirements since 1997, and we have continued to innovate ever since. Your safe passage into the future of broadcasting is our mission. A new snake is on its way.

Get ready to see where fiber is going next!

See us at NAB2004 Booth #SU9824



Telecast
Fiber Systems, Inc.

(508) 754-4858 • www.telecast-fiber.com

Turbulence

CONTINUED FROM PAGE 30

vision, which is a cheap alternative to address rising program costs," said Stefanie Kane, a partner specializing in media economics at PricewaterhouseCoopers. "Reality television cannot sustain a life-cycle in syndication. The audience for reality diminishes rapidly. This is of great

concern to the economics of television."

Though the broadcast networks still express public support for their local affiliates and regard their O&O stations as important local branding vehicles, there is virtually no public talk among industry players of the transition to digital terrestrial broadcasting.

The subject seemed mostly irrelevant at the recent Media Summit in New York City sponsored by several

McGraw-Hill companies. One participant noted that local stations might become more relevant in the big media picture when they finally figure out a business model for digital broadcasting.

Even HDTV is now viewed mostly in terms of luring the cream of the crop in high-end pay television subscribers.

"The satellite guys were the first to roll it out. Cable was pained to lose their best customers and that's obviously driv-

ing their decision to add high definition at a rapid pace in all the major MSOs," said Karl Meisenbach, director of advertising at HDNet.

The topsy-turvy economics of television is causing media companies to re-aggregate their assets and take a new look at the profitability of creating programs, said Leonard Asper, president and CEO of CanWest Global Communications, owner of the Global Television Network in Canada.

"Today you have to accept that the first run of your new TV show isn't going to get the same license fee it used to get," said Asper. "It isn't going to attract the same advertising revenue. But that's OK, because the show is going to get a little bit more in syndication, it will get more in pay-per-view, more in VOD, and you will sell the DVD. And maybe you'll create a music soundtrack. New revenue has to come from the fragmentation to pay for the content."

BIGGER ISN'T ALWAYS...

With this re-aggregation comes management hurdles, Asper noted.

"Media becomes powerful because they've aggregated a bunch of assets under one roof," he said. "However, this is very difficult to control because there are people involved. I don't think media companies are nearly as powerful as the media itself makes it out to be."

Global media conglomerates are headed for trouble, said Patrick Vien, president of network enterprises at the Universal Studios Television Group.

"I think these oligarchies are going to get very difficult to manage. All empires eventually break down. They are then rebuilt by true independents. So over time that will happen in this business as well," he said.

The music business has already begun a swing back toward independents and other parts of the entertainment business, television included, will eventually go the same route, said Jay Boberg, former president of MCA Records.

"We are returning to the era of the independent entrepreneurs that don't have the baggage of the big, dark corporate giants," Boberg said. "We've seen these waves of decentralization and then the bigger companies buy up the small ones. Then there is some paradigm shift like we've just seen and the big companies start to lose their power and a whole crop of independents pop up. Then they are consolidated again."

Today, Boberg continued, the people running the major media companies understand this cycle, but they have difficulty knowing when to seize the moment to make the right moves.

"There are times when it's better being an oil tanker and there are times when it's better to be a jet skier," he mused. "It just depends on where you are in the whole technological marketplace. Right now being on a jet ski is a much better place to be." ■

Belden Delivers Flexibility To Your Audio and Video Digital Conversion.

Analog, Digital or Data — More Broadcast Engineers Choose Belden Than Any Other Brand of Cabling Products.

Why? Because broadcast engineers know that Belden has an extensive line-up of digital cabling products — including data cables — and the quality to match.

Whether you're installing cable in a television or radio studio, a video post-production facility, an indoor or outdoor sports arena, a film production studio, a church, a government chamber, or an entertainment venue — any area where a high quality signal is important — Belden has the digital cable to meet your needs.

To make your selection process easier, we're offering a 3rd Edition of our "Digital Studio Cable Guide." This Guide will help your understanding of digital cables, SDI and AES/EBU specifications, HD Radio concerns, key electrical/distance parameters, and why Installable Performance™ is important to cable performance.

Look to the leader. Call 1-800-BELDEN-4 and get a free copy of the definitive "Digital Studio Cable Guide." Or download a copy from Belden's Web site at: www.belden.com/tb65.pdf.

Belden

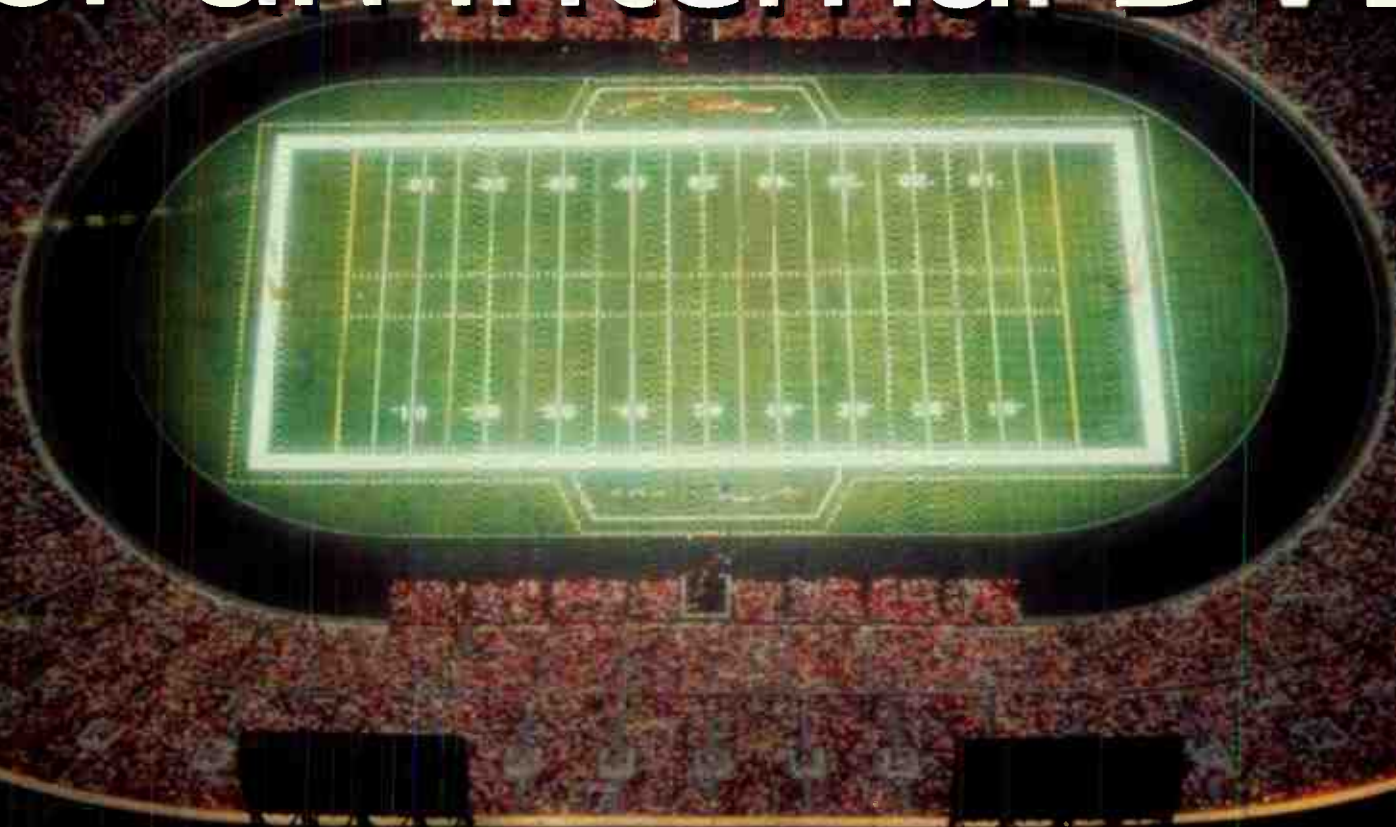
Performance Delivers The Future™

© Copyright 2004, Belden Inc.

BRILLIANCE™

Now with
8-Channels

This game is too big for an internal DVE.



Dveous/MX



The big games demand **Dveous/MX**. This new machine is a higher definition of the industry-standard. More power. More functionality.

More ways to deliver superior picture quality for news, sports, specials, concerts and more.

Best of all, you get SD and HD in one box. With the same intuitive user interface. So when you're ready to work in high definition, there's no learning

curve. Your Dveous/MX is totally future-proof.

Thinking about an internal DVE? Then go to www.accom.com for a free copy of DVE Smackdown — a powerful report comparing Dveous/MX to internal DVEs. You'll see why Dveous/MX is in a league of its own.

Accom

Sony Drives Forward With Optical Disc

Equipment giant gets behind MXF media wrapper initiative

by Tom Butts

TOKYO

Since last NAB, Sony has shaken up its professional broadcast division, with several well-known veterans taking early retirement, the appointment of a new president and the sale of its systems integration division.

In December, John Scarcelli, current president of the company's Business Solutions Division, took on the added role of heading up Sony's broadcast division, now part of the company's "Professional Solutions" group. Longtime imaging pioneer Larry Thorpe and division president Pat Whittingham took early retirements.

Despite the reorganization, Sony's message for NAB2004 is similar to what it has pushed in recent years: Using the power of computer-based technologies in improving production workflow as well as promoting the increasing availability of lower-cost HD production gear.

Last year, Sony introduced its



Michimasa Sekiguchi, GM, Storage System Planning for Sony with the XDCAM system optical disc medium.

vision for an IT-based production world when it rolled out its XDCAM professional optical disk system. The system takes advantage of the use of metadata and MXF to quickly acquire, edit and transfer digital content from the field back to the station or production facility.

Since XDCAM was launched a year ago, the emergence of MXF as an

important new industry standard for importing and exporting data files (the standard recently received its final SMPTE stamp of approval) has helped advance the cause of an IT-centric production workflow. MXF allows interoperability among differing data formats, giving manufacturers of competing formats the opportunity to use metadata to its fullest extent.

"We believe [MXF] is the only mechanism that can connect the many [production] islands that exist today," said Hugo Gaggioni, CTO for Sony Broadcast at a recent tour of Sony facilities in Japan.

Sony has made MXF a key component of its XDCAM system, which includes two DVCAM camcorders, a mobile deck for single machine-cuts only editing, a compact deck for ingest and an editing recorder that can transfer proxy material at up to 50x realtime.

The process starts when footage captured on an XDCAM is recorded in the high-resolution data file and a low-res, frame-accurate proxy file along with metadata that can include

voice and script data. Editors can determine their EDLs in the field and immediately transfer the selected data in an MXF wrapper back to the facility over a LAN or the Internet at speeds of up to 50x realtime. This year Sony is launching several new XDCAM-based products to enhance efficient content transfer: XPRI Mobile and XPRI MetaStation.

FROM THE FIELD

XPRI Mobile is just what its name implies: A laptop version of Sony's XPRI NLE system that can transfer proxy data up to 20x realtime. XPRI MetaStation is an ingest editing station that can transfer proxy data at up to 50x realtime and allows editors to take material from XDCAM and instantly reproduce timelines created in the field by importing a fully compatible EDL, including effects and titles.

"Broadcast news production work done in the field needs to be easily accessed, managed, edited and transmitted to the studio, where it can be finalized and made ready to air," said

SONY, PAGE 46

Ingest Is A Thing Of the Past



Ingest, capturing, digitizing, file transfer...whatever you want to call it, it's a time consuming step between acquisition and editing. What if you could eliminate that step entirely? Only the FireStore family of DV disk recorders has DTE Technology™ which completely eliminates the ingest stage of production. DTE Technology allows you to record clips directly to disk, in NLE native file formats for popular editing packages including Avid, Final Cut Pro, Premiere, Matrox, Canopus and more. There is no need to capture, transfer or convert files...just shoot, then edit.

With models for the desktop, the field and the studio, only FireStore with DTE Technology makes ingest a thing of the past.



See us at NAB Booth SL3501
FOCUS Enhancements

FireStore™
(800) 338-3348 www.firestore.com

UHF broadcasting doesn't get any better than this

The future is unlimited where you find the Thales point

THALES



Wherever you find the Thales point, you'll find award-winning innovation for all your digital transmission and distribution needs. We're helping broadcasters and service providers benefit from the unlimited potential of the digital age with complete end-to-end solutions. And that's the whole point. Thales. Great people behind great solutions.



DCX Paragon MSDC-IOT

Thales' DCX Paragon is designed to provide broadcasters with the most cost-effective and efficient transmitter ever created. DCX Paragon utilizes Soft Arc Technology™ (SAT), which eliminates the need for a crowbar, dramatically increasing the transmitters' overall reliability. Designed with cost of ownership in mind, DCX Paragon has a beam efficiency of up to 60%. Available in oil-cooled and water-cooled versions, UHF broadcasting doesn't get any better than this.



www.thales-bm.com

See us at NAB 2004
Booth # C4709

Panasonic Bets on P2 in Las Vegas

Price of the flash memory storage medium remains steep

by Frank Beacham

SECAUCUS, N.J.

Placing its bets on the flash memory storage media that's driving the digital still photography revolution, Panasonic will showcase its new solid state P2 news gathering system—dubbed "ING" for its IT roots—at NAB 2004.

Panasonic said it will begin delivering the P2 system to broadcasters in the second quarter of this year—though at its pre-NAB news conference in late February, no customer commitments were announced.

The first products in the new DVCPRO P2 series are the AJ-SPX800 2/3-inch camera, the AJ-SPD850 studio recorder, the AJ-PCD10 card drive, and AJ-P2C004 4GB and AJ-P2C002 2GB modules.

The hardware portion of the system is modestly priced. The new camcorder, set for May delivery, lists at \$19,500. The studio deck, due in June, is slated at \$15,000, while the P2 card deck is priced at \$2,500.

However, a single 4 GB flash memory module providing 16 minutes of DVCPRO-quality recording is being priced by Panasonic at a whopping \$2,100. The same module provides eight minutes of recording at DVCPRO resolution. The camera can simultaneously hold five such modules for recording, bringing its total media cost to about \$10,500.

Not included in that price is what goes into a sixth PC card slot. It can be outfitted to accept a range of IT communications options such as a wireless LAN card or MPEG-4 proxy video encoder.

Panasonic's memory module is a special ruggedized version of a PCMCIA card that contains four postage stamp-sized 1GB SD memory cards with a controller IC.



Panasonic AJ-SPX800

Panasonic's parent, Matsushita Electric Industrial Co., Ltd., along with Sandisk and Toshiba Corp., collaborated to develop the SD flash format in 1999. Today, the proprietary form factor is licensed and used by hundreds of manufacturers.

Panasonic has chosen to seal the PCMCIA module from its customers, which means the device is not user-upgradeable as faster, lower cost SD

flash memory cards become available.

A Panasonic executive told TV Technology "off the record" that he believed that the corporate decision is a mistake since it will prevent users from acquiring their own SD memory cards at the lowest discount prices.

FALLING PRICES

Responding to the still high cost of flash memory, Panasonic insists that prices will continue to fall as the storage technology becomes more popular in the consumer photography market. The company also insists that the initial 2 GB and 4 GB capacities are temporary, with 8 GB, 16 GB and 32 GB capacities to come.

However, at \$2,100, Panasonic's flash memory is currently priced far above even the list price of flash memory on the market today.

For example, Sandisk, a co-inventor of the SD format and leading manufacturer of memory, sells its 1GB SD

shooting in field locations, a Panasonic executive noted that without enough laptop disk drive space, users could burn a DVD disk in the field to store the overflow of images. This was an unusual comment since Sony's competing IT-based news recording system emphasizes video storage on optical media in the first place.

In any event, Panasonic marketing executive Stuart English noted that Panasonic's P2 system "is ready, it's here and it's currently being beta-tested."

That testing would be by CBS, Fox Entertainment Group, and Raycom Media, companies that Panasonic said had provided "invaluable development assistance and are currently taking part in the beta testing of DVCPRO P2 products."

FIREWIRE FRIENDLY

Also at NAB, Panasonic will introduce the AJ-SDC905, its first dual-mode DVCPRO50 camcorder with an IEEE 1394 input/output. That I/O capability—called "Firewire" by Apple Computer—is considered an Apple-friendly move to assure the lossless

The P2 system "is ready, it's here, and it's currently being beta-tested."

— Panasonic's Stuart English

flash card for \$329.99 retail list. With no discount, four such cards in the Panasonic module would cost \$1,319.96 retail, leaving another \$780 for the PCMCIA case alone.

Panasonic's proprietary SD flash format is also far more expensive than competing flash memory in other form factors. For example, a 1 GB Compact flash card is commonly priced now at under \$170 in stores, while 4 GB versions are available at under \$1,300. This memory is functionally identical to SD in storage capacity and a 4 GB Compact flash card can plug directly into a standard PCMCIA card holder.

In touting the IT benefits of file-based newsgathering, Panasonic envisions video made on its P2 system being transferred and edited onto laptop computers equipped with standard PC card slots and video editing software. The theory is that the P2 storage cards, after transfer to the laptop's drive, would be returned to the camera crew for reuse.

However, when questioned about how news crews would handle accumulating video over several days of

transfer of 50 Mbps digital video for non-linear editing, such as Apple's Final Cut Pro.

The camcorder offers operator-controllable selection of 4:2:2 sampled DVCPRO50 or 4:1:1 sampled DVCPRO recording, and native 16:9 wide-screen or 4:3 aspect ratios. Priced at \$18,900, it features three 2/3-inch 520,000-pixel IT CCDs that offer F13 at 2000 lux, and low-light shooting down to 0.09 lux.

Also set for debut is the AJ-SD93 "Universal SDTV" Feeder Deck featuring an IEEE-1394 Firewire interface. With a base price of \$6,500 (August delivery), this VTR handles 4:2:2 video transfers at 50Mbps over IEEE-1394 to non-linear editing systems. It can also be outfitted with optional analog and SDI inputs and outputs.

The AJ-SD93 can record onto small, medium or large DVCPRO cassettes with a maximum record time of 184 minutes (92 minutes in DVCPRO50). It can also play back DV and DVCAM tapes. Designed for desktop and mobile applications, the AJ-SD93 is 3 RU high and one half-rack wide. ■



It doesn't show but reveals.

See what's been hidden with ERG's new ultra-high resolution 6" diagonal HDM-EV30D HD monitor. To further improve your view, it offers enhanced color and gamma adjustment functions, adjustable framing markers, and a convenient memory preset function. In addition, its rugged, compact design and low power consumption make it ideal for location shooting. All of which can help you look more closely. Find the new ERG HDM-EV30D at NAB 2004, Booth #SU10609. www.erg-ventures.com, erg@erg-ventures.co.jp, US: 1-949-509-6558, Japan: 81-3-3760-8161

ERG HD Monitors

What do you get
when you take
[VELOCITY] to a
new [ALTITUDE]?

Visit us at NAB to find out!
Booth #SU9868

**We're About To Take
Editing Performance "Higher"**

The Velocity family of non-linear editors has always stood for an exceptional combination of quality, performance, flexibility and affordability. Visit us at NAB to see how we're taking this tradition to a "higher" definition.

Canada +1 (800) 387 0233
USA East +1 (800) 231 9673
USA West +1 (888) 843 7004
Latin America +1 (305) 512 0045



www.leitch.com

Avid Boasts Tighter Integration

Broadcast vendor logs a banner year in 2003

by Mary C. Gruszka

TEWKSBURY, MASS.

Avid Technology will be touting tighter integration, more attractive price points, and HD in its broadcast product line-up for NAB2004.

Although David Schleifer, director of Avid Broadcast and Workgroups, wouldn't release specifics, he said that the new offerings at the Avid booth would reflect the company's continuing R&D efforts.

"Avid as a company is committed to investing in editing, shared storage, and asset management," Schleifer said. "We know all the pieces."

Those efforts started paying off in 2003, which Schleifer described as a "banner year."

"We saw a lot of growth," he remarked. "DNA which was introduced in 2003 was well-accepted by the market. DNA customers love the idea of software codecs since it makes it future proof. They can mix and match resolutions and different types of media at the same time."

Sales of asset management, Unity for News, and nonlinear news production were also up.

"We saw a lot of groups getting introduced to the technology and others were adding to what they already had," Schleifer said. "Broadcasters also saw asset management as important."

Why all this activity now?

"Price performance was a big factor," Schleifer said. "Our systems are more affordable. People are seeing the benefit of more power at a price point than

we have ever delivered."

Another factor, Schleifer said, is that "Avid achieved a level of stability and install-ability, making [our systems] easier to install."

2004 will see further developments in the product lines, HD being a notable example. Avid will introduce HD upgrades for its systems like Media Composer Adrenaline and the Avid NewsCutter Adrenaline FX system.

Schleifer noted that last year the DNA (Digital Nonlinear Accelerators) architecture was shown with a slot for HD.

"Now we are filling the slot with actual hardware to make it real," he said. "Our HD upgrade gives a lot of performance that the market hasn't seen before."

Even customers who aren't planning on immediately doing HD "want to know that the system can grow with them," Schleifer added.

That even includes HD news.

"We know it's coming in the next year or two," Schleifer predicted.

ALL THE INEWS THAT FITS

And speaking of news, look for a tighter integration of the iNEWS newsroom computer system with other Avid systems.

"We're constantly refining the solution," Schleifer said. "We want things to happen seamlessly, and we want the product set to work together."

iNEWS will be upgraded to better manage information into the server including Web-based, e-mail, and wire services. "In the past we've only handled wire services, but now we'll be able to manage all kinds of data streams more efficiently," Schleifer commented.

Other enhancements for iNEWS will

be Linux support on the "back-end" server side.

"We had been Unix-based before," Schleifer said. "But Linux gives more flexibility, more options, and is more affordable for the customer."

"We want things to happen seamlessly, and we want the product set to work together."

— Avid's David Schleifer



David Schleifer, director, Avid Broadcast and Workgroups

On the user side, the interface remains Windows-based. Avid expects to provide more complete end-to-end systems that include shared storage, editing and playout, all tied together with asset management.

"We're beefing up our asset management offering," Schleifer said. "All of the products talk with media asset management. Unity allows flexibility in the workflow."

MXF is playing a key role in the seamless movement of media from one system to another, from one geographic location to another. Avid has made MXF its native file format. "MXF is one mechanism we're using to produce consistency across all our products," Schleifer stated.

Also playing a part is the expansion of the codec library to allow browsing of many different resolutions, and the breakout of the logging tool as a self-contained application.

"Lots of people need to see what's on the system to review footage, but they don't need a full-blown editor," Schleifer explained. "They can do shot selection, mark in and out points and be productive without being in editing."

Avid has already started to integrate into its product line the alienbrain product family that it acquired from Munich-based NXN Software AG in January. "alienbrain is an amazing workflow tool," Schleifer said. "It's been used in the gaming and animation industries for 'complex projects with multiple deliverables,' and encompasses infrastructure, configuration, project, workflow management, and version control."

According to Avid literature, alienbrain is designed to "work with any file format associated with 3D models, textures, video, audio, source code and office documents."

In summarizing Avid's position as the company prepares for NAB2004, Schleifer remarked, "we are very focused on tightly integrating to make our solutions more powerful, easy to install and easy to use." ■

CYBERSET LIGHT

ORAD'S LATEST 3D VIRTUAL SET

Affordable, Compact, Plug & Play

NEWS

ELECTIONS

WEATHER

ENTERTAINMENT

- 1 RU DVG including internal chroma-keyer
- Multiple camera solution based on Orad's pattern recognition tracking
- Single operator using Windows 2000 & 3D Studio Max
- CyberSet- The world's most widely used virtual set system

Come see us at NAB: Booth SL4724

For more information visit - www.orad.tv

or Call- 212.931.8723 Ext. 103



Committed to winning

After introducing more than 25 new products last year, you'd think we'd call a time out. But we won't wait for the next big thing. Not only are we committed to being at the forefront of the industry, but we want to ensure that our customers can rely on us to provide high-performance, cost-effective, scalable, multi-format solutions.

Our goal is for you to win. And to win, you need a partner, not just a technology company. Regardless of how you develop or deliver your content, we have solutions that fit the way you work.

And when you buy Grass Valley products, you get more than world-renowned quality. You hire the most knowledgeable support team in the industry—highly trained professionals who can support you, from installing new equipment, training your technicians or simply reducing long-term maintenance costs. In other words, we're on your team.

To find out more, see us at
www.thomsongrassvalley.com

GV-2040US

 grass valley

LDK 6000 mk II

Only our LDK 6000 mk II WorldCam camera captures true progressive HD images, natively, in multiple formats and frame rates. With three 9.2 million-pixel HD-DPM+ CCDs, it offers the highest-quality picture available for everything from remote-controlled, portable hand-held, and studio applications to EFP uses for SDTV and HDTV productions—even digital cinematography.

**LDK 5000**

Our LDK 5000 is the only camera that lets you shoot in SD today—and in any native HD format whenever you're ready. Its DPM+ CCD uses 9.2 million pixels to capture extremely high-resolution images. With this over-sampling technology, you get the best possible images with extremely low aliasing in applications ranging from studio and fixed-camera installations to portable, hand-held EFP uses.

**Kalypso**

From the moment it was introduced, our Kalypso Video Production Center line set new standards for live production. Today, it continues to break new ground, with SD and HD models as well as the only switcher that can be upgraded from SD to HD via software.

**Setting a New Standard for Live Production**

Our next-generation Kalypso Video Production Center puts unparalleled live production tools at your fingertips. This digital system offers powerful mix/effects capabilities with unprecedented levels of keying and compositing and an open, networked architecture for robust operational integration. All from a familiar, intuitive Grass Valley interface.

Kalypso HD Video Production Center

The Grass Valley Kalypso HD Video Production Center provides native support for 1080i and 720p production. It also offers the same user interface, feature set, and effects-generation capability as the groundbreaking standard-definition Kalypso system.

Kalypso Duo Video Production Center

Our Kalypso Duo Video Production Center is the only switcher than can be upgraded from SD to HD with a simple software installation. It features the familiar Kalypso user interface, control panel, and advanced production technologies, making it instantly familiar to operators worldwide. It also adds a new, macro feature for creating multiple keystrokes and recalling them from a single button.

Trinix

From broadcast facilities to production trucks, our Trinix digital video routing switcher family can handle SD and HD signals from 3 Mb/s to 1.5 Gb/s in the same frame. Available in three dense, fixed-frame sizes, the Trinix family features efficient and redundant cooling, proactive status monitoring, and front-loading, hot-swappable modules for easy servicing.

**Kameleon****Up and Down Converting SD/HD**

Our Kameleon Media Processing System incorporates multiple discrete modular functions into a single processing module—functions you can combine in more than a dozen different ways. It's ideal for the complex processing of multiple program streams in broadcast centers, video production facilities, satellite uplink operations, and production trucks.

**PVS 3000 for SD and HD storage and layout**

Leapfrogging current server offerings, the PVS 3000 Profile XP Media Platform can play out SD and HD material from the same server—and on the same timeline. Designed to fit into any topology, the PVS 3000 supports standalone, distributed, and SAN configurations. It is also available as an upgrade package for existing Profile XP Media Platform users.

**The de facto standard for mobile production**

Today, our Grass Valley line of products is emerging as the de facto standard for mobile production. Over the last year, more mobile production companies in the U.S. and Europe standardized on our equipment than any other manufacturer. Some of them include:

- Alfacam
- Cinevideogroep
- Colorado Studios
- Dome Productions
- Media Mobil GmbH
- National Mobile Television
- NEP Supershooters
- New Century Productions
- Trio Video
- Visions

25

new products
in the last year

There's a purpose to our passion™

At Thomson our passion is your product, whether it's sports, news, live, or dramatic production. In fact, we're downright fanatical about it. From engineering to field testing to support, we put the world's best tools at your fingertips.

Our line of Grass Valley™ products is one of the most trusted in broadcasting. And with good reason. With 19 technical Emmy® awards, our worldwide research and development effort is unparalleled. And we are constantly working directly with customers to create features and products that meet their current needs and grow with them in the future.

It's why you'll find us in some of the world's largest multi-format broadcast facilities. In fact, from major sporting championships to high-profile commercials to the most glamorous award ceremonies to all-digital newscasts seen by millions, the world's media leaders have chosen Grass Valley products from Thomson because they won't settle for less.

Step up and win

Wherever you are in your digital transition, we have the tools, talent, and expertise to make it a smooth one. You can choose an SD switcher, like the Kalypso™ Duo Video Production Center, and upgrade it via software to HD whenever you're ready. Or get your hands on a camera like the LDK 6000 mk II WorldCam that lets you capture true progressive HD images, natively, in multiple formats and frame rates, using three 9.2-million pixel HD-DPM+™ CCDs for the highest quality images available.

Media leaders worldwide are leveraging Grass Valley HD solutions because they want to bring their "A" game. They know that if they want to compete with the best content possible, it's imperative to demand the best.



Setting standards on principle

Every HD product with our name on it adheres to a common set of principles:

- It must support multiple formats, or be truly format and resolution independent
- It must be prepared for the future by being switchable, configurable, or easily upgradeable
- It must deliver superior quality images and/or sound
- It must be feature-rich and fully capable so as to exceed the highest industry benchmarks

Multi-format and future-proof

Our strategy is to develop products that can meet your SD needs today, while protecting the path to your HD future. Need proof? Just take a look at our products, which offer the industry's broadest support for true multi-format switchability and future-proof designs. They include:

- **New** Kayak™ HD 1 M/E digital switcher
- **New** Maestro™ next-generation SD/HD branding and master-control system
- **New** HD and SD additions to the Kameleon™ Media Processing System modular product line
- LDK 5000 camera, field upgradeable from SD to HD
- LDK 6000 mk II WorldCam, a highly popular choice for multi-format production
- PVS 3000 Profile® XP Media Platform SD/HD server
- Kalypso Video Production Center and XtenDD switcher lines
- Trinitix™ SD/HD digital video router
- Concerto™ Series multi-format video and audio router
- Apex digital audio router, the highest density and most reliable for large-scale infrastructures



And you think they're fanatics?

Harris Builds on Strength of Divisions

Broadcast business benefits from corporate siblings

Deborah D. McAdams

BOURNE, FLA.

Something extraordinary happened at Harris Corp. in the last year. The company actually added jobs. A total of 700 jobs were added in the company's Florida facilities, where Harris government work gets done. And file government and broadcast communications are separately reporting divisions in the house of Harris, the segments feed off of, and into each other, as the case with the recently won contract for the Iraqi TV Network. That contract netted Harris Corp. a \$10 million deal to overhaul and manage Iraq's media infrastructure, including two radio, two television networks, and a newspaper. Harris' partner in the endeavor, Lebanese Broadcasting Corp. International, is also a Harris customer. LBCI last October hired Harris to install the ADC-100 automation system in its transmission facility. LBCI broadcasts throughout the Middle East, the United States, Australia, Africa and Europe. Harris' other TV customers constitute a likewise far-flung lot; Rundfunk Berlin-Brandenburg in Germany, Ho Chi Minh Television in Vietnam, TXA in Australia and a raft of commercial and public TV stations in the United States. Harris's product range is equally diverse, from high-powered transmitter and microwave service to pocket-sized recorders. The upshot of Harris' success is the management of communication signals, from start to finish. The strategy at the broadcast division

mirrors that structure, and so does the company's choice of products for display at NAB2004.

SHIFTING FOCUS

As Harris Broadcast Division President, Bruce Allan puts it, "Harris is shifting from a product focus to broader systems that will make a true impact on the bottom line."

Harris's emphasis at NAB this year will involve following "the content process from creation through the entire chain to the ultimate destination," i.e. the old U.S. television household. The first of the company's NAB2004 debutantes will build on last year's introduction, the Harris Resource Suite, aka hrs.



Jay Aldrick, VP, strategic business development, Harris

The new components include Broadcast Presentation Manager, a system with a two-way Windows-based graphical interface that allows the traffic department to track commercials that don't appear during breaking news or other interruptions.

"These systems are like the cash register of the station," said Brian Lay, director of product marketing for automation solutions.

Harris will demo Broadcast Presentation Manager in Las Vegas.

Another newbie for hrs, an analog

tape-to-digital disk ingest system, will handle the Snell & Wilcox MXF agnostic file wrapper. (Snell & Wilcox will be giving away the wrapper, starting this year, to ostensibly do away with the headaches of file-form compatibility conflicts). Digital ingest software—aka Pathfire—will also be rolled out for the hrs, for those who no longer have to mess with tape, wherever they may be.

Once video becomes a file, it has to go somewhere. NetVX, the highway system of video files, will return to NAB this year with a new GB Ethernet interface.

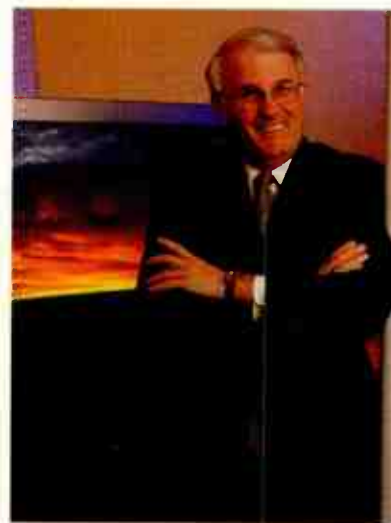
Jay Aldrick, vice president of strategic business development, said NetVX has the capability to consolidate ingest operations.

"Say you have two stations," he said. "You could do ingest at one station and move [the content] over the microwave link to the IP server at the other station. It can do 64 real-time simultaneous transfers."

A scaled-down version of the ADC-100 automation system will serve as the traffic cop of video files. The ADC-25 was created with adolescent digital channels in mind, with modular add-ons that can turn it into a full-scale playout and control system.

DATA SAVERS

Two more products created specifically for digital channels include the Streamslate and DATAplus. Streamslate allows a station "to turn an unused channel off" and occupy it instead with a data stream of information directing viewers, for example, to the main channel, according to Aldrick.



Bruce Allan, president and general manager, Harris Broadcast Communications Division

DATAplus ferrets out any unused bandwidth; kind of like a Disk Defragmenter in a Windows operating system.

Another Harris rollout is a toolset that turns ordinary stereo or even mono audio into 5.1 surround sound. The NeuStar system turns out 5.1 audio using 30 percent less bandwidth than other systems, according to Harris.

Finally, Harris could hardly show up at an NAB without a transmitter or two. This year, the PowerCD with a "high-efficiency, multi-stage depressed collector inductive output tube" will debut.

The high-end UHF PowerCD will ship in May, said Aldrick. Keeping it company in the Harris booth—a line of Atlas 5 to 30 kW analog transmitters, just in case the old PAL or NTSC unit goes before the 85-percent digital threshold is reached. ■

Leitch Takes High-Definition Action

Company has new CEO and new focus on modular and HD products

Bob Kovacs

CHICAGO

Recognizing that high-definition here to stay, Leitch Technology looks toward NAB2004 with a slew of new products that target HD editing, switching and distribution.

In addition to many new HD offerings, the company is also expanding its products for newsroom workflow and content management, as well as products for multi-image monitoring. Leitch's new president and CEO, Timothy E. Thorsteinson, said the company's focus is simple:

"The way you get ahead in the world is to have a better product than the next guy and a better solution for the customer," Thorsteinson said.

In addition to a new CEO at Leitch Technology, Thorsteinson has installed new people in high-level positions, putting in place the management team needed to move the company into the HD era. The appointments include David Toews, chief financial officer, and Brian Cabeceiras, head of sales for the Ameri-



Tim Thorsteinson, Leitch president and CEO

cas. In addition, the leaders of Leitch's three business units—servers, post and video processing and distribution—now report directly to Thorsteinson.

"Our streamlined management structure will have the value of creating focus as we move forward on our initiatives," Thorsteinson said.

Much of Leitch's new focus is on products for high-definition creation and distribution. For example, the company will take the wraps off

VelocityHD, the HD version of its venerable nonlinear editing system at NAB2004. A new standard-definition version, VelocityQ, will also be unveiled at the show.

Routing of video signals continues to be a primary product line at Leitch and the company will feature its new Panacea Clean Switch at the NAB. The Panacea Clean Switch handles multiple channels of SD and HD in the same switcher, and can be used in single-channel or multichannel on-air applications. The Panacea AES/EBU Quiet Switch can be paired with its video twin for digital audio routing.

LEITCH, PAGE 44

Leitch

CONTINUED FROM PAGE 43

Leitch will show its Opus master control switch in an SD/HD multi-format setting at NAB2004, including dual-channel effects and squeezes. The company's new LogoMotion II content-branding system will be mated to the Opus, giving the ability to key four

layers in SD and two in HD for those on-screen logos and "bugs."

The final bit of HD news from Leitch is the announcement of new HD-capable distribution and processing modules for the company's 6800+ and NEO rack chassis. This will allow SD and HD distribution, processing, encoder and decoder modules to reside in the same industry-standard enclosure.

Although the company responded

to the demand for high-definition creation and infrastructure products, there's also been plenty of action in the standard-definition world.

For example, Leitch will be showing its new Nexio server platform targeted at newsroom workflow and productivity. The Nexio system allows ingest, browsing, editing and the creation of rundowns, all integrated with newsroom computer systems.

A highlight of the Nexio system is

its ability to provide low- and high-resolution files for convenient browsing and editing. The company's Ingest Control Manager permits scheduled recording of incoming feeds, with a "crash" record feature for quick response to breaking news events.

Nexio also incorporates an air function, called Nexio Transition Server, making the system a point—a nexus, if you will—of ingest, production and playout.

Also new at the Leitch booth is the Digital Turnaround I (DTP), which is an MPEG-2 that lets broadcasters overlay and logos onto pre-compressed HD streams. The product can be used for logos, crawls, weather and news information.

Thorsteinson said that Leitch has been suffering through the soft economy much the same as other companies in the industry but has not been particularly hard-hit. However, an adjustment of the company's management, products and culture was one of the first tasks that he began upon his appointment as CEO.

NOT A BIG COMPANY

"Leitch had a 'big-company' culture and we're not a 'big-company' culture and we're not a big company," he said. "We're a medium-sized, scrappy, competitive equipment supplier."

He responded by flattening the company's organization and broadening managers' spans of control.

"Today, if you want to leverage yourself, a place you can drive productivity is in management," Thorsteinson said. "Most professional people—and the majority of our workforce is professional—don't need a lot of supervision."

On the product side, Thorsteinson said that Leitch is consolidating some of its lines to eliminate redundancy and focus on the most popular products and systems.

"We have a new modular platform [for distribution amplifiers, processors and card-based components] and we're moving from five different modular forms down to two," he said. "We're consolidating router platforms to a simpler product offering."

"But we're being careful because we have a large installed base of customers so you won't see the 30 to 40 percent [cutting] of the product line here that I did at Grass Valley," (Thorsteinson was the former CEO of Grass Valley.)

Leitch has a wide-ranging product line and will feature many of its ongoing products at its NAB booth. They include the NEO VR modular digital video recorder, which now has an associated command center application. In addition, the company will spotlight the DPS-575 TBC/framesync, the Integrator Gold router, the CCS Navigator control system and its SuiteView multi-image display system. ■



ZETA 100

A DIGITAL CONSOLE FOR LOCAL TV AND RADIO PRODUCTION

As a broadcaster you can't afford to compromise. With the Zeta 100, you don't have to. Based on Calrec's field-proven Alpha architecture, the Zeta 100 provides exactly the same broadcast-specific features as our larger Sigma and Alpha 100 consoles. Over 30 years of broadcast experience in a console designed for local TV and radio production. No compromise, no problem. Just sound broadcast sense.

- Intuitive control surface designed for on-air operation
- Compact — up to 48 faders/88 signal paths, configured as 32 stereo and 24 mono channels
- Hot swappable cards and panels throughout
- Interrogation facility on every buss
- 2 stereo / 5.1 Surround Main Outputs
- 8 stereo/mono audio sub-groups
- 8 auxes, 16 Multitrack/IFB outputs
- Comprehensive Mix-minus/Direct Output per channel
- Powerful relay system
- Automatic redundancy on power supplies, DSP and control processors
- Power up and operation independent of the on-board PC
- Comprehensive buss structure. No restrictive buss allocations

The Sigma 100 medium format digital production console



The Alpha 100 large format digital production console



CALREC AUDIO LTD, NUTCLOUGH MILL, HEBDEN BRIDGE, WEST YORKSHIRE, HX7 8EZ, UK TEL: 01144 1422 842159 EMAIL: enquiries@calrec.com WEB: www.calrec.com
 South and Mid West States — TEL: (615) 871 0094 EMAIL: ericj@redwoodweb.com
 North East States and Canada — TEL: (212) 586 7376 EMAIL: dsimon@studioconsultants.com
 Western States — TEL: (818) 841 3000 EMAIL: jschaller@audiospec.com

See us at NAB2004 Booth #N1012

18X

Everyone's waiting to see it.



HA18x7.6ERM/ERD
High Definition



A18x7.6ERM/ERD
Standard Definition



HAs18x7.6BMD
Motor Drive

Features vary with model

ONLY FROM FUJINON!

- 18X Standard Zoom Range
- Longest and Widest Standard Lens
- DigiPower Servo
- User-Programmable Functions
- Remote Control

Visit us
at NAB Booth
SU11542

FUJINON

Broadcast and Communications Products Division

FUJINON INC. 10 High Point Dr., Wayne, NJ 07470-7434 Phone: (973) 633-5600, FAX: (973) 633-5216

FUJI PHOTO OPTICAL CO., LTD. 1-324 Uetake, Kita-Ku Saitama City, Saitama 331-9624 Japan Phone: 81-48-668-2152

World Radio History

www.fujinon.com

Sony

CONTINUED FROM PAGE 38

Yuji Kobayashi, senior general manager of network content creation for Sony. "It was only natural to combine the editing and acquisition strengths of both the XPR1 and XDCAM systems into one comprehensive workflow."

Based on blue-laser technology, the 12-inch re-writeable discs can hold up to 90 minutes of DVCAM footage and will cost under \$30, according to Sony. Last year Sony announced that CNN and NBC were among its first XDCAM customers; the company says it plans on shipping up to 1,000 XDCAM units by the end of this month. XDCAM is also now compatible with the Avid platform.

XDCAM is also part of Sony's major news production initiative at the show: the unveiling of its MXF-based Networked Production System (NPS). Using Sony's NewsBase platform, NPS includes newsroom software, a RAID-based daily server and playout server, plus associated networking components and workstations. The system scales from as few as three full-resolution editors to

more than a dozen simultaneous workstations, offering prox access to potentially dozens of analysts at one time, hundreds of full-resolution video in its server with multiple channels ingest and playout.

CATCHING THE HD WAVE

Along with emphasis on IT production gear, Sony is also riding the growing demand for HD production with its "Riding the HD Wave" theme for the show.

A new hi-def camera, the HDC-730S targets news and production acquisition and the company expects to announce enhancements to its HDCAM SR cameras as well.

A new multipurpose HD camera will also be launched at the show. The HDC-X300 features three megapixel power HAD, 1/3-inch CCDs and supports 1080/60i and 1080/24p. The camera will be priced in the \$15,000 range.

For SD production, the DVCAM DSR-PD170 will be introduced. The camcorder features Advanced HAD 1/3-inch CCDs, support 480p and 480i. They allow for capturing footage in low light and the camera also features a built-in slot for MemoryStick flash memory card for still storage.

Also making their debut at the Sony booth will be two new camera systems as well as 21-inch and 32-inch additions to Sony's series of LCD professional monitors. In addition, an IEEE-1394 (FireWire) interface has been added to the company's J Series of compact VTRs.

A new entry-level, 3 RU modular switcher, the MFS-200C, targets small- and mid-sized broadcast markets.

On the storage side, Sony is introducing DigitalMaster DVCAM video storage, targeting the independent production market. Due to higher tolerances in manufacturing, Sony claims DigitalMaster reduces the dropouts by 50 percent or more and causes 90 percent fewer errors compared to MiniDV.

And finally Sony will introduce "Anycast Station," an all-in-one production system that summarizes Sony's longstanding "anycast" technology.

The Anycast Station consists of a six-input video switcher, six audio mixer, special effects generator, preview and program video outputs, Pan/Tilt/Zoom remote control, Sony-compatible robotic camera, RGB output for displaying from a PC or projector, encoder and server to handle ingest and streaming.

Although slightly smaller than last year's "city within an exhibit," Sony's 24,000 square foot booth will be organized so that busy visitors can get as much detail as they desire.



When it comes to technical furniture—Winsted is way ahead of the curve.

There are many reasons Winsted has been the industry standard for electronic equipment for nearly 4 decades. Our ability to see the future and design furniture that meets changing electronic needs and style trends are just one of them. Winsted offers the broadest line of technical furniture in the industry. From quick-ship, out-of-the-box items to fully assembled, highly customized control rooms, our knowledgeable support staff and designers help you determine—and get—exactly what you need. Call **1.800.447.2257** for a catalog, or visit www.winsted.com today.

Winsted®

Setting the Standard in Technical Furniture.



Furniture and Accessories for Video • Multimedia • Security • Tape Storage • Command Consoles

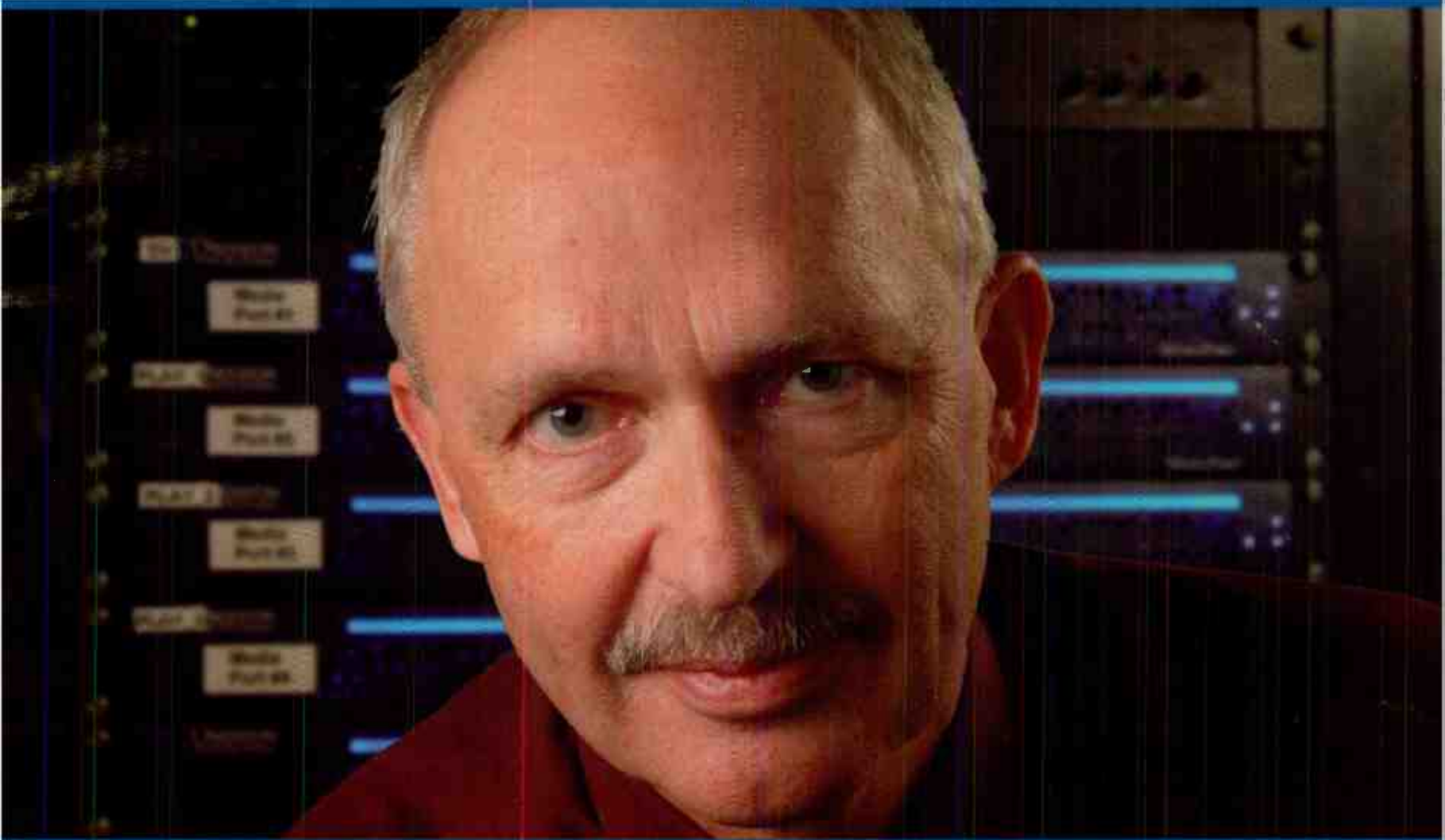
"We selected Omneon servers and shared storage for playout, and have since connected our production processes. Omneon is the one solution that fits our tight budget, meets all our requirements today and supports us as our needs change."

Helge Blucher
Vice President
Detroit Public Television

Detroit Public Television operates on a very tight budget with limited resources. When it came time to select a media server, they needed a cost-effective solution that gave them both operational efficiencies and the flexibility to satisfy multiple requirements.

With Omneon SPECTRUM™ media servers, Detroit Public TV implemented a solution that worked across their entire operation. Built around the concept of Smart Scalability™, Omneon SPECTRUM systems can be configured to meet precise format, channel count, bandwidth and storage specifications. What's more, Omneon SPECTRUM systems can then be expanded in smart, manageable increments—without replacing the original system and in many cases, without taking the system off-line.

Join us for an informative online web seminar about optimizing your broadcast operations through IT technologies. Register at www.omneon.com/webseminar.



It's not just
what you serve.

It's who.

World Radio History



OMNEON
VIDEONETWORKS

www.omneon.com

866.861.5690

See us at NAB2004 Booth # SU7466

PRODUCT PREVIEW

An overview of selected products on display at NAB2004

PRODUCT PREVIEW

CAMERAS

Tools for the memory-based camcorder will be shown this year as part of what the company calls ING: IT News Gathering. Included in the P2-based DVCPRO lineup is the AJ-SPX800 2/3-inch camera, the AJ-SPD850 studio recorder, the AJ-PCD10 card drive and the AJ-P2C004 4GB and AJ-P2C002 2GB modules.

The company will also introduce a more economical SD camcorder, the DVCPRO50 AJ-SDC905, a 50 Mbps unit with IEEE-1394 I/O and three 2/3-inch CCDs, capable of working in a minimum illumination of 0.01 lux with a sensitivity of f13 at 2000 lux. The camera is also 16:9/4:3 switchable.

In addition, Panasonic will unveil two SD convertible cameras, the AW-E350 and AW-E650, which use three-CCD sensors.



Sony's HDC-X300

Also from the company is the AJ-SDC615, a midrange DVCPRO camcorder that uses three 2/3-inch CCDs and has a standard IEEE-1394 (FireWire) port.

Last year Sony Broadcast and

Professional introduced its optical disk recording field-production initiative. This year, that will be fleshed out with the company's XDCAM IT-based professional video production equipment using Professional Disc optical media.

Products that fall under the new XDCAM family include the PFD23 disc media, the PDW-530/P and PDW-510/P disc camcorders, the PDW-3000, PDW-1500 and PDW-V1 disc recorders and the PDZ-1 proxy browsing software. Sony also announced interoperability between XDCAM recorded disks and Avid's nonlinear editing systems.

Also new in the Sony booth will be the HDW-730S HDCAM camcorder, designed for news and production video

acquisition. It features three 2/3-inch IT CCDs (1920 x 1080i) yielding a 1,000 line horizontal resolution and a sensitivity of f10 at 2000 lux, with minimum illumination of 0.003 lux with the HKDW-705 Slow Shutter option. The camcorder also features power consumption of 33W.

Sony will also introduce a multipurpose HD POV camera, the HDC-X300, featuring three 1.5-megapixel power HAD, 1/2-inch CCDs. The camera achieves 1,080 lines at 59.94i, 50i, 24p, 25p and 30p, and still-picture mode. The new camera will lower the cost of an HD camera to the \$15,000 range

CAMERAS, PAGE 56

NAB

THE WORLD'S LARGEST
ELECTRONIC MEDIA SHOW
April 17-22, 2004, Las Vegas, NV

What's in store?

Cameras	48
Batteries & Lighting	50
Lenses	54
Camera Support	59
Editing	64
Monitors	66
Asset Management	68
Automation	70
Routers & Switchers	75
Storage & Recording	76
Cable, Fiber & Networks	79
Satellite & Remote	80
Signal Processing	82
Audio	98
Test & Measurement	102
Transmission	110
Graphics	112

GO DIGITAL UPGRADE

without spending a fortune!

Studio Exchange

818.840.1351

email for quotes Paul@studio-exchange.com

816 N. Victory Blvd. Burbank, CA 91502 FAX 818.840.1354

BUY ▲ SELL ▲ TRADE ▲ NEW ▲ USED



The Amazing AG-OVX100A
Make a living. Flip a switch. Make a movie.

Panasonic ideas for life

Blackmagic DeckLink

Uncompressed 10 bit SDI Real Time **EFFECTS** **\$695**

NEW

HDTV downconversion
on all models!
NAB 2004 #SL2472

FROM ONLY

\$695

DeckLink's low cost and innovative design have made it the most popular way to connect to broadcast tape decks.



→ Blackmagic DeckLink

4 Incredible Models

All DeckLink models include

Transitions:

- Dissolve • Cross Dissolve • Dip to Color
- Brightness Contrast • Additive Dissolve
- Non Additive Dissolve • Fade in Fade out

Filters:

- Sepia • Desaturate • Brightness Contrast
- Proc Amp & Tint • Gamma Correction
- 3-Way Color Correction

Desktop Display:

A truly exciting feature. With the second desktop display Adobe Photoshop™ can be used for video work. See exactly what you get by painting directly into a broadcast monitor.

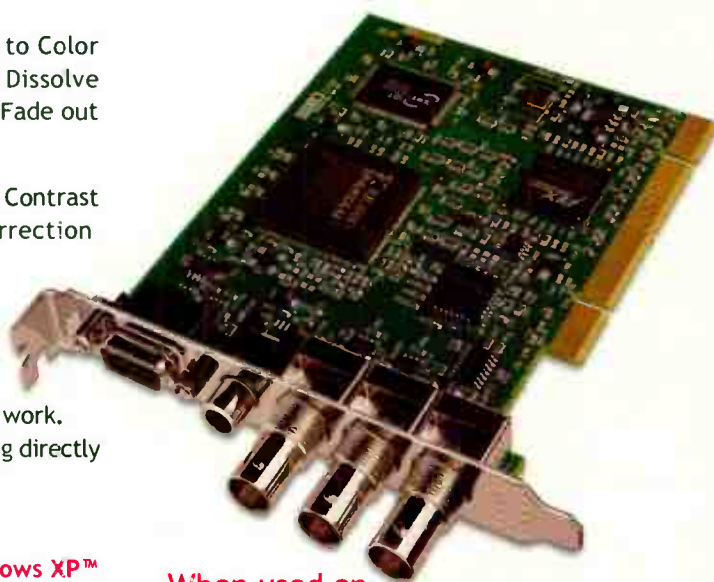
Incredible Compatibility

Apple Mac OS X™ and new Windows XP™ support using same hardware!

DeckLink is fully compatible with :

- Apple Final Cut Pro™ • Adobe After Effects™
- Discreet Combustion™ • DVD Studio Pro™
- iDVD™ • Discreet Cleaner™ • Color Finesse™
- Microcosm • Apple Shake™

All DeckLink cards include Blackmagic Deck Control for automated capture of clips from tape, great for cost effective DVD authoring or effects workstations.



When used on

Apple Mac with Final Cut Pro RT Extreme™, your DeckLink will never be out of date. As faster computers are released, you instantly get more effects and layers!



NEW - DeckLink HD

Revolutionary HDTV SDI card that's changing the industry. Instantly switches between HDTV or NTSC/PAL standard definition, eliminating your upgrade risk to HDTV. Affordable for everyone! **US\$1,995**

DeckLink Pro

Advanced all SDI digital. Also includes genlock, SDI and YUV/NTSC/PAL monitoring and a massive 8 channels of digital audio monitoring for only **US\$995**

DeckLink SP

Unbeatable low cost analog solution. Featuring full analog YUV video, balanced XLR analog audio, 10 bit SDI mastering output and genlock connections. Includes everything to connect to decks like Betacam SP™. **US\$895**

DeckLink

Incredible low cost uncompressed 10 bit SDI card. **US\$695**

CALL YOUR DEALER NOW

www.blackmagic-design.com

Blackmagic Design

Want to know
CEO, Tim
what the company
build the best products



by Craig Johnston

This writer never carried a car battery to power a television news camera, but he worked with people who had memories of doing so. The author did see NiCad battery technology seemingly stand still for 20 years, then witnessed a dizzying acceleration of battery technology driven by consumer electronics' demand for smaller, longer-lasting power sources.

If battery technology has been revolutionary over the past dozen years, then NAB2004 will see what might be the mother-of-all-revolutions in camcorder portable power supplies.

BATTERIES

Jadoo Power Systems Inc. will debut its NABII fuel-cell power for ENG cameras, using rechargeable hydrogen power cells. They are touted to run a camcorder or other field equipment more than two-times longer than batteries. The fuel cells are designed to attach in the same manner as a standard camera battery.

Jadoo's fuel cells use the same technology as hydrogen-powered cars, electrochemically combining hydrogen and oxygen to make electricity and water. The process is silent, and the cells are refilled using standard, industrial grade hydrogen. The Jadoo refill station can refill four of the cells in an hour; additional modules can expand the refill station to handle 24 cells at once without sacrificing refill time.

Frezzi Energy Systems (a division of Frezzolini Electronics) will unveil the Frezzi advanced 130 W-hour onboard Ni-MH battery, which provides the highest energy output for use with professional ENG/EFP camcorders. Utilizing Frezzi's-

dual brick adapter, two 130 W-hour batteries can be used to power an HMI 200 W light for location work.

Also new from the company is the Frezzi M2100A/V Advanced Battery Charging System for all high-energy based NiCad battery systems.

IDX System Technology Inc. has upgraded its JL-2Plus, a two-channel multi-



Jadoo Power Systems' hydrogen-powered NABII fuel cells

format sequential NP-style quick charger. The updated JL-2Plus is a combination of a 60 W power supply and dual NP-style charger that will automatically fast charge Li-Ion, NiMH, and NiCad (NP-style) in any combination. The JL-2Plus includes 10-foot XLR power cable.

IDX will also premier an upgraded A-E2DT V-mount camera adapter with a two-pin power tap, designed to provide V-mount compatible cameras with a connector for use with onboard lights. The unit allows those using cameras with no DC output to power support equipment. The A-E2DT is used between the camera head and an Endura battery, and it supports V-mount compatible cameras.

The company will also showcase its ET-8 Endura Tower eight-battery charging system, i-Trax, an Endura power management system, and BMS, its Endura battery management software.

PAG USA will take the wraps off L95 Li-Ion Time Battery, which utilizes advanced Lithium-Ion cell technology that combines a 95 W-hour capacity with a weight of only 1.67 pounds. The L95 Li-Ion will power a camcorder and a light up to 35 W. The battery is available in PAGlok or Anton/Bauer compatible formats, has extended life or extended capacity charging options and contains nine safety mechanisms. The L95 Li-Ion Time Battery features a display that will report equipment run-time in hours and minutes.

Also new from PAG is its Power Circle Li-Ion Batteries, which come in 95 and 65 W-hours. Both incorporate a micro-driven coulometric capacity indicator, called the PAG Power Circle, which displays charge status in terms of percentage.

PAG will also showcase its Freelancer Charger, an all-chemistry, two-channel, ultra-compact charger designed for worldwide location use. The PAG Power Plate, a dual battery mount for PAGlok batteries that is compatible with PAGlok, Anton/Bauer or Sony V-type battery mounts, will also be shown. It enables two L75 or L95 PAGlok batteries to be used in parallel and incorporates the PAG Power Circle voltage indicator.

Anton/Bauer Inc. will unveil new battery technology at NAB this year, but not before

the exhibition opens. The company will display its range of power choices, including Gold Mount batteries and chargers, which include the new capabilities of the Dionic 90, Dionic 160 and HyTRON 120 batteries.

The Dionic lithium-ion battery packs weigh 20 percent less than prior batteries, while delivering 60 percent more power. The HyTRON line is designed to support some of the new HD cameras.

Anton/Bauer will also display its Stasis shoulder-mounted power support system for MiniDV cameras.

VFGadgets.com will introduce Whitelighting block power battery pack, with two 14 Volt, 7 A-h packs. It can be operated as a single 28 Volt, 7 A-h battery or as two independent 14 Volt, 7 A-h batteries. The pack features military-type internal wiring and active current protection. The Whitelighting has an LED bargraph capacity indicator for each 14 Volt pack. Charging from full discharge takes three hours.

LIGHTING

Lighting has come a long way since the days when the choices were tungsten, tungsten and tungsten.

Balcar S.A. will debut its Balcar Spotflux 2 (85 W) and 4 (170 W) fluorescent fixtures, available with either the standard Opalite 3 reflector or with the 12.2-inch backlight reflector.

Barbizon Lighting Co. will display new lighting systems for broadcast and video applications. The company will host short presentations in its booth to discuss broadcast lighting.

Barger-Baglite will unveil its GT-6, a six-bulb fixture capable of filling the Quartz Chimera front screen with only one of its six lamps. It can operate on 15 Amp home outlets and needs no speed-ring.

Also new from Barger-Baglist is the GT-3, a three-lamp compact soft light source for Chimeras.

Bron Kobold USA will introduce its DW 800, an all-weather 800 W focusable open-face or PAR HMI fixture. It features a bayonet reflector mount and the Bron Kobold EWB 400-575-800 All-Weather electronic ballast.

The company will also showcase its All-Weather 200 and 400 W HMI's, DIF 200 Reporter HMI, CL 16 dimming camera light and Lumax fluorescent fixtures.

Chimera will pull the curtain up on OCTAPLUS Banks. The seven-foot OCTAPLUS can be broken down to a five-foot, eight-sided bank; the six-foot model converts into a four-foot, eight-sided bank; the three-foot version is a stand-alone eight-sided bank.

Chimera will also debut its Quick Release Speed Rings, available in several sizes beginning with the six-inch diameter size.

Dedotec USA Inc. will unveil its Dedolight DLH200D 200W HMI light head, utilizing the company's patented Apherics2 optical system. Both AC and battery ballasts are available, and several projection attachments and special effects accessories.

The company will also present its Dedolight SOFT200D 200W HMI softlight, designed for four types of soft boxes.

Electronic Theatre Controls Inc. (ETC) will premier its Sensor CEM+, designed to interface with the ETCNet2 Ethernet system. The Sensor+ dimming system with a CEM+ control module provides up-to-date network control as well as two standard

LIGHTING, PAGE 52

BY STOREEL CORP.

TAPE STORAGE



If it needs to be stored, it deserves STOREEL.

Technology is transforming the tape storage industry. Keeping in touch with customer requirements is our top priority.

Call Storeel today when space saving becomes your priority.

770-458-3280

Fax 770-457-5585

Call Today For A Free System Design Consultation
Tailored To Your Individual Requirements

Post Office Box 80523, Atlanta, Georgia 30341

Toll Free 888-STOREEL

7 8 6 7 3 3 5



Fiber/Triax-Same CCU

Native 720p

Native 1080i

24p

2-3 Pull Down

Variable Frame

HD/SD


**Whatever your HD system requirements,
all roads lead to Ikegami.**

More broadcasters are buying HD cameras from Ikegami, because Ikegami has more of what they need. In addition to their world-renowned technology, Ikegami offers a complete range of HD systems to meet almost any requirement and application. With a complete line of products that includes studio and hand-held cameras, a CCU that accepts both triax and fiber camera cable, compact and full-blown multi-format HD Switchers, a range of HD Monitors, and a line of Up and Down Converters, Ikegami is the choice for today and down the road.


See Us At NAB Booth #C6428



HDK-79E



HDK-79EX



HDK-790E



HDK-725P




HSS-3000
HD/SD Switcher



HTM 2070



HTM 1907



CCU-790A

Fiber & Triax from the same CCU.
Only Ikegami has it!

Ikegami

Ikegami Electronics (USA), Inc. 37 Brook Avenue, Maywood, NJ 07607
East Coast: (201) 368-9171 West Coast: (310) 297-1900 Southeast: (954) 735-2203
Southwest: (972) 869-2363 Midwest: (630) 834-9774

Jelly-Fish™ Surround Sound Monitor

New



MSD600M++ Enhanced Version

- Improved Image Quality • Fast Signal Processing • Embedded Audio via SDI • 96 kHz Input • User Configurable up to 32 Input Channels • Signal Generator w/White and Pink Noise • Advanced Future Options • RS232 Comm. Port



DK-AUDIO AMERICA Inc.

4417 East Villa Rita Drive • Phoenix, AZ 85032 • USA
Tel.: +1 (602) 765-0532 • Call Toll-Free: +1 (800) 421-0888
• Fax: +1 (602) 765-1473 • jdt@dk-audio.com

www.dk-audio.com

VariTime™ Sync Generator



New Compact PT5202 Generator for half 19" rack

- Front Panel Operation • Moving Text • 3 Black Burst in VariTime™ resolution, 8 PAL or 4 NTSC fields • TSG/Black Burst Analogue • 1 TSG/Black SDI



DK-AUDIO AMERICA Inc.

4417 East Villa Rita Drive • Phoenix, AZ 85032 • USA
Tel.: +1 (602) 765-0532 • Call Toll-Free: +1 (800) 421-0888
• Fax: +1 (602) 765-1473 • jdt@dk-audio.com

www.dk-audio.com

See us at NAB2004 Booth #C3843

Lighting

CONTINUED FROM PAGE 50

DMX inputs. The CEM+ allows for 128 presets with programmable timed fades for as many as four separate rooms.

Also new from ETC is its Source Four Revolution, a modular moving light with 16- to 36-degree zoom capability and patented QuietDrive motor.

Element Labs Inc. will pull the wraps off its Versa Tile, a glowing LED light tile controlled by video signal for generating visual effects when used in large arrays. Because each Versa TILE represents one pixel on the screen of a PC or Mac, content can be created using any graphics program or adapted from widely available stock imagery.



Frezzi's Micro-Sun Gun Model 1 On-Camera Light

Frezzi Energy Systems will present its Frezzi dual head Super-Sun gun kits model SSGK2-200 with 200 W HMI light-heads for ENG/EFP illumination. Each kit contains two light-heads, choice of AC or DC ballasts, HMI lamps, barn doors, soft boxes and transport cases.

Also new is the Frezzi Micro-Sun gun HMI kit model MRAK-NP1 for professional Mini-DV camcorders. Each kit contains the 10 W Micro-Sun HMI light-head, battery pack, overnight charger and camera-mounting shoe.

K5600 Inc. will introduce its BlackJack 400 W, a compact daylight balanced focusable Fresnel instrument offering ability to project large patterns and gobos. K5600 will also introduce newsroom and small studio lights. Its 800 W Joker Bug will be shown working on special DC power-packs with K5600's own DC ballast.

Kino Flo Inc. will roll out its ParaBeam 400 and 200 television and broadcast studio lighting fixtures, sporting four and two 55 W color-matched fluorescent tubes respectively. The ParaBeams are designed to produce denser shadows than Kino Flo's traditional production lighting systems. Depending on its orientation, the ParaBeam can create or erase shadows on the set.

Kino Flo will also present its Kamio ENG on-camera ring light, a featherweight version of the company's family of ring lights.

KW/2 Lighting Products Div. is launching its line of "Smart Lights," which convert standard fixtures to analog, voltage, or DMX dimming by means of a modular bal-

last housing. KW/2 will also introduce its line of "Cool Lights" that utilizes the 80 W biaxial lamp.

Fluorescent lighting is in the spotlight in the Lowel Light booth. The e-studio line of non-dimmable studio fluorescent fixtures are designed for those who need an efficient soft light source, in tungsten or daylight color temperatures. Three models are available, housing two, four or six T-55 W lamps, with a collection of control accessories and a unique stand or lighting grid mounting system based on Lowel's Caselite products.

Lowel has also upgraded its Fluo-Tec studio line with full dimming control from 0-100 percent. Also, up to 512 dimmable fixtures can now be controlled by the compact, handheld wireless IR DMX controller.

PAG USA will introduce the Paglight L24, a compact and portable 250 W location light with many of the features of PAG's onboard camera light.

Also new from PAG is the Paglight M, a versatile miniature 12 V version of the original Paglight for smaller camcorders. PAG will also showcase its Power to Light Adaptors, accessories that enable users to power a Paglight or Paglight M with either a PAGlok battery or a battery with a snap-on compatible connector.

Photoflex will be showcasing its various lightbanks, designed to suit fixtures from 100 up to 10,000 W from makers such as Arri, DeSisti, Lowel, Janiro and Strand. The company will also feature its LiteDiscs, LitePanels, lightstands, chroma-key backgrounds and other accessories and lighting tools.

Videssence LLC is introducing the V168-442TT V-Beam, a compact fluorescent unit which produces 2.4 times more light using 25 percent less wattage and 30



PAG's L95 & Freelancer Charger

percent fewer lamps than the previous V192-632TT V-Beam. The reflector is high purity aluminum (99.9 percent) with 95 percent reflectance, and it focuses the light of four 42 W triple-tube fluorescent lamps. The V168-442TT V-Beam is a 168-W unit.

The newest miniature Videssence addition, the Baby Base, is an 84 W instrument in a 9 x 5 x 6-inch housing. It uses two 42 W triple-tube lamps, has an adjustable mounting yoke that allows rotation and may be locked into place, and integral dimming control for the 0-10 analog dimming option. The new miniature Baby Basekit is 30 x 13 x 12 inches, weighs 34 pounds, and comes with a foam-padded, water resistant PVC-backed polyester case. ■

Make HDTV more than just another pretty picture



Dolby® Digital 5.1 on DTV and HDTV services transforms TV viewers from spectators to participants, turning ordinary television into a total entertainment experience.

At NAB, we'll demonstrate the difference Dolby Digital 5.1 makes—and how you can add spectacular surround sound to your DTV and HDTV programming. Additionally, we'll be demonstrating Dolby Pro Logic® II, for delivering exciting surround sound via conventional stereo broadcast services.

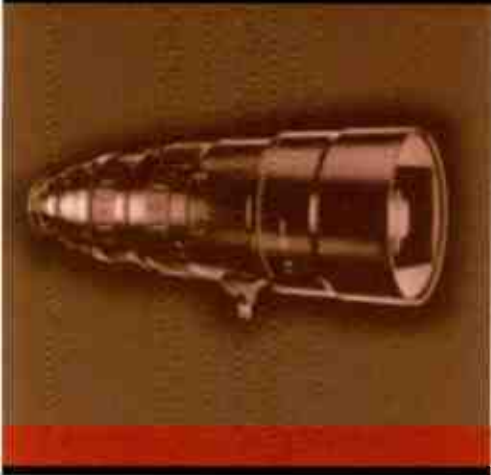
To learn more, and to get a sneak peek at how Dolby is developing innovative solutions for the delivery of surround sound in future broadcast environments, visit us at NAB 2004. Hear how your TV service can become more than just another pretty picture.

www.dolby.com/events/nab

**NAB 2004, APRIL 19-22, LVCC SOUTH HALL,
UPPER LEVEL, BOOTH SU10443**



Dolby, Pro Logic, and the double-D symbol are registered trademarks of Dolby Laboratories.
© 2004 Dolby Laboratories, Inc. All rights reserved. 504/15219



by Craig Johnston

Video cameras, with their mass of ever improving electronics, still depend on ingenious arrays of glass up front to focus the picture on the imager. And as the performance of the cameras have gotten better, up to and including new tools for electronic cinematography, lens makers have marched forward with better optics. 2004's NAB will see many new lens introductions in Las Vegas this year.

Canon will debut a wide-angle portable telephoto lens for SDTV, the J22ex7.6B. The first in Canon's new e-IFxs broadcast lens series, it is equipped with an informational LCD display with control paddle, which allows users to customize the enhanced digital functions with ease and precision.

The J22ex7.6B builds on the J21x7.8B, delivering imagery through the X-Element and Power Optical System. Maximum zoom speed has also been reduced to 0.5 seconds, end to end. And the J22ex7.6B

WRSD/WASD uses Canon's Crossover technology, which restores the 4:3 image of a switchable camera to that of a conventional 4:3 format camera, in addition to a 2x extender.

Canon also will showcase its Digi Super 100xs (XJ100x9.3B IE-D) triple digit zoom lens. Incorporating Canon's Image Stabilizer technology, the 100x is a long lens that can take the bounce out when used at full zoom.

Fujinon will introduce two similar ENG lenses, one for high-definition and one for SD. The new HD lens is the HA18x7.6BERM/BERD, which features a wide-angle focal length of 7.6mm and an 18x zoom. The wide angle lets shooters get just a little bit more of the subject into the shot, while the longer zoom range than the previous generation lens has more telephoto reach.

The HA18x7.6 is about the same size and weight as its predecessor, and comes with programmable digital features that allow the shooter to set preferences for different kinds of shooting. The optics have been improved to reduce chromatic aberrations and minimize focus breathing, and the lens has an RS-232 port for remote control from a PC.

Fujinon's new A18x7.6BERM/BERD is similar to its HD sibling, with optics that are optimized for SD shooting.

Thales Angenieux will showcase its box type lenses, including the 70X HD OB/Sports Lens, which features an advanced display system (ADS) to enable users to monitor lens settings and adjust digital features quickly.

The company also will follow up on last

year's launch of its Optimo film lens by displaying its 26X Telephoto Zoom Lens in HD and high-resolution (HR) versions to complete its line of zoom lenses. Additionally, the Optimo line of lenses for HD cinematography and film cameras will be showcased.

Zeiss (B&P) is returning with its line of HD lenses featuring film-style lens markings and ability to accept film world accessories, such as zoom motors and matte boxes. There are rattlings about some new Zeiss HD cine lenses, to be announced on the first day of the show.

Century Optics will showcase a number of lens-front teleconverters, allowing videographers to get more range out of their lenses. Century's 2X HR teleconverter fits 27-37mm front-thread camcorders like Sony PDX10, TRV950, PC 120 and the Canon Elura/Optura. It is an HR converter, which doubles focal length range in telephoto direction. Also on display is the 1.6X LC teleconverter for 18X/19X Canon IF Pro and 19X/20X Fujinon Pro Classics lenses. Designed to slip on the lens front to extend zoom reach, it yields more telephoto range in

lower light situations and may be added to lenses with internal-doubler.

Additionally, Century will introduce its 0.8X LC wide-converter for 18X/19X Canon IF Pro and 19X/20X Fujinon Pro Classics lenses. It mounts to the lens front



Canon's J22ex7.6B

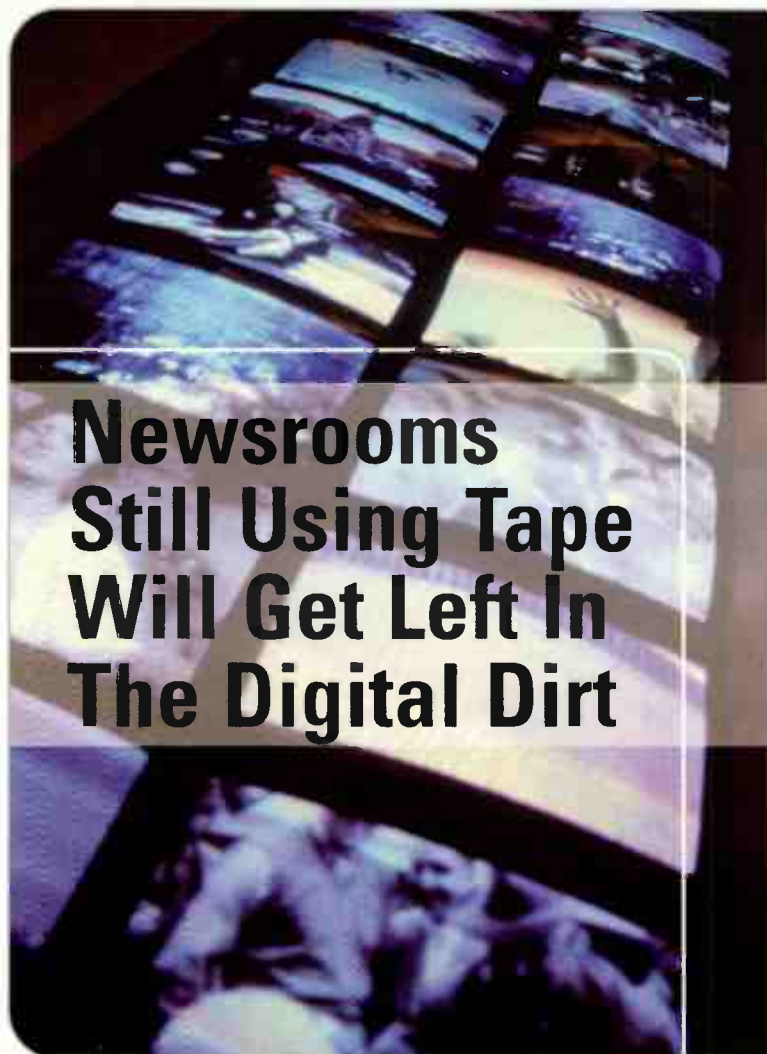
for 20 percent more coverage at wide-angle throughout the zoom range.

Innovision Optics will debut its 45-degree-angle attachment for its HD Probe lens, expanding the high-resolution tubular lens system's choice of lens orientation to three viewing angles. The HD Probe lens offers a choice of five, high-resolution prime optics.

Also at Innovision will be the Series 6000DV Lens System, a narrow diameter Endoscopic lens system that allows the lens to go through an opening the size of a donut hole. Users can choose from an array of objective prime lenses in 45- or 90-degree view, in mounts such as B4.

Abakus Scientific Ltd. will be showing its wide-angle specialty lenses in the Band Pro booth. The company's Stadium Lens

LENSES, PAGE 58



Newsrooms Still Using Tape Will Get Left In The Digital Dirt

New Open-Architecture Design Provides First Affordable, All Digital Tapeless Newsroom



Don't Believe?

Come SEE!

Booth C9125

Central Hall

NAB2004

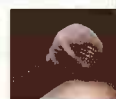
- Full-Featured Ingest/Edit/Playout End-to-End Solution
- Instant Access to Hundreds of Hours of DV and MPEG Networked Storage
- Automated Ingest of SAT Feeds and Faster than Real-Time Batch Digitizing
- Low-Resolution, Frame Accurate Proxy Editing Running Inside Newsroom Automation Software
- DV Studio Pro Editor with Real-Time Effects and No Transcoding
- Fully MOS and VDCP Compliant for Broadcast Environments



VIDEO
TECHNIQUES
INC.



CIPRICO
Accelerating the Digital News Workflow



matrox
Digital Video Solutions



www.newsflow.tv

The industry's best performing camera slams
the brakes on file conversion.



**The GY-DV5000U with integrated Hard Disk Drive
saves you time by recording in the format your editing
system requires.**

How do you improve on the traffic-stopping performance of the DV5000? Add the world's first fully integrated, programmable Hard Disk Drive (HDD). It's the only one of its kind that lets you record in the native DV format of any leading NLE system.

The critically acclaimed DV5000 already had a lot going for it, like remarkable highlight handling and the ability to record on full-sized DV, mini-DV or memory card. And now it delivers the tremendous timesavings of true Direct-to-Edit capability. No bulky two-piece clip-ons. No more capturing, rendering or file conversions. The DV5000 with on-board HDD lets you go right to editing.

The DV5000 also allows you to monitor HDD status and preview scenes in the viewfinder. And its hot-swappable disk drive uses commonly available drives that are user replaceable.



For more details and specs, call 1-800-582-5825 or visit us at www.jvc.com/pro and we'll put you on the road to working faster and driving up your profitability.



Key Specs

The GY-DV5000U

- 12-bit A/D converter, 24-bit DSP for outstanding highlight handling and studio quality pictures
 - Accepts full-size and mini-DV tape
 - Sensitivity f/13 at 2000 lux; 0.2 lux (100% video)
 - 800 TV lines, 63 dB S/N (camera)
- Optional DR-DV5000U HDD Module**
- Records in the native file format of most DV-based NLEs
 - User-replaceable 2.5" mini-drives (40 GB drive supplied)
 - Hot swappable drives

JVC
PROFESSIONAL

The Perfect Experience

Cameras

CONTINUED FROM PAGE 48

according to Sony.

In the standard-definition arena, Sony will introduce the BVP-E30 SD studio camera, featuring 14-bit A/D conversion, four-times the resolution for digitizing and a slow-shutter capability. The camera incorporates a movable shoulder pad for better balancing and a new handle for ease of operation.

Because so many stadiums, arenas and other sporting and entertainment venues are already cabled with triax and have yet to have fiber optic cable pulled through them, Sony will show a new HD triax converter, which enables a choice of connectivity with triax or optical fiber systems on location.

MULTI-USE ACQUISITION

Ikegami will introduce its HDK-79EX full-digital HDTV camera, offering HD (1080i/720p) and SD (480i/480p) format compatibility. The CCD readout can be switched between interlaced and progressive-scan modes, and the signal can be converted in the CCU to different formats. The camera features a compact camera head that is 30 percent smaller than the company's HDK-79E and its 2/3-inch 2.2 megapixel 1080i FIT CCD image sensors lets the camera achieve 1,000 lines of horizontal resolution and a S/N ratio of 56 dB.

For users not yet needing an HD camera,

the HDK-79EX can provide high-end NTSC material by using a downconverter in the CCU to achieve a sampling frequency of 28.64 MHz and a maximum resolution of 900 TV lines in the NTSC format. Both HD and NTSC are provided simultaneously from the CCU and in both digital and analog form. Monitoring video signals are likewise provided in both HD and SD to adapt to different system installations and to permit continued use of conventional QC monitoring.

Ikegami will also enter the memory-based video field-recording arena with a solid-state memory storage device for its Editcam nonlinear camera systems. The new solid-state FieldPak is compatible with the company's existing camcorders and detachable recorder, and a 16 GB pack is able to capture more than one hour of DV25 footage. Ikegami claims to be the first broadcast manufacturer to have a production series of a digital acquisition system with no moving parts.

The company will also showcase its development of CMOS-based products with the SP HDL-40 CMOS, a high-performance POV camera featuring three 2.1-megapixel CMOS sensors, Ikegami's new multiformat sensors that work in native 720p or 1080i formats. The HDL-40 weighs less than four pounds and the fully digital stream through the camera to the HD-SDI output assures signal integrity, high picture quality and stable reliability.

JVC will introduce its KH-F870U 3-CMOS HDTV POV camera, with 1,920 x 1,080 resolution CMOS imagers. Besides

lower power consumption, the CMOS imagers have on-chip digital signal processing, with the ability to process at the individual pixel level. CMOS imagers can also image in either progressive or interlace format, and the camera has a standard HD-SDI output.

Also new from JVC is its KY-F560U general purpose camera, which has three 1/2-inch CCD imagers. It yields 850 lines of resolution, with 64 dB S/N ratio and a sensitivity of 2000 lux at f13. The camera has a standard bayonet lens mount, is expandable with plug-in option boards (SDI), and can be converted to a studio configuration with an optional studio accessory kit.

JVC is also promising to show a memory-based recording version of its hard drive-based camera using technology from Focus Enhancements originally introduced at NAB 2003.

The system utilizes FSHDD-1 removable FireWire disk drives, which can be daisy chained to the external six-pin FireWire port, allowing ultralong record times and the system can be programmed to record in various NLE-friendly file formats.

Hitachi Denshi will premier its new SK-3300 2.2-megapixel FIT CCD multistandard HD camera family. The system features a digital optical fiber transmission between camera head and CCU, and built-in up- and down-converters, allowing its CCU to provide any SDI format including 1080i, 480i, 575i, 720p or 480p.

Also new in the Hitachi booth will be the Z-4000W digital multistandard camera, the latest generation of Z-cameras with improved performance. Popular features such as aspect ratio switching have been retained and the camera has new high-performance CCD imaging devices with improved S/N, highlight smear suppression and object depth-of-field characteristics.

The company will also debut its SK-31B HDTV camera for robotic pedestal, studio and POV applications and it will return with its CR-D10 DVD camera/recorder that features direct docking to the company's Z-3000 and Z-4000 video cameras. The CR-D10 can write to DVD-RAM and DVD-R optical disks, and also sports an LCD monitor and power for wireless microphone receivers.

NEW FEATURES

Thomson Grass Valley is adding some important features to its existing cameras, including a hybrid fiber adapter for the LDK 6000 mk II Worldcam. The system was originally delivered with triax as the link back to the CCU and the new adapter allows the camera to deliver higher-quality footage back to the CCU using fiber optic cable.

A new SDI multicore camera system will also be introduced consisting of either an LDK 300 or LDK 500 camera with the choice of IT, ITW, FT or DPM sensors. It features a compact multipurpose adapter and up to 100-meter multicore cable, as well as a choice of camera control panels.

ParkerVision, which was acquired by Thomson last month, will display the

CameraMan 3e, with three advanced HAD CCDs, 530 TV lines of resolution, and a 12x zoom lens. The integrated camera-pan/tilt system has auto-focus and auto-white balance modes, and can be manually configured for lighting and mounting positions.

The popular XL1S and GL2 DV-based three-CCD camcorders will be at the Canon USA booth, along with lenses and accessories for these and other cameras in Canon's line.

Camera makers using CMOS imagers are seeing an upgrade in the sensors available, as Rockwell Scientific will introduce its new

ProCamHD 3560 sensor, with a 2.1-megapixel (1,936 x 1,086) capture area providing 60 frames-per-second progressive, 120 fps interlaced at 150 MHz at HD resolution. The new sensor allows the selection of a 12-bit data rate at 150 MHz or 24 bits at 75 MHz, and increased frame rates up to 60 fps progressive and 120 fps interlaced at 2.1 megapixel resolution, while maintaining the same optical size as current sensors.

Arriflex, a storied name in cinema cameras, will be showing a video camera work-in-progress, the D-20 Camera Demonstrator. Arri has worked in close collaboration with the Fraunhofer Institute for Integrated Circuits in Erlangen, Germany, to develop a working demonstrator that fulfills requirements for besting 35mm film as an acquisition media.

The Arri camera demonstrator is based on a single, specially designed six-megapixel CMOS sensor that features an image area comparable to that of 35mm full aperture negative. Arri said that aside from the high resolution, the choice of the sensor also addresses other issues essential to cinematographic use. The single-chip configuration, together with the large-format, ensures that 35mm cine-lenses will have the same field-of-view and depth-of-field as 35mm film cameras.

Lairdcam will showcase its Helmer Camera System, featuring ruggedized, lightweight aircraft aluminum mounts with a lifetime warranty. It utilizes a steel tube-style color camera with a choice of resolution and Sony precision CCD image pickup devices.

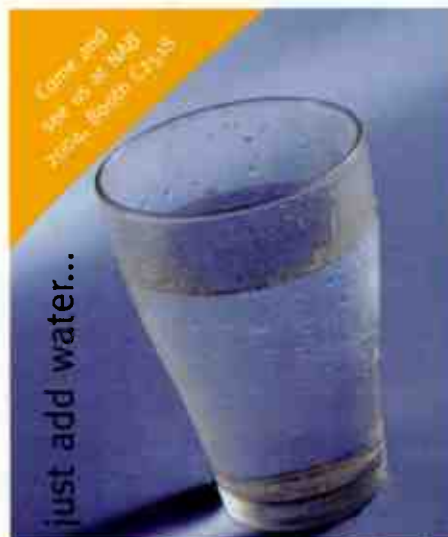
Coptervision will fly in with its Flexvision system, the smallest gyro-stabilized camera system for UAV surveillance available in the market. It is nine inches in diameter and weighs 12 pounds, has multiple, interchangeable camera configurations, and can be mounted inverted or sideways.

DSI RF Systems will showcase its TMS-2300i multi-use system for traffic monitoring, weather reporting and cutaway shots for breaking news. It allows use of Internet-bandwidth transmission via broadband that produces less expensive camera feeds than fiber.

16X9 Inc. will again display the Sim F-900 Time-Frame Intervalometer, built to work with the Sony CineAlta 24P HDW-F900's single-frame record feature. It allows recording time-lapse intervals between four seconds (the minimum allowed by the HDW F900) and up to 18 hours. ■



JVC's KH-F870U 3-CMOS POV camera



just add water...

Expanding on e2v's current broad ranges of IOTs and Klystrons. Innovation, power unleashed.

Energy saving collector IOTs (ESCIOT's)

- Proven water cooled designs
- Increased efficiency up to 60% in 3 or 5 stage designs
- 30kW average digital power
- 60kW analog power
- Plug-in style for ease of maintenance



e2v

an e2v technology

e2v technologies inc. USA
Tel: 1-914-592-6050
Email: enquiries@e2vtechnologies-na.com

<http://comms.e2vtechnologies.com>

Lenses

CONTINUED FROM PAGE 54

yields a horizontal angle of view greater than 180-degrees, and a diagonal angle of view of 210-degrees. The lens is a fast f1.8, and was originally conceived to cover the 1998 Soccer World Cup in Paris.

The company will also show its fast f1.8, HD Arena Lens, yielding a horizontal angle of view greater than 120-degrees, and a diagonal angle of view of 140-degrees. The lens is a fast f1.8.

The Schneider Optics Digicon Filter is designed for but not limited to electronic cinematography. Schneider touts it as useful in lowering highlights and raising black levels. It allows digital cameras to capture a more dynamic range without loss of resolution. The Digicon is available in 6.6-by-6.6-inch, 4-by-5.65-inch and 4-by-4-inch sizes.

Schneider also will show the Sunset Series Filters, including Twilight Sunset, offering color only at the horizon, as it is clear on bottom and ND on top. Classic Sunset offers flame-orange color that transitions to gold gradient across the center with the other half going clear. Sunset Series is available in 6.6 x 6.6", 4 x 5.65" and 4 x 4" sizes. The company's 127mm

Protective Clear Filters, available mounted (solid brass rings) and unmounted, coated or uncoated will be on display, as well. The optical flats can be used with a Fujinon 10.4x48mm wide-angle lens.

Finally, Schneider will showcase its Color Correction Effects in a range of new colors including: Sahara Gold, Golden Sepia, Chocolate and



Thales Angenieux's 70x HD OBISports lens

Tobacco and 10CC Green, based on a Wratten 10 green filter. Color Correction Effects are available in 6.6 x 6.6", 4 x 5.65" and 4 x 4" sizes.

LEE Filters' new Soft Focus glass camera filter adds a light amount of soft diffusion, and is designed for portrait work. The filter works with the LEE system of filter holders and hoods.

Petroff Matte Boxes will feature a universal MiniDV camera base adapter for its line of matte boxes designed to fit major

lenses for video and film production. The matte box comes in three different sizes 4 x 4", 4 x 5" and 5 x 5", and accommodates three filter stages. (By special order it can be easily modified for four or more stages.)

All filter stages rotate 360 degrees independently, with the ability to block rotation of some stages in order to maintain the position of polarizing filters.

Chrosziel will show its lens accessories including sunshades, matte boxes and lens control systems in the 16X9 booth at NAB.

A new Matte box with Interchangeable Filterstages will be introduced. It fits any lens up to a 4.5mm focal length zoom lens or 5mm Canon or Fujinon prime lens, and consists of a wide-angle housing covering both 16:9/4:3 (CLWAH-F4.8) aspect ratio, and includes a French flag, mounting blocks and pivot mechanism for use of side wings.

Also new from Chrosziel is the DV-Mattebox 4x4 for the Panasonic AG DVX-100, designed to cover both 16:9 and 4:3 and including a French flag and 16:9 mask. The filterstage is designed for two 4x4 filterholders, one fixed and one rotating.

ProSource is debuting its MB-350 wide-angle matte box (SHADE FX) from Vocas for lenses wider than 5.0mm. It features a four-stage filter system, which incorporates

two independently rotatable filter trays and two non-rotatable, horizontally oriented 4x5.6 filter trays. The MB-350 is equipped with a variable "eyebrow" system for flare reduction internally mounted



Fujinon's HA18x7.6

within the lens shade, and can be adjusted to just outside the view of any focal length lens. An optional 16:9/4:3 matte system also can be used within the fourth stage filter tray in the hood.

VFGadgets.com will display an ultra-thin Red Eye wide-angle, non-zoom-through camera lens. The device fits over the end of the camera lens, weighs less than 3.5 oz, and increases lens angle by 30 percent. It has an anti-reflective coating and anodized aluminum housing, and works with lens hoods and matte boxes. ■

Complete Automation Solutions

New! NET-Series Event Controllers



- ❖ Network Access and Control
- ❖ Drag and Drop Scheduling
- ❖ Media Resource Library

TCD/IP System Controller

- New! Integrated Digital Messaging
- New! Drag and Drop Scheduling
- New! Web-Based Control



TCD R/P MPEG Recorder/Player

- ❖ All-Digital Recording and Playback



THE WORLD'S LARGEST
ELECTRONIC MEDIA SHOW
April 17-22, 2004 • Las Vegas, NV

See what's new at NAB!
Booth SU11603

info@leightronix.com ♦ www.leightronix.com ♦ (800) 243-5589

Affordable ♦ Versatile ♦ Reliable

Cable/Broadcast Automation

LEIGHTRONIX, INC.

CONTROL PRODUCTS

IT'S TURBO CHARGED

8500 Series

NAB Booth
SU 11919

Perfect for signal acquisition, the 8500 module is a converter, frame sync, proc amp, and more. With both digital and analog I/O, it can handle any signal you can throw at it. This turbo charged module has 12 bit video and 24 bit audio.

Perfect for broadcast, great in remote trucks, it's the alternative to dedicated 1 RU frame syncs. The Avenue 8500 is the most powerful, single module solution available.

And with Avenue PC Software and Avenue Touch Screens, you can control and monitor all types of Avenue modules from any location in the world.



AVENUE from

ENSEMBLE
DESIGNS

- Tel 530.478.1830
- Fax 530.478.1832
- www.ensembledesigns.com
- info@endes.com
- PO Box 993
Grass Valley CA 95945 USA

Camera Support

CONTINUED FROM PAGE 59

to 33-feet.

Technocrane will introduce its Techno 15 telescoping crane. Its integral remote read has unlimited rotations for pan/tilt and is fitted with a drive system that ensures that every shot is precise.

Allen Osborne Associates has just the ticket for the videographer who has to get

a camera up high in a hurry, the A4-30 Stand Alone. This four-leg Pneumatic Mast can go up to 30 feet and hold 50 pounds, and can be placed anywhere in five minutes by a single operator. The unit comes with air pressure device, tools and instructions.

Also new from Allen Osborne are mast accessories kits that include pan/tilts and cable sheath for cabling air compressors remotes for all equipment.

Boom Audio/Video will show its Cool

Cam portable camera boom arm for MiniDV or broadcast camera. The unit can be body-worn or tripod-mounted, and is touted as the fastest boom made. Its length can be varied from 3-13 feet, and features a motorized pan/tilt head and full camera and lens control.

Also at Boom Audio/Video will be the Kit Cool microphone boom pole support, which assists the operator in holding any boom pole steady for long periods while taking the strain off the arms, shoulders,



Vinten's Quattro S with the Vector pan/tilt head

and back, and freeing one hand for adjustments.

Microdolly Hollywood will spot a product that allows videographers small dollies and jib arms to free themselves from a fixed monitor to see what the camera is seeing. The company is introducing eyeglasses with a small monitor in the eye, which gives the operator a clear view of what the camera sees.

The company will also introduce the 2 of Power Head, a wire-driven camera head that operates in total silence and can run underwater. The upgraded model has presets to aid operators in doing creative shots, and the eight-pound head can carry a payload of up to 40 pounds.

Panther will show the Classic hybrid between Panther's Evolution and its predecessor the Super Panther. In addition, the company will introduce accessories for its products, including a new cable head for Panther's Pixy, providing the operator with a simple axis remote head.

Also on display will be Panther's Multi Mount, which can carry a payload of 45 pounds and is designed for mounting pan/tilt heads (via a built-in 100mm) or lights onto cars or tricky surfaces.

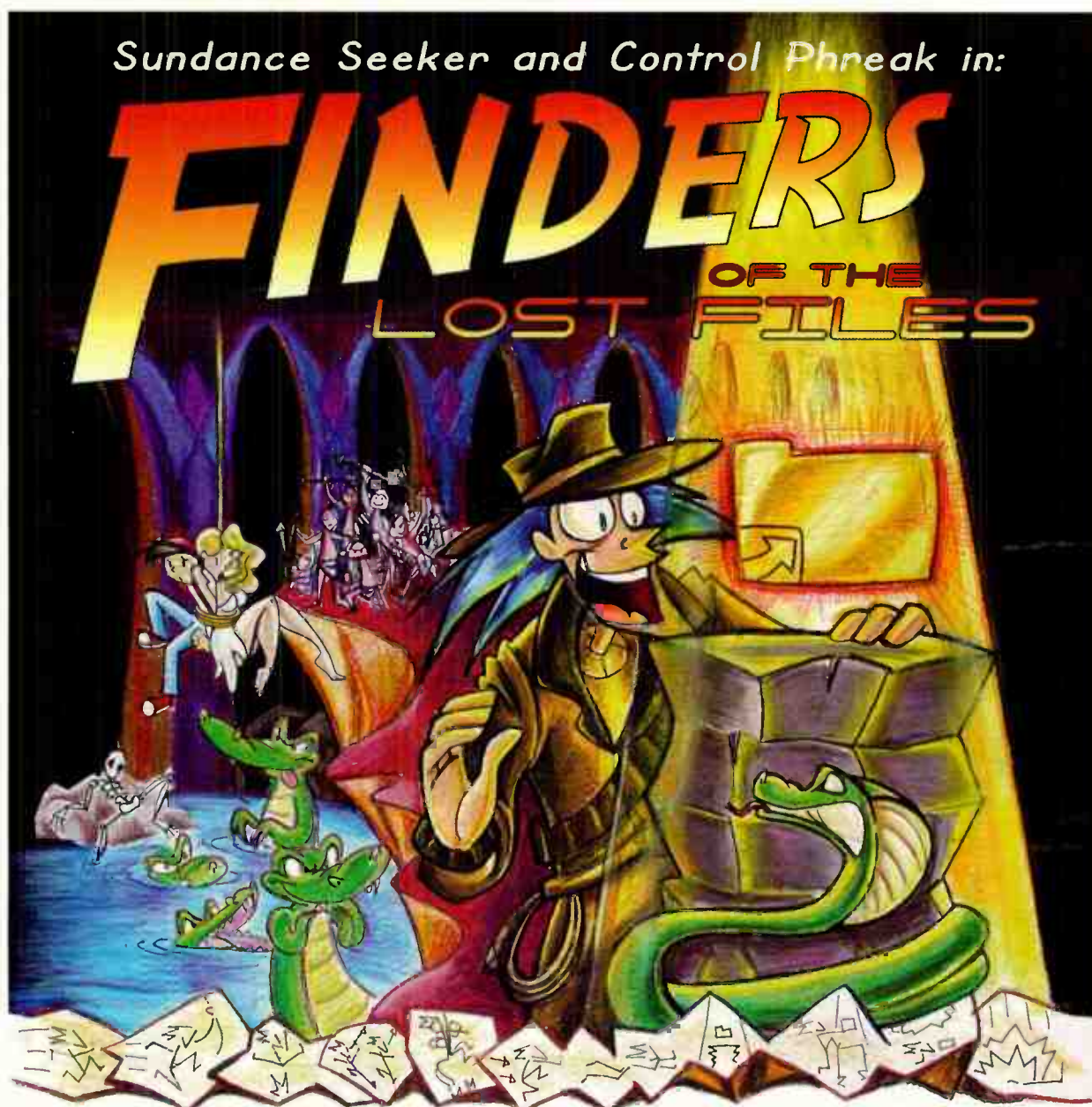
Panther products will be shown at the SteMan Inc. booth.

J.L. Fisher will show several dolly camera supports this year. One new is its model 23 Jib, a stable, lightweight, telescopic arm. The Jib sections are ergonomic, easy to handle and assemble quickly. color-coded, pre-tensioned cables join the assembled sections into an extremely rigid jib. The jib can be configured in 1-foot increments up to 21 feet.

Noga will show its Holdit variable system, a one-touch articulated system designed for mounting accessories to cranes and stands. Noga will be shown at the Band Pro Film & Digital booth.

Videopart, a specialty manufacturer that makes camera production accessories to eliminate parallax errors and safety issues caused by unstable camera fastening plates on cranes and other mountings, will display its M-Plate, designed for the Sony VCT-14 plate, allowing it to connect

CAMERA SUPPORT, PAGE 62



SEEKER™ BY SUNDANCE DIGITAL

BECAUSE FINDING YOUR FILES SHOULDN'T BE AN ARCHEOLOGICAL ADVENTURE!

Seeker is a highly flexible digital asset management system designed with a broadcaster's needs in mind. Any facility that uses digital media can benefit from using Seeker. Seeker supports Video, Audio, Graphic and Document files, regardless of file format, and will index the asset so it is easily found and available anywhere on your network.



See Us at NAB!
Booth SU-7470



SUNDANCE DIGITAL 972-444-8442 SALES@SUNDIG.COM WWW.SUNDANCEDIGITAL.COM

by Craig Johnston

When a video camera is purchased, the shopping has just begun. It needs a tripod or pedestal, a case, dollies and cranes to add production value moves in three-dimensions, and of course monitors so that the director, client and the rest of the crew can watch.

Welcome to the world of camera support equipment, a major part of the annual exhibition.

BOTICS

Two giants of the robotic camera business have merged: **Vinten** and **Radamec**. The resulting company, **Vinten Radamec Broadcast Robotics**, will display in a single booth, where an array of robotic and virtual studio products will be on display.

Among them is the new Series 200 positioning system. By incorporating a scalable architecture, the Series 200 allows multi-user, multifacility control of pedestals, heads and elevation units, and is intended to be compatible with AutoCam devices.

Vinten will also show its Lynx controller Predator pan/tilt head, offering remote control of cameras for difficult and motion uses. The Predator robotic head allows one-and-a-half turns in less than a second and reaches its maximum speed in less than 0.25 second.

Also in the remote control section of the Vinten booth will be the new manual Pro 900IT pan/tilt head, designed for precision camera tracking in virtual studio environments. In addition, the company will feature its new TCPi Linux-based control system and the latest Scenario XR virtual studio environment.

Telemetrics will display enhancements to its camera robotics systems, including standing, wall- and ceiling-mounted camera elevator systems; advanced camera control and control system software; remote-controlled pan/tilt mechanisms; and the company's line of coax and triax camera control systems.

One of the new products shown by Telemetrics will be its HD-HOU-S2 weatherproof remote camera control system, which includes housings with HD, SDI, and RS-422 interfaces.

Also on display from Telemetrics will be the Camera Remote Control System, which includes a Room Automation Interface, a TRK-H Camera Track System with a pan/tilt X/Y axis configuration option, a Motor Elevating Pedestal Flex Track System, and DS-4 device server for remote camera control connectivity for virtual studio uses.

In addition to integrated camera control systems, **ParkerVision**, which was acquired by Thomson last month, will display its extensive line of CameraMan pan/tilt systems that work with cameras from a variety of vendors as well as the company's own PVTV News live news transmission system.

Manfrotto will debut more products in its line of LANC remote control equipment with the introduction of the 521 Series for advanced amateur videographers who shoot using miniDV and Hi8 cameras.

The Manfrotto 521 and 521P Series remote controls are designed for use with the Panasonic AG-DVC80 and AG-DVX100 camcorders. Both models allow the shooter to easily find and manipulate

zoom, focus-in, focus-out, record/stop and power controls, and are built onto small clamps that allow the remotes to be mounted in any number of places, such as steering wheels, tripods, tabletops and hang gliders.

The other new remote control from Manfrotto is the 523 Series, which gives videographers advanced control over zoom functions, and comes with three factory preset zoom speeds, each of which can be customized. Manfrotto products will be seen in the **Bogen Imaging** booth.

Centurfax will debut its Blue.i Studio Navigator device for tracking and positioning robotic cameras in Virtual Reality sets. Blue.i captures X/Y-axis and rotational positioning data, transferring it to any proprietary motion-control system or virtual reality software. No overhead or wall sensors are required.

Innovision Optics will introduce its Mini Shuttle HD, a compact remote-controlled camera platform for popular broadcast cameras. The Mini Shuttle travels along customized straight or curved track, and comes with pan/tilt head and a controller with eight preset memory positions.

Also new from Innovision is its BulletCAMS remote camera head from Movie Engineering, a high-speed portable moving-camera system for sports and entertainment venues. And the company will be showcasing the Radcam Omni Miniature Camera Car, a remote control car that accepts a variety of compact digital cameras—including HD—for high-speed and low-angle action.

Frezzi will premier a new, broadcast-quality pan/tilt head and control system. The FPT-15 can support up to a 15-pound camera load and features fast, silent, operation with pan/tilt angles, lens zoom, focus and iris, and an onboard memory that stores 255 presets.

Accompanying the pan/tilt head is Frezzi's new F-AXP-PLV Pilot camera controller. The Pilot can handle six pan/tilt heads and cameras, and features an integrated LCD touchpanel screen with soft keys.

Mark Roberts Motion Control will introduce its Ulti-Head, a high-stability pan/tilt remote head for motion control in the studio or on location. It features carbon fiber adjusting tubes and can be mounted on a crane, tripod or Panther dolly, and powered from a 24-V battery. Fully repeatable movement, storage and replay can be accomplished using the company's Flair software and hardware.

Shotoku will bring its VR Tracking System to NAB2004, which gives real-time camera-positional signals of the X, Y and Z location to a virtual reality system. VR tracking is built into the company's TP-70VR and TP-66VR pedestals, and is also built into Shotoku's Crescent VR and TE-12VR fluid heads for studio cameras, and the TU-03VR fluid head for an ENG/EFP camera.

Another piece of the VR tracking system is the VR Jib, which gives positional signal of the Jib Arm. Used together with an ENG type VR head mounted on this Jib, it allows 3D movement from a crane shot on a virtual set. This VR Jib can be mounted on a VR pedestal, which allows the Jib to roam freely inside studios.

Shotoku will also exhibit its four-stage TP-70 studio pedestal and Crescent pan/tilt head, as well as its three-stage TP-66 studio pedestal, which is making its NAB debut.

TRIPODS AND PEDESTALS

Chapman/Leonard will showcase its Lencin camera pedestals, including the new Lencin Compact for smaller sets and locations; it can be wheeled through a 30-inch door. It has an enclosed base, and a column friction brake that can hold the column at any height.

The company will also display the Mini Lencin, a flexible pedestal capable of vertical movement from 1.5-feet off the floor to a height greater than 4.5 feet.

Vinten will present the Quattro S, a new compact pedestal designed for multicamera studio use. Its base also allows it to track through a 30-inch doorway. Like other pedestals in the Quattro series, this product has a four-stage telescopic column, and triangular column design for torsional stiffness, minimizing unwanted rotational movement.

Also new in the Vinten booth is the Protouch range, including the Pro-6 and Pro-10. These two pan/tilt heads, combined with the new Pozi-loc tripod, are targeted at today's professional DV camera user. The Pro-6 and Pro-10 heads offer continuously variable fluid drag and with a capacity of either 13.2 or 22 pounds and illuminated leveling bubbles for quick set up in low light.

And the company will be showing its new Vector 900 pan/tilt head, which retains all the functionality of the original Vector with increased robustness and tilt range.

Libec USA will debut its new LS-22, a tripod-and-head system aimed at DV camera shooters. It features a fluid head equipped with a two-position coun-

terbalance system to handle both standard and front-heavy cameras. The head's capacity is 8.8 pounds and it attaches to the tripod via a 75mm ball base.

Libec will also exhibit its line of fluid head tripod systems as well as the JB-30 portable jib arm.

Miller Camera Support will display its SOLO VJ tripod, designed for 10- to 40-pound camcorders. It has a 74-inch maximum height, and due to its spreader-less design, will go down to 8.7 inches. The tripod incorporates telescoping carbon legs, which do not rotate when tightened and weighs only 6.8 pounds.

The company's Arrow line of fluid heads will launch a new product, the Arrow 30, a 100mm ball-leveling fluid head for 10- to 30-pound DV and ENG camcorders. Based on the higher-capacity Arrow ENG head, Arrow 30 supports camcorders such as the Sony from DSR-PD170 through DSR390 as well as Sony's XDCAM PWS30.

Cartoni USA will introduce its Cartoni P20 pedestal, a compact portable pedestal designed for lightweight studio cameras. The P20 supports up to 48 pounds.

The company will also showcase its



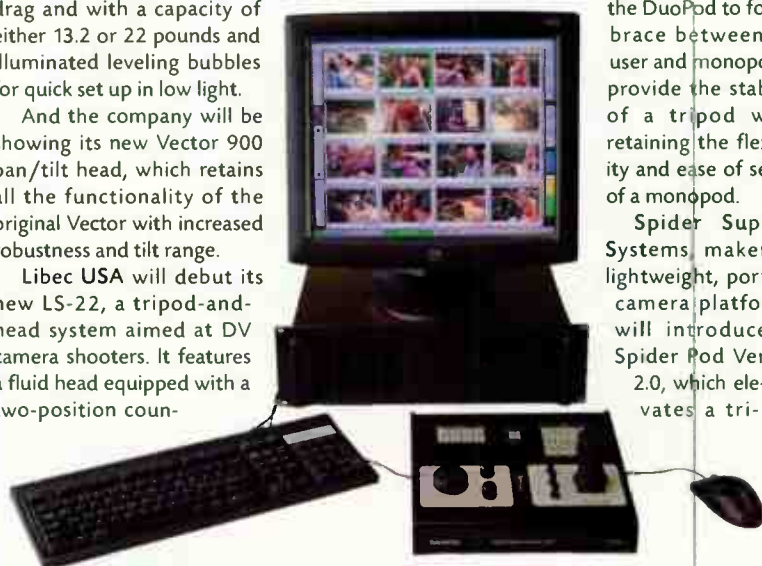
Omega, Sigma, Laser and Gamma product lines.

Gitzo will highlight its line of tripods, heads, monopods, mic fish poles and camera stands in the **Bogen Imaging** booth. Gitzo heads are each designed to work with a specific series of the company's tripods.

DuoPod Monopods will showcase the DuoPod Pro, which combines the advantages of a tripod with those of a monopod.

A simple design allows the DuoPod to form a brace between the user and monopod to provide the stability of a tripod while retaining the flexibility and ease of set-up of a monopod.

Spider Support Systems, makers of lightweight, portable camera platforms, will introduce its Spider Pod Version 2.0, which elevates a tri-



Telemetrics' CPS-CC-S Camera Control System

pod and camera to 24 inches. The riser and platform section are separate units, isolating the videographer's movements from the camera, cutting down on shake.

Also featured in the Spider booth will be the Scorpion Pod, a one-piece portable tripod riser and standing platform that elevates a camera tripod and operator 23 inches.

And the company will show its Expansion Web, providing a wider standing platform area when used in tandem with the Spider Pod's tripod riser.

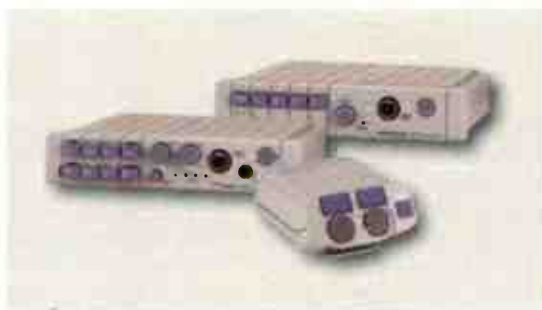
CRANES, JIB ARMS & DOLLIES

Egripment will return with its line of cranes, dollies, remote camera heads and controls, and other support equipment and accessories. Last year the company showed a model of a telescoping crane in development. This year the company will display a deliverable model of its Xtreme T12, manufactured from carbon fiber composite material and aviation-grade aluminum. The Xtreme T12 can reach a height of 44 feet, with the arm capable of on-air telescoping from a length of 16-feet

CAMERAS, PAGE 60

In this room

there are no excuses, no second chances. If you can't perform, get out.



RTS™ TW
Two-Wire Intercom System



RTS™
Digital Matrix Intercom System



RadioCom™
Wireless Intercom System

We've been in control rooms for over 30 years. We know that when all else fails, your intercom can't. It must be reliable, intuitive to use, and in these days of stretched budgets, must have a lifetime measured in decades. RTS TW intercom systems have the widest variety of panels and the newest technology. Yet today's model will "plug and play" with a RTS system circa 1971. RTS ADAM DSP-based matrix can be used with the newest VOIP technologies, fiber optics and coax interconnects, and still work with the keypanels you bought in 1984. Radiocom wireless intercoms have the exclusive Clearscan™ frequency agility to find you an interference-free channel within seconds after someone else's RF signal starts interfering with yours.

Reliability. Backward compatibility. Low cost of ownership.
RTS and RadioCom intercom systems don't need excuses. **They work.**

Call Toll-Free 877-863-4169 today or visit our web site www.rtssystems.com

Visit Us at NAB2004 Booth #C-9106

the industry standard for over 30 years

Camera Support

CONTINUED FROM PAGE 60

to a ratchet tie down with a safety belt. For strength and lightness it is made from a carbon fiber and has connection for a side box, cable management and monitor support.

Also in the Videopart booth will be a Wing-Plate designed for the Ikegami T-791, with the same features as the M-Plate.

STABILIZERS

Easyrig Camera Support will show off its Easyrig2 in a number of sizes to give camera operators the speed and mobility of a handheld camera, while achieving steady shots from the shoulder and hip. Specially designed suspension lines with shock absorbers hold the camera, redistributing the load to the user's hips. Easyrig accepts loads from 13-35 pounds and folds into a specially designed carrying bag. Easyrig products will be seen in the Band Pro booth.

Glidecam Industries will debut a number of new products, including the Glidecam V-35 and Glidecam V-10 Smooth Shooter body-mounted stabilization systems. They are a new addition to the "V-Series" line of body-mounted stabilizers.

MONITORS

Laird Telemedia will show off its Waveshot Wireless Video Monitoring System, a lightweight camera-mounted transmitter designed to send a crisp, clear video image to any pocket-sized or regular TV with a UHF tuner and antenna, up to several hundred feet away. The transmitter and TV receiver can be tuned to an unused UHF channel in the local area.

Astro Systems will show off two of its newest monitors, the WM-3004M, a six-inch HD/SD waveform/vectorscope monitor, and the DM-3005, a six-inch display monitor.

PROMPTERS

BDL Autoscript will launch a new wireless scroll control designed for the "wandering" presenter. In addition, a new ActiveX controller, which enables a prompter to be managed and scrolled from any newsroom client will be demonstrated for the first time.

BDL will also show updates to its +WinPlus+ prompting software with many new facility and newsroom interfaces.

CPC Computer Prompting and Captioning is addressing HD production with its new CPC-2000 software, which outputs both prompted text for the talent to read, and closed captions in HD. CPC has also acquired the Mac-based CCaption software line to complement CPC's PC software. CPC's software development team will continue to support both lines.

Also to be shown in the company's booth is its CPC-800 Webcast caption/subtitle software, designed to caption/subtitle live video on the Web.

Listec Video will display its ST-2015SA standalone Solo Series for field use. The prompter is supported by its own tripod assembly and the camera is positioned behind the prompter. The unit features Listec's Spectra-Lite 15-inch composite TFT LCD monitor.

Also in the Listec booth will be the ST-2056 point-of-view ENG prompter for field operation and productions. The unit features a large size mirror for comfortable viewing, sliding bracket and adjustable rod assembly for speedy setup and can be mounted above the lens, independent of the tripod system, or below the lens utilizing an easy-mount balance assembly.

Mirror Image will introduce a new prompter called the OS 160-LCD Outsider, a 15-inch LCD panel in a large, trapezoid hood that folds up easily for shipping and hauling.

Also new from Mirror Image is an upgrade to its EasyPrompt software, which adds the capability of prompting in any language.

ProPrompter will debut its ProPrompter Pocket PC, which uses a pocket PC with included software and a custom-designed lens-mounted prompter hood and mirror system. The Pocket PC version of the ProPrompter is designed for location or studio, where a single talent is using the ProPrompter in a medium-to-tight shot. It comes with Pocket ProPrompter software loaded on a SD memory card, USB Host adapter, USB Mouse, USB foldable keyboard, all of which fits safely in a custom hard shell case.

Also in the booth will be the ProPrompter LCD, a 5.6-inch LCD monitor that weighs under three pounds and can be used in the field or in the studio, even on a

Line backpacks, which can be added to any existing Clear-Com installation and feature customized setup options programmable by PC, onboard setup options viewable in the integral LED display, and the ability to store up to four different setups in memory.

JK Audio will display its ComPack, a universal telecom interface for intercom systems. It has a three-pin XLR beltpack intercom jack that allows it to be plugged into a ClearCom or RTS partyline system, and connected to any PBX, analog phone line or cell phone.

Drake Electronics will introduce a new version of its FreeSpeak line of wireless intercom products. FreeSpeak Lite provides the PiCo 4000 matrix with FreeSpeak con-



Panther Classic

handheld or Steadicam-mounted camera.

QTV (a division of Autocue) will introduce its FDP-7 LCD prompter at the show. Using a seven-inch, lightweight LCD screen, it is designed to work with the newest generation of portable cameras and lightweight support equipment, even to the point of being used with hand-held or stabilizer carried cameras and camcorders.

The company also has added a "High Bright" option to its FDP-12 prompter, giving on-air talent much easier-to-read script material when outdoors in direct sunlight.

Telescript will announce its new FPS-180 flat panel LCD prompter, featuring an 18-inch flat-panel screen, for use in studio and large-venue productions. The LCD screen features a bright, high-contrast display with anti-reflective, anti-glare AR glass.

TeleScript will also roll out its new TeleScript Jr., a minimalist approach to prompting software that allows full-screen viewing and on-the-fly editing.

INTERCOMS

Clear-Com will showcase its CellCom digital wireless intercom, which combines digital transmission with a base station that interconnects with wired communications, such as party-line and digital matrix systems. The system operates above the UHF television bands and is license-free in most countries.

Also new from Clear-Com are its Party-

nectivity for the first time, giving smaller Drake systems access to the this digital wireless and license-free intercom system.

The company will also show its new innkeeper PBX, designed to convert a multiline PBX telephone system into a talk-show console. It connects between the telephone handset and the phone base, and can be used either for talk-show production or in a newsroom to record interviews.

Riedel Communications will show the Artist-S system, a matrix platform for production intercom uses. The heart of the Artist-S consists of a fiber-based, digital infrastructure in a 1 RU frame, and is capable of transporting digital and analog audio on the same strand. Each unit serves as an Ethernet hub providing 32 intercom ports and supports up to 512 ports in total.

Also from Riedel is its MAX headset, for use in areas with high ambient noise levels. It features a rotating gooseneck, electret or dynamic microphones and push-to-talk buttons integrated in the connecting lead.

Systems Wireless will introduce the HME Pro 850 multichannel wireless intercom, with frequency-agile UHF wideband operation, automatic frequency scanning and output power control. Two-wire and four-wire interfaces can be used simultaneously.

A second new product from the company is the LCD Refresh Series of user pan-

NEW

MediaFlex16

Cost Effective Groundbreaking Modular Routing Switcher

Introducing...

MediaFlex16, the first in a new line of modular routing switchers. Applications include: Presentation, Education, Residential, Sports Bars, Post Production, Duplication

Features:

- 16x16 Modular Video & Stereo Audio Cards
- Volume, Bass, Treble & Balance Controls
- NTSC/PAL, Y/C, Hi-Def Component, RGBHV
- Audio Input Trims
- Optional 8x8 VGA (DB-15HD Card)
- Accepts Up To 8 GPI Inputs
- RS232 Control With SAS (Simple Ascii Strings)
- 5-Year P&L Warranty

Make The Switch!

www.knoxvideo.com

VISIT KNOX - NAB BOOTH #SL4017

KNOX VIDEO TECHNOLOGIES
 8547 GROVEMONT CIRCLE
 GAITHERSBURG, MD 20877
 TEL: 301 840 5805 FAX: 301 840 2946

COME SEE OUR INNOVATIVE AND EXCITING IP-BASED VIDEO SOLUTIONS

Visit the BCE team at Booth C-3325 (Aastra Digital Video Booth)
at the 2004 NAB Conference April 19-22 in Las Vegas.

Our BCE broadcast experts will present live demonstrations of our HDTV over IP, File Transfer and converged network solutions for media, including SDI/ASI Video, MPEG services and Voice over IP. You'll also have the opportunity to see our innovative online booking system.

BCE is a leading provider of customized media, entertainment, broadcast and imaging solutions. We have been providing superior quality and technologically advanced video-transport solutions to the broadcast, post-production, wireless and DTH industries for over 50 years.

For more information about BCE, or for a sneak preview of our online booking system, visit www.enterprise.bell.ca or call 1-866-223-4872 (Canada 1-800-361-8989). For further inquiries, please email info.solutions@bell.ca.

Media, Entertainment, Broadcast and Imaging Solutions





by Jay Ankeney

Expect HD capabilities to be sprouting up everywhere in the edit systems that will be on display at NAB2004. It also looks like editors are going to have to learn Linux to experience some of the new offerings. Here are the most interesting introductions from editing companies that have been announced for the Vegas gala so far.

Accom will present the new Axial/MX hybrid (linear/nonlinear) edit controller. Running on the same platform as their Axial 3000, but in a smaller and faster configuration, Axial/MX is capable of editing all formats of SD and HD, including 24p. Both Axial systems will receive new 5.1 software that adds RAVE (Random Access Video Editing) support for the Abekas 6000 video server.

In addition, Accom's Abekas Dveous/MX digital video effects system

will be seen with new Quad Twin functionality in both SD and HD formats, and benefiting from a new internal hard drive for more storage and faster save/recall of files.

AJA Video Systems will debut its 10 LD input/output plug-in box, co-developed with Apple, offering full 10-bit uncompressed video via FireWire into Final Cut Pro edit systems running Mac OS X. Accompanying it will be 10 LA, similarly designed for 10-bit video I/O to analog component or composite systems. Both are Panther and G-5 certified, and can be used in a desktop configuration or mounted in an optional 1 RU mounting bracket.

Visitors to Aurora Video Systems will see the new ReaktorHD that lets Macintosh users view their video on low-cost LD monitors, including the RT Extreme offline mode of Final Cut Pro. They'll also get a gander at PipeSDI, a low-cost 10-bit uncompressed SD I/O system for FCP; and PipePro, which will allow editors to have efficient access to FCP's RT Extreme video. PipePro supports up to eight channels of 48 kHz audio embedded in the SDI inputs and outputs.

This year, Avid Technology is playing it

as close to the vest as during the last run up to NAB, promising enhancements to its new Avid DNA (Digital Nonlinear Accelerator) technology, but not releasing details until the pre-show Sunday press conference. We have

proprietary codec that lets HD and SD be on the same timeline. Also, the latest edition of the MediaEdge2 video distribution system now offers MPEG-4 support.

The new Version 6.0 software for the smoke and fire edit systems will be one of the highlights at Discreet's booth. The

Montreal-based company will demonstrate new smoke SD system running on the IBM Intellistation and also Linux workstations. Following its data-centric philosophy, Discreet will demonstrate "Absolute Resolution Freedom" workflows in HD and SD, and present the results of its digital intermediate developments by screening films like "Master and Commander" in a new 2K digital theater.

Addressing a much-neglected market segment, DNF Controls will debut its

linear edit system, the 2MCE-24P cuts-only editor, for last minute fixes or audio overlays on 24p material using two VTRs. Based on its ST300 controller platform, the 2MCE-24P cuts-only editor supports 24p editing using NTSC drop- and non-drop frame timecode as well as PAL frame rates.

DVS will feature Version 3 of its Clipster multiresolution edit system, designed to edit SD to 2K material off the company's new uncompressed high-definition digital disk recorder, the name of which will be announced at NAB. This new DDR features a re-designed user interface running under Windows to let you save files in either the dpx, cineon, TGA, BMP or AIFF native format.

The Fastrack SE ("Super Edit") from Editware will be demo-ed with new Version 3 software that enables look-ahead auto assembly by interfacing to a combina-

tion of linear and nonlinear sources. In addition, Version 3 software for the Fastrack VS ("Video Server") system adds access to video servers, including the EVS Server that Fastrack VS used for playback during the Super Bowl.

The Piranha NLE from Interactive Effects will be demonstrated on the new SGI Tezro workstation performing 4K tricks thanks to a transfer rate of over 600 Mbps. It will also pre-

view the Piranha 4.0 multiplatform release on Linux.

Leitch will unveil its new VelocityHD nonlinear editor, using the same software interface as the VelocityQ NLE systems. We will also see the NewsFlash newsroom editor accessing content stored on the NEXIO server system, and supporting a range of ingest formats, including SDI, SDTI, FireWire and Ethernet connectivity. New enhancements to NewsFlash include long GOP editing, audio rubber banding, MXF import/export and NCRS integration.

EDITING, PAGE 74



Boxx Technologies' HD [pro] edit system

learned, however, that attendees can expect to see the next generation of the Avid DS Nitris and Media Composer Adrenaline systems, with the latter getting an HD option to enable a seamless high definition workflow with Avid Unity Media Network. The Avid NewsCutter Adrenaline FX newsroom editor will also get HD support capabilities, and their iNEWS newsroom computer system will show off its support for the Linux platform.

Blackmagic Design will show DeckLink, its SDI ingest card for Macintosh and Windows computers, with versions available for SD and HD applications. The cards feature 10-bit processing, VCR control and support of real-time effects.

The new HD [pro] edit system from



Leitch's velocityQ

Boxx Technologies uses Adobe Premiere Pro software on Windows and the Bluefish444 card to edit 10-bit 4:2:2 uncompressed HD video supporting 1080i, 1080PsF and 1080p, and eight channels of AES/EBU digital audio. The system comes configured with 2 TB of RAID 3 storage and 14 hot-swappable drives.

Canopus Corp. will be stepping into the HD editing world with the new HDW-1000 NLE system. As a real-time NLE, this offering includes an HD-SDI card and the company's latest version of EDIUS Professional video editing software, along with a pro-

Fastrack!

Tape/Server Hybrid Editing

Non-linear editing on video servers
Combine up to 80 VTRs/server channels
Flexible serial and ethernet control
Optimized linear editing capabilities

**See the Fastrack VS and SE at NAB'04
LVCC South Hall, Upper Level #SU7820**

editware

GRASS VALLEY, CALIFORNIA
200 Litton Drive, Suite 308
Grass Valley, CA 95945 USA
tel: 530.477.4300 fax: 530.477.4304
www.editware.com

Canon's 3-Chip PTZ Camera System Adds A New Dimension To Quality Production.



SPORTS



**20X Optical Zoom
(Up To 100X DIGITAL)**



REALITY PROGRAMMING



WEATHER COVERAGE



TRAFFIC MONITORING

Now broadcasters can take advantage of a high quality PTZ camera system featuring genuine Canon optics, advanced technology and sophisticated design and control.

The NU-700N provides an impressive turnkey, plug and play system for shooting documentaries, travel destinations, outdoor reality programs, weather, traffic and much more. The NU-700N combines a 1/4" 3 CCD Canon video camera with a built-in 20X optical zoom lens and 5X digital function for a powerful 100X zoom range, all contained in a rugged outdoor housing with unique features including a rain wiper and defrost. When used with Canon's optional network camera server, the VB150, (shown below) broadcast images can be controlled and viewed on the Internet or a LAN.



NU-700N FEATURES AT A GLANCE

- Exceptional video quality from Canon optics and a 3 CCD camera.
- A built-in rain wiper and defrost effect for adverse weather conditions.
- Powerful 20X optical zoom lens, plus a 100X digital zoom feature.
- Auto focus for improved operability.
- Flexible connectivity, either to a LAN or the Internet through an optional server.
- Non-proprietary protocol allows users and system integrators to provide a third-party server or controller, for easy integration with other systems.



**VB-150
NETWORK CAMERA SERVER**



**NU-700N
UNDER \$10,000**

Find out more at
canonbroadcast.com

1-800-321-4388 (Canada: 905-795-2012)

See us at NAB2004 Booth #SU9649

Canon KNOW HOW™

Canon is a registered trademark and Canon Know How is a trademark of Canon Inc. ©2003 Canon USA, Inc.



by Kelly Brooks

For HD video monitors at NAB2004, one thing is certain—size matters. Next to the use of LCD/Thin Film Transistor (TFT) technology, also known as active-matrix (AM), compact size and portability are key features of this year's selection of monitors.

A contender in the race for most compact unit is Glidecam Industries' L7-Pro with a weight of 1.8 pounds. Featuring a 16:9/4:3 switchable TFT active matrix and daylight-viewable color display, the unit works as a remote viewing monitor on the base platform of Glidecam's V-16, V-20 or Gold Series professional camera stabilizers. L7-Pro is powered by an external 12 VDC 600mA battery or other power supply, and can be used on top of a camera as an oversized viewfinder.



ERG Ventures' HDM-EV80D

Marshall Electronics will present its 6.5-inch portable HD/SD LCD monitor that also weighs less than two pounds and offers input configuration without adapter boxes. Standard inputs include active loop through on each connection for HDSDI/SDI and composite video with Pal/NTSC recognition. The unit also features a scaleable VGA input for computer graphic applications.

Transvideo's six-inch Cinemonitor III features a menu system with adjustments for brightness, contrast and saturation made through the use of manual potentiometers. A digital keypad organizes all the functions based upon how often they are used.

Also new is the six-inch Rainbow II professional LCD monitor that operates just like the original five-inch Rainbow. The new version accepts NTSC and PAL, and has a wider viewing angle and optimized performance in full sun. Images can be displayed in Full, Under-Scan or Broadcast modes. The five-inch Rainbow II features a built-in format converter: The 4:3 screen will display images in 4:3 or 16/9 ratios. It will also display unsqueezed anamorphic images with the anamorphic option installed.

At NAB2003, ERG Ventures introduced

a six-inch HD/SD LCD monitor with color, gamma adjustment functions, framing markers and a memory preset function. This year, the company will show the 8.4-inch HDM-EV80D, a rackmount version that includes the same features as the six-inch, but can be adapted for location shoots. Its HD/SD inputs can be intermingled, and the DC output enables the wiring of two monitors consecutively from one DC unit.

Sony Broadcast will show new products in its Luma series of LCD monitors, including 21- and 32-inch versions. The LMD-320W is a 16:9 monitor that can be used in multiscreen applications, as well as a studio monitor. The LMD-210 is a 4:3 monitor; both monitors accommodate a variety of SD and HD signals.

INNOVATIONS ABOUND

Because many LCD screens are invisible unless directly viewed, Marshall Electronics' V-R191P-SDI 19-inch LCD rackmount monitor offers CRT-style viewing angles, 16.7 million colors and a bright 450-cd/m² luminance display and 3.9 megapixel resolution. Its feature set includes direct access controls and selections, plus multi-format input capability for SDI, composite, Y/C and scalable WXGA. The composite signal output uses a digital-to-10-bit analog con-



Ikegami's HTM-1907

verter and three individual tally lamps. The unit also is available in a 17-inch model.

DataCheck, which recently acquired flat-panel supplier Dixal Technology, will have a combined test instrument/monitor in tow on the road to a Vegas debut, as well as HS-SD and HD-SDI large-screen video monitors. The 19-inch model 21190-4WVA monitors waveform, vectorscope and audio levels, and displays 4:3 or 16:9 in quad or full-frame mode. The four-input video switcher enables a user to measure data simultaneously.

A 24-inch LCD HD-SDI monitor that displays 4:3 and 16:9 aspect ratios and features native 1,920 x 1,080 resolution and dual A/B inputs also will be on display. The monitor includes screen controls on the front panel, anti-reflective tempered glass, an

Zero to soft light
in 60 sec.

Compact, Quick, Beautiful

Join the thousands of pro's who've discovered the magic of Rifa-lite®. Go from kit to lit in less than a minute, for beautiful wrap-around light quality that's virtually fool-proof. Now added to a wide range of Lowel kits, Rifa is everything you'd expect from the world leader in location lighting.



lowel 

lowel.com 800-334-3426

external power supply of 12 VDC and weighs less than 26 pounds.

Pro-Bel's Vutrix VX line of TFT monitors range from 15- to 40-inches and share the Pixel-to-Pixel common electronics processing system, which posts incoming video streams from SDI. Video quality is boosted by the series' scaling technology. The V18 18-inch 4:3 rackmount display features a resolution of 350-cd 1,024 x 768 and the ability to de-embed two audio channels from the same audio group or different ones.

The V7D widescreen is used in the out-



Marshall Electronics' V-R 191P-SDI 19-inch LCD monitor

side broadcast vehicle market and offers two seven-inch high-resolution 1,024 x 600 TFT displays with reduced viewing angles for better definition.

Pro-Bel also will show a 40-inch widescreen TFT with a 500-candela display, native 1,280 x 768 and integrated VuWall software, and its VDSI distribution system.

Ikegami's HTM-1907 flat surface 19-inch HD/SD multiformat monitor features an optional SDI module that accepts HD-SDI or SD-SDI by auto-detection, and can be equipped with embedded audio outputs (analog or AES/EBU) and audio level indicators (four- or eight-channel). Ikegami also will present a 20-inch version, and 17- and 22-inch LCD HD/SD models.

MULTIDISPLAYS, ONE UNIT

Spain-based Kroma Telecom will present its triple five-inch TFT monitor with high view angles, vibrant color range and low picture delay. It includes 12 inputs; two analog and two digital per each screen. The company also will exhibit TFT monitors from its LM50XX series in nine-, 15- and 18-inch models.

Similarly, Ward-Beck offers triple and quad versions of its A/V monitor system. VMS33 features three high resolution (960 x 234) LCD displays, 28-segment stereo VU/PPM meters and five-segment correlation meters in a 3 RU panel, while the VMS44 has four 480 x 234 displays, VU/PPM meters and five-segment correlation meters in a 2 RU panel. Telescoping and tilting capabilities are included on the front panel for unobstructed views, and the units come with NTSC video, stereo analog and AES inputs. PAL displays and digital video inputs are optional.

Washington-based Avitech will show-case its updated Media Command Center (MCC) virtual monitor wall system. Built around MEDI technology, Avitech's open and distributed architecture, the system features a mix-and-match module platform for

customizing views to suit signal monitoring applications such as HD, SD, analog audio, digital audio, embedded audio or computer-generated graphics. All signals are shown on the same display.

In addition to scaling down video, MCC maximizes the screen for full display. Users also may utilize DCDi technology from Faroudja, a division of California-based Genesis Microchip, which enables the wall system to deliver full screen pictures for HD and SD signals.

Evertz will debut its video wall display, the MVP multi video display processor.

The MON8-1 LCD video monitor from Panoramadt, the video division of Wohler Technologies, features eight 1.8-inch LCD screens with a composite video input, loop-through output and termination switches in 1 U of rack space.

To extend the life of its monitors, the company designed the MON8-1 to utilize white LED backlights with a lifespan of about 100,000 hours. Specs include

4:3; NTSC, PAL or auto-sensing input signal; power supply of 100-240 VAC and power consumption of 33 VA; and viewing angles of ten degrees/top, 30 degrees/bottom and 45 degrees/left and right of the screen.

Motorola Broadband will show HD plasma display monitors by Moxell Technology. The 42-inch 16:9 flat panels include advanced digital video scaling technologies.

The PG-H42 features a 1,024 x 768 pixel HD panel delivering 1,000 cd/m2 brightness, along with a 3,000:1 contrast ratio.



Kroma Telecom's LM50XX series

The enhanced-definition (EDTV) PD-S42 features an 852 x 480 pixel panel, with 640 cd/m2 brightness and a 1,000:1 contrast ratio.

Astro Systems will show two of its newest monitors, the WM-3004M, a six-inch HD/SD waveform/vectorscope monitor, and the DM-3005, a six-inch display monitor. The rest of the company's line of lightweight LCD monitors will be displayed.

TV One Broadcast Sales will debut the LM-1042R, a dual 10.4-inch LCD monitor in a 19-inch rack-mount case. Each of the dual displays has a PC input and composite video input. The PC input can handle resolutions up to SVGA, but an optional module can expand this to SXGA and all HD resolutions.

The company will also show its array of LM Series Professional LCD monitors, available in standard 19-inch rack-mount configurations. All use active matrix LCD displays with wide viewing angles. ■

12x5.3 Wide Super Zoom



True Life Cinema
Soho, New York City

“As an independent production company, you need equipment that delivers maximum flexibility both during shoots and in post. I knew that Thales Angenieux made great film lenses, but was not aware of the

video lens line. Once I saw the images produced by the Thales Angenieux lenses, I knew I had to have them.”

said Ron Buffone, President and Principal Owner of True Life Cinema.



12 x 5.3AIF.HR Wide Super Zoom
10 x 5.3AIF.HD Wide Super Zoom

“I tried lenses from other lens manufacturers with focal ranges comparable to Thales Angenieux's 12 x 5.3 Wide Super Zoom lens, but nothing came close.”

said Mr. Buffone.

angenieux

THALES

For more information call 973-812-3858,
e-mail angenieux@tccus.com or visit www.angenieux.com



by Susan Ashworth

Today's asset management technologies have made big strides since the technology hit the NAB show floor a few years ago.

Then, the focus was on relatively simply media management (getting a clip from point A to B). Now, asset management technology is touching all segments of a broadcast facility. To remain competitive, asset management technologies must consider how to handle ingest, cataloging, searching and retrieval, as well as archiving and then repurposing of media.

One company addressing this market is the ADAM Systems Group of Advanced Software Resources, which will showcase its E-Series asset management systems, supporting SD and HD processing and storage for the broadcast, film, post production, government and corporate markets. At the show will be the ADAM 1000, a digital asset management system and media engine configured as a networked desktop system.

AT&T will be on hand discussing its Digital Content Management Service, which stores, indexes, retrieves, transcodes and packages content for different distribution channels, including broadcast and Internet.

Among its editing technologies, Avid Technology will also showcase systems for the asset management market, including Avid Unity MediaManager. New capabilities include expanded full-resolution media browsing, comprehensive logging and multiple-site searching.

BBC Technology will showcase its established line, including Colledia for Sports and News, a modular management system for larger, fast-moving news productions. Also on display will be Colledia for Production, a media management system targeted for documentary or long-form filmmakers.

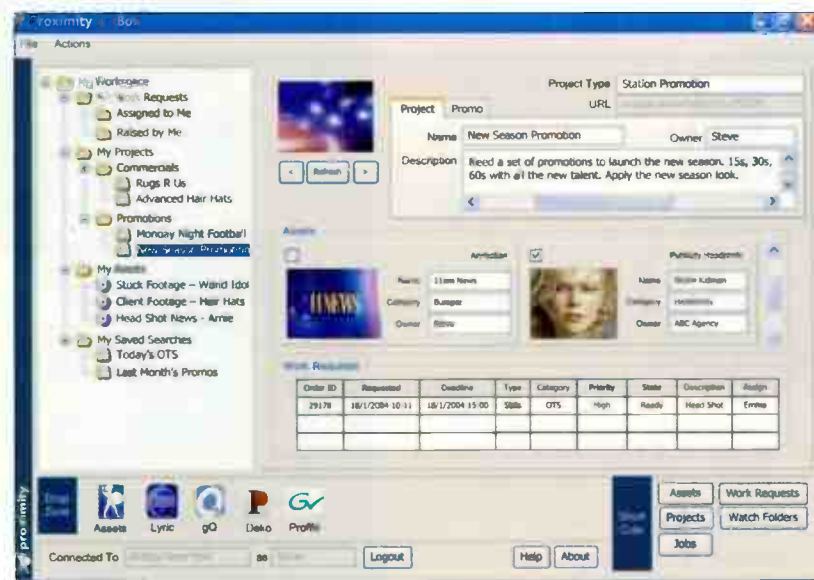
Asset management capabilities for the PC will be discussed at the BlackBall booth where the company will showcase its BlackMagic storage solutions, which offer search and asset management capabilities.

AUTOMATIC MANAGEMENT

Combining asset management and storage is the goal behind BlueLine Technology's StationMaster Media Management Suite. This automation software incorporates media management and archiving in one application, allowing for control of all media assets in one main database. Multiple users can access media via a security- and password-protected gateway. Other solutions include the JustClips interface GUI, which allows users to use BlueLine's MPEG server as a clip ingest and playback device.

flow scenario for digital data production.

Floral will demonstrate how its products will now work with Telestream's FlipStation to enhance delivery workflow by providing unattended transcoding and transfer of video files from edge servers. Using the technology, content appearing in dub lists from the traffic department is located on the edge servers and automatically transferred and transcoded to the play-to-air video servers. FlipStation can locate content on edge servers as well as locally produced commercial or promotional content.



Proximity's Artbox GUI

Targeting the cable and broadcast market, BroadView Software will bring its BroadView-branded software system, which helps TV stations and cable networks manage media for program acquisitions, ad management, scheduling and traffic.

Dalet Digital Media Systems will showcase the DaletPlus Media Library for media asset management. DaletPlus Media Library offers collaboration across a broadcast facility by making media assets available throughout various departments, such as production and playout, research and programming, and marketing.

Digital Transaction Group, formerly Odetics Broadcast, combines automation with asset management in its AIRO Automation System, which offers device control, schedule management, content ingest, acquisition and archiving.

Focusing on collaborative content creation, Discreet will offer demonstrations of its Open Access system, a collaborative work-

IBM will show its Digital Content Management and Digital Content Distribution solutions for asset management, as well as servers and workstations for managing data.

IPV Ltd. will show off SVStudio, its browse software to handle real-time media. SVStudio compliments the company's SpectreView shadow browse technology.

New from Just Edit is the VSN Netshare, a video content management system that allows journalists, editors or the post-production team to edit and locate video content through a centralized video server. Video clips are organized in categories without file paths, and a search mechanism finds key words in video titles and descriptions to let users view videos in low-resolution MPEG-4 video. VSN Netshare integrates into the company's VSN network.

Konan Technology will highlight its Konan-DigitalArchive, which allows users to

manage and search for specific media frames from a storage server.

Leitch will showcase MediaNet, a key component to its NEXIO server platform. MediaNet is a fully integrated content management application that provides a unified view of server content whether on the local or a remote server system. Equipped with search and sort tools, MediaNet allows users to mine content and metadata and provides heightened security and content management across multiple NEXIO server domains.

Mediaproxy will showcase Enigma, which offers media logging and near-real-time monitoring to desktop clients.

Microboards Technology will come to NAB2004 with its flagship digital asset management system. MediaBeacon, which allows users to share media with third parties, convert formats and manage and organize directly from a Web browser. Rimage Producer will also be shown.

MicroFirst will be on hand with its Digital Automation System, which can control devices and manipulate recording schedules as well as manage clips and logos.

Omneon will be on hand with its Spectrum line, including the Spectrum for Archive system for storing and managing media assets. In addition, a suite of new Omneon Media Tools for viewing, browsing, manipulating and managing media clips within an Omneon Spectrum system will be showcased.

SERVING UP NEWS

For management and file transfer control, Pathfire will showcase its DMG Server Connect for News, which enables digital file transcoding and transfer of news content directly to play-to-air servers and video editing platforms. The DMG Server Connect for Programming system enables digital file transcoding and file transfer of syndicated programming, spots, promos and other short-form content directly to play-to-air servers. Likewise, DMG News Connect embeds the functionality of the DMG user interface into a station's newsroom computer system application, enabling newsroom staff to insert script information, browse low-resolution content, search DMG archives and initiate content movement without switching to another application. Point-to-Point is a new generation of digital content distribution and management systems that enable networks to move live as well as store-and-forward video from one point to another.

Peter Storer & Associates will highlight the SIMS system, short for Storer Information Management System. This acquisition, program schedule and program finance system interfaces with sales/traffic and automation systems for single or multi-channel operations. The company's Program Manager System provides television program management capabilities for broadcasters and networks. Also on display: the IPS Instant Program Schedule, a program scheduling system.

New from Pinnacle Systems at NAB2004 is DekoVIA software, which integrates template-based Deko automation into news workflow so that journalists and editors can work directly with graphics at their news editing stations.

In addition to its new automation offerings, Pro-Bel will showcase asset management capabilities, such as its MAPP media

ASSET MANAGEMENT, PAGE 72

vtecs™

Visit us at Booth SU8648

General Purpose Control Panels with Interfaces

Introducing the Hottest, and the Coolest Control Panels

- ◆ Multiple Vendor Control
- ◆ Ingest Frame Sync QC
- ◆ Full Router Integration
- ◆ Channel Based Organization

Videoframe™

Videoframe, Inc. P.O. Box 1991, Grass Valley, CA 95945
Tel: 530-477-2000 www.videoframesystems.com

Pay for a switcher....

Discover that for the cost of a switcher, Broadcast Pix is a complete live video production system. Leading studios use Broadcast Pix for news, sports, corporate, education, religious and government broadcasts.

Now a single operator has the tool to create great live television. You always know what's on every source, key layer and device with PixButtons. When you still need a team, just add more hard or soft panels. New for 2004 are dual clip stores, 3D DVE and complete camera control. Patents pending.

get a **Studio**



The Broadcast Pix Studio system includes

- Digital Production Switcher
- Animated Inscrber Character Generator
- Digital Disk Recorder
- Three Pinnacle DVEs
- Still Stores
- Logo Generator
- Broadcast Pix control panels with PixButtons.
- Fail-safe on-air redundancy
- Workstation and Router

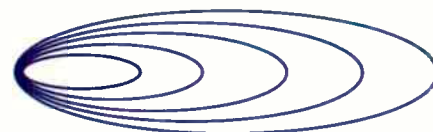


*PixButton™
(Mens Crew clip)*

*\$20,900 Complete
(monitors not included)*

Test drive one at NAB
Booth SU9524

www.broadcastpix.com



Broadcast Pix



by Susan Ashworth

Broadcasters are always on the lookout for efficient, cost-effective ways to trim expenses and maximize revenues.

And one key piece of that puzzle is often found in the back room with automation solutions, whether it is for an entire broadcast facility or specifically for a bustling newsroom environment.

In anticipation of this trend, Associated Press will showcase new features to its ENPS news production system at NAB2004. The newest version, 4.0, supports a wider variety of languages including Arabic, Chinese, Hindi, Korean, Japanese and Greek. Journalists can now access ENPS newsgathering assignments and program running-orders remotely with WAP-enabled mobile phones and PDAs. Other new features include an enhanced newsgathering assignment system, improved wire reader func-

tionality and new navigational capabilities. Other solutions on display include SNAPfeed, a software application that allows a field journalist to transmit video from remote locations to the newsroom using a laptop.

Newsrooms could benefit with new technologies from Autocue Systems, including QScript. Designed to facilitate paperless news production, QScript mirrors the newsroom control system rundown for all updates. It runs on a touchscreen or wireless tablet PC to notate scripts and highlight words that can be seen on the prompter. Other systems: QVote, designed for federal and parliamentary election tabulation and real-time graphic updates to air; QClose school and business closing automation system; QScore, which takes in sports data and feeds the results into CG templates for broadcast.

Avid Technology will be on hand with Avid iNEWS, featuring machine control, the ability to store CGs with the script, and the ability to synchronize words with pictures inside both Avid NewsCutter and Media Browse systems. Companion control systems will also be in the Avid booth, including the Avid iNEWS ControlAir system, which can control up to 32 on-air playback devices.

Designed for automated environments, Axel Technology will showcase DIGI TV, which allows for management of all major steps of the broadcast process, from playlist creation and commercial planning to play-out, be it in a single- or multichannel envi-

ronment. The solution includes management of cart machines and video servers in M-JPEG / MPEG-2 formats.

BUF Technology will showcase its Spot Video Server Management System, with features that include multichannel server control and VTR control, among others.

Broadcast Tools will show the Console Controller 5, which interfaces non-broadcast consoles and DAWs to the broadcast studio.

Burk Technology will demonstrate several control technologies, including the ARC-16 Web Interface, which provides Web-based control and monitoring for the ARC-16 transmitter remote control system; the GSC/VRC Web interface, which brings IP capability to the GSC3000 and VRC2500

and support for off-the-shelf server hardware including HP and IBM automation servers. The company is also introducing a new DALingestClient in Vers. 4 that will allow for more accurate and user-friendly capture and tracking of content.

Floral Systems will showcase new features on the AirBoss automation system, including the Automated "Join in Progress," or AutoJIP. This feature makes it easier to join a program already in progress after a live sporting event has run longer than expected, or at the end of a breaking news event. At the push of a button, AirBoss makes the necessary timing calculations to cue video servers and automatically marks all items skipped as "pre-empted" in the as-run log. The company will also show the MediaTrans



Leightronix's TCD/IP

transmitter remote control systems; Burk Technology's Lynx 5 software, which brings new features to the GSC3000 and VRC2500 control, monitoring and logging software; and the Firmware Vers. 5.6 for the ARC-16 transmitter remote control system.

TAPELESS TECHNOLOGY

Tapeless has been a buzzword on the show floor over the last few NABs, and this year Comprompter News & Automation will bring its version to fruition. The company will demonstrate its NewsKing Tapeless NewsRoom, now including ClipTracker software, allowing users to set up a tapeless newsroom environment.

Dalet Digital Media Systems will showcase its DaletPlus News Suite, which gives journalists real-time access to video, audio, wires, stills, feeds and CGs from their desktop. Users can edit video while recording and send to air with a single click.

Formerly part of the Odetics Broadcast line of products, the AIRO Automation System will now be up and running in the Digital Transaction Group booth. This automation system integrates device control, schedule management, content ingest, acquisition and archiving, and now includes an eXtensible Device Server (XDS) to manage and control broadcast devices.

DNF Controls will introduce new modules to its Flex Control Network including the Flex Control VTR control module. The new module supports shared control of one to eight VTRs from one DNF Flex Control CP20 control panel. Also new this year is the Flex Control Clip Control module, which allows Flex Control users to load and play video clips on video servers and DDRs within Flex's Ethernet-based, distributed control environment.

Encoda Systems' Automation Division will release the Encoda D-Series Vers. 4 automation solution. Based on open source, standards-based Linux Vers. 2.6, it will be one of the first consumer applications to use this technology. Features include future hardware platform support, IP networking, and remote administrative functionality;

Plus for centralized switching of studio cameras at remote locations. In addition, Floral's program timing application MediaTimer has been enhanced to offer desktop viewing of programs stored on a high-resolution video server. The low-resolution video display is located on MediaTimer's GUI. Floral will also showcase AutoLog, an automated off-air logging and review system.

Inscriber will tout its Inca AutoCG newsroom automation system, which can broadcast multi-layer graphics, clocks, logos and real-time clip-to-clip transitions on a single channel. Changes that occur within the news service provider can be updated within Inca AutoCG's interface, with new content being created instantly. In its unattended mode, Inca AutoCG will automatically broadcast new content.

JLCooper Electronics will highlight its ES-SloMo Universal Instant Replay Controller, a four-machine editor and universal jog/shuttle remote for VTRs, DDRs and disk recorders. Also on display is the MCS-Clipshot Tactile switch palette, which provides instant video clip access or audio playback triggering in broadcast, post production and other applications. Also being shown: The ES-450, a universal jog/shuttle remote controller for VTRs or DDRs over Ethernet, and the eBOX, a 10/100 (Ethernet) to RS-232/422/485 and GPI hardware interface that acts as a portal for controlling devices across the building or anywhere.

Just Edit will showcase VSN News, a live production and news playout system that can be operated manually or automatically and can remotely control video and audio mixers. It communicates with VSN CG for on-air automatic news titling without any graphic operator needed, and can work as a master or slave playout. It can also trigger native files from all popular editing systems, including those from Pinnacle, Avid and Matrox, without rendering or transcoding. Also on display will be VSN Matic, a playout and video server designed to automate

AUTOMATION, PAGE 8

DTG

DIGITAL TRANSACTION GROUP

*Supporting Today's Solution,
Innovating Tomorrow's*

We are the former engineering
and support team from Odetics Broadcast.
As broadcast engineers like you, we asked

*Why does a Television Automation System
cost as much as a House?*

Now it doesn't.



See you at NAB Booth SU11036

Digital Transaction Group, Inc.
11004 Metric Blvd. Austin, Texas 78758
Phone 512.837.3737 Fax 512.837.3791
www.dtgiv.com

WHEN YOU'RE LOOKING FOR THE "LITE" TOUCH

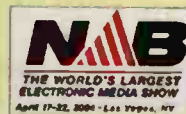
Make PESA's MCLite Master Control Your Choice for SD Operations.

Master Control has become one of the fastest evolving areas in the modern broadcast plant. The PESA MCLite Digital Master Control Switcher, with its flexible and open architecture, has been developed to fulfill the needs of all present and future requirements.

The MCLite is a compact, low-cost, multi-channel SDTV Master Control Switcher available with a wide range of processor and control panel options. Multi-channel, multi-format and centralcasting operations benefit from the modular nature of the MCLite, allowing each channel to be fitted with just the appropriate amount of processing power. Multiple processors and control panels can be arranged in any combination, with up to 16 channels being controlled all from a single control panel or from station automation.

FEATURES

- Multi-Channel SDTV Operation
- Compact A/B Mix-Effects Processor
- Four Keying Layers
- Logo Keyer with Internal Storage
- Extensive Logo Management Software
- Optional DVE Squeezeback
- AES and Embedded Audio Processing
- Automation and GPIO Interfaces
- Relay Bypass Protection



April 19 - 22, 2004
Las Vegas Conv. Center
Booth # SU9530

Contact Your
Local PESA Sales Rep. for More Information



35 Pinelawn Road
Suite 99E
Melville, NY 11747 USA
Tel: +1 (631) 845-5020
(800) 328-1008
Fax: +1 (631) 845-5023

PESA's MCLite Has It All!

Editing

CONTINUED FROM PAGE 64

MacroSystem Digital Video will be stepping into the big time with the Casablanca Solitaire, which includes a built-in DVD burner and removable hard drive. New Quadcam software will let members of the growing "Cassie Cult" cut between two, three or four scenes in the clip bin played simultaneously. The company

promises to show this VCR-sized system working with MacroSystem codecs passing full-resolution HD signals.

Matrox Electronics Systems Inc. will show new real-time filters for its RT.X100 Xtreme Pro edit hardware, including color match, color pass, lens warp and timecode overlay to boost the capabilities of Matrox editing with Adobe Premiere Pro. Rumor has it high-performance HD edit technology will also be demonstrated, but details will be scarce until the show.



Canopus' HDW-1000

You've heard our name. You've heard our products.

If you've watched any TV this millennium, you've heard audio passing through Sound Devices — the fastest growing name in portable audio mixers, preamps, computer interfaces, and digital field recorders. Our philosophy is simple:

Build field-production audio products that improve our customer's work life.

Sound Devices audio specs far outperform any camera's onboard audio. Our 442, 302, and Mix Pre are known for superb audio quality, extensive control, and field-tested durability, making them the portable mixers of choice.

You'll find our gear in the hands of production crews working with ABC, CBS Sports, NBC News and Sports, CNN, NEP, NMT, Fox Sports, National Geographic, and scores of other clients who can't afford to work with anything but the best.



(From the top: **MixPre**, our most compact, two channel field mixer. **302**, a feature-packed, three channel field mixer (the one you'll end up buying). **442**, our top of the line, four channel field mixer (the one you'll want to buy).)

Now we'd like to hear from you.

Give us a call or drop us an e-mail (no spam, thanks). Let us know what you do and what kind of audio gear you're using. We'll help you determine which Sound Devices product is right for you and then get it in your hands — either to try or buy.

SOUND DEVICES

Sound Devices, LLC · Reedsburg, Wisconsin USA · 800.505.0625 · www.sounddevices.com

We will definitely see the new Version 3.0 for Media 100's 844/X multistream Windows-based NLE at NAB2004, a software upgrade the company is calling the "Visual Effects" release because it brings with it an advanced keyer, 3D DVE and real-time shadow and glow effects. The GenesisEngine, the heart of 844/X, will also be seen on the Macintosh OS X platform in the new Media 100 HD system, whose timeline is compatible with earlier generation Media 100i models on Mac platforms and can be used in tandem with 844/X via the 844/X software codec.



Editware's Fastrack SE

The Pinnacle Systems booth will feature demonstrations of the Version 5.6 software upgrade for the Liquid line of Windows-based digital editors, including a capability boost to its "any format" Liquid blue system. In addition to adding functionality to a smoother workflow, Version 5.6 lets you capture material on one system and immediately begin editing it on another, while also integrating DVD authoring into the editing environment through an enhanced MPEG encoder.

NAB2004 will be the first opportunity to see Quantel's new Version 2 software for its generationQ "resolution coexistent" line, boasting a powerful process tree interface option. The iQT digital intermediate system and eQ HD editor should be seen integrated with SGI InfiniteStorage solutions featuring the SGI InfiniteStorage Shared Filesystem CXFS.

Sony is expanding the usefulness of its XDCAM professional disc capture systems with two new digital edit configurations for its XPRI line of NLEs. XPRI Mobile is an editing software application that runs on most Windows laptops. Packages edited using proxy video on XPRI Mobile can be transferred up to 20x speed back to the studio where they can be auto-conformed on the desktop XPRI MetaStation in full resolution. In addition to MXF file import and export, XPRI MetaStation offers effects and an optional real time 3D DVE.

The original XPRI NLE will get Version 7, which features advanced color correction, multicam editing and integration with the XDCAM system. ■

by Claudia Kienzle

In their latest product offerings for NAB 2004, router and switcher makers are striving to expand input/output capacities, add layers of hardware and software for SD and HD formats, and accommodate servers, VTRs, DDRs, CGs and DVEs.

PRODUCTION SWITCHERS

Brick House Video Ltd will be exhibiting a new incarnation of its VTB-1D SDI digital video switcher with upgraded front panel, switchable program/preview composite monitoring and variable genlock timing.

The company also will introduce Neptune, a 1 RU chassis, feature-rich dual-SDI frame synchronizer to the U.S. market. The unit can be configured as two fully independent channels or as an intelligent switch that selects the best input based on operator criteria.

Additionally, the VTB-2D rack-mount SDI switcher, with dual-channel downstream keyer, will be featured.

Broadcast Pix will be showing Version 2 of its Broadcast Pix Studio System, featuring a digital switcher, animatable Inscribe CG, DDR, stillstores, three DVEs and a StudioMemory recall system.

In Version 2, Broadcast Pix offers several options: a camera-control option for robotic control of Hitachi and Sony cameras; a Pinnacle 3D DVE for effects, such as warps, page-turns, splashes and stained glass; and a dual DDR that doubles the capacity of the integrated DDR unit to two channels, with two hours of storage.

Echolab will debut Secret Project X2004 SDI switcher; and the Ckey4 chroma-key, which works outside the typical RGB space across the entire hue spectrum. The company is also introducing a DVS Uni-Module that gives I/O flexibility to its Echolab 2000 and 5000 digital switcher series.

The Eyeheight Ltd. irisHD is an HD-SDI digital vision mixer with up to eight inputs and up to eight downstream keyers. It offers full 10-bit mixing, programmable mix times and automatic or manual transitions. The U.K.-based company also will feature the vistaHD compact A/B vision switcher for space-challenged trucks and facilities. The vistaHD supports 1080 HD in 24, 25 and 30-Hz frame rates to SMPTE-272 specification.

FOR-A Corp. of America will debut the Hanabi HVS-1000HS, a 1 M/E version of its Hanabi HVS-3000H/S 2 M/E digital HD/SD production switcher. With eight to 16 inputs, the Hanabi HVS-1000HS is switchable between 1080i, 24p and 720p HD and SD.

Ross Video will feature its new Synergy MD and MD-X series of 10 multi-definition digital production switchers, from the Synergy 100 MD single M/E switcher to the Synergy 4 MD-X 4-M/E switcher. Ross also will debut Version 1 of its overdrive production control system, which integrates with its Synergy SD and MD-X series production switchers to enable touch screen control over servers, VTRs, DDRs, audio mixers, robotic cameras and routers.

Sony Broadcast is also taking its high-end switcher technology to a lower price-point with the introduction of the

MFS-2000 multiformat switcher with digital effects. The MFS-2000 will be available in one and 1.5 M/E versions with up to 20 inputs.

Thomson Broadcast & Media Solutions will show the Grass Valley Kayak HD digital HD/SD production switcher. The 3 RU switcher features 16 inputs, four fixed outputs and 10 timed auxiliary buses. The company will also mark the NAB debut of its "TV Station in a Kit," complete with Grass Valley digital cameras, networked attached storage systems (NAS), iVDR digital video recorders, switchers, routers, master control systems, nonlinear editors, news playback systems and modular conversion and distribution solutions.

ROUTING SWITCHERS

Along with its BUFMC routing switcher control system for PCs, BUF Technology will introduce free BUFkeys software for its VQC-3000 Panel, which automatically enters TC numbers into third-party applications such as spreadsheets and QC databases.

Evertz will introduce the MVP multi-video display processor for video wall displays and signal monitoring applications. The system works with inputs and outputs of any size. The company also will show its (HD9045PVE) production VANC encoder system for management of HD video-acquired production material; the 7764AVM-4A HD/SD Quattro auto-detecting HD/SD card for extending the Quattro AVM's HD signal monitoring capabilities.

FOR-A will show its RS-SD808, an 8 x 8 SDI router that fits in 1 RU. The unit can also route composite video. For HD applications, the company will spotlight its RS-HD808 (8 x 8) and RS-HD1602 (16 x 2) routers, which can route any digital signal from 143 Mbps to 1.5 Gbps. These are both 1 RU units.

Leitch Technology will show its Panacea Clean Switch, a digital video clean switch that handles multiple channels of SD and HD signals simultaneously. Leitch also will show its Panacea routing switchers and the new Panacea Lite, a small router for a 12x1 matrix; and

serial digital video router and A128M stereo analog audio router are two new versions for its VikinX 128 x 128 modular routing concept. The fully redundant routers offer control features and provide surveillance of the router's vital parameters.

nVision will feature the NV7512 TDM digital audio router, a two-channel system expandable from 512 x 512 to 2,048 x 2,048. Also on display will be its NV5128 multiformat router, now expandable to 128 x 128 HD signals, increased from 32-squared to fulfill the I/O requirements of medium-sized facilities; the NV990 router control system; and the NV8256-Plus expandable large-format digital video router with A/D and D/A converters.

Pesa Switching Systems' latest routing switcher, Premiere, is a small, expandable router that can be configured as 8 x 4, 12 x 8, 16 x 8 and 16 x 16.

It handles a variety of signals, including composite, Y/C, RGB, RGBHV and stereo audio; future releases will add SDI, HD-SDI, and AES-EBU. The company also will introduce the Klikcontrol Internet-based router control system, which operates over Ethernet via TCP/IP and uses a Windows Internet Explorer client interface.

Additionally, Pesa's Cheetah HD/SD digital routing switcher and Ocelot HD-MR multirate digital router will be on display.

Pro-Bel will show enhancements to the Sirius multiformat routing switcher it debuted at last year's show. The Sirius router line now includes more signal types and features, such as advanced input/output monitoring. Pro-Bel has also expanded its Procion router control with a new user interface.

Quartz Electronics' latest multiformat router supports both HD and SD video formats; analog and AES audio and Topaz video and audio routing switchers, including HD, SD, AV and AA models, in 16 x 16 and 32 x 32 sizes.

Ross Video will debut enhancements for its Talia NK routing systems, ranging from 16 x 16 to 32 x 32, and supporting SDI and analog video; AES/EBU and analog audio; data routing; and a Web browser-based configuration system. Also on display, the company's new multidefinition (HD and SD) additions to its Gearlite terminal equipment line, including the DAC-9213 multidefinition digital-to-analog converter, and the SRA-9201 multi-definition reclocking DA.

Sigma Electronics' DV5515 is an HD/SD frame synchronizer with built-in embedded audio management and delay compensation, new to its OctaStream line

of digital audio management equipment. Also, HD tri-level sync generation has been added to the RSG470 series of test and reference generators. Sigma also will show new HD presentation switching routers for projection and display systems.



Thomson Grass Valley's Maestro



nVision's NV5128

Integrator Gold, which now mixes analog and digital video signals in the same frame with optional input and output conversion modules, providing scalable routing of digital signals in several sizes.

Multidyne Video & Fiber Optic Systems will introduce a line of routing switchers for HD-SDI and SDI video controlled by programmable panels and intelligent software GUIs, with matrix sizes ranging from 5 x 1 up to 1,024 x 1,024.

Network Electronics' HD128M HD

Sierra Video Systems will feature its new Shasta 1602HD-LS, a digital router that switches HD video with embedded audio without pops or clicks, in a 4 x 2 or 8 x 2 configuration, with a full feature set. Additionally, the company will introduce the Lassen 3232VS, which houses 32 x 32 composite video and stereo audio matrices and a built-in front control panel in a 3 RU frame.

Snell & Wilcox has added 17 new HD/SD models to its IQ Modular line, including: the IQMUX 40 HD/SDI remultiplexer; IQSDA0 HD-SDI/SD-SDI distribution amplifier; IQSYN20 HD/SDI frame synchronizer; IQSRT00 HD/SDI 5 x 2 router; IQSRT10 HD/SD-SDI 8 x 2 routing switcher; and IQMDA00 HD-SDI monitoring distribution amplifier.

The company also will show its Roll Call intelligent control and monitoring system; HD up-, down- and cross-converters, plus the Prefix CPP1000 HDTV compression pre-processor.

The ISIS Group will display its Innovation 16 x 2 broadcast router with input DC clamping. (DC clamping on all analog video inputs eliminates the need for clamping DAs.) Other features include hot-swap front-loading modules for installation and upgrade from analog to digital video and audio.

Nine new sizes of its Innovation multimedia routing switchers will debut, ranging from 8x4 to 32x32.

Utah Scientific will show its UTAH-400 digital routing switcher, with 64 x 64 matrix and AES router in a 4RU frame; the UTAH-400 with analog audio and video I/O option; and the SqueezeMAX

ROUTERS AND SWITCHERS, PAGE 96



by Susan Ashworth

Beating as the heart of a broadcast facility, storage systems have come a long way over the last few years. Networked and interoperable with a number of third-party systems, today's storage technologies come in all shapes and sizes: as servers, video recording devices, DDRs, clip- and stillstores, and even as removable media like videotape, DVDs and CD-ROMs. For attendees to NAB, this year's show promises a growing breadth of options, whether for small single-channel operations or facilities that handle hundreds of audio and video channels.

TRANSFER & STORE

After introducing its new line of ImageServer video servers at NAB 2003, 360 Systems is back with new software applications including MXF file transfer, VideoFax, DV operation, clip trimming, still-store-graphics animation, playlisting and slow-motion. A PAL model for the ImageServer 2000 has also been released.

This year, support equipment for hard drives and storage will be available from Acard Technology in the form of new RAID controllers and bus masters for data transfer to storage.

Alcorn McBride will spotlight two versions of its Digital Video Machine playback devices, including an HD version. For SD playbacks, the big news is the Digital Video

Machine 4, which provides four MPEG-2 servers in a single box.

In addition to its new disk recording technology, Ampex Data Systems will showcase its DST 914 data storage library.

Arena-Maxtronic will highlight products for disk-to-disk backup, nearline and online storage, some with S-ATA technology for improved point-to-point data transmission topology. Also new, a four-bay FireWire/USB combo to the IDE tower RAID product.

Accom comes to NAB touting a slew of new features and functions, including new HDTV hardware for the Abekas 6000 production server. The system can now mix and match SD and HD channels in the same server with I-frame compression for frame-accurate editing in SD and HD. The company will also launch APR/ClipStore, a new lower cost uncompressed recording system. Accom will also show its WSD/HDe DDR, a multidefinition digital disk recorder for long-form applications.

Avid Technology will show off the newest features in its Avid DNA family of products, including expanded networking and workflow capabilities.

BlackBall will demonstrate its BlackMagic rich media storage system. The Workgroup Edition allows five users to access a BlackMagic desktop volume through a Web browser, while the Server Edition can handle from 10 to an unlimited number of users. Each system offers users a corresponding search engine.

ARCHIVE & MANAGE

Archiving and management come together in the StationMaster Media Management Suite from BlueLine Technology. This automation software incorporates media management and archiving in one application. The company's JustArchive software interfaces BlueLine's MARS DVD with other automation and MPEG systems. Other storage options include the HDSD data storage system, which will store 1 TB on a single 120mm

disk with a data transfer rate of 3.2 Gbps.

Designed for graphics-intensive applications, Boxx Technologies will demo its high-end workstations, including RenderBoxx and Render Nodes.

New products from Century Global include the dual-bay FireWire 800 storage system and the aluminum FireWire 400 and 800 storage system.

New from Chyron Corp. is the Clyps HD, a real-time HD clip server with uncompressed HD video and key, in and out. Designed for graphics, the Clyps HD has up to 1.3 TB of storage enabling up to 180 minutes of lower third animations or 60 minutes of full-frame video. Included is an intuitive GUI with browsing and database functionality. Automation interfaces are also available, and a second channel is optional.

Ciprico's line of digital media storage includes the DiMedia 1700, its next-generation Network Attached Storage (NAS). The system offers more than 1,000 Mbps sustained bandwidth to multiple clients or over 25 streams of high-capacity DV; 1.5 TB of storage with 12 hot-swappable SATA drives; redundant power supply and bandwidth management options. In addition, Ciprico will introduce its new FibreStore 2212A, which takes advantage of the latest serial ATA technology.

Doremi Labs will display its new MCS-HD four-channel HD video server featuring two record and two independent play HD video channels with shared storage and selectable compression rates.

For HD and SD applications, DVC Digitalvideo Computing will show the ClipRecorderHD, an uncompressed HD and SD digital disk recorder with 4:4:4 and 4:2:2 storage capabilities, Cineon and DPX file format options, and RS-422 master/slave proxy encoding. Also on display, the ScreenDiskDDS, an uncompressed playback system for film, 2k and HDTV; ScreenDiskFSP, a frame sequence processor workstation; and CineRAM, a mobile, uncompressed, 4:4:4 digital cinematography recorder with a recorder pack for HD-digital cameras.

DVS will showcase its line of video systems and digital disk recorders, including HDStationPlus and HDStationRGB/2K. Designed for high-end post-production applications, the DDRs are based on Windows or Linux and enable an operator to capture, process and play out HDTV data either manually or automatically using batch programs.

Enseo will bring its line of server and storage options to NAB, including its Star HD server and Channel Efx Server.

In addition to new encoders, Envivio will showcase its streaming server options, including the 4Sight MPEG-4 streaming server.

A provider of IP video-smart network devices, Exavio will come to NAB with ExaVault in hand. This storage subsystem is comprised of a Linux-based controller, ExaView management software and scalable storage arrays from 3TB to more than 120 TB.

Making its NAB debut is Fast Forward Video's DigiDeck digital video recorder. Based on the company's Recon DVR technology, Fast Forward's DigiDeck records to IDE hard drives and is available with com-

posite and Y/C input/output, two channels of unbalanced audio, genlock, timecode I/O and RS-422. The system can record up to nine hours on a single drive.

With their eye on the broadcast, post, security, medical and presentation markets, Focus Enhancements visits NAB with its FireStore FS-2 studio DTE technology. With a rackmount chassis, analog and digital audio/video support, and industry-standard control capabilities, the FireStore FS-2 DDR can be used as a tape deck replacement in a variety of markets.

FOR-A comes to the desert with a new multichannel DDR, the LDR-4. Features include a 120 GB hard drive for up to 30 hours of DV-quality record time per channel. Designed for multicamera live digital sports production and broadcast, the LDR-4 DDR can record every camera input of up to four channels continuously using MPEG-2



Omneon's Spectrum

long GOP compression onto a single hard drive. In addition, video feeds can be viewed and monitored onsite or remotely with any standard PC.

Huge Systems will demo its HMV-320R, a redundant disk storage system capable of sustaining 10-bit 1080i high-definition content from five disk drives. Designed as redundant disk storage for all DV, SD and HD content, the system utilizes SCSI Ultra 320 technology.

IBM will have its slate of workstations, eServers, storage drives and content management systems on display this year.

RECORD & PLAY OUT

WSD/HDe, new to Accom's series of universal format digital disk recorders, will now have 2.5 hours of built-in recording capacity at 24p format for long-form applications such as telecine, digital film, DVD encoding, post-production, and broadcast playout.

New from BUF Technology this year is the "Sport" Replay System, a miniature full-featured video server built into a high performance control panel. Sport adds slow motion instant replay capability to any existing mobile or permanent installation. No breakout cables are needed, according to BUF.


The VSN Matic play-out and video server will be found in the Just Edit booth. The system is capable of recording and playing back videos from hard disk in MPEG-2 or DV25 as well as controlling video and sound mixers, VTRs and other equipment. Also on display, the VSN Legalrec, a backup recording system that digitizes material in VHS quality using MPEG-4.

JVC Professional Products comes to NAB with its new mini-HDV recorder/player, the CU-VH1US. The system has 720p HD recording via an IEEE 1394 input. Features include a built-in 3.5"

STORAGE, PAGE 84

network
the innovator

ROUTERS • FIBER OPTIC TRANSPORT • SIGNAL PROCESSING



Visit us at NAB.
Booth SU11606

Contact Network Electronics
Phone: 800 420-5909
E-mail: ussales@network-electronics.com
11075 South State Street, Suite 27
Salt Lake City, Utah 84070

www.network-electronics.com

LATEST TECHNOLOGY
It's a competitive world. You need the latest and the best technology to stay at the top of your game. Our MTBF numbers are industry leading and will give you peace of mind.

QUICKEST DELIVERY
No more waiting! Our huge inventory guarantees speedy deliveries. 50-100 small routers usually ship in 5 working days; 10 routers or less can ship the same day.

FASTEST SERVICE
Through our Advanced Replacement Policy you will receive a new unit BEFORE you send the old one back - no questions asked!

HIGHEST INNOVATION
Need space? Need flexibility? Need expandability? Our compact routers, signal processing products and optical modules address every format in the most configurations available today.

3 YEAR WARRANTY - OR LONGER
Worry free! Stress free! Our extensive warranty gives you peace of mind for 3 years. And if you want even more ask about our NetCare Service that extends your coverage to 5 years or longer.

TOTAL PICTURE
A full range of products to accommodate every need, every format, every budget. Our TSS (Technical System Sales) Group is ready to design your system to suit your requirements at prices you can afford.

see the difference...

HDTV SOLUTIONS from MRC

From the leader in video microwave links for HDTV transmission, MRC announces exciting new COFDM high definition solutions for "live from the field," all the way to your "off air" broadcast

This year at NAB 2004, MRC demonstrates the latest advances in airborne, portable, ENG, SNG, and public safety applications. Product showings will include REPORTER™, STRATA™, QuikVue™, CodeRunner™, TwinStream™, and DAR Plus™ radio systems, along with the latest flyaway satellite systems by Advent and CML.

Visit our booth this year and you'll see why MRC is the choice for your digital solutions.

Watch our web site for announcements about live demonstrations, new products, and upcoming events.

NAB

THE WORLD'S LARGEST
ELECTRONIC MEDIA SHOW

April 11-22, 2004 - Las Vegas, NV

Booth # C3206



A Valley Company

Midwave Radio Communications
101 Wilbur Ave. Bldg 3
North Billerica, MA, USA 01862-1250
+1-978-671-2700

www.mrcbroadcast.com

Storage

CONTINUED FROM PAGE 76

LCD display, downconversion capabilities from HD to 480i for playback on standard monitors, and digital dubbing via IEEE-1394. Also new this year will be the SR-MV30U, a DVD-R dubbing recorder that serves as a dual-format S-VHS/DVD-R.

Attendees looking for content storage from Leitch will find it with the Nexio server system. The technology supports multiple compression in SD and HD, industry-standard control protocols, MXF/AAF file interchange, and ASI interfaces. Nexio's storage area network can be integrated with added storage, DVD and tape-based archives. The NEO VR, a digital video recorder packaged on a single module will also be shown. The recorder is integrated into Leitch's NEO platform and controlled by the NEO-VR command center application.

In the server arena, Logic Innovations will showcase the ECS-1300, an edge content server for ATSC and DVB networks. Features include VOD cache and streaming capabilities for IP-based video including MPEG-4, WM9 and Real Networks.

Matco will demonstrate the MA-3200, an MPEG-2 video server with redundant power, RAID-5 hardware, hot-swappable drives, up to 2 TB local storage and the capacity to handle from one to five channels. Also on display will be the MA-3300 MPEG-2 video server, which can handle up to four channels and up to 4 TB local storage. The company's MA-3400 and MA-3500 video servers can handle up to 14 channels and offer up to 1.5 TB local storage. Other storage options include the MA-4000 series of storage servers and storage arrays.

Storage needs will be met at the Maxell booth as the company extends its DVD line with the DVD-R Plus Series for professional video and data storage applications. DVD-R Plus has a 4.7 GB capacity and currently supports 8x write speeds. To help ensure high-

quality recording and noise-free playback, Maxell uses proprietary organic dye recording layer materials with the DVD-R Plus Series. This new disk also has a pre-recorded shelf and archival life of more than 100 years.

Once media is encoded onto a video server, keeping that file in a digital state is possible with TeraStore from NVerzion. Several terabytes of nearline storage are available in the TeraStore's compact, rack-mountable, networked-based server expansion system.

Omneon Video Networks will showcase its Spectrum media server and announce expanded HD format support to the MIP 1002 Mediaport SDTI media interface adapter which will enable Omneon technologies to support Panasonic's compressed HD format, DVCPRO-100, in addition to MPEG and HDCAM.

Other initiatives include native support for MXF across the Spectrum line, allowing users to select QuickTime or MXF. Storage comes in the form of Omneon's Spectrum for Production, the company's shared storage infrastructure for collaborative production. The company will also demonstrate enhanced edit-in-place capability for news and video editors. The company's Spectrum for Distribution multichannel, multiformat playout servers will also be on display as well as the Spectrum for Archive system, designed to store and manage media assets.

New storage products for its solid-state, tapeless P2 system will be shown in Panasonic's booth. The line includes the AJ-SPD850 studio recorder, the AJ-PCD10 card drive and AJ-P2C004 4GB and AJ-PC002 2 GB modules. (See Panasonic, p. 40.)

Also new from Panasonic is the AJ-SD93 DVCPRO50 VTR. This 50 Mbps feeder deck offers IEEE-1394 interface for nonlinear editing and video applications. The system records DVCPRO50 and DVCPRO, and plays back

DVCPRO50, DVCPRO, DV and DVCAM.

Pinnacle will come to NAB to highlight several storage and server options, as well as technologies for streamlining news and graphics distribution. Palladium Store systems, Thunder servers and MediaStream playout servers will be displayed.

Pioneer Electronics' newest recorder is the PRV-LX1, a modular DVD-video recorder. The system offers real-time video recording capabilities to streamline DVD video capture, compression, authoring and recording. The recorder can transfer video and audio content to DVD and customize DVD menus and chapter points, a product that Pioneer says is a first in a standalone video recorder.

SeaChange International will display its Broadcast MediaCluster play-to-air system which, when combined with the online SeaChange Broadcast MediaLibrary, scales to 24 TB of centralized storage that supports any media file format and devices.

ScienTek will highlight its server/storage options at NAB, including the PR316FS, a 3U rack-mountable chassis system with hot-swappable drives, redundant power supply, RAID support and a monitoring/management utility. The PR312 will also be on display. This 3U rack-mountable system has hot-swappable cooling fans, up to 12 GB DDR

NTSC/PAL, supports 1080i, 720p, 480p and 480i as well as up- and down-conversion.

With an eye on improving post-production workflow, SGI will be at NAB to show off SGI InfiniteStorage for production. This system replicates post-production workflow by incorporating applications from Alias, Apple, Discreet, mental images and Quantel. Using InfiniteStorage Shared Filesystem CXFS, multiple content creation seats on any operating system can now share SD, HD and 2K files in a heterogeneous client SAN architecture. The system offers simultaneous support for Mac OS X, IRIX, Windows XP, and 32- and 64-bit Linux clients.

SGI will also demo the enhanced MXF capabilities for its SGI Media Server for broadcast as well as Altix 350, an Intel Itanium 2 Linux-based mid-range technical server for rendering.

Software Generation will demonstrate its FlashNet backup and archive management software on a number of booths at NAB2004 including Asaca, Quantel and Thomson.

TAPE OPTIONAL

In addition to its lineup of recording and server technologies, Sony will debut DigitalMaster DVCAM, which features a dual active magnetic layer to reduce dropout and error rates. Compared to other tapes on the market, Sony said its DigitalMaster series delivers 50 percent less tape shrinkage for increased physical stability.

Materials Exchange Format (MXF) is popping up in various places in the industry, and Sony will show its server-based Newsroom Production System that uses MXF to transfer, ingest and share footage. The system consists of newsroom software, RAID-based servers and networking components, and can support more than 12 NLE workstations.

Sony will also introduce an i.Link (IEEE-1394) port as a new standard feature on its J Series of videotape players. These players are popular for tape logging and ingest into NLE systems, and the new i.Link feature will simplify connection to other DV-compatible equipment.

SpectSoft plans to highlight its 10-bit uncompressed DDR with asset management and editing features, including RGB color correction, 2:3 pulldown and RS-422 control. The file system stores individual frames as well as clips in SD and HD.

Graphics get new treatment with Spencer Technologies Newstore-Max, a four-channel still- and clipstore with 3D-DVE and a touchscreen GUI. Also on display will be "Branding Iron," a multichannel server designed to help enhance station branding.

Teleste Video Networks will show off BLUEbox, a platform for storing and playing compressed digital video, audio and data.

ISIS will showcase OpenStore, a tapeless transmission archive system that offers user-selectable formats, resolution and data rates; automatic recording; analog video and audio connections; RAID-5 protection; and still picture, slo-mo and viewable shuttle of selected sequences.

In addition to its brand of master control and production systems, Thomson will showcase its MSeries iVDR Intelligent Video Digital Recorder, Profile XP Media Platform systems, and companion storage and server solutions.

Xytech Systems will show its MetaVault library system, which will be integrated at NAB with DAX, Xytech's new digital asset management system. ■



Panasonic's AJ-PCD10 card drive for P2.

ECC memory, dual built-in Ultra320 SCSI channels, dual built-in Gb Ethernet ports and a built-in SCSI-SATA RAID controller.

Sencore will introduce its VP 3340 Video Player, which provides three HDTV outputs including YPbPr/RGB composite

MULTI-LINGUIST

Introducing

**HD/SD
UP/DOWN/CROSS
CONVERTER
MODEL HD8021**

Model: HD8021 HDTV
HD/SD-SDI UP/DOWN CONVERTER

DIGITAL INPUTS: SMPTE 292 or SD 258M-C Auto Switching

ANALOG OUTPUTS:
Analog HD: 720p, 1080i and 1080a
SD: Composite Component and Y/C

DIGITAL OUTPUTS:
Dual-rate HD/SD-SDI (switchable input/output)
Dual-rate HD/SD-SDI (up or down) Converter

User Adjustable: Aspect Ratio and Letter Box Control

CE

Decidedly slim, savvy and user-adjustable, the HD8021 runs a full 10-bit video path with dual-rate digital in, digital out and 12-bit analog outputs. This rugged powerhouse converter defines i to p and p to i with exacting signal integrity as it readily handles 601, 720p, 1080i, and 1080/24p (including 3:2 add for 60-fps apps). It even drives XGA analog monitors, overlays safe-area reticules and converts aspect ratios. From HD to SD, SD to HD, HD to HD, and SD to SD, the HD8021 brings forth real conversion affordability and performance at only \$2,995.

COBALT DIGITAL | 800.669.1691 | www.cobaltdigital.com

See us at NAB2004 Booth #SU9520

www.bhphotovideo.com



Apple G4 Turnkey Systems



Avid Xpress DV



Pioneer DVD-R/RW Writer



Sony PVM-20N5U



Panasonic AG-DV1000



Canon XL-1S



Sony DSR-25



JVC GY-DV500U



Sony DSR-370L



InFocus LP-650



Panasonic AG-DVX100



JVC BR-DV600UA



The Professional's Source

When in New York City

Be Sure To Visit Our

SuperStore



420 Ninth Ave.

Between 33rd & 34th Streets,
New York, N.Y. 10001

For Orders Call:

800-947-9907 • 212-444-5007

or Fax (24 Hours):

800-947-7008 • 212-239-7770

Store and Mail Order Hours:

Sun. 10-5, Mon. thru Thurs. 9-7

Fri. 9-1, Sat. Closed

We Ship Worldwide

CALL LETTER TV STATION? WIN A \$100,000 DIGITAL MAKEOVER.



**NAB BOOTH
C.6421**



Are you planning to digitize or upgrade the infrastructure of your call letter TV station? Are you considering how best to implement the file-based broadcasting infrastructure of tomorrow?

If so, make sure you visit Snell & Wilcox at NAB 2004. You could win for your station our fantastic "Digital Makeover" prize of Snell & Wilcox signal processing and control infrastructure products, to the value of \$100,000.

To take part in this unique prize competition, all you have to do is sign up online before on April 18, 2004, and confirm your registration by visiting our NAB booth (#C.6421).

It's as simple as that. And because entry is limited to call letter stations only, your chances of winning this amazing prize are surely far better than any other odds you'll get in Las Vegas!

For full details go to www.snellwilcox.com/digitalmakeover. Restrictions, terms and conditions apply.

Registration closes April 18, 2004



Automation

CONTINUED FROM PAGE 70

master control room.

Harris Corp. is introducing "Digital Ingest," a new component of its Harris Resource Suite (hrs) product. The software-based system allows a facility to automate front-end media ingest and transfer processes for pre-prepared content that arrives on media delivery systems, such as Media DVX.

Media Ingest will also be demonstrated with advanced features such as batch capture (tape to disk), scene recognition, and proxy creation to the media ingest process. Also new from Harris is ADC-25, a scaled-down version of the company's ADC-100 system, which schedules, manages and controls programming playout over a wide range of devices.

Harris will also provide the first public demonstration of its Broadcast Presentation Manager scheduling interface.

New from Leightronix is its TCD/IP System Control with Integrated Digital Video Messaging. Features include machine control for up to 64 VCRs or DVD players, control for select video/audio switching matrices and standalone operation with remote access via a TCP/IP network.

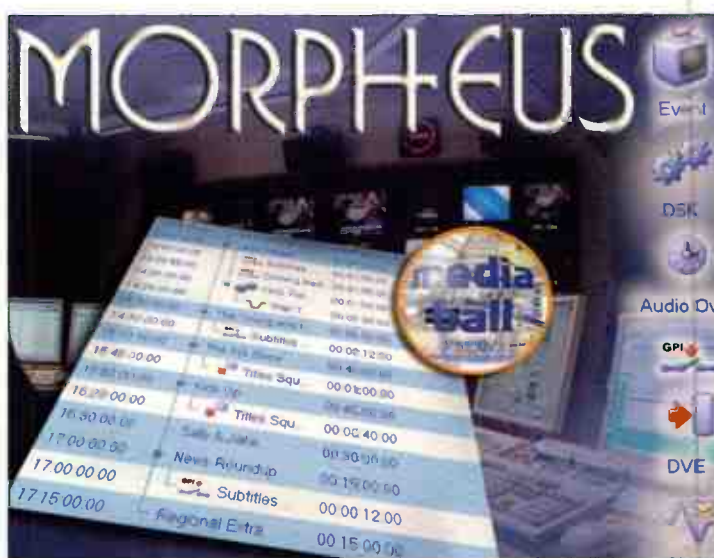
Leitch will demonstrate its NewsNet end-to-end newsroom system based on the NEXIO server platform. NewsNet provides scalable ingest, browse, edit and rundown applications integrated with newsroom computer systems. Of particular interest will be the integration between high- and low-

resolution file systems, and Ingest Control Manager, which provides for scheduled recording of line feeds with "crash record" to capture breaking news events.

In addition to several new server solutions, Matco will showcase established products for the automation market, including automation controller solutions.

Logging and control technologies will be addressed at the mediaproxy booth with the company's Enigma logging solution, which offers media logging to disk and near-real-time monitoring to desktop clients; remote, interactive configuration and management of operating parameters and control/monitoring of third-party equipment.

MicroFirst will demonstrate its Digital Automation System, or D.A.S. for short. D.A.S. can support up to 16 play or recording schedules; 2,000 day-of-air events per schedule; 32 serial devices and unlimited Ethernet control; 500 playout channels; 5,000 clips; 500 logos; and 10 GUI workstations. Interface and control solutions from MicroFirst will include the new GPI 24 x 24, a general-purpose interface unit that provides the bridge between modern, serial-controlled automation control systems and other non-serial site equipment or activities. Also new this year: the MPC-3200, a real-time automation control and interface solu-



Pro-Bel's Morpheus

tion that can execute downloaded event schedules and provides a distributed-control automation environment.

READY TO DUB

NVersion will show its line of products, which can handle dubbing, preparation and delivery, and manage video servers, VTRs, master control switchers, multiplexers, character generators, satellite receivers, cart machines, storage systems, logo inserters, still stores, routers and other devices.

The foundation for much of OmniBus Systems' new automation products is the company's proprietary G3 technology, which

employs standard IT protocols and is based on "component ware" architecture. According to the company, G3 redefines the process for creating new broadcast automation systems by shifting the emphasis to specific tasks. G3 allows broadcasters to control OmniBus automation and selected broadcast equipment. Along those lines, OmniBus will introduce Tx>Play, its first transmission automation system based on G3. Tx>Play is a scalable system for facilities operating from one to eight

channels. The company will also show a G3-enhanced version of Colossus Control. Combining multiple timeline, schedule grid, and event-detail views on a single or dual high-resolution display, G3 Colossus Control allows a single operator to monitor and control up to 32 channels from a single workstation. The company will showcase an N+1 failover redundancy solution for Colossus and Tx>Play Automation Systems. This feature is unique, the company said, because it is automatic and effectively backs up the entire transmission chain, not just the video server output.

The ON-AIR Central range of modules

"Mini" Replay at a "Mini" Price - \$5995

Sport offers all the advantages of disk based recording at a fraction of the usual cost. Sport is intuitive, takes only minutes to learn, and has perfect control over picture motion.

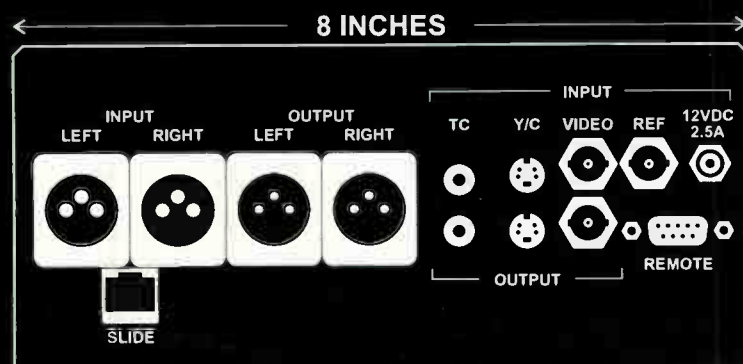
Replays are ready in a flash and highlights are built with ease and speed. Sport records hours of high quality video and audio, yet fits anywhere - zero rack space.

Finally, disk based recording is within reach of any budget.

Video Server Inside!



Sport
Integrated Replay System



Sport Rear Panel



April 17-22, 2004 • Las Vegas, NV
Please come visit us in the
Upper South Hall Booth SU9539



858-451-1350
www.buftek.com
email: info@buftek.com

from ON-AIR Systems automates the broadcasting process from program capture to playout, logging and reporting. And at NAB this year, the newest version of ON-AIR Central, Vers. 4.0, will be launched. According to the company, the new version's use of TCP/IP- and XML-based interfaces brings new levels of interoperability to ON-AIR Central modules, enabling third-party solutions such as newsrooms, subtitling systems and interactive platforms to be integrated more easily.

ParkerVision will have on display an all-new PVTV CRX series of production automation systems, which feature expanded features and functionality.

To better enable a station's automation system to manage and move content and metadata throughout its facility, Pathfire will highlight DMG Automation Connect, which provides hands-free ingest and playout of all programming content. The company's newsroom automation solution includes DMG News Connect, which embeds the functionality of the DMG user interface into a station's newsroom computer system application.

Pinnacle Systems will showcase its DekoVIA software, which integrates template-based Deko automation into a news workflow environment, enabling journalists and editors to work directly with graphics at their news editing stations. Also on display will be the company's DekoCast Badging and Branding technology, which allows users to schedule on-air promotion as needed.

Announced as a "major new automation range," Pro-Bel hits NAB2004 with Morpheus. Able to manage a single channel or multichannel environment, Morpheus includes a concept known as MediaBall that provides a unique way to handle secondary events such as interactive TV, Pro-Bel said.

Ross Video will launch Vers. 1.0 of the OverDrive production control system, which enables touchscreen control over devices used in news, sports or live events. OverDrive integrates with the Synergy SD and MDX series of production switchers, leveraging control interfaces over video servers, VTRs, DDRs, audio mixers, robotic cameras, routers, stillstores and other devices.

Scott Video will showcase Video Time Shifter, which can delay up to four programs simultaneously, as well as Scott Video LE, a TV automation playback system.

IN CONTROL

Spencer Technologies will tout Newscaster, an expanded version of its Newstore system that controls external devices from the system's touchscreen time line. External device control includes robotic cameras, VTRs and routing switchers. According to Spencer, Newscaster makes it easier for one or two persons to run a newscast using legacy equipment. Also on display will be Clipper, a "station in a box" that includes built-in automation to controls all the external equipment needed to run a 24-hour station operation, such as satellite ingest, VTRs and spot insertion, among other devices.

Sundance Digital will show a new version of NewsLink, which adds device drivers for cameras, audio consoles and video switchers to its existing line-up of server, editor and graphic system controls for automating live newscasts. The company will also showcase the Media Prep operator interface.

Promoted as a time and work-saver for

Titan and FastBreak automation systems, Sundance's News Recorder automates segmenting during live recording of content to the video server. Program segments may be marked via tally or GPI input using a specially configured workstation; auto-segmented clips are immediately accessible for inclusion in playlists for re-broadcast.

Telemetrics will showcase a new camera remote control system/newsroom automation interface, among other camera control technologies.

Wireless aficionados will get a boost from Telestream's new MAPone system, a wireless IP transmission application for reducing the cost and complexity of newsgathering. The system improves time to air by enabling journalists to transmit news stories directly from ENG laptops. When combined with FlipFactory, it provides a single-step transfer process from the field directly to newsroom system.

VideoBank will show the Playlist Producer, which automates the playout of material and playlists from the archive to

VTRs and NLEs.

Control solutions from vizrt include viz|media sequencer, used to create customized ticker solutions, manage content as well as control real-time graphics and external devices. Data feed integration and GUI front ends can be custom-designed. The company's viz|conductor solution allows multiple clients to render graphics on a shared cluster of viz|engine servers. The number of viz|engine servers in the cluster can be dynamically configured from a remote graphical interface. ■

ANTON BAUER® OR IDX! ONLY THE AZDEN 1000 SERIES UHF RECEIVER IS DESIGNED AS AN INTEGRATED PACKAGE!

The Azden 1000 Receiver can be purchased integrated into the Anton Bauer® "Gold Mount" (1000URX/AB), or the IDX "V" Mount (1000UDX/VM) for use with any V-Mount battery system, for easy and secure mounting to your camera. Designed specifically for broadcast ENG, the 1000 is a true diversity system with 2 complete front ends, and offers 121 user-selectable UHF channels in the 723-735MHz range.

Here's what Buck McNeely, of the TV Show "THE OUTDOORSMAN WITH BUCK MCNEELY" has to say about the 1000:

"My choice of wireless microphones is the AZDEN 1000 series. I can mount up to 2 receivers in line between the camera body and the battery on the gold mount adapter and it's powered by the attached battery with little noticeable extra drain. We have hundreds of channel options and appreciate the clear reception and range these Azden units deliver."

Craig Caples of Caples Productions in Las Vegas says

"When shooting at the Las Vegas Motor Speedway and televising UNLV games at Sam Boyd Stadium we use the Azden 1000 series, the Anton Bauer® unit and both the 1000BT beltback and 1000XT plug-in transmitter. We've used it for about 2 years in almost every condition and environment, getting a strong clear signal, without any problems, including on the ski slopes of Utah. Caples Productions is proud to use Azden."

Azden has been selected by both Ikegami and Panasonic for their "Slot-In" cameras (model 1000URX-Si).

For complete features and specifications visit our website: www.azdencorp.com.



P.O. Box 10, Franklin Square, NY 11010 • (516) 328-7500 • FAX: (516) 328-7506
E-Mail - azdenus@azdencorp.com



Bodypack transmitter (1000BT) with reduced current-drain for improved battery life, is available with Azden EX-503H, Sony ECM-44H.

Plug-in XLR transmitter (1000XT) works with dynamic mics.

Signal Processing

CONTINUED FROM PAGE 82

product lineup, canaletto, a broadcast-quality digital color corrector providing individual control of R, G and B gain, lift and gamma.

Also new from Eyeheight is its safeEyesHD graticule generator that provides guide markers for all common television and film formats.

FOR-A will spotlight its new UFH-70HS, HD/SD frame synchronizer, an analog-to-SDI frame synchronizer, and the standalone FA-145 frame synchronizer/timebase corrector. Both these new modules fit into FOR-A's Universal Frame chassis, offering customers the means to easily add cards to convert among formats.

Also from FOR-A is the IVS-70HS video stabilizer that can take the shake out of SD and HD video images shot in adverse conditions. Another introduction is the DCC-70HS, a multiformat, multistandard version of the company's DCC-700 digital color corrector with 14-bit, 4:4:4 component signal processing circuitry and the ability to control black, white and gamma (RGB) levels individually or as a group.

Fortel DTV will lift the curtain off its FS-516 A/V synchronizer, a single-board solution for transcoding, synchronizing and processing a variety of source types, including NTSC, PAL and SDI.

Also new from Fortel DTV is its DEC-510 NTSC decoder, a modular card for conversion from NTSC to SDI using the company's QuadraComb filtering. And the company will showcase its 500 Series video synchronizers, QuadraComb-enabled editions of Fortel's 400 series synchronizers.

Harmonic will roll out its DiviCom MV 100 SD Encoder, a real-time digital A/V encoder that delivers compression at ultra-low bitrates for MPEG-2 and next-generation codecs such as MPEG-4/AVC and Windows Media 9.

Also from Harmonic is the DiviCom MV

450 HD Encoder, the DiviCom MV 30 SD encoder, and the Narrowcast Services Gateway (NSG) 9000 series.

Hotronic will roll out its ATS51 (NTSC or PAL) low-cost, full-bandwidth TBC/frame synchronizer. It features front-panel adjustment, and the proc amp controls are preset and adjustable. The ATS51 has a digital comb filter, gen lock and is dual channel.

Also from Hotronic is the model AP41 10-bit TBC/framesync, featuring full control and front-panel adjustment. It has true Y/C processing outputs that include composite, Y/C, YUV and SDI.

International Datacasting will unveil its IPE/IPD 2100 series IP encryptor and decryptor. The unit's features include encryption and modulation of IP video streams, decryption and demodulation of IP video streams, stream manager functionality, IP level FEC (forward error correction) and optional video output.

IPV Ltd. will introduce its SVPClcard, a dual-channel, SDI input, MPEG-1 and -2 encoder PCI card with external LTC timecode input. The SVPClcard ingests high-quality broadcast source material through its two SDI inputs. Material is converted to MPEG format with frame accuracy in real-time and can be streamed out to a LAN via the network connection of the host PC.

Also new from IPV is its nSpectreSDI, a two- or four-channel, SDI input, MPEG-1 or -2 rackmounted hardware encoder with external LTC timecode input. The nSpectre ingests high-quality broadcast source material through its two SDI inputs and converts to MPEG-1 or -2 format with frame accuracy in real time.

JVC Professional Products will showcase its DM-JV600 HD MPEG-2 encoder, which allows creation of an MPEG-2 bitstream from HD. It's designed for mastering D-VHS recordings as well as digital HD terrestrial and satellite broadcasting.

Keywest Technology will return to Las Vegas with its picture-in-picture products, including the QS440 four-channel PIP inserter. Returning to the Keywest booth is

its smaller version of the company's Big VooDoo Picture-in-Picture, which features the ability to switch PIP video with background.

Kinoton GmbH will introduce its FilmReader film scanning equipment for postproduction and film archives. The unit scans motion picture film in a resolution of up to 5k at a speed of several frames-per-second. The FilmReader scanner also offers automated identification of picture damage and dust as well as a very gentle treatment of all kinds of film stock.

Also new from Kinoton is the DIPIT, a complete system for the administration, distribution and presentation of digital content. DIPIT is available in different configurations and resolutions, in single and multichannel versions, for standard SD or HD material, for standalone use or as an expandable network solution.

Laird Telemedia will showcase its Probay, an analog-DV-analog media converter that provides the features of Laird's existing DV media converters in a 5.25-inch computer drive bay enclosure. Housed in the new DVMOD technology, Probay features easy-

Marshall Electronics will display its BC-0301-10 D/A module. The unit features simultaneous composite and S-video D/A (10-bit) conversion with 4x over-sampling. It comes with a power supply, and options include rack mount (V-CRM3) and case holder (V-CB1) for use in desktop applications.

Also new from Marshall is the BC-0909-AD, a universal digital converter for analog HD (SMPTE-274M) YprPb, RGBHV to HDSDI or analog composite, Y/C, YUV, RGB to SDI with support for the 480i, 480p, 720p, 1080 24p, 1080i formats. The analog-to-digital conversion in this module employs 10-bit sampling and data path with 2x over-sampling of chroma and an adaptive filter process. The companion BC-0909-DA converts HD-SDI to analog HD.

Media Links will take the wraps off its MD2000, a 2 RU HD modular processing system including upconverter, downconverter, D/A, A/D, distribution amplifier and audio mux and demux modules. The company will additionally present its MD-006, a mobile eight-channel CWDM system that supports HD and SD with eight bi-directional

inputs multiplexed over a standard HD fiber camera cable.

Also new from the company is the MD 6000, designed to send uncompressed HD video over SDH/SONET



Tandberg's TT1221 IRD HD receiver

to-use front-panel controls and high-quality signal processing, and the drive simply plugs into a standard computer power connector.

Leitch Technology will return to NAB with its DPS-575 digital processing synchronizer, an all-in-one system offering maximum functionality and flexibility in 1 RU. With its many digital signal-processing capabilities, the DPS-575 can be used for digital noise reduction, bi-directional analog to digital transcoding, linear keying, SDI audio embedding/de-embedding and timebase correcting in broadcast, mobile and studio production.

Ligos Corp. will present its MediaRig encoder, a new PC-based real-time MPEG-2 encoding system for use in contribution, transmission and distribution DTV applications. It is an end-user software application paired with a PCI card for ingest and output of digital NTSC/PAL formats, and is available in single or dual-stream configurations.

Magni Systems will feature the direct digital encoding (DDE) capability for its MCP-601 product. The demonstrations will show how PC graphics and text (in DVI or VGA) can be encoded to SDI video, while retaining the resolution and sharpness of the original PC display.

Magni will also introduce two new versions of the MCP-601, one for analog composite or component video formats (MCP-601-A), and one for SDI environments (MCP-601-D). Both models are capable of converting DVI and VGA graphics, and support resolutions from 640 x 480 up to 1,600 x 1,200.

Both new products also offer genlock with keying and Magni's video push-squeeze digital effects capability.

system. It features a direct OC-48 and OC-192 interface with optional protection circuit featuring hitless switchover and error protection.

Media Links' MD-003 is a 3 RU 16-channel CWDM system with error protection and in-channel packet management and monitoring. And the company will showcase its MD-101 portable HD downconverter, which features a direct camera adapter and selectable user presets that are saved in memory.

Miranda Technologies will bring forth a new product in its multi-image display processor family, the compact Kaleido-Alto 10-input display processor, which is designed for monitoring environments requiring fewer inputs. The Kaleido-Alto uses the same image display technology as the top-of-the-range Kaleido-K2 processor, and it features auto-sensing SDI/analog inputs and displays clocks/timers, UMD, tallies and audio metering.

Modulus Video will introduce its AVE-SD video encoder for H.264/MPEG-4 AVC. It is a real-time, standard-definition encoder that supports Main Profile@Level 3 at up to three times the bandwidth efficiency over MPEG-2.

Also new from Modulus is the AVE-HD HD video encoder for H.264/MPEG-4 AVC. It offers non-real-time high-definition encoding and supports Main Profile@Level 4. In addition, the company will show its AVA-SD video decoder and stream analyzer for H.264/MPEG-4.

Multidyne will introduce a pair of signal processors, the VAGC-100 and VAGC-200, which automatically maintain video level at

SIGNAL PROCESSING, PAGE 9

Streaming

Digital Media

File Interchange

Broadcast

Also available:

Get Streaming! Quick Steps to Delivering Audio and Video Online by Joseph Follansbee

An Introduction to Video and Audio Measurement, 3/e by Peter Hodges

8 Years of Partnership

Focal Press - leading international publisher of books in all areas of media and communication technology

NAB - America's #1 source for broadcast related publications

Visit the NAB store located in the LVCC Lobby April 17 - 22nd for these and other Focal Press books!

www.focalpress.com



PRIMUS

More than just a modem.

Imagine a new approach to both ENG and STL Microwave links:

- Modular plug-in design
- Multiple program streams in 12 MHz and 25 MHz
- Integrated MPEG2 encoding
- Configurable modulation methods, COFDM and VSB
- Useable with existing analog or digital-ready equipment

Imagine sending a single ENG van to cover a story and being able to transmit two camera feeds and a tape feed together on one microwave path.

Imagine having multiple backhaul feeds over one microwave path — and doing it over your existing analog link.

Imagine doing all this in 12 MHz.

Nucomm's Primus is more than just a modem. The modulation method is configurable, from COFDM to VSB — it's your choice.

Encode up to four MPEG2 4:2:2 streams — it's your choice.

Multiplex up to four video streams — it's your choice. All this over an existing analog only link. With digital-ready equipment, you can achieve even higher data rates for applications such as HDTV.

Imagine the choices you gain with the new Primus from Nucomm.



101 Bilby Road, Hackettstown, New Jersey 07840 USA

Phone: 908.852.3700 Fax: 908.813.0399

www.nucomm.com

See Nucomm's Microwave Choices at NAB 2004, Booth #1425

World Radio History

Cable Fiber Net

CONTINUED FROM PAGE 79

cables for commercial use will be shown in the Belden booth. Belden AE Access Control Banana Peel composite cables eliminate the use of color-coding and application printing on the four individual cables. Belden will also show its 179DT mini digital video cable for mobile units, and the 7987A low-skew UTP (unshielded twisted pair) cable for video and mini RGB.

Bittree Inc. will exhibit its line of video patchbays, patchcords and accessories.

Clark Wire & Cable will introduce an all-in-one triax crimp tool for use with RG59-style and RG11-style triax cables without changing dies. Also new, the Clark fiber-optic cable breakout reel with military-grade crush-resistant tactical fiber that is crush-resistant. Finally, Clark will expand the base of its cable offerings to provide replacement General/Carol Brand power cords for a variety of techni-

cal equipment.

New from JLC Cooper Electronics will be the eBOX, a 10/100 (Ethernet) to RS-232/422 (9-Pin)/485 and GPI hardware interface. The unit acts as a portal for controlling devices across the building or across the world by using IP addressable, point-to-point architecture to send control messages over existing Ethernet wiring. eBOX features four serial connectors, activity LEDs, 24 GPI inputs and 24 GPI outputs as a standard feature.

Gepco International Inc. will feature its portable HBB hybrid fiber breakout box and the HDR hybrid component distribution rack, a single-space rack chassis for breakout from hybrid fiber camera connectors to discrete electrical and fiber connectors. For audio, Gepco will introduce to its 61801EZ single-pair audio cable in 10 new color options to bring the total number to 20.

Environmental Potentials will debut a number of products, including EP 2000 for removal of surge anomalies and high-frequency noise, EP 2500 main gate protection, EP 2400 rackmount power protection and frequency filtering, EP 2300 low order harmonics mitigation, and EP 2100 series telephone, cable and Ethernet suppression with EMI/RFI filtering.

Gefen Inc. will debut its ex-tend-it HDTV repeater for extending HD video up to 100 feet from the source using high quality copper cables. Gepco will announce that its HD coax is now shipping with individual test results and certification attached to each reel.

Nemal Electronics International will debut a 37-pin (DT12) connector for field and studio applications featuring a low profile, reduced weight, weatherproof insert, wire retention on dust caps and a variety of strain reliefs. Also new from Nemal will be its SND2424 24-pair and SND1224 12-pair audio snake cables. Key features include AES/EBU compliant, 110-ohm, color-coded and numbered pairs.

QVS will introduce its HD multimedia interface (HDMI) cable capable of transmitting both video and audio signals from DVD players, set-top boxes and camcorders to television sets, projectors and other video displays. QVS will also show its UltraThin HD15 VGA cable featuring triple shielding, PVC jacket and molded ends with reversible mounting screws.

Switchcraft Inc. will introduce the Z version of its AAA Series XLR connectors that features reduced part count, wider cable range, and stronger pull-out force.

The company will also debut a line of molded longframe patchcords that the company says are extremely flexible, have low capacitance, are AES/EBU digital ready, and are outfitted with nickel-plated plug fingers. Switchcraft also will show its new MVEZN patchbay, which combines 16 midsize video jacks rated to 3.0 GHz and 24 TTEZN audio jacks with the EZ Norm cam.

Whirlwind will exhibit E BEAM, which the company says incorporates the latest laser technology for Ethernet and CobraNet wireless transmission.

To keep track of all this wire in an installation, WireCAD will show Vers. 3 of its suite of documentation tools. In addition, WireCAD Enterprise Admin Tools allow multiple users to work together sharing global and project specific information.

CODECS, ETC.

Logic Innovations will introduce its ECD-1300 edge content decoder integrated receiver decoder for ATSC and DVB networks, featuring hardware decoding of IP-based MPEG-4, MPEG-2, and MPEG-1 content, streaming or from hard drive storage, with DVR functionality.

Motorola Broadband will demonstrate its all-digital network solutions for cable, IP, and telco transport as well as for HD-over-cable, plus multiplexers and transcoders. ■



ON THE FAST TRACK...

Even if you don't know our name, you know our work.

Riedel designs, manufactures and distributes the most sophisticated radio and intercom technology for customers worldwide in the broadcast, pro-audio, event, sports and theatre industries. And while you may not have seen us, we have been hard at work behind the scenes at such major events as:

SuperBowls XXXVII and XXXVIII Formula One Racing (all events!)
The Academy Awards Winter Olympics at Salt Lake City
MTV Music Video Awards NBA All Star Games

...and many more!

Because our all digital systems are simple to use and easy to install and set up, we have quickly become a favorite among those who demand the best. They know that when it comes to the **FAST TRACK** of live events and broadcasting, there are no second chances!

Come see us at NAB! Booth C11210

RIEDEL

THE COMMUNICATIONS PEOPLE

www.riedel.net Burbank, CA. 818-563-4100

Visit Us at NAB
Booth #C4717

HD CHAMPIONS!



US Patents 6,069,607 and 6,532,024
UK Patent 2,330,475
Other US and International Patents Pending



VTM-450E HD/SD



VTM-440HD/SD



VTM-420HD/SD

Videotek Continues to Dominate On Screen Test and Measurement!

Building on a 30-year commitment to the television industry and Emmy winning technology, Videotek's series of High Definition test and measurement instruments were innovatively designed as complete system solutions for HD, SD, and composite formats. Videotek stays ahead of the curve and sets the standards by providing such features as an intuitive gamut display, pixel zoom, HD and SD data analysis, HD/SD eye pattern, 708 closed caption display, lip-sync and loudness monitoring, Metadata display and alarms, as well as Dolby® surround decoding and display. With all of these features and more, Videotek's HD test and measurement instruments are undoubtedly the dominant players.

Whatever the application: Operations, Engineering, or Broadcast, Videotek has the product that is right for you. Free VTM enhancement and a five year unconditional warranty proves that Videotek is FIVE TIMES BETTER than the competition!

For more information on these and other Videotek leading products, visit our web site or call one of our product specialists today.



VIDEOTEK®
A Zero Defects Company

Toll Free: 800-800-5719 • Direct: 610-327-2292
www.videotek.com

Dolby® is a registered trademark of Dolby Laboratories.

Signal Processing

CONTINUED FROM PAGE 90

standard IRE levels and provide automatic flatness equalization for more than 3,500 feet of Belden 8281 and more than 3,000 feet of RG59U to within +0.05 dB at 5 MHz. The units are designed to automatically compensate for signal degradation for satellite, cable TV headends, ENG, off-air signals and roll-off due to coaxial cable loss.

Network Electronics will introduce the N-Box, a housing for ConQuer and flashlink cards (except DWDM) with its associated standard back-plane.

Also being shown by Network Electronics, its AAV-MUX and AAV-DMUX; HDSOI-CHO-2x1 automatic changeover card; and a range of new ConQuer distribution amplifiers.

One of the companies that made an early bet on the future of digital television was nVision. The company will feature two series of modular products in its NAB2004 booth, each targeted at different applications.

The 4000 Series from nVision is a rack-mount chassis that supports modules for multifunction signal conversion, processing, synchronization, audio embedding and de-embedding, transmission, and distribution. The company's 500 Series is for video and audio signal distribution. Both platforms support data rates to 1.5 Gbps.

Optibase will take the wraps off its MPEG MovieMaker 400 MPEG-4 encoding board. The device encodes FD1 resolution in single-channel configuration or simultaneous dual-channel encoding in SIF resolution.

Also new from Optibase is its VideoPlex HD decoding board, with playlist support for back-to-back and seamless playback. It supports MPEG-2 MP@HL video decoding covering all 18 ATSC formats, and has the ability to choose mapping or allocation tables from MPTS files.

PatchAmp will roll out its multirate wideband digital DA, featuring automatic reclocking and cable equalization for SMPTE 292M, SMPTE 344M and SMPTE 259M. It supports data rates of 143, 177, 270, 360, 540 and 1,485 Mbps, with single 1 x 9 or dual 1 x 4 operation.

Also new from PatchAmp is the PA-3200HD multiformat distribution frame for high-density video/audio applications.

Peak Communications has now integrated the latest MPEG-2 encoding and DVB-S compliant technology with its L-band upconverter into the EMC7002 encoder/modulator. The device requires less than 3 W_o and features a QPSK modula-

tor and an upgrade path that allows additional modulation schemes including 8PSK and 16QAM.

Pixel Instruments will introduce its DG-1200, which corrects for lip sync errors introduced by production switchers with internal DVEs. The product interprets pre-programmed GPI and/or tally outputs from the switcher and generates delay control pulses to steer up to five Pixel Instruments AD-3100 audio synchronizers to automatically eliminate the lip sync errors.

The company will also feature its established VS-5200 frame synchronizer/TBC, AD-3000 audio synchronizer and lip sync corrector, and UMAT-1200 audio monitor/transcoder.

Radyne ComStream will roll out its SE4000 DVB MPEG-2 encoder, designed for mobile broadcast applications as well as network and cable head-end use. It features modulated 70 and 140 MHz IF and L-band outputs, and an L-band monitor port with F-connector cables.

Also new from Radyne is its THE15A HDTV encoder, which supports both DTV broadcast and HD distribution applications. The THE15A provides compliant ATSC or MPEG-2 transport streams at rates of up to 108 Mbps and supports one HDTV service in 1080i, 720p or 480p.

Ross Video will unveil additions to its GearLite compact terminal equipment line with two multidefinition (HD and SD) products, the DAC-9213 D/A converter and the SRA-9201 reclocking DA. Also new at NAB2004 from Ross Video is the ADC-8035 dual-analog composite-to-SDI decoder and the ADC-9033 universal analog-to-SDI decoder, which will accept SD composite, component or Y/C analog input and produce a broadcast-quality serial digital output.

Scopus will premier its Codico E-1800 HD encoder that provides multiformat 1080i, 720p, and 480p support, with 4:2:2/4:2:0 encoding. The E-1800 also provides audio multiplexing and MPEG-LII and Dolby Digital (AC-3) encoding for analog and digital audio inputs.

Also new from Scopus is the Codico E-9000 UniversalEncoder, which resolves the need for an encoding platform for each broadcast format by serving as a universal platform for MPEG-4, Windows Media 9 (WM9), SD and HD encoding formats. The UniversalEncoder provides broadcasters with a migration path from MPEG-2 to new compression algorithms such as the SD and HD MPEG-4 Part 10 (H.264) and WM9 formats.

Sigma Electronics will roll out its new DV5515 HD/SD frame synchronizer with

built-in embedded audio management and delay compensation. The unit is designed to keep audio/SD video and HD video in perfect time.

Also new from Sigma is the addition of an HD tri-level sync generation to the TSG470 series of test and reference generators. A new option module can be added to the TSG470 or TSG 470D to provide three additional reference outputs that can be independently configured for any SD or HD reference.

Skymicro will introduce the Merlin2004 capture codec board, which is completely compatible with previous Merlin models. Features include alpha blending of live video with decoded video streams.



Leitch's DPS-575 synchronizer

Skymicro will also exhibit I/O expansion panels compatible with the Merlin capture codec.

Snell & Wilcox's IQ modular line will see significant expansion with the introduction of 17 new products, including converters, synchronizers, distribution amplifiers, routers and audio modules, all capable of operating in either SD or HD. Among the new products are the IQMUX 40 remultiplexer, IQSDA0 distribution amplifier, IQSYN20 frame synchronizer, IQSYN00 frame synchronizer and IQMUX00 digital audio embedder with synchronizer.

Snell & Wilcox will also introduce a new range of high-performance, low-cost up, down and cross converters. And the company will introduce its Prefix CPP1000 HDTV compression pre-processor.

Tandberg Television will introduce its new TT1221, an integrated receiver/decoder targeted for MPEG-2 SD systems. Replacing the company's current TT1220 IRD, the new decoder adds both standard and optional specifications that surpass the former model's performance while retaining its cost efficiency.

The company will also showcase its ES770 MPEG-2 encoder, an upgradeable extension of its ES710 encoder. It provides low-bitrate encoding, creating MPEG-2 real-time encoding for multichannel systems.

Teleste Video Networks will present its Bluebox platform for compressed digital video, audio, and data. It provides a stan-

dards-based MPEG-2 video networking solution for customers in education, healthcare, broadcast, homeland security, and other corporate and enterprise campus settings.

Telestream will introduce MAPone, a wireless IP transmission application that improves time-to-air by enabling journalists to transmit news stories directly from ENG laptops. When combined with the company's FlipFactory, it provides a single-step transfer process from the field directly to newsroom systems or virtually any server or system at the station.

Also new from Telestream is its FlipFactory News and NewsManager. FlipFactory News provides a single-step digital file transfer process from ingest to destination systems at a facility and incoming media is automatically transcoded and delivered to broadcast servers and newsroom systems.

Teranex will lift the curtain off its XM module, which provides broadcast, cable and satellite providers the ability to perform format conversions (up and down) of source feeds to support a customer's format infrastructure. The module was designed to address high-density traffic areas and fits in Thomson/Grass Valley Kameleon modular chassis.

Also returning to the Teranex booth is its Volare 220 video processing and multiformat converter, which offers SD/HD conversion, MPEG artifact removal, and noise and grain reduction in a 2 RU chassis. The Volare 220 system allows updates as requirements change.

And the company will be showing its Xantus MoCo option, which adds motion-compensated phase-correlated standards conversion to Teranex's Xantus format converter.

The ISIS Group will unveil its SC-108 eight-signal converter, which delivers broadcast-quality conversion from NTSC or PAL to SDI. It features eight independently configurable channels housed in a 1 RU frame, an RS232 port, using computer hyper-terminal capabilities or optional GUI configuration tool.

Thomson Broadcast & Media Solutions will present its Grass Valley modular products, from the multi- and single-function Kameleon and Gecko lines to the Newton Ethernet-based modular control system and NetCentral software for SNMP-based remote monitoring.

The Kameleon product gains SD, HD, and fiber-optic additions. Its I/O additions include four new modules, built-in fiber support and easy activation via plug-in modules. The SD additions include 17 new modules and the HD additions include 16 new modules.

Triveni Digital will debut its GuideBuilder family of PSIP and DVB-SI generation systems, which collect, translate, manage and generate metadata compliant with the ATSC/A65 PSIP or DVB-SI standards. The systems are compatible with all leading MPEG-2 encoders and multiplexers.

Tut Systems will take the wraps off its M2-400 video edge device, supporting MPEG-2 4:2:2 and 4:2:0, and featuring protocol support for IP, IP/ATM and ATM.

SIGNAL PROCESSING, PAGE 101

The HD Maestro™

- Input HD-SDI, output DVB-ASI
- Based on the LSI Logic DoMiNo™ chipset
- Perfect for post production HD content distribution
- PC platform provides flexibility and connectivity

For more information on the HD Maestro™ or any DVEO products, call 858 613-1818. Or visit www.dveo.com



Visit us at booth C6747

Real-time
PC-based
High-resolution
(1080i) HD
MPEG Encoding
Workstation



“WOW”



PRO850

WIRELESS INTERCOM SYSTEM

**That's the typical reaction we get
when broadcast and theatre professionals
see and hear the next generation from HME.**

**The amazing all-new
HME Pro 850 Wireless Intercom System.**

**Call today for a demonstration
and let us “WOW” you, too!**

Intercom Specialties

888.810.1001

Systems Wireless

800.542.3332

NAB

Booth C2525

HME

www.hmepro850.com

Routers

CONTINUED FROM PAGE 75

video effects/graphics unit for master control.

Videoquip Research Ltd. is introducing the RS-44SDI 4 x 4 digital video routing switcher, supporting the SDI video format. The four inputs may be connected to the four outputs under local or remote push button controls. Also, Videoquip

added 1 x 8 digital modules to the analog modules on its MDA-8 modular audio/video distribution system.

CONTROL EQUIPMENT

Broadcast Tools Inc. added the LOV II Loss-of-Video switcher with quad audio switcher; DMS III AES digital monitor/switcher; PS99 programmable time scheduler; the SS 16.16 crosspoint switcher; and the CC-5 Console Controller 5 for interfacing non-broadcast

consoles and audio workstations to the broadcast studio.

Video Equipment Rentals (VER) is showing new HD monitors, cameras, signal processors and plasmas; and a line of audio



Sony's MFS-2000

mixers, amplifiers and speakers, new LED display walls for indoor or outdoor use, large venue projectors and video scan converters and scalars.

With No Limitations... Format Freedom is Yours.



With all the options ProMax has to offer, your productivity is limitless.

ProMax ProMedia Converter, priced at \$2295, can convert virtually any composite, component, S-Video or SDI signal into any other signal including compressed over FireWire. The ProMedia Converter offers high quality embedded audio and is both NTSC and PAL compatible, allowing the unit to work anywhere world wide. The ProMedia Converter is also a standalone, bi-directional solution for converting any of your video and audio signals. Call one of our technical sales representatives today.



- Macintosh G5/2.0 GHz DP Turnkey Video Editing Systems
- Apple Final Cut Pro 4 Software
- Realtime Previews, Color Correction, OfflineRT, Plus Much, Much More.
- Custom Configured Including Decks, Storage, Flat Panel Monitors, Speakers, Cinema Tools, and DVD Studio Pro.
- Systems Include 90 Days of Toll Free Support and Three Years of AppleCare.
- Rack Mounted LAN Storage Available

proMAX

ProMax Systems, Inc.

16 Technology Drive - #106 • Irvine, California 92618
www.promax.com • TEL: 949-727-3977 • 1-800-977-6629

MASTER CONTROL SWITCHERS

Eyeheight will feature a next-generation modular master control system, scalable from an automated A/B mixer to a full-scale system with manual over-ride. The modular playout system includes a mix/wipe module; keyer; audio; voice-over module; internal crosspoints; logo store and 3D DVE.

Miranda Technologies will feature the PresStation multichannel HD/SD master control switcher panel that operates with the company's Oxtel Series Imagestore master control and channel branding processors to provide channel branding graphics capabilities, such as clip playout; dual 3D-DVEs; automated character generation; four layers of animation/clock insertion; and a new master control switcher panel.

nVision will show its new NV5128-MC HD multichannel, 1080i/720p master control switcher; the A/B video mixer has three external linear keyers, built-in squeezeback and logo store, eight-channel A/B audio mixer plus audio overs; and an optional built-in Dolby E decoder.

Pro-Bel will feature its TX500 master control system, scalable from a simple mixer to a multichannel system with multilevel audio support for surround sound.

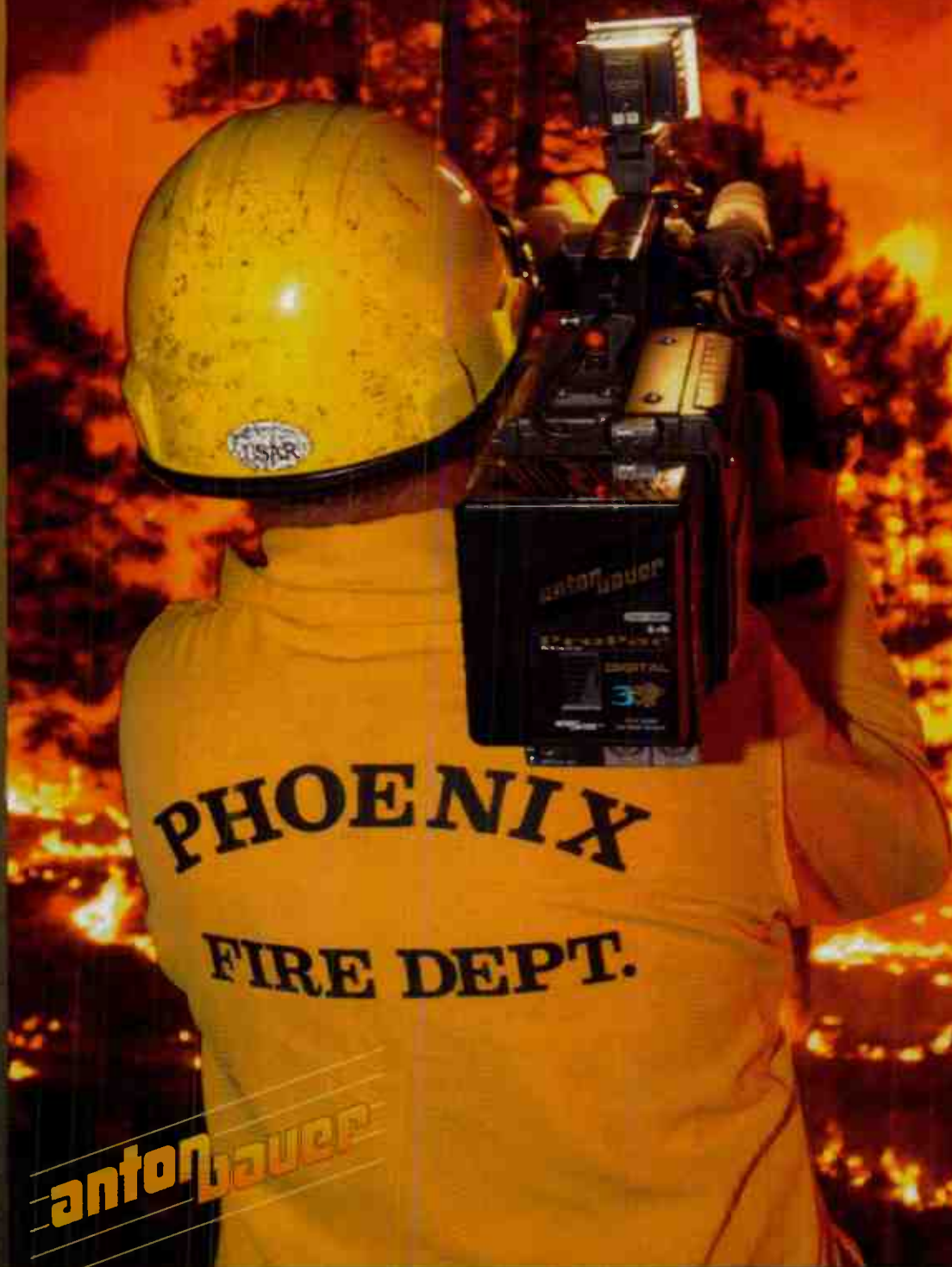
Quartz Electronics is introducing the QMC-HD second-generation master control switcher, which handles all major HD formats, and featuring up to four keying layers. It offers support for 16 channels and optional internal Dolby E decoders, plus enhanced internal logo storage with support for multiple animated logos and multi-channel SD/HD systems.

Thomson Broadcast & Media Solutions will be showing the Grass Valley Maestro master control system, a next-generation HD/SD system that combines embedded branding and full-featured master control capability with traditional signal processing components.

PatchAmp will debut multirate wide-band digital DA automatic reclocking and cable equalization for SMPTE 292M, -344M, and -259M; the PA-3200 HD multiformat distribution frame for high-density video/audio applications, such as mobile and flight packs; and the Broadcast Brick single DA frame.

Snell & Wilcox will debut the IQ modular component infrastructure system, featuring converters, synchronizers, distribution amplifiers, routers and audio modules—all capable of SD or HD resolutions. ■

A PROFESSIONAL SELECTS
HIS EQUIPMENT KNOWING THAT
THERE ARE NO SECOND CHANCES.



THE POWER BEHIND THE BEST CAMERAS
CAPTURING THE BEST IMAGES IN THE WORLD.SM

PHOTO COURTESY OF PAUL WILLIAMS, VIDEO PRODUCTION SPECIALIST, PHOENIX FIRE DEPARTMENT, ARIZONA

ANTON/BAUER, INC. 14 PROGRESS DRIVE, SHELTON, CONNECTICUT 06484 USA • (203) 929-1100 • FAX (203) 925-4988 • WWW.ANTONBAUER.COM

See us at NAB2004 Booth #C3806

World Radio History



by Mary C. Gruszka

Last year's NAB saw the release of a number of mid-priced digital consoles and further developments in the mid- and lower-price range will be unveiled at NAB2004.

AMS Neve will be at the show with its Libra Live digital console, for live or live-to-tape applications. New for the Libra live is the MIO5 96 series of 96 kHz I/O subsystems.

For analog audio, AMS Neve has the BTC, a console for large facilities that can be upgraded to digital. The BTC can be used to program and postproduction mixing, including surround sound.

The Calrec Audio Hydra audio network will make its NAB debut alongside a full complement of digital consoles. The Hydra is a networking and mic pre-amp system that enables I/O resources to be shared throughout the range of Calrec digital consoles.

Calrec will also demonstrate its Alpha, Sigma and Zeta 100 consoles with new features designed for NBC for the 2004 Olympic Games.

The Max Air from Euphonix is a 96-channel digital mixing system for on-air, live-to-tape and outside broadcast applications. It uses Euphonix's digital processing core and converters, and includes hardware redundancy and software diagnostics. Euphonix will also demonstrate the System 5-B, an all-digital mixing system that can handle a large number of digital and analog sources. The console's design includes provision for backup power and redundancy tailored to the on-air environment.

Fairlight will display its new DREAM Constellation line of large format digital audio consoles.

Harrison will unveil new features for its TVD-SL digital broadcast console. New are the IKIS control platform, a digital tools card (DTC), plug-in software packages, TFT

integration, expanded metering options, expanded high-resolution GUI and an expanded broadcast logic interface.

The Harrison MPC3-D digital film console now also has many of the same new features as the TVD-SL console.

InnovaSON will introduce an upgrade to the Sy40 digital live mixing console. The Sy40-8 will have 48 input channels and 26 output mix buses, plus an additional two monitor buses, the ability to freely configure the most suitable console layout and I/O arrangement for any application, InnovaSON's Xfad (expanded fader) mode for inputs and buses, and free assignment of VCAs and freely configurable fader layouts.

New InnovaSON consoles that contain its Sensoft 8.1 software will be sold as Sy40-8 units; upgrade kits will be sold separately.

Logitek Electronic Systems will intro-

puts, and 5.1 digital surround sound.

Wheatstone will also exhibit its 4 RU Bridge router for powering a dual-domain audio routing system. Ethernet- or serial-interface interconnections are standard, with hard and soft control capabilities.

Wheatstone will also exhibit its established line of audio consoles, including the SP-8 modular analog live.

SMALL MIXERS

Azden Corp. will introduce its newest portable 2-channel FMX-20, an all metal, battery-operated field mixer that can be attached to a camera or worn on a belt. Azden will also display the 511DRH, a half-rack-sized 794-806 Mhz UHF receiver.

Cooper Sound Systems will roll out its CS208 V.2 professional eight-channel portable audio mixer. The unit features four

main plus two aux outputs and comprehensive communications, and is now available with optional internal A/D converters with AES/EBU outputs and eight balanced, pre/post fader outputs.

Henry Engineering will introduce StudioDrive, an on-air/production audio mixer that fits in the drive bay of a PC. Features include six inputs (one mic; five lines), on-air program outputs, plus interface to a PC sound card, monitor system, headphones and telco line.

Professional Sound Corp. will roll out its PSC AlphaMix portable audio mixer featuring built-in NP-1 battery compartment, power distribution for wireless, LED meters on each input channel, boom-pole-mounted remote control and easy two-camera support using two Hirose 10-pin connectors.

Professional Sound will also show its PSC DV ProMix 3 portable audio mixer for DV cameras, with three inputs that have independently switchable phantom power; line or microphone input levels, two-position low-cut filters and channel-assignment switches, sunlight-readable LED meters and tape confidence monitoring function.

Radio Design Labs will debut the RUMX4 4-channel mic/line portable audio mixer with built-in compressor/limiter,

metering and switchable phantom power. The mixer features XLR microphone inputs and an unbalanced phono jack line input. Each input channel has its own dual-LED VU meter above the associated front-panel level control and the output stage has one balanced output that may be set to either microphone or line level, plus an unbalanced phono jack line out.

Sonifex will introduce the S2 small format, modular mixer. The S2 has digital and analog input channels, simultaneous analog and digital outputs, PFL/cue, fader-start operation, automatic monitor muting on mic-live, light switching remote outputs, optional EQ on input modules, and two main audio buses.

AUDIO EDITING

Digidesign will debut Pro Tools|HD Accel with features that include DSP power, sample-rate support, new high-resolution audio interfaces and peripheral options. The company will also debut DigiDelivery for secure global file transfer and exchange of any kind of digital file of any size.

The Digidesign DV Toolkit for Pro Tools LE is a software bundle for audio sweetening. The system requires previous installation of Pro Tools LE 6.1 or higher and includes special timecode functions, DigiTranslator 2.0 option for full AAF/OMF import and export, Digidesign's AudioSuite DINR LE noise reduction plug-in and Synchro Arts' VocAlign Project plug-in for dialog replacement.

Merging Technologies will showcase its Pyramix Virtual Studio 4.2 for multitrack recording, editing and mixing to synchronized internal or external picture sources. The software to be shown will have new features and enhancements designed for film and TV post production.

SmartSound Software will feature its Sonicfire Pro 3.2, the company's flagship soundtrack creation product lets users create royalty-free soundtracks for video, film or other visual projects. Version 3.2 includes enhanced support for high-end video editors.

Tascam will introduce the SX-1LE digital production environment featuring a 40-input, 32x8 digital mixer with 100mm faders and dynamic automation of all parameters. Also included is a 48 kHz, 24-bit, 16-channel hard disk recorder with built-in IDE drive and 16 mic preamps with phantom power.

The Tascam FW-1884 FireWire control



Wheatstone G8

duce guest panels for the company's digital audio consoles. Each panel provides individual control over microphone and headphones for guest locations.

Solid State Logic will showcase the C100-V1.5 digital broadcast console designed for on-air and live-to-tape productions, and the C200-V2 console for creative mixing. The C200 features an in-line design and a dedicated knob-per-function control surface, and both snapshot and dynamic automation.

Wheatstone Corp. will demonstrate its latest DTV console, the D-9TV. The console can direct any source to any fader and is equipped with integral dynamics/EQ functions along with full event recall. Powered by the Wheatstone Bridge Engine, the console features multiple mix-minus clean feeds, individual channel Bus-Minus out-

Introducing the

DigiDeck

digital video recorder™

A DVR based on the award winning Omega Deck® DVR and the Recon® DVR

Features

Motion JPEG • 720 x 486 pixel resolution • NTSC or PAL
Analog Composite and Y/C I/O • Genlock • RS422

Applications

Presentation • Staging • Spot Insertion
Video Walls • In Studio • Video Assist
Film • Multi-channel sync playback



fast forward video



Broadcast Performance / Great Price

Single Channel	\$3495
Dual Channel	\$5495

Visit us at
NAB 2004
Booth C2851

18200 - B West McDermott St., Irvine, CA 92614 Tel:(949) 852-8404 Fax:(949) 852-1226 www.ffv.com

[Arid Environment]

PANACEA

Dual 4x4 to 32x32
16x1 to 256x1
HD/SDI clean switching
AES/EBU quiet switching
Digital 3.172 MB/s to 1.5 GB/s
Analog 250 MHz wideband
Analog stereo audio
AES digital audio
SDI/ASI
DS3/E3



[Cool Price]

Panacea: Intelligent Routing
High-performance Leitch routing
at unbeatable prices to
connect your Integrated
Content Environment (ICE)

PANACEA - Chosen by Panasonic for the 2004 Athens Games

An Oasis in the desert — Relief from scorching prices for high-performance routing

- On-air quality of Panacea offered at a refreshing price
- Vast control flexibility spanning coaxial to serial to Ethernet — with intelligent control using our award-winning control and monitoring software, CCS Navigator™
- Advanced routing capabilities: A comprehensive array of routing matrices in 1 and 2RU frames in all signal formats to meet your production, operational, monitoring, mobile, or institutional requirements.

Invigorate your Integrated Content Environment.
www.leitch.com/panacea

Free Integrated Content Environment Poster:
www.leitch.com/poster

Canada	+1 (800) 387 0233
USA East	+1 (800) 231 9673
USA West	+1 (888) 843 7004
Latin America	+1 (305) 512 0045
Europe	+44 (0) 1344 446000
Hong Kong	+852 2776 0628



www.leitch.com



by Mary C. Gruszka

Maintaining signal quality is of such importance that NAB2004 will dedicate an entire session of the Broadcast Engineering Conference to Quality Control for DTV.

On the exhibit floor, attendees can see QC in action for audio, video, MPEG, video-over-IP, and RF. A growing trend in monitoring systems is the ability to install probes at critical points in the signal path and monitor the signal and system components through network-controlled architecture.

AUDIO

DK-Audio will unveil the PT0660M, an addition to DK-Audio's MSD600M range of audiometers. This multitrack meter (up to 32 channels) combines the company's proprietary JellyFish surround display with a rotary control knob on the front panel, enabling it to act as the master volume control for speakers in both surround and stereo configurations. An internal switching matrix and new software allows customers to change presets, as the 10 presets are directly available from the front plate.

Also new to the DK-Audio range will be the PT0600M master stereo display, shown for the first time in the U.S. The PTO600M shares the same motherboard

as the successful MSD600M++ surround sound meter, but is built into a half-rack width. The unit will be shown alongside the new SDI module, which de-embeds up to four channels of audio and offers facilities to re-clock the signal.

DK-Audio will also show the MSD600M-INPUT-HD/O, a new HDTV de-embedder module for the MSD600M++, PT0600M and PT0660M. This extracts the audio contained in HD-SDI so it can be routed via the unit's built-in matrix and displayed on the screen as a level meter combined with various phase meters.

Specifically for the U.S. market, DK-Audio is introducing the MSD600M-Input/2 and MSD600M-Output/2 modules for the MSD600M, PT0600M and PT0660M. DK-Audio will also be showing new software packages for its MSD and PT audio instruments.

Dolby Laboratories will introduce a remote application that enhances the LM100's postproduction advanced loudness measurement capabilities. Features include continuous logging of short- and long-term speech, with loudness values in realtime, while storing history data for later analysis. The remote application also has the ability to simultaneously control multiple LM100 units.

Dorrough Electronics will demonstrate its remote control to access phase, correlation, and other functions in its range of high-visibility loudness meters.

Logitek Electronic Systems will be showing its line of audio level meters including 5.1 and 7.1 surround sound.

SpiderVision will be highlighted in the Modulation Sciences booth. SpiderVision is a system for visualizing surround-sound compatibility with all types of matrices, as well as stereo and mono.

Rohde & Schwarz will introduce its UPV analog and digital audio analyser, a compact instrument with digital audio interfaces that function up to a 192-kHz sampling rate. The UPV has expanded

measurement bandwidths and several analysis tools, and it can perform multiple measurement functions simultaneously, while presenting the results Windows-compatible graphics.

RTW GmbH & Co. KG will demonstrate its SurroundMonitor 10860-VID surround-sound vectorscope for video systems. The unit features a multichannel peak meter, surround-sound analyzer, dialnorm meter, real-time analyzer, 10-fold phase meter, AES/EBU interface monitor, and supports loudness-referenced level setting after calibration to a standard listening level.

RTW will also show its PortaMonitor 10641-VID, a four-channel audio vectorscope that includes multistandard peak meters, audio vectorscope, phase meter, real-time spectrum analyzer and AES/EBU status monitor.

Television Systems Ltd. (TSL) will debut the AMU1 BA and BD compact low-cost, bargraph metering units. Features include analog, AES and SDI inputs, and full range of scales including PPM, VU, DIN, NORDIC, and dual high-resolution 106-segment tri-color bargraph displays.

Videoquip Research will introduce the AM-4 audio monitor panel that provides facilities for monitoring two stereo analog, two stereo AES3 stereo digital and two SDI embedded stereo signal sources. Four high-resolution meters display VU and PPM values simultaneously and selected sources may be monitored using the built-in speakers or via headphones, in stereo, left or right channel only, or summed mono.

Ward-Beck Systems Ltd. will launch the RLM24 with 24 stereo loudness meters (48 audio channels) with silence sensor and alarm. The unit will have dual redundant power supplies and fit in 2 RU of space.

Wohler Technologies will introduce the AMP2-S8MDA multichannel audio monitor and converter in a 2 RU chassis. The unit provides two SDI inputs on BNCs that can accept either an HD-SDI or an SD-SDI input, and AES and analog auxiliary inputs are also provided. The AMP2-S8MDA features eight tri-color LED bargraphs for level metering, front-panel group and channel selection, and Wohler's AMP series in-rack self-powered speaker system.

VIDEO AND AUDIO

Astro Systems will introduce the WM-3004M HD/SD waveform/vectorscope. In monitor picture mode, the unit provides marker identification (center, frame, 4:3, 13:9, 14:9, 2.35:1, 1.75:1, 1.66:1). The adjustment function controls contrast, brightness, and chroma level. In waveform mode, the unit features parade identification, overlay display and line-select function, and in vectorscope mode, the monitor shows color bar scale, IQ axis identification, line-select function and enlargement identification. The unit also performs audio status identification.

Axon Digital Design will introduce the

SIM10, a signal-integrity monitor for its Synapse modular range. The SIM10 is designed to check integrity of the SDI signal and give a monitor output that shows any reported errors, as well as indication of several metadata values and audio levels. The on-screen audio level bars give a direct view of four-channel audio content.

Evertz returns to NAB2004 with the newest addition to its Quattro quad-split display and signal monitoring product line. The 7764AVM-4A HD/SD Quattro auto-detecting HD/SD card is VistaLink



Videotek's VTM440

enabled (SNMP) and displays not only active pictures in a quad-split or expanded-view configuration, but also on-screen signal status details including audio level and phase graphs, UMDs, tallies and user-configurable fault messages.

Grass Valley modular products from Thomson will include NetCentral software for SNMP-based remote monitoring.

Hamlet Video International will exhibit a number of new measurement and monitoring products, including the FlexiScope handheld monitoring device. At NAB2004, a version with HDSDI and SDI with embedded audio monitoring will be shown.

The LCD Scope 292WVA from Hamlet is an HD-SDI, SDI, composite, component, Y/C monitoring unit, with embedded, AES/EBU and analog audio inputs that fits into a 3 RU half-rack-width space.

Hamlet's Vidscope is a plug-in software solution for Windows computers that monitors and measures DV, NTSC and PAL and associated audio. The traces can be displayed in any number of ways that Windows enables.

Kwill Corp. will demonstrate a number of its test products such as the VP2000H, which performs automatic, real-time evaluation of HD video. The device is used for debugging encoder/decoder operations and evaluating digital broadcasts.

The company's VP21S carries out automatic, real-time quality evaluation of SD video quality and can be used for debugging encoder/decoder operations. It can also be used for quality evaluation of broadcast systems, automatic dubbing, DVD authoring and DVD playback.

Leader Instruments will introduce a number of video and audio monitors, as well as new features for existing products. For example, the LV5750 portable multi-format HD/SD-SDI monitor features waveform, vector, picture, audio, status,

TEST & MEASURE, PAGE 106



- Full Service Architecture and Design for Critical Listening and Viewing Environments
- Acoustic Consultation
- Interior Acoustics
- AV Design / Planning
- Specialized Acoustic Treatments
- Trouble Shooting / Acoustic Testing

NAB Booth #C2223

Walters-Stork Design Group

ARCHITECTURE  ACOUSTICS

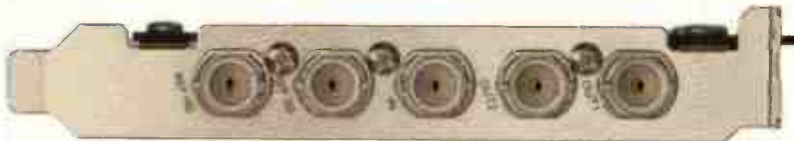
www.wsdg.com

USA - EUROPE - LATIN - BRAZIL



EDIUS HD

DESIGNING THE BEST HD-NLE SYSTEM



HDRX-E1



EDIUS^{PRO}



DESIGNING THE BEST HD-NLE SYSTEM

Canopus set out to design the best HD video editing system. It had had to be of the highest quality, yet affordable – a fraction of the cost of current high-end HD editing systems. It needed to provide realtime, multi-layer HD editing and effects processing with the scalable functionality and stability for which Canopus is renowned. Since current video content is still largely SD, support for editing both SD and HD simultaneously was essential.

Canopus proudly presents...

EDIUS HD

Complete Realtime HD/SD Editing Solution

- > EDIUS Pro editing software with Inscriber® TitleMotion™ HD for Canopus
- > Canopus software HD codec
- > Canopus HDRX-E1 – HD-SDI and SDI input/output board



www.canopus.com

©2006. All trademarks or registered trademarks are properties of their respective holders.

canopus
broadcast

Audio

CONTINUED FROM PAGE 100

WIRELESS AUDIO

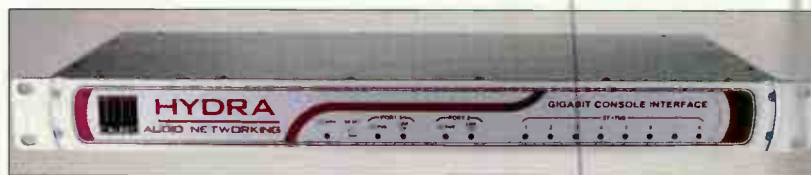
Lectrosonics will show its UCR411A compact receiver with updated firmware and LCD features that include compatibility modes for use with earlier analog wireless transmitters. User-selected modes provide backward compatibility in addition to a digital hybrid operating mode.

The company will also feature its updated UH400 plug-on transmitter, which converts any mic with XLR connector to wireless operation. The unit provides selectable 5, 15 and 48-V phantom power and 100 mW output power.

Zaxcom will highlight its Digital ENG Wireless system, which provides transmission of two full-bandwidth audio channels with one receiver and one transmitter using one 200 kHz RF channel. Features include no intermodulation, encrypted

transmission, digital dropout protection, transmitter remote control, clothing noise

reduction algorithm and 100 percent digital modulation.



Calrec's Hydra

The company will also demonstrate its Studio Digital Wireless system, which includes remote-controllable transmitters, integrated voting system where multiple receivers connect together to cover a wider area, AES/EBU and analog receiver outputs, pushbutton transmitter control, 500-1000 MHz operating range, secure audio transmission (scramble mode) and auto selection of best clear channel.

LOUDSPEAKERS

Broadcast Tools will show its DMS III AES digital monitor/switcher.

Data Check will demonstrate its model 22020 12-channel dual-speaker monitor that operates either independently or in conjunction with any combination of the company's video monitors. Occupying 1 RU space, this unit offers six stereo or 12 mono inputs, loop-through functionality and headphone jacks.

Television Systems Ltd. (TSL) now has improved representation in the United States and will launch its SLS-1P loudspeaker, a self-powered, rackmount or free-standing, 1 RU audio monitor with magnetic shielding, 15 W per channel amplifier, separate HF and LF drive units and XLR input connections.

MISCELLANEOUS

ATS Communications will introduce the RKR multiclips, universal lavalier mic clips that hold one or two mics in any orientation with wire strain relief grip. These will be available in black and white, with magnetic styles available.

Boom Audio/Video will show its Kit Cool microphone boom pole designed for holding any boom pole steady for long periods of time.

Neutrik will debut the AA series of XLR chassis connectors, which are completely compatible with the A series and will offer improved design features. The AA series of receptacles will only be available in female versions.

Radio Design Labs will introduce new modules, including SAS-RC8 eight-channel in-wall audio monitor system, the ST-LCR3 logic-to-pulse converter and the TX-J2 unbalanced stereo-RCA-to-mono-balanced line-level transformer.

MUSIC AND EFFECTS

Selectracks will educate NAB2004 attendees about its wide range of production music, comprised of a network of composers from around the country and offering custom scoring for all productions.

Sound Ideas will introduce new sound effects and music libraries such as Ear Candy 8, which features 300 new imaging elements on one CD, including IDs and logos, hits, attacks, transitions, drones, alarms, whooshes, rewinds and other special effects. ■

Trust your signal to the broadcast link experts—Moseley. DTV-LINK is a new economical, versatile STL solution. Today, serve up multiple DVB-ASI streams, plus SMPTE-310, in STL/TSL applications. Powerful dual error correction and strong BER performance keep the system robust in even the worst multipath conditions. Tomorrow, global standards conformance and open architecture give you flexibility to keep up with emerging technologies.

DTV LINK

Digital Multiplexing of Video for Flexible RF Network Solutions

6, 7, 13 GHz Bands
Multiple DVB/ASI, SMPTE-310 Video Streams
DS3
T1 or LAN Interface
Reed-Solomon & Viterbi Error Connection



Moseley

For more information • (805) 968-9621
www.moseleysb.com

See us at NAB2004 Booth #N1907



Are You Betting Your VHF Station's Future on 1980's Technology?

Did you know that some major manufacturers' current VHF transmitter product lines are still based on technologies that were developed in the 1980s? While these products may have been cutting edge in their day, the times have certainly changed. This year at NAB Axcera will be introducing a new concept in VHF technology. Come to see the first VHF transmitter of the 21st century at NAB booth C8606.



t: 724.873.8100 f: 724.873.8105 www.axcera.com/tvtech info@axcera.com

the **rf** experts

Canare Corp. of America C5317
Intro: Electrical-to-optical/optical-to-electrical converters featuring low signal jitter and power consumption, reduced size and weight. Designed for multiple formats including HD-SDI and SD-SDI applications. 1 U size power supply unit permits mounting of up to 16 Canare optical conversion modules; Hybrid fiber-optic camera cable with tear-resistant polyurethane jacket and Elastomer heath construction; Hybrid fiber-optic receptacle cable for in-camera and panel hybrid

fiber-optic cable; single-mode fiber-optic cables; fiber-optic single-mode assemblies, all with SC connectors with BellCore boots.

Canon USA Inc. Broadcast & Communications Div. SU9649
Intro: Advanced HDTV and SDTV lenses and accessories.
Also: Digi Super 100xs, Digi Super 86xs, HDxs Series HDTV lenses, IFxs SDTV lenses, IFPro Pro-video lenses, NU-700 PTZ remote control camera system,

Canobeam Free Space Optics System

Canopus Corp. SL5805
Intro: Canopus real-time nonlinear editing system with HD-SDI card and new EDIUS Professional video-editing software for real-time HD; MediaEdge2 video distribution system with MPEG-4 support; Canopus Imagine 2.0 still-image animation software with multiple image support, advanced soundtrack capabilities and a project Wizard; ProCoder 2.0 professional video transcoding software with

new features.
Also: ADVC100, ADVC300, ADVC1000, DVStorm2 Pro+

CaptionMax SU7780
Intro: HD Captioning, proficient in 708 requirements, software conversion capabilities, full manipulation of feature sets; Digital data management with Clipmail/ftp services to transport digital files for fast turnaround; Audio Description with one-stop services; Web-based order tracking with electronic billing option.

Cartoni USA C8235
Intro: The Cartoni P20 Pedestal, a compact portable pedestal designed for light-weight studio cameras up to 48 pounds.
Also: Omega, Sigma, Laser, Gamma

Cavena Image Products AB SU9063
Intro: Cavena S-CUE news subtitle transmission system; Cavena S-EYE subtitle monitoring system; Cavena STU transcoder line 21 in/Teletext out/Teletext in/Line 21 out; Cavena TEMPO subtitle editing and preparation software.
Also: Cavena SAM subtitle archive and management system, Cavena STC subtitle transmission software, Cavena STU DVB/MPEG2 subtitle dncoder software, Cavena S-MUX subtitle multiplexer, Teletext/line 21/Closed captioning inserters, encoders, decoders, Cavena S-DVDs

Celco C2142
Intro: A new 3D-color management and film recorder driver software package for the latest generation Fury and Firestorm High Performance Digital Motion Picture Film Recorders will be introduced. The GUI software package will consist of both color-management tools dedicated to the digital intermediate process and film recorder operation and calibration tools. The software will allow a user to visualize the output images before and after various imaging tools such as sharpening, degrading, 3D color space manipulation and color management are applied.
Also: Firestorm, Fury

Centurfax Ltd. SL967
On Display: Blue.i Studio Navigator for tracking and positioning of studio equipment such as robotic cameras. Captures absolute X,Y and rotational positioning data and transfers it to any proprietary motion control system or virtual reality software, such as vizrt, Orad and Brainstorm. No overhead or wall sensors required.

Century Global Inc. SL1059
Intro: Dual-bay FireWire 800 storage system; Aluminum FireWire 400 and 800 storage system
Also: Ice Cube, Daisy Cutter, SoHo, Alumni Laureate, Concord, Hot Buttered

Century Optics - a Schneider Optics Division SU10615
Intro: 16:9 Widescreen Eyepiece for Panasonic DVX100 and DVX100A allows viewing of a "normal" (unsqueezed) image when shooting with Panasonic's 16:9 optical anamorphic attachment (or the squeeze feature in the DVX100A). No modification needed, slips onto camera's existing finder, locks down with one screw and has range of lens add-ons; 2X HR Tele-Converter for 27-37mm front thread camcorders like Sony PDX10, TRV950, PC 120, Canon Elura/Optura, etc. A high-resolution converter, it instantly doubles focal length range in telephoto direction; 1.6X LC Tele-



K2 IOT and K3 MSDC IOT's from Eimac

EASE OF USE

No IOT system is easier to tune and maintain than the Eimac K2 and K3 MSDC IOT amplifiers.

K2 tube replacement and maintenance can be handled by one person without removing the cavity assembly from the cabinet.

RELIABILITY

Oil-cooled K3 MSDC IOT

- no electrolysis with oil.
- minimal maintenance.
- low pressure, low flow rate operation.

K3 three stage MSDC design simplifies the power supply requirements.

- simplicity = reliability

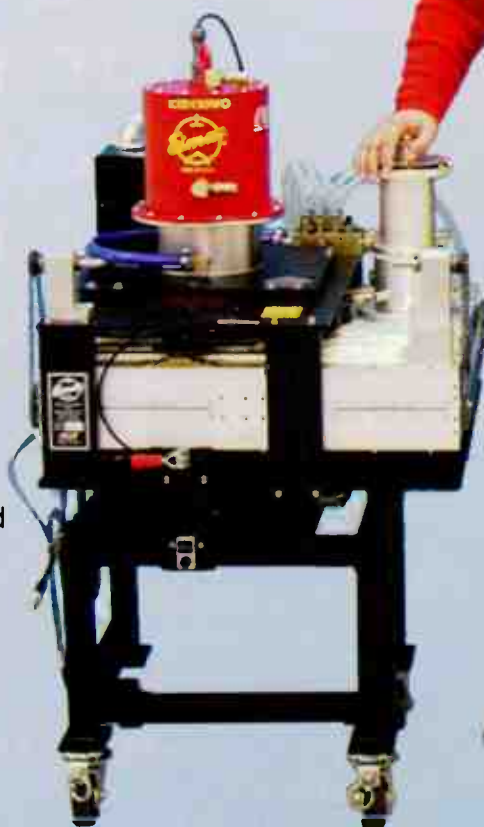
Eimac IOT's have documented lifetimes of up to 70,000 hours or more.

EFFICIENCY

Eimac's Klystode IOT pioneered high efficiency UHF-TV power amplifiers.

The K2 continued this leadership with enhanced ease-of-use.

The K3 three stage MSDC IOT demonstrates efficiency of up to 58%.



Eimac Division
 301 Industrial Road
 San Carlos, CA 94070
 tel 650.592.1221
 fax 650.592.9988
 email. iot@cpil.com
 www.eimac.com

ISO 9001:2000 Certified . Made in USA



Visit Eimac at NAB 2004
 Booth number C2118

Multi Bit Rate is Ready

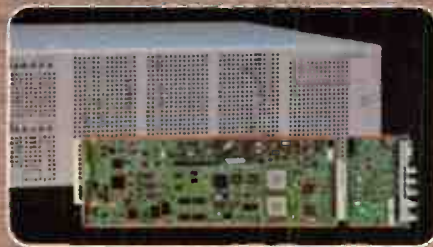
SDI, 1080i, 720p, 24p...whatever the format, FOR-A is there.

HD/SD Multi Bit Rate products line-up



Digital Video Switcher **1M/E HANABI**

More compact but yet maintaining the same know-how of HANABI 2M/E model, the new 1M/E HANABI offers two types of control panels for live and edit applications.



Frame Synchronizer **UFH-70FS**

New frame synchronizer module for HD. Driver All Frames is capable for the synchronization for HD-SDI or SDI signals. Conveniently, installed into the various UFH frames depending on the system requirements.



RCG Solution / Virtual Studio System **digiStorm**

Joint development for FOR-A and B&H-storm Multimedia. It is compatible with wide range of virtual studios and real-time computer graphics.



Digital Super Keyer **DSK-70HS**

Compact and high design multi-format digital super keyer supports both HD and SD signal formats using one line 11.1 MHz channel and one line 10 MHz channel.



Routing Switcher **RS-HD Series**

It provides dependable and versatile signal routing support for HD-SDI or SDI video base systems. Easy control routing setups and switches via RS-RU series remote control units.



Character Generator **3D-VWS**

It is an advanced and versatile character generator with still store capability. One source multi use was implemented by adopting OpenGL technology.



Digital Color Corrector **DCC-70HS**

Compact digital color corrector offers superior 4-bit, Y-Cb-Cr component signal processing circuit and the ability to control Black, White and Gamma (AGC) levels precisely, as a group.



Video Stabilizer **IVS-700HS**

Uses a moving image processor to electrically correct the image shaking occurring in cameras. It can correct just like unintentional unsteadiness, while maintaining the panning or tilt movements of the camera.

And More...

See you @ NAB Booth #C5628

FOR-A Company Limited/Head Office: 3-8-1 Ebisu, Shibuya-ku, Tokyo 150-0013, Japan

USA/FOR-A Corporation of America: 1125 Knott Ave. Cypress, CA 90630, USA

CANADA/FOR-A Corporation of Canada: 425 Queen St. W. #210, Toronto, Ontario M5V 2A5, Canada

Tel: +81 (0)3-3446-3936 Fax: +81 (0)3-3446-1470

Tel: +1 714-894-3311 Fax: +1 714-894-5399

Tel: +1 416-977-0343 Fax: +1 416-977-0657

World Radio History

Converter for 18X/19X Canon IF Pro & 19X/20X Fujinon Pro Classics, may be added to lenses with internal doubler for super telephoto; 8X LC Wide-Converter for 18X/19X Canon IF Pro & 19X/20X Fujinon Pro Classics, mounts to lens front for 20 percent more coverage at wide angle, telephoto or in between.
Also: Wide-angle converters, fisheyes, wide-angle adapters, tele-converters, 16:9 widescreen adapters, achromatic diopters (macrozoom attachments), portable HD lens collimator, LCD magnifier for viewing 2.5-inch monitors and Century DV matte box.

Chief Manufacturing SL5218

Chimera 9730

On Display: Octopus Banks are compatible with strobes and continuous light sources. Features include Quick Release Speed Ring, eventually available in several sizes, beginning in April with the 6-inch diameter size. Allows lightbank to be collapsed without disassembly.
Also: Video PRO Banks, On-Camera Microbanks, full line of extensive light-control accessories.

Christie Digital Systems SL5830

Intro: Christie FP40, featuring direct-view 40-inch active matrix TFT, 170-degree viewing angle, native WXGA (1280x768) resolution, 470 cd/m² brightness with 600:1 contrast ratio, 50 lbs. (23kg) 3.5-inch (8.9cm) depth, DVI, HD15, BNC RGBHV and YCbCr, Composite, S-Video and DB9 connections; GraphXMASTER CS50-D100U, a self-contained, stackable 50-inch SXGA display wall cube with 180-degree viewing angle, high brightness and contrast with a pixel density of 32.8 pixels/inch, 100/120 W UHP lamp system; The Christie CP2000 series of digital cinema projection features Texas Instruments 2K resolution DLP, LampLOC, LiteLoc, SSM and touch panel controller; The 99-pound (45 kg) Christie Roadster S9 DLP projector with new TI three-chip system delivers 8,500 ANSI lumens output in 1280x1024 and features 1,500 W Xenon Cermax illumination, Intelligent Lens System, LiteLOC and an eye-bolt kit. GraphXMASTER CS70, a stackable cube displays native SXGA across a 70-inch screen.

Chromatec Inc. SL5224

Intro: Chromatec LipSync 1 stereo analog audio delay synchronizer for resynchronizing audio with video that is subject to processing or transmission delay. Features zero to 2,700mS delay (up to 81 TV frames NTSC), delay settings in 1, 10, 100 and 1,000mS increments, audio input level adjustment, bypass switch, balanced

audio I/O via XLR. *Also:* Chromatec in-picture audio meter/alarm, Bel Digital Audio, MonitorMx, Teletest

Chyron MJ0149

Intro: HyperX HD/SD Graphics Solution, Chyron's new real-time HD CG platform utilizing next generation high-speed bus architecture with advanced 3D rendering engine technology. Coupled with Chyron's format independent Lyric software, HyperX provides both HD or SD content creation, playout and real-time animations in a cost-effective package; Clyps HD HD Clip Server, a real-time HD clip server with uncompressed HD video and key, in and out. Designed for a graphics environment, the Clyps HD has up to 1.3 TB of storage enabling up to 180 minutes of lower third animations or 60 minutes of full-frame video. Included is an intuitive GUI with browsing and database functionality. Automation interfaces are also available, and a second channel is an option; C-Mix HD Layering Mixer is a layering mixer with simultaneous SD and HD outputs. Included are four SD video and key inputs, plus a background layer, an SD mixer and an HD upconverter. The four video and key sources can come from a Chyron product or any other device with SD outputs. When used with Lyric software, the mix information becomes part of the CG message timeline. If used in a standalone configuration, control is via USB or Ethernet; Advanced Lyric, the latest version of Chyron's broadcast software features improved 3D rendering and effects and multi-channel back-to-back clips. The movie objects feature enables playback of multiple .AVI and .MOV files as animated objects within a Lyric scene. Lyric also now includes comprehensive asset management & browser functionality.

Also: Duet LEX, Aprisa Replay, Duet SD, Lyric Plug Ins for Avid, CODI Strator, Solo, CAL, Lyric

Rich Hajdu, VP Sales and Mktg.
 5 Hub Dr.
 Melville, NY 11747
 Phone: 631-845-2000
 FAX: 631-845-3895
 E-Mail: info@chyron.com
 Web Site: www.chyron.com

Clark Wire & Cable C10013

Intro: All-in-One Triax crimp tool for RG59- RG11-style triax cable; Fiber-optic Cable Breakout Reel with military-grade, crush-resistant tactical fiber; General/Carol Brand power cables provide replacement power cords for a variety of technical equipment.

Also: RG6SD digital coax, CV7559 digital coax, DSM1 digital coax, CV752 analog coax, TV7559 and TV7511 triax, RCC

composite cable, Optical Cable fiber-optic cables

Clear-Com Communication Systems C7406

On Display: CellCom wireless intercoms with 1-RU base station supporting up to 10 wireless belt-packs, interfaces with two channels of PL and four wire/matrix ports, supports up to 10 transceiver/antennas that can be removed up to 1,000 meters; Eclipse digital matrix system, with matrix cards that support 16 ports (full-duplex audio channels with data) of communication, allowing up to 208 ports in the 6-RU card frame. Four frames may be connected into one single 832-port system, and frames can communicate with each other. The frames also feature dual redundant processors and power supplies, providing state-of-the-art dependability.

Also: Party-Line intercom systems, Matrix Plus and IFB systems, headsets, interfaces, wireless microphones

Coast to Coast Tower Service N4028

On Display: 24-hour emergency service, broadcast tower and antenna services.

Coastal Satellite Inc. C11046

Coaxial Dynamics N4019

Cobalt Digital Inc. SU9520

Intro: HD8022 with dual-rate digital SD/HD inputs/outputs, embedded audio pass-through with delay correction; HD8090 HD/SD analog to HDSDI/SDSDI dual-rate analog-to-digital converter with internal de-jitter circuit; 8020, a dual-rate digital inputs-to-dual-rate analog outputs using 12-bit encoding, with user configurable reticule overlay-internal de-jitter circuit.
Also: HD8021, HD8019, 6540, 6590, 6546, 6081, 6040, 5591, 5590, 5540, 5018, 5016, 5015, 4010, 4020, 4030, 4040, 4012

Comet North America N4210

Comlab Telecommunications N4610

CommandSoft Inc. SL2769A

On Display: FibreJet SAN management system for Mac OS X & 8/9

Compix Media SL5521

Intro: Multiple CG systems with two full compliment CG's in one system. NewsScroll software with simultaneous real-time clock, logo, and news scroll capability that can be managed locally or remote by phone or Internet.

Also: Compix Media Single Channel Video CG systems, Multiple Channel CG

systems, and board and software kits, and various software upgrades

Comprompter News & Automation C9125

On Display: NewsKing Tapeless NewsRoom with ClipTracker software.
Also: NewsKing, ScoreMaster, VoteMaster, SchoolMaster, NetVid

Comrex N2722

Continental Electronics/DRS Broadcast Technology N2402

Continental Lensa S.A. N3134

Continental Microwave/Vislink C3206B
On Display: Ku-band flyaway antennas

Cooper Sound Systems Inc. N2424

Intro: CS208 v.2, an eight-channel portable professional mixer with four main plus two auxiliary outputs and comprehensive communications features. Now with optional internal A-D converters with AES/EBU outputs and balanced pre/post fader outputs.
Also: CS 104 ENG mixer

Coptervision LLC C9122

Intro: Photovision, an unmanned helo system for shooting aerial stills from ground level to 300 feet in the air. Flexvision, a 12-pound gyro-stabilized camera system for UAV surveillance with a 9-inch diameter.
Also: Coptervision, Rollvision, Remotevision

CPI - Eimac Division C2118, C2914

Intro: CPI-Eimac K3 MSDC IOT high-efficiency UHF DTV power amplifier, simplified to three stages and achieves 58-percent efficiency. Low-pressure, low-flow oil cooling eliminates problems associated with DI water systems. Eimac sets the standard for ease-of-use with all of CPI's IOT systems. CPI-Eimac K2D130 high-power IOT system performs in either NTSC or 8-VSB service. Advanced anode-down design puts all water plumbing below the high-voltage section and allows easy one-man changeout of tubes without a hoist and without removing the carriage assembly from the transmitter cabinet.

Also: Inductive Output Tube (IOT) Harry Schneider, Broadcast Mktg. Mgr.
 301 Industrial Rd.
 San Carlos, CA 94070
 Phone: 650-592-1221, Ext: 4004/1-800-414-8823
 FAX: 650-592-9988
 E-Mail: powergrid@cpi.com
 Web Site: www.eimac.com

"It's a bird, it's a plane..."

DC Comics

Introducing...

neuron

...the future has arrived.

AXON
 Digital Design

See it at booth # SU7548, or call for a private appointment: (408) 450-7973 www.axon.tv

Creatas SL2255
On Display: Royalty-free stock footage

CrewStar Inc. C8826

Crispin Corp. SU9819

Crown Broadcast IREC N712

CRT Custom Products Inc SL2455
Intro: Alternative packaging for CD and DVD. Plastic Elmar trays adhered to board.

Crystal Vision C7143
Intro: Synner144, a combined synchronizer for tracking audio delay with embed/de-embed capabilities for audio and video; SW808 controller Crystal Vision's SW808 modular 8x8 routing switch; DEC105S, a combined 10-bit PAL/NTSC or Y/C-to-SDI broadcast decoder and SDI synchronizer.
Also: Safire digital chroma keyer, LKEY211 digital linear keyer, ADC104 component-to-SDI converter, ENC116 composite or Y/C-to-SDI encoder, DDA108 SDI distribution amplifier, ShARC aspect ratio converter, ViViD video delay, Flip scan reverser, ViPA video processor.

Curious Software Company Ltd. SL463
Intro: Curious gFx Pro in 8-bit and 16-bit configurations, for painting and rotoscoping in an effects environment.
Also: Curious World Maps, Curious gFx Broadcast

D.A.V.I.D. Systems Inc. SL2477
Intro: Video File Transfer DigaReplicator V for transfer of media data, metadata and project data between two or more locations via LAN/WAN connections, in MPEG-1, MPEG-4, or Windows Media; DigaIndexer for dynamically matching databases and directories, and generation of metadata for multimedia content automatic format conversion, featuring automated, template driven indexing, matching/transfer via FTP, waveform and keyframe extraction, audio-level analysis; automatic conversion during the indexing.
Also: DigaIngester, MediaEditor, DigaCon, DigaPlayer AV

D2 Software SL5211
On Display: NUKE compositing and effects software with pure scan-line render and multiprocessor support, 32 channels of 32-bit floating point color data per node, 2D and 3D compositing environments, multiple platforms, non-proprietary hardware base and plug-in architecture. Power Cocktail from Digital Site Corp. of Japan, a NUKE-compatible clustering render farm application.

da Vinci Systems C9117
Intro: revival plus Restoration System, an upgrade featuring all toolsets of revival, plus color enhancement, primary color controls, an imported session list with selected scenes, preset look-library, and automated toolset for controlling white, black, lift, gain, and gamma balance.
Also: Resolve Color Enhancement Software family and Nucleus Digital Intermediate Product suite, both lines introduced at IBC2003 and becoming available in the U.S. at NAB2004. Also displaying Firstlight telecine calibration tool; 2K color enhancement system; 2K Plus color enhancement system; revival for discreet restoration system; Colorist Toolbox color enhancement system.

Dalet Digital Media Systems SL3842
On Display: DaletPlus News suite for real-time desktop access of video, audio, wires, stills, feeds and CGs. Integrates

with Grass Valley, Omneon, Pinnacle, Quantel and other video servers; DaletPlus Media Library for media asset management.

Da-Lite Screen Company Inc. SL5353
Intro: Multi-Mask Imager, a fixed-frame screen featuring horizontal and vertical masking and a choice of eleven projection screen surfaces; The PWM-1624, a universal plasma wall mount designed with rail-mounting system that places the back of the display two inches from the wall. Accessory speakers can be mounted directly to the Contour Electrol case. Accessory speaker package includes a pair of Anchor 30-W speakers, wireless remote control and mounting brackets.
Also: Contour Electrol, Advantage Deluxe Electrol, Deluxe Insta-Theater, Theater-Lite, Da-Plex Rear Projection Screen, Rear Projection Module (RPM), Quick Link Monitor Mount

Data Check SL5202
Intro: Data Check Model 21190-4WVA quad split 19-inch LCD monitor combines vivid confidence monitoring with test instrument measurements in a versatile rack-mounted unit. The unit displays bright video pictures as well as vectorscope, waveform and audio level readings on a single easy-to-view screen; Data Check Model 21245 HD-SDI, capable of processing all HD-SDI formats, this highly advanced dual-input 24-inch LCD monitor significantly enlarges the size and quality of video monitoring displays. With 1920x1080 native resolution, Model 21245 is ideal for post production, edit bays and HD broadcast operations; Data Check 24015 SDI Four Pack, uniquely designed as a plug-and-play replacement for Sony PVM-481U racks. With low energy consumption, vivid color displays, and both SDI and composite capability, this advanced unit fits cleanly into new and existing monitor walls; Data Check 22020 Dual Speaker, Data Check's 12-channel dual speaker monitor operates either independently or in conjunction with any combination of the company's video monitors. Occupying one RU of space, this versatile

unit offers six stereo or 12 mono inputs, loop-through functionality along with headphone jacks and a wide frequency range; Data Check 22060/5 6.4-inch Monitor, a new economical LCD monitor that provides confidence monitoring of both SDI and Composite signals. With more than 300 nits brightness and 150:1 contrast ratio, this unit provides dual high-quality images at an attractive price.
Also: Six Pack, Three Pack, Two Pack, Tuner, Hot Swappable, High Bright Video Monitors
Len Gross, Pres.
13725 Saticoy St.
Van Nuys, CA 91402
Phone: 818-373-5492, Ext: 241
FAX: 818-373-5446
E-Mail: Lgross@datacheck.com
Web Site: www.datacheck.com

Davicom 4610

Dawnco Inc. C10943
On Display: Satellite and off-air antennas, LNBS, TI filters, block downconverters, digital and analog receivers, matrix switchers, fiber-optic transmitters and receivers, fiber-optic jumpers, non-pen roof mounts, cable and connectors and more.

Dedotec USA Inc. C9728
Intro: Dedolight DLH200D 200W HMI light head with patented Apherics2 optical system and AC and/or battery ballast. Dedolight SOFT200D 200 W HMI soft-light.
Also: Dedolight Precision Lighting Instruments

Delta Digital Video SL2459
Intro: 4400 Series A/V encoders/decoders with MPEG-4, bi-directional stereo audio and data Ethernet IP T-1/E-1 AC or 12/28/48VDC; 4300 Series A/V encoders/decoders with H.263, bi-directional stereo audio and data Ethernet IP T-1/E-1 AC or 12/28/48VDC. Models 2020H/2120H MPEG-2 encoder/decoder with Ethernet IP DVD-quality audio, video standards compliant transport stream and bi-direc-

tional audio and data.
Also: 2000 Series MPEG-2 encoders/decoders, 3000 Series H.261 encoders/decoders

Delta Meccanica s.r.l. N2029
Intro: 20 kW, 3 dB Hybrid Coupler; 200 W DVB filter

Dielectric Communications C7806
Intro: The TFU-WB is a UHF antenna for bandwidth requirements of up to 30 channels, typically in a directional array with a directivity of 1.9 times and power ratings up to 80 kW.
Also: antennas; towers; lighting; monitoring; RF systems; transmission line; service

Digidesign SL4761
Intro: Pro Tools/HD Accel TDM system; DigiDelivery, a secure global file transfer exchange system; DV Toolkit for Pro Tools LE, an audio-augmenting software bundle; Digi 002 Rack, a FireWire-based Pro Tools LE studio-in-a-box.

Digital Anarchy SL5833
Intro: Animatable and deformable 3D layer for use within After Effects and Final Cut Pro. Texture Anarchy for After Effects or Final Cut Pro. Primatte 2.0, chromakey software for Photoshop.

Digital Juice SL4705
On Display: Videotraxx, 34 DVDs and 3,200 clips of royalty-free NTSC D1 stock footage. PowerToonz Library, eight volumes of clip art designed specifically to enhance PowerPoint, video production or print. Wedding Editor's Toolkit, with more than 75 GB of content StackTraxx royalty-free music delivered full length and/or standard length in stackable format.

Digital Rapids Corp. SL2466
Intro: CarbonHD, an HD recording, play-out, and transcoding system. Copper DMG (Digital Media Gateway), a secure, error-corrected, global distributor of digital media over diverse networks. Formats supported include Windows Media 9, MPEG-2, MPEG-4, and post production formats.

Audio Distribution. Done Right.

MIC

Analog

Balanced

Active

Metered

Remote

Line

Digital

Unbalanced

Transformer

Monitored

VCA

See why more Engineers and Installation Professionals are specifying ATI.

Call us at 1-800-922-8001 or visit ATI on the Web.

www.ATIaudio.com



Digital Transaction Group SU11036
On Display: AIRO Automation System for integrating device control, schedule management, content ingest, acquisition and archiving, with eXtensible Device Server (XDS) and modular architecture.
Also: AIRO XDS Automation System

Digital Vision C6142
Intro: Motion estimation module for ASC3 Dirt & Scratch Concealer and other DVNR tools.
Also: BitPack MPEG-2 encoding system, BitLink Professional HDTV Decoder, Valhall Media Mastering control system, DVNR Image Processor

Discreet SL3547
Intro: New versions of Inferno, Flame and Flint visual effects systems, and its non-linear editing and finishing systems Fire and Smoke; Next generation solutions and data-centric workflows for SD, HD, 2K, 4K film and video; and a Digital Intermediate film theatre with technology demonstrations of Lustre digital grading and color correction system and other Discreet systems centered around high performance 2K and 4K film workflows. A preview of technology for collaborative content creation; real-time uncompressed editing and finishing 4:4:4 (RGB) media at SD, HD, 2K and 3K resolutions; real-time 10- and 12-bit 4:4:4 RGB media formats; and Absolute Resolution Freedom, which edits, composites, converts and masters any format. Innovations in keying, tracking and color correction technology, including Master Keyer, Colour Warper and others.

DK-Audio America C3843
Intro: The PTO600M is a half-rack version of MSD600M++ master stereo display. The modular unit can accept analog, AES/EBU, SDI embedded, and HD embedded audio with proprietary JellyFish surround display; The PT8611 Tri-Level VariTime sync option for the PT5210/30 PTV generators is a multi-standard option providing migration to HD production by offering three separately controllable tri-level outputs. Any

of 21 HD formats can be selected; The MSD600M-Input/2 & MSD600M-Output/2 modules for the MSD600M++, PTO600M, PTO660M and PTO600M-LS are designed to accept BNC connectors and 75 Ohm termination on the digital audio signal. These modules can be set for either 110 Ohm and balanced input or 75 Ohm termination and unbalanced operation on the AES signals. The output module has also been adapted so that it sends out higher signal levels.
Also: PM5639, PTO600M-LS, PT5210, PT5230, PT5202, PTO200C, PTO600C-III

DNF Controls SU8965
Intro: Flex Control Network uses modular, Ethernet-based technology to deliver real-time machine control between multiple control points and devices, with VTR Control, including record, play, stop, rewind, fast-forward, jog, shuttle, slo-mo, loop play and search-to-time. The module supports shared control, with control of one to eight VTRs, individual or ganged, from one DNF Flex Control CP20 panel. Clip Control module enables users to load and play video clips on video servers and DDRs within Flex's environment. Clip Control Module supports Odetics protocol-controlled servers and DDRs.
Also: Flex Control Network Tally Interface Box; DMAT-O Sports Controller; 3040P/DLO and Event Sequencer Option, ST300-DSR1K for SONY DSRDR1000

Dolby Laboratories Inc. SU10443
Intro: LM100 Remote Application enhances the unit's postproduction abilities and assists with advanced loudness measurement. Features include: continuous logging of short and long-term speech, with loudness values in realtime while storing history data or analysis at a later time. The remote application also has the ability to simultaneously control multiple LM100 units.
Also: Dolby Digital, Dolby E, Dolby Pro Logic II, LM100

Doremi Labs Inc. C2529
Intro: The MCS-HD 4-channel HD video server with two record and two play independent HD video channels, shared storage and selectable compression rates; the ORCA MPEG-2 HD Encoder PCI Card with real-time MPEG 2 encoding of HD video up to 200 Mbs; The HDVI-10, an SDI-to-DVI converter; the V1-HD compressed and uncompressed HD video disk recorder.
Also: MCS MultiChannel Video Server; V1-MP2 video disk recorder; V1 uncompressed VDR

Dorrough Electronics C7814
Intro: Remote control to access phase, correlation, and other functions in the Loudness Meters.
Also: Loudness Meters

DPA Microphones Inc. N2536
Intro: DPA4071 Miniature Microphone with Presence Boost is an omnidirectional miniature condenser microphone for performing talent in television broadcast and film applications. It features presence boost, a permanent 5dB soft boost at 4-6kHz, which targets the so-called "presence area," the range at which the human ear is most sensitive, and the range of speech intelligibility, clarity and definition.

Drake Electronics SU6776
Intro: FreeSpeak Lite provides the PiCo 4000 matrix with FreeSpeak connectivity for the first time, giving smaller Drake systems access to the this digital wireless and license-free intercom system.
Also: 4000 Series II Matrices, Refresh Panels, FreeSpeak

DSC Laboratories C10306
Intro: Resolution, and other precise camera alignment patterns.
Also: Ambi/Combi rear-lit test systems; CamAlign front-lit ChromaDuMonde, and other patterns for critical camera alignment; Cavi-Blacks, cases and other accessories.

DSI RF Systems Inc. C9314
Intro: The TMS-2300i is a multi-use sys-

tem for traffic monitoring, weather reporting and cutaway shots for breaking news. An Internet bandwidth transmission, such as broadband, produces less expensive camera feeds than fiber, and enables broadcasters working within a limited budget to expand their on-air remote camera feeds and supply digital video feeds to their station's Web site; The MD-1000LL is a modem dialer that allows for remote control of cameras and other auxiliary functions through direct data or microwave subcarriers. No dial-up telephone circuits are needed.

DVS Digital Video Inc. SL4713
Intro: Clipster has real-time color correction, pan & scan, resizing, and full editing capabilities; Centaurus is a PCI-X bus capture card for SD, HD and 2K, for OEM and systems integrators.
Also: HDStation2U, HDStationRGB/2K

e2v technologies C2518
Intro: Stellar Cool is new to e2v's family of high power outdoor satellite communication amplifiers, and is rated to 50 degrees Celsius plus direct sunlight (solar gain 1120 W/m squared), has up to 400W output power, and is available in C and Ku bands with X and DBS coming soon; The water-cooled Esciot is a high operational efficiency plug-in IOT. **Also:** EEV IOTs & ESC IOTs, EEV Klystrons, Stellar Satellite Uplink Amplifiers and EEV Thyatrons

Echolab C9210
Intro: Secret Project X2004 is Echolab's new SDI switcher; The Ckey4 chromakeyer works outside the typical RGB space across the hue spectrum; The DVS UniModule for the Echolab 2000 and 5000 digital switcher series can be field configured for any analog format or SDI, and provides frame-sync for non-genlock sources.
Also: DVS5900, DVS5700

Econco N1405

Editware SU7820
On Display: Fastrack VS hybrid non-linear editor for access and control of video servers; Fastrack SE linear/hybrid editor Vers. 3, optimized for linear control of VTRs.
Bob Lefcovich, VP, Sales and Technical Support
 200 Litton Dr., Ste. 30B
 Grass Valley, CA 95945
 Phone: 530-477-4300
 FAX: 530-477-4304
 E-Mail: bobl@editware.com
 Web Site: www.editware.com

EDX Wireless LLC N1122
On Display: Signal, EDX SignalPro, MSITE and TPATH

Electronic Theatre Controls C8732
Intro: Sensor CEM+ interfaces with ETC's ETCNet2 Ethernet system; The Sensor+ dimming system with a CEM+ control module provides network control and two standard DMX inputs; The CEM+ allows for 128 presets with programmable timed fades for four separate rooms. Operations like configuration, status monitoring and basic record-and-play are done from the face panel or via a Web browser. The Sensor CEM+ module provides control, and Source Four Revolution ETC features the only moving light engineered with theater in mind; The Revolution has modularity, brightness, imaging and 16-36 degree zoom capabilities.
Also: Source Four luminaires, Sensor Dimming, SmartPack Dimming, Emphasis and ETCNet2

AheadTek

Twice the Head Life Half the Cost

Video Heads

- ★ Digital Betacam
- ★ Betacam SP
- ★ Betacam SX
- ★ 1" Type C
- ★ 3/4" U-Matic
- ★ 2" Quadraplex
- ★ Pro VHS/SVHS



800-971-9191 ♦ 408-226-9800

WWW.AHEADTEK.COM

See us at NAB2004 Booth #SU10654

SENCORE

**Exclusive Test Instruments For
Your MPEG and HDTV Needs.**



TMS 1779 Transport Stream Monitor

- MPEG-2, ATSC, and DVB Monitoring
- Remote Monitoring
- Logging and file capturing



MNA 1420 MPEG-2 Network Analyzer

- Real Time Monitoring
- Data Logging
- Portable, Battery Operated



TS 1692A Transport Streamer

- Multiple Stream Payout
- Supports Multiple Standards
- Remote Controllable



SLM 1456 Digital Signal Meter

- Full Spectral Display
- Measures Analog and Digital
- BER and MER levels

**Includes
8 VSB**

**Stop By Our Booths At NAB (SU11011 and C10343) To See What's New
Call 1-800-SENCORE (736-2673) or Visit www.sencore.com**

Electronics Research Inc. N3322, C5706

Element Labs Inc. C9322

Intro: Versa Tile is a glowing LED light tile controlled by video signal that generates visual effects when used in large arrays, enabling walls and floors to come alive with colors, patterns and moving images. Each Versa TILE represents one pixel on the screen of a PC or Mac. Content can be created using any graphics program or adapted from widely available stock imagery. Available in standard 5 x 5 or 10 x 10 panels configured with internal rigging hardware for temporary use or as simplified frames for permanent installations.

EMR Corp. N1600

EMS Satellite Networks C12325

Intro: High speed, two-way Internet via satellite communications hubs and terminals based on the DVB-RCS global open standard.

ENCO Systems Inc. SU6764, N2426

Intro: enCaption is a speaker independent, speech recognition system designed for automated real-time closed captioning for news, weather and breaking events; A neural network-based system that is available in English, Spanish and French, DADtv is a specially packaged configuration of our digital audio delivery product DADpro32. Specifically targeted at TV, DADtv supports PBUS interface, as well as GPI, serial and IP. It also supports a wide selection of control surfaces aimed at making networked TV audio easier,

higher quality and more powerful.

Don Backus, VP Sales & Mktg.
29444 Northwestern Hwy.
Southfield, MI 48034
Phone: 800-362-6797/248-827-4440,
Ext: 130
FAX: 248-827-4441
E-Mail: backus@enco.com
Web Site: www.enco.com

Encoda Systems C5617

Intro: D-Series Vers. 4 automation system is based on open-source, standards-based Linux Vers. 2.6 and offers a growth path in critical areas such as device support, future hardware platform support, IP networking and remote administrative functionality; Operational Broadcast Monitoring, designed to rapidly identify and correct possible failures and errors on transport streams on an network and specific channels through all stages of transmission.

E-N-G Mobile Systems Inc. C6444

On Display: Electronic newsgathering vehicle; satellite newsgathering vehicle

Ensemble Designs SU11919

Intro: The HD Frame Synchronizer and Proc Amp with optional eight-channel audio processing will be featured, as will the new remote panel for controlling proc adjustments for the Avenue proc amps and converters. Perfect for live shading and remotes. Compatible with Avenue 8500 proc amp and frame sync. The eight-channel digital audio processor option for Avenue 8500 frame sync and proc amp. 8500 has digital and analog

I/O and is perfect for handling incoming satellite feeds and remote truck feeds; The new BrightEye series of converters include audio embedding and disembedding. A lot of power is packed into the 5.5-inch chassis; The Avenue 8400 SDI frame sync also handles embedded audio seamlessly.

Also: Avenue Signal Intergration System, BrightEye Video and Optical Converters
Cindy Zuelsdorf, Dir. of Sales & Marketing
PO Box 993
Grass Valley, CA 95945
Phone: 530-478-1830
FAX: 530-478-1832
E-Mail: info@endes.com
Web Site: www.ensembledesigns.com

Enseo SL673

On Display: Alchemy Efx, Alchemy HD, Quartet HD, Channel Efx Server, Star HD Server

Environmental Potentials N604, C11744

Intro: EP 2000 provides removal of surge anomalies and high frequency noise; EP 2500 Main Gate Protection; EP 2400 rackmount power protection and frequency filtering; EP 2300 offers low-order harmonics mitigation; EP 2100 series offers telephone, cable and Ethernet suppression with EMI/RFI filtering.

Envivio Inc. SL5842

Intro: 4Caster Broadcast 4500 Series, real-time MPEG-4/H.264 encoder for media transport solutions; 4Caster Broadcast 4500 Series, non real-time MPEG-4 encoder for IPTV and enterprise solutions; 4View Broadcast 4500 Series professional MPEG-4/H.264 decoder for media transport solutions; 4Front EPG portal MPEG-4 system
Also: 4Sight MPEG-4 streaming server, 4Mation MPEG-4 authoring system, EnvivioTV MPEG-4 software player, 4Forum MPEG-4 corporate communications and distance learning system.

ERG Ventures Co. Ltd. SU10609

Intro: HDM-EV30D 6-inch (16:9) HD/SD monitor, featuring horizontal turn-over display, peaking function and frieze function. Input: HDSDI/HD analog/SDTV analog; HDM-EV80D 8.4-inch (4:3) HD/SD rackmount monitor; 4 input/1output makes it useful on locations when multiple cameras are used, such as events, dramas, sports or news. Energy-saving, use only 1/4 battery than a cathode-ray tube type, and compact size. The monitor is equipped with DC output, so one can feed power to another. Multiple monitors can be wired in a row without powering each monitor from DC unit; adjustment volume of pictures on the front part. The monitor can be used by itself as well as in the system as a rackmount monitor. Input: HDSDI/SDTV digital (D1).
Also: HDM-EV80D, HDM-EV35D, HDM-EV30D

ERI-Electronics Research Inc. N3322

Intro: The BPF250 is a 19-inch rack mountable 250 W (average) UHF band-pass filter that comes in six, seven and eight cavity versions for critical or non-critical rejection and is temperature compensated to prevent drift. It can be used in reflective or constant impedance configurations, with Type N or 7/16-inch connectors available; The SL (Stretch Line) Channel Combiner is a VHF or UHF channel combiner for combining two (up to 20 kW average power each) frequencies that are minimally three channels apart, using a pair of high quality 90-degree hybrids, and a transmission line

phase shift of 180 degrees between the two channels. Isolation between the two transmitters is accomplished by the -35 dB isolation achieved by the first hybrid.
Also: UHF and VHF television broadcast antennas, transmission line, towers, filters, combiners, and RF components.

ESE C5222

Intro: PC-471PCI Time Code Interface Card synchronizes PC clock to master clock or other time source. Reads ESE or SMPTE or EBU time code; NTP Client Displays can be adapted to read the time from a network. Displays vary in size from .55 inch to 4 inches, and come in a variety of enclosure types: ES-110 GPS-based frequency standard generates a stable source of 10 MHz and 1 PPS using the Global Positioning System satellites as a reference; ES-242U is a 2-input, 12-output distribution amplifier for numerous IRIG time codes. The unit switches from Input A to Input B if an error is detected on Input A.
Also: Master clock systems; A/V distribution amplifiers; SMPTE/EBU time code products; and audio level indicators and interfaces.

Euphonix N3616

Intro: The Euphonix Mar Air is a 96-channel digital mixing system for on-air, live-to-tape and outside broadcast productions. It uses Euphonix's digital processing core and converters, and includes hardware redundancy and software diagnostics.
On Display: System 5-B all-digital mixing system that can handle several digital and analog sources. The console's design includes provision for backup power and redundancy tailored to the on-air environment.

Evertz SU11827

Intro: MVP Multivideo display processor, with HD, SD and composite analog inputs and multiple scalings of the same input displayed across single, dual or multiple displays with VistaLink (SNMP) support; Production VANC encoder system simplifies the management of HD production material; 7707LT/LR L-band and 7707IFT/IFR 70/140MHz IF fiber-optic transmitters and receivers feature wide dynamic range, AGC control on both RF and optical interfaces, low noise and low IMD contribution, and include built-in RF and optical power meters and fully SNMP-compliant remote monitoring and control; PKG7770MFC HDTV compression codec compresses one SMPTE 292M (1.485 Gbps) serial digital video signal with up to four AES channels of embedded or external audio into one 270 Mbps SDTI-compliant output stream; 7764AVM-4A HD/SD Quattro auto-detecting HD/SD card extends the traditional Quattro AVM signal monitoring features by providing for monitoring of HD signals.
Also: Logo inserter; mini switchers; 7700FR-C multiframe

Exavio SL5141

Intro: ExaMax and ExaVault, configured for multistream broadcast and post-production applications. The ExaMax Media Intelligent Network Platform is a video-smart network device that improves the performance of existing storage products for HD, digital film and multi-stream compressed files. The Exavio ExaVault Storage Subsystem is comprised of a Linux-based controller, ExaView management software and scalable storage arrays from 3TB (1 RU) to over 120TB in a single 1 RU chassis; integrates with NASs and SANs; Fibre Channel connectivity.
Also: ExaMax 3000

I·D·

15 Years of Excellence

Advanced Digital Power Solutions



Why is IDX the NUMBER ONE choice for Lithium Ion power solutions?

- Award Winning Technology
- Exclusive PowerLink™ Feature
- Extra Power
- More Choices
- Less Weight
- Greater Options
- Proven Reliability
- Superior Service

IDX System Technology, Inc.
1602 Lockness Place, Torrance, CA 90501
Phone: (310) 891-2800 Fax: (310) 891-3600
Email: idx.usa@idx.tv



Website: www.idx.tv

See us at NAB2004 Booth #C5639

Eyeheight Ltd.

SU11809
Intro: IrisHD, a HD-SDI digital vision mixer with up to eight inputs. Features include full 10-bit mixing with programmable mix times and automatic or manual transitions; SafeEyesHD graticule generator provides guide markers for common television and film formats; Iris SD-SDI vision mixer, an SD version of IrisHD vision mixer with 10-bit processing vision and up to 12 inputs; Eyeheight's modular master control system, Payout, evolved from the PresTX line of video and audio switching equipment.

EZ FX Jibs Inc.

SU9069
Intro: Dolly is a position dolly with casters for rolling over a variety of surfaces. The Jib Stand is an adjustable column design for mounting a Jib. With the capacity for accepting fluid heads it can also be used as a tripod.

Also: EZ FX Jib; EZ FX Handle; 6-Foot Extension; 4-Foot Extension; High Hat; Undersling; EZ FX Junior Jib; Broadcast Zoom/Focus controls EZ FX Jib Pod; EZ FX Monitor Platform; EZ FX LCD Vest; EZ FX LCD Jib Vest; EZ FX Stabilizer Mount; EZ FX Dutch Tilt Plate

Fast Forward Video

C2851
Intro: DigiDeck DVR; based on the technology of the company's Recon DVR, the DigiDeck records to IDE hard drives and is available with composite and Y/C input/output, two channels of unbalanced audio, genlock, timecode I/O and RS-422. The system can record up to nine hours on a single drive. Options include RGB/Component out and Windows control software. The DigiDeck DVR can be ordered as a single- or dual-channel system.

Also: Recon, OMEGA Deck

Floral Systems Inc.

SU11017
Intro: Auto JIP, the automated "join in progress" feature for AirBoss, simplifies joining a program in progress after a live sporting event by making timing calculations to cue video servers and automatically mark items skipped as "pre-empted" in the as-run log; MediaTrans Plus delivers video and audio signals between two locations using MPEG-4 technology; MediaTimer Desktop program timing application can be used on remotely located computer workstations to view content on the desktop without installing cables to the video server; FlipStation integrates Floral automation products with Telestream Flip Factory to enhance the delivery workflow by providing unattended transcoding and transfer of video files from edge servers.

Also: ShareCasting, System L100/LT200, AirBoss, MediaMaster, ShowTimer and MediaFiler.

Focus Enhancements

SL3501
Intro: The FireStore FS-2 digital disk recorder incorporates extensive analog and digital audio/video support and industry standard control capabilities in a rackmount chassis, including a full complement of inputs/outputs, a reference video loop through, DV25 format DTE technology support, extensive recording capabilities and flexible playback options; FireStore FS-2EX external expansion module allows up to three FireStore FSHDD-1 FireWire disk drives to be added to FS-2; Firefly MZ system with Multi-Zone functionality for professional digital signage and visual marketing applications.

FOR-A Corp. of America

C5628
Intro: The Clean Switch CS-HD-1602 routing switcher distributes HD signals with

embedded audio from a compact 16-x-2 HD/SDI routing matrix architecture; the Hanabi HVS-1000HS, a one mix/effect version of the two mix/effect Hanabi HVS-3000HS digital HD/SD switcher, supports 1080i, 24p, 720p and SD and is SD/HD switchable, multibit and multiformat; the HVS-1000EOU switcher for editing and in-studio applications and the HVS-1000LOU version for OB and live production applications; the IVS-70HS video stabilizer helps remove shake from SD and HD video images shot under adverse conditions or from long distances with a telephoto lens; the LDR-4 multichannel digital disk recorder provides high-quality recording of four input streams to a 120 GB hard drive, which provides capacity to record 30 hours of DV-quality material per channel; and the DCC-70HS multiformat, multistandard (HD and SD) version of the DCC-700 digital color corrector offers 14-bit, 4:4:4 component signal processing circuitry and the ability to control black, white, and gamma (RGB) levels individually or as a group.

Forecast Consoles Inc.

SU11639
Intro: MASTERail 2.0 version of our modular-based console system; MASTERail NLE editing consoles incorporate the MASTERail technology.

Fortel DTV Inc.

SU7477
Intro: FS-516 A/V Synchronizer, a single-board system for transcoding, synchronizing and processing a variety of source types: NTSC, PAL or SDI with analog, AES embedded or Dolby audio; DEC-510 NTSC Decoder, a modular card enabling conversion from NTSC to SDI using QuadraComb filtering; 500 Series Video Synchronizers; QuadraComb-enabled editions of Fortel's 400 series synchronizers.

Also: Transcoders, synchronizers, legalizers and color correctors.

Foundry (The)

SL5513
Intro: Furnace for Avid|DS VFX Plug Ins; Furnace for After Effects VFX Plug Ins; Tinder 5.0 for Discreet VFX Plug Ins; Tinder 2.0 for Shake VFX Plug Ins.
Also: Furnace for Avid|DS, Furnace for After Effects, Tinder 5.0 for Discreet, Tinder 2.0 for Shake, Anvil, Keylight, Tinderbox.

Foxcom Inc.

C11743
Intro: Course Wavelength Division Multiplexing Units; CWDM technology transmits multiple channels over a single fiber. Up to 8 L-band and/or 70/140 MHz IF signals can be transmitted; New line of C, X, and Ku-band fiber-optic interfacing links, which transmit and receive uplink and downlink signals in the 3.4 to 12 KHz range, will be added to our line of IF 70/140 MHz and L-band links. The Sat-Light IFLs function as a transparent link, transmitting all satellite modulation formats between the satellite antenna and the Network Operations Center (NOC) or control room, carrying an polarization on each link up to 15km. Lasers enable minimal distortion.

Frezzi Energy Systems

SU10512
Intro: Frezzi Dual Head Super-Sun Gun Kits, model SSGK2-200, provide 200 W HMI Lightheads for ENG/EFP illumination. Each kit contains two lightheads, choice of AC or DC ballasts, HMI lamps, barn doors, soft boxes and transport cases; Frezzi Micro-Sun Gun HMI Kits, model MRAK-NP1, for all Professional Mini-DV camcorders, provide on-camera lighting for maximum daylight balanced output. Each kit contains the 10 W Micro-Sun HMI lighthead, battery pack, overnight charger and camera-mounting

shoe. Frezzi 130 W-Hour On-Board Ni-MH battery provides high "energy output" for use with professional ENG/EFP camcorders and dual brick adapters for powering HMI 200 W on location lighting; Frezzi M2100A/V Advanced Battery Charging System for high-energy based nickel battery systems; charges, analyzes, reconditions and maintains batteries for optimum performance and cycle life; Frezzi Total Control Pan and Tilt Heads with Pilot Advanced Controller Systems feature silent operation for single and multiple head installations.

Also: Frezzi lights, batteries, chargers, light kits, power packages, on-camera accessories for power and lighting integration.

James Crawford, CEO

5 Valley St.

Hawthorne, NJ 07506-2017

Phone: 973-427-1160/800-345-1030

FAX: 973-427-0934

E-Mail: frezzi@frezzi.com

Web Site: www.frezzi.com

Frontline Communications

C7133, MM118
Intro: SNV Sprinter; ENG/DSNG Modular Broadcast Vehicle; 2 Combination C-band & KU-band SNVs; DSNG-350 HT "High Top."

Fuji Television Network Inc.

C8339
Intro: CamSat motion-control system, with six movements that can produce shots from several angles; easily programmed for off-line operation; minimum setup required; quiet for use during live broadcasts; Smart MUX multi-functional multiplexer was developed at the request of those in Fuji Television's Technical Department. TVACS (Television Active Control System), a vibration-proof helicopter camera system that can automatically remained fixed on a ground target by combining a car navigation system with ADS technology.

Fujinon

SU11542
Intro: The HA18x7.6BERM/BERD HD ENG/EFP zoom lens for video and news production features a competitive focal length, covering 7.6-137mm and minimum object distance of 0.6mm. It offers operators a wide shooting range, and features improved optical characteristics and programmable digital features; The A18x7.6BERM/BERD ENG/EFP zoom lens is designed for SD news and video production. It features a focal length of up to 137mm, a wide angle of view at 7.6mm and improved optical characteristics and programmable digital features.

FX Group

R616
Intro: Set designs for television news, sports and entertainment programming, featuring multi-use rear projection screens to display graphics, news footage and live newsroom images. Set designs for TV incorporate motorized tracking of plasma monitors. Other mechanisms allow monitors to be used in multiple positions, i.e. pop-up plasmas, plasmas that lower from the ceiling and rotating brackets that allow the monitor to be used in both horizontal and vertical positions. Lighting designs for TV feature automated moving lights with multi-colored gobo patterns projected on translucent screens. Set remodeling for TV that offers printed graphic coverings that can be applied like wallpaper.

Gefen Inc.

SL5857
Intro: Ex-tend-it HDTV Repeater for extending HD video up to 100-feet from the source using copper cables; Ex-tend-it HDTV switcher with digital audio; Ex-tend-it 2:8 HDTV Splitter splits the HDTV

signal eight ways; Ex-tend-it SDI to DVI Adapter is a converter that enables systems that output SDI to display on digital flat panels equipped with DVI and connect to any Gefen DVI or HDTV Switcher; the Ex-tend-it HDMI Switcher enables two HD sources to link to one HD display with HDMI. Sources are switched behind the scenes.

Also: HDTV Switcher with digital audio.

GenArts Inc.

SL5260L
Intro: Sapphire plug-ins, a collection of over 175 image processing and synthesis effects, are now available for After Effects, Premiere, Final Cut Pro, Combustion, Digital Fusion, 844/x and Quantel generationQ. Long considered necessary on compositing and editing systems like Avid AVX products, Discreet Systems and Shake.

Genelec

N4012

Gepco International Inc.

C1429
Intro: Hybrid fiber distribution boxes: floor and rack boxes that breakout Lemo SMPTE hybrid fiber connectors to ST fiber and electrical connectors; HD Coax is now shipping with individual test results and certification attached to each reel. Gepco HD Coax features a 3GHz bandwidth and meets or exceeds SMPTE specifications.

Also: HD Video Coax, Hybrid Fiber Camera Cable, Triax

Glidecam Industries Inc.

C8843
Intro: V-35 and V-10 body-mounted camera stabilization systems; L7-Pro 7-inch LCD monitor (16:9/4:3) available in SDI; Vista Head, a remote pan/tilt head for up to 20 lbs.
Also: 2000 Pro, 4000 Pro, V-8, V-16, Gold Series, Camcrane 200

Global Media Resource Inc.

C3128
On Display: Blank, new and recycled video tapes

Groove Addicts

SL5302
Intro: Groove News consists of custom sound-design packages for news, also available for syndication. Adrenalin is a news package created for Viacom-owned WBZ 4 News Boston. Five new CDs from the Groove Production Music Catalog.
Also: Samples of music libraries.

Hamilton Metalcraft Inc.

C2843
Intro: We now offer our made-to-order sheet metal fabrication services in heavier thickness.

Hamlet Video International Ltd.

C3243
Intro: FlexiScope is the hand-held measuring solution suitable for engineering or operational personnel. FlexiScope features a range of add-on modules to measure any signal. The first is HD-SDI and SDI with embedded audio monitoring; LCD Scope 292WVA is the big brother of the LCD Scope 400WVA; an HD-SDI, SDI, composite, component YC monitoring unit, with embedded, AES/EBU and analog audio inputs; a direct CRT replacement product with a built-in screen; fits into half width, 3U rack space; Whichwire tells the user what's on the end of a cable. Small and water proof, it runs on AA cells, and switches itself on when an input is applied, tells the user what it is and shows the associated color picture on its screen; Digigen comes in three models: Digigen 292, 601 and Combo. These full specification devices are inclusive of HD, SD and composite multi-standard operation with user-programmed 64-character alphanumeric moving identification, plus embedded, AES/EBU and analog audio outputs. Vidscope is a monitoring and measure-

ment tool for DV, NTSC and PAL, and associated audio, plug-in software solution for Windows computer operations. *Also:* Monitor Scope 601A; DigiScope 601A; Adept; LCD Scope 400WVA

Hannay Reels Inc. C10317
On Display: Cable Reels

Harmonic Inc. SU11006
Intro: will roll out its DiviCom MV 100 SD Encoder, a real-time digital A/V encoder that delivers compression at ultra-low bitrates for MPEG-2 and next-generation codecs such as MPEG-4/AVC and Windows Media 9.
Also: DiviCom MV 100 SD encoder, DiviCom MV 450 HD encoder, DiviCom MV 30 SD encoder, Narrowcast Services Gateway (NSG) 9000 Series

Harris Corp. C1906
Intro: PowerCD Digital MSDC IOT transmitter with built-in eCDi network monitoring and control system; NeuStar DTV sound surround system that converts audio into surround sound regardless of format; Dataplus, a network agnostic data-casting system.
Also: ReCon, eCDi, hrs, NetVX, Atlas Analog

Harrison N3016
Intro: TVD-SL Digital Broadcast Console with new IKIS control platform, Digital Tools Card (DTC), plug-in software packages, TFT integration, expanded metering options; expanded high-res GUI; and expanded Broadcast Logic interface; MPC3-D Digital Film Console with new TFT integration, Digital Tools Card (DTC), plug-in software packages, surface design, expanded metering options, expanded

high resolution GUI, and external serial control.
Also: TVD-SL, MPC3-D

Henry Engineering N1100
Intro: StudioDrive, an on-air/production audio mixer that fits in the drive bay of a PC and features six inputs (1 mic + 5 line), on-air program out, interface to PC sound card, monitor system, headphones, and telco line.
Also: Matchbox HD; TwinMatch; Superelay; USDA; DigiStor-MP; MicroMixer; StereoMixer; StereoSwitch; LogiConverter; Audio OnLine

HNB Communications N2812
Intro: Portadrive, a portable multichannel recorder for audio acquisition, records more than four hours of uncompressed eight-channel 24-bit/96kHz or over 20 hours of four-channel 24-bit/48kHz audio onto a removable 40GB hard disk; USB2.0/FireWire PDRDSUF docking station accepts the Portadrive's removable HD caddy via a slot in the front panel, featuring a universal power supply and USB and FireWire cables.

Hi-Tech Enterprises Inc. SU11303
On Display: New and used broadcast video equipment

Hotronic Inc. C6913
Intro: Model ATS51 NTSC or PAL low-cost full bandwidth TBC/frame synchronizer with full adjustment on front panel. Proc Amp controls are preset and adjustable, digital comb filter, gen-lock. Dual channel in a full size 1 U rackmountable chassis is available; Model AP41 10 bit TBC/frame synchronizer with full control and adjust-

ments on front panel, proc amp controls preset and adjustable, digital comb filter, gen-lock, freeze frame/field, and 16 speed strobe. True Y/C processing outputs can include composite, Y/C, YUV & SDI etc. 1U size and rackmountable.
Also: TBCs, frame syncs, 8x2 asynchronous router, proc amps, analog/SDI converter, audio delay, video/audio delay, 8x8 SDI router, A/V multiplexer/demultiplexer, SDI frame synchronizer & video/audio delay up to 20 sec., test signal generator.

Howard Zuckerman & Associates SU7071

Intro: Scorebox, a score "bug" on the television screen that can give the viewer information such as down/yardage and time remaining for a football game, corporate or station identification logos, updated scores of other games, etc. Scorebox is operated by one individual at the remote site of the event or from the control room or transmission point. In a lunchbox configuration, the unit takes up just slightly more space than a regular desktop PC and packs into one small case for ease of travel and shipment. In a rack mount configuration, the unit can be mounted anywhere in a space of 4 RU. The operator's screen and keyboard are connected by one CAT5 cable.
Also: Scorebox

Huge Systems SL 3433
Intro: HMV-320R, a redundant disk storage product capable of sustaining 10-bit, 1080i HD content from five disk drives utilizing SCSI Ultra 320 technology.
Also: HMV-320R

IABM C1400
Intro: The International Association of Broadcasting Manufacturers (IABM) will be exhibiting and hosting a private meeting room as a service to member companies.

IBM SU 98-9
Intro: Solutions, technologies and services for on-demand models, delivered as part of a framework based on IBM's media and entertainment experience. These solutions support the ability to consolidate overhead, integrate operations, optimize business customer offerings, drive direct-to-consumer relationships and prepare for integrated media.
Also: Digital content creation, management and distribution; workstation, eServers, storage.

IDX System Technology Inc. C5639
Intro: Upgraded JL-2Plus and Endura System VL-2Plus, both with new high impact molded case reducing weight to 2 pounds and improved performance by 15 percent.
Also: Endura System, E-80, E-80S, E-50, E-50S, VL-2Plus, VL-4, VL4S, NP-Style Solutions, NP-23, NP-H50dx, NP-L50, NP-L50S, JL-2Plus

Ikegami Electronics (U.S.A.) Inc. C-6428
Intro: HLM-1700R and HLM-2200 HD LCD monitors; HDL-0101 wireless HD camcorder; HSS-3000 multifunction HD/SD switcher; HDL-40C CMOS camera; DNG technology including DNS-301 camcorder and DNE-31.
Also: HC-400W with DNR-20, HL-DV7AW, HL-55NA, HDK-79NA, HDL-20, HL-60W, HDK-790E/79E, HDK-720/720P, HTM-1907R, HTM-2070R,



**Frezzi Charges the Batteries,
Powers the Cameras,
& Lights the News.**



2000 Emmy
Award Winner



Frezzi HMI Mini-Sun Guns
18W, 24W, & 50W



Frezzi 200W HMI
Super-Sun Gun



Frezzi M2100A Advanced
Battery Management System



Frezzi Dimmer Mini-Fill
& Camera powered by
BP-14MHEG 130Wh Battery



Frezzi's Micro-Filis
Dimmer / on-off / HMI's

Frezzi
ENERGY SYSTEMS

5 Valley Street
Hawthorne, NJ 07506
(973) 427-1160 Fax (973) 427-0934
<http://www.frezzi.com>

Contact Frezzi for information on a specialized power & lighting solution for your requirements (800) 345-1030

DVCPRO-100, to their existing media server implementations; also, building on its leadership in driving MXF standardization, Omneon will introduce native support for MXF across its line of Omneon Spectrum media servers, giving customers the choice to select QuickTime or MXF as the media wrapper format for material stored within an Omneon system. Omneon is leading the way in providing MXF support as a native media format, eliminating all forms of format conversion or transcoding when working with the new MXF format; Media Server Solutions Omneon Spectrum for Production - Omneon will highlight its unique shared storage infrastructure for collaborative production, demonstrating enhanced Edit-in-Place capability for news and video editors. Working with Final Cut Pro from Apple, editors have maximum productivity by editing material directly on an Omneon Spectrum, making finished edits immediately ready for playback and reducing their time-to-air. Omneon will also show application support for browse editing along with additional craft editor application integration; also, with Omneon Spectrum for Distribution, Omneon will once again raise the standard for multichannel, multi-format playout servers, showing a mix of both multiformat SD and multiformat HD playback, all from the same server. Omneon will demonstrate multiple configurations, ranging from the industry's most cost-effective large 30+ channel Omneon Spectrum playout server to the new six-channel Omneon Spectrum ES remote server, connected

via Gigabit Ethernet for IP-based content distribution. Omneon will also expand its industry-leading multi-format capabilities with new solutions for HD playback in any format, all of which seamlessly integrate into any Omneon system. With Omneon Spectrum for Archive, Omneon will demonstrate integrated solutions for nearline and offline storage and management of media assets. Best-of-breed archive application and storage partnerships will be on display highlighting the integration of Omneon with various archive solutions. In addition, a suite of new Omneon media tools for viewing, browsing, manipulating and managing media clips within an Omneon SPECTRUM system will be on display. Also: Multiport MIP 3000 Series, Mediaserver MCP 2100, Mediastore MSC 4400 Geoff Stedman, VP Worldwide Mktg. 965 Stewart Dr. Sunnyvale, CA 94085 Phone: 408-585-5000 FAX: 408-585-5099 E-Mail: sales@omneon.com Web Site: www.omneon.com

Omnia, A Telos Co. N1416

OmniBus Systems C7634
Intro: OmniBus Systems G3 technology shifts emphasis from applications to specific tasks, to control and configure OmniBus automation and selected broadcast equipment; Tx>Play Transmission Automation, a scalable system for facilities operating from one to eight channels, complementing OmniBus

Colossus and based on G3 technology; Colossus Control, the first component of OmniBus Colossus transmission automation built with G3 technology, it allows a single operator monitor and control up to 32 channels from a single workstation; N+1 Failover, a redundancy system in which one channel in a multichannel operation can be designated as backup; also based on the G3 technology the OmniBus Headline Media Editor Suite, a multiformat desktop editing system featuring support for WM9, as well as MPEG-1 and MPEG-2. Headline Media Editor's journalist-friendly functionality enables high-speed SD and HD editing in single or mixed formats, even on a laptop. Also: Columbus, Colossus.

Omnimusic C2151
Intro: Flash*Point new scoring for reality programming, investigative reporting, and promo creation. Also: Omni, Blue Dot, Flash*Point.

Omnirax C-2014
Intro: The Force 36 is a workstation for A/V editing and music production, in a choice of melamine laminate colors as well as black melamine laminate combined with Acajou Mahogany, Maple or Grey Metalcraft Formica desk and riser surfaces. The OmniDesk Suite is an ergonomic workstation consisting of four components that together provide an ideal creative environment for A/V editing: The OmniDesk, OM13R (positioning on right side of desk) or OM13L (left side), OM13D (with door; R and L indicate left or right side). The optional KMSOM attaches to the OmniDesk. The desk surface is wide enough for large keyboard controllers, control surfaces or smaller mixers, while providing eight rack spaces in two bays within easy reach. The shelf above the rack spaces can hold computer monitors and nearfield monitors. An optional sliding computer keyboard shelf, the KMS-PR, is available.

OMT- iMediaTouch N709

On-Air Systems Ltd. SL1264
Intro: New version of On-Air Central broadcast automation system; On-Air Systems will also demonstrate how PC-based broadcasting can provide a cost-effective end-to-end TV system for the corporate market; On-Air Central's range of modules automates the broadcasting process from program capture through to playout, logging and reporting. Vers. 4.0 uses TCP/IP- and .XML-based interfaces to bring new levels of interoperability to On-Air Central modules, enabling third-party solutions such as newsrooms, subtitling systems and interactive platforms to be integrated. New features for On-Air Central Vers. 4.0 include multichannel audio, comprehensive GPIs, and integrated TXCG; SQL Data Base enabled On-Air Central will also show the benefits of broadcast automation for corporate users as an alternative method of communicating with employees and other target audiences both nationally and worldwide.

Optibase Inc. SL 2463
Intro: MPEG MovieMaker 400 MPEG-4 Hardware Encoding Board encodes FD1 resolution in single channel configuration or simultaneous dual channel encoding in SIF resolution. AAC Low Complexity (LC) audio encoding supports live streaming over IP networks. MovieMaker can detect varying levels of motion in a stream and can detect scene changes. It supports horizontal cropping; VideoPlex HD Decoding Board Playlist support for back to back/seamless playback. MPEG-2

MP@HL video decoding covering all 18 ATSC formats. Ability to choose mapping or allocation tables from MPTS files. Simultaneous analog and digital RGB output via DVI-I, or digital YUV output via SDI/HD-SDI. Automatic SD/HD up/downscaling Audio pass through, including 5.1 Dolby Digital audio, via optical TOSLink; MPEG Composer 3.8 Sony IMX compliant. MXF Interoperability. Sony M2P file format encoding. Also: MGW 2000, MPEG MovieMaker 2005, MPEG MovieMaker400, VideoPlex HD, MPEG Composer 3.8.

Opticomm Corp. SU11304
Intro: DVX-5400 Multiverse Compatible Series 4 Channel Uncompressed SDI One-Fiber Solution; DVX-6400 Series 4 Channel Uncompressed HDTV One-Fiber Solution; Multiverse Platform Opticomm's new Multiverse Platform utilizes Multiple Division Multiplexing to transport 1-144 channels of almost any combination of video, audio and/or data over one single fiber from one rack mountable chassis. RGB-4000 Transport system for RGB Video, Stereo Audio, Mouse and Keyboard on one single fiber. Also: DVX-5400; DVX-6400; RGB-4000; Multiverse Platform.

Orad Hi-Tec Systems SL4724
Intro: Teletrator for 3D studio presentations, new virtual techniques for elections and new sports enhancement features for American Football, basketball, track and field and swimming; Also: Graphical Computers, DVG; CyberGraphics; CyberSet Light; Virtual Sets; CyberSet; Cyber Sort Studio; Forum/Elephant

PAG C8235
Intro: PAG L95 Li-Ion Time battery provides 95 W-hours of capacity and will power both a camcorder and camera light up to 35 W. Displays equipment run-time in hours and minutes; PAG Power Circle Li-Ion Batteries; Lower cost high-quality Li-Ion ENG batteries in capacities of 95 and 65 W-hours, incorporating PAG Power Circle capacity indicator; PAG Freelancer Charger is an all-chemistry, 2-channel, ultra-compact charger, ideal for location use; PAG Power Plate; A dual battery mount for PAGlok batteries that is compatible with PAGlok, Anton/Bauer or Sony V-type battery mounts. It enables two L75 or L95 PAGlok batteries, to be used in parallel, providing combined capacity and a higher current-draw capability. Incorporates PAG Power Circle voltage indicator. Also: Paglight range of on-board camera lights.

Panasonic Broadcast & Television Systems Co. C3811
Intro: AJ-SDC905 DVCPRO50 camcorder with IEEE-1394 I/O, three 2/3-inch CCDs, minimum illumination of 0.01 lux, 12-bit DSP, 16:9/4:3 switchable, f13 at 2000 lux sensitivity; AJ-SD93 DVCPRO50 VTR is a feeder deck with IEEE-1394 interface for NLE and video applications that records DVCPRO50 and DVCPRO, and plays back DVCPRO50, DVCPRO, DV and DVCAM.

Paradise Datacom C11246
Intro: P300VMUX 70 MHz to L-band Modem Functions; Four or eight Analog Voice Circuits; 10/100 Base-T IP Bridge/Router; Fax, Modem and optional STU IIB & IIB support via integrated relay; 1.1kW Indoor C-band Rack Mountable SSPA. Provides 900 W of linear output power; TWTA replacement for 2.2 kW TWTA N+1 hot swappable power supply; provides extreme reliability; satellite ter-



Integrated News and Automation

Buzzword for 2004: "Tapeless Newsroom"

A tapeless Newsroom is more efficient and flexible; it gives you greater power over your content. It should also be integrated with your newsroom ... and it shouldn't cost you an arm and a leg. Comprompter has the best, most Practical Tapeless Newsroom Solution. See it now

Automation for:

News ... Elections ... Closings ... Scores ...
Markets ... Headlines ... Forecasts ... Tapeless Newsroom ...

Devices:

Captioning ... Stills ... Character Generators ...
Video ... Audio ... Robotic Cameras ... Video Streaming ... Tapeless Newsrooms

Think of it as Automation ...

With a built-in Newsroom!

MAIN HALL
BOOTH C9125

PHONE 800-785-7765
WWW.COMPROMPTER.COM



including editing and conforming to grading and effects. Users can include titles and deliver multiple formats to any device via LAN, SAN or single and dual link HD-SDI. Its ability to create "virtual film-outs" reduces production overheads by cutting down the need for traditional film-outs by up to 90 percent. Includes tools for SD, HD and data file mastering, such as unlimited layer-based color correction, real-time 2k playback, integrated 3D color cube technology, pan and scan, and RGBA compositing. For secondary color correction, Film Master V2 has a user-defined keyer, bezier shapes, tracking module and the ability to reference external alpha mattes. One of the first shipping products to incorporate OpenFX API, the new standard API for visual effects announced by The Foundry. Also: Nucoda Data Conform, Nucoda Data Play

Nucomm Inc. C1425
Intro: ENG Analog Coder is designed for 2 GHz ENG applications, featuring up to two video channels and eight audio channels a 12 MHz channel; ENG VSB Digital Modem is a 70 MHz device that enables up to three video channels and 12 audio channels to be transmitted through digital ENG Links in a 12 MHz channel; Channel Master COFDM Portable Microwave System is a multiband digital/analog portable microwave transmitter/receiver system combining both MPEG-2/COFDM and analog modulation in a small and lightweight case that can be switched between the 2 and 7 GHz bands; Quad Carrier Modem can transport up to four channels of video/audio/digital programs through a 25 MHz STL channel; CamPac is a miniature 2/7 GHz COFDM wireless camera transmitter designed to deliver broadcast quality in a small, lightweight and rugged aluminum case that fits on the back of portable video cameras. Also: Microwave products for ENG and live camera video.

NVerzion SU7075
Intro: Station automation products to dub, segment, edit and schedule broadcast material while managing video servers, VTRs, master control switchers, multiplexers, character generators, satellite receivers, cart machines, storage systems, logo inserters, still stores, routers; also, turnkey system integration services including video servers, routers, character generators, master control switchers, racks; TeraStore Server Expansion Media Library to keep encoded media in a digital state, with terabytes of nearline storage in a rack-mountable unit. Facilities can store material with this networked-based server expansion system. There is no limit to the number of TeraStores that can be unified. Used with Xpansion software modules, this nearline storage solution is agnostic to the main control system. TeraStore/250 4 RU rack mount chassis 4 TB (JBOD) or 3 TB (RAID). Approximately 833 hours capacity at 8 Mbps (RAID). Includes TeraStore Broker and Xpansion Xplorer Site License. Also: NVerzion software/automation, NVerzion, Xpansion, System Integration

nVision SU7552
Intro: NV5128-MC HD Multichannel Master Control Switcher supports both 1080i and 720p, A/B video mixer plus 3 external linear keyers, built-in squeeze-back and logo store, eight-channel A/B audio mixer plus audio overs, optional built-in Dolby E decoders; NV7512 TDM Audio Router, two-channel 512x512 system, expandable to 2048x2048, accepts AES, MADI or stereo analog inputs and

outputs, supports mono (single channel) routing; NV990 Router Control System, the power and flexibility of a server-based system, without the server, low-cost, compact, provides redundancy for NV900 Router Control System; NV5128 Multiformat Router enhancements, built-in analog video conversion, HD-SDI expansion to a full 128 in by 128 out; 8256-Plus Digital Video Router enhancements, built-in analog video conversion. Also: NV5128-MC SD Master Control Switcher, NV9000 Router Control System, 4000 Series Modular Processing, 500 Series Modular Distribution Doug Buterbaugh, Dir. of Sales 125 Crown Point Ct. Grass Valley, CA 95945

Phone: 530-265-1000/800-719-1900
FAX: 530-265-1021
E-Mail: nvsales@nvision1.com
Web Site: www.nvision1.com

Octave Systems Inc. SL3700
Intro: Copy Master 52X CD Duplicators with 80 GB hard drive; Mediatechnics Fusion series of standalone robotic CD/DVD duplicator/printers using new robotics, advanced electronics and stepping motors; Bravo DVD Publisher, a dual-purpose model that produces DVD±Rs at 4x and as CD-Rs at 16x speed; CopyWriter Live records most audio or video sources at 12X speed.

Omneon Video Networks SU7466
Intro: Enhancements to SDTI media interface adapter (MIP 1002 Mediaport) to enable support for Panasonic's compressed HD format, DVCPRO-100. Thus Omneon Spectrum becomes the first media server capable of supporting all leading HD formats simultaneously, including MPEG, HDCAM and DVCPRO-100. Incorporating Omneon's Smart Scalability, the Omneon Spectrum allows broadcasters to deploy server infrastructure for HD/SD playback today and gain the flexibility to add channels or services at any point in the future. Delivering complete investment protection, current Omneon customers can easily and cost-effectively add HD services, including

OverDrive
The pressure to produce more with less has never been greater. On air devices are more complex and controlling the production can be a real challenge. OverDrive™ simplifies live production control with a simple and powerful user interface.

OverDrive™
OverDrive™ is a Windows based production control system. It drives all of the devices during a production, extending the reach of the technical director to include video servers, audio mixers, robotic cameras and more. This means that you can get a more sophisticated production on the air without increasing your staffing levels. Productions are more consistent and less staff training is required to execute a production.

Synergy Series Production Switchers
The key to OverDrive™ is the tight integration to the Ross Synergy Series production switcher family. The interfaces to audio mixers, video servers and robotic cameras are connected through Synergy enabling a tightly integrated production system. This also means that the Synergy production switcher has direct control over these devices without the OverDrive™ system present.

OverDrive™ Benefits

- Sophisticated productions
- Consistent productions
- Fewer staff
- Less staff training
- "On-the-fly" changes
- Immediately air breaking events
- Optional newsroom link

Live Production Made Easy

ROSS
Cool Practical Technology™
www.rossvideo.com
tel: (613)652-4886
email: solutions@rossvideo.com

NAB 04 Booth SU11029

RF clothing; Narda Model 2600 is a solar-powered, wireless solution for monitoring field strength remotely.

Also: Nardalert, SRM-3000, RadMan

Nautel N3302

Nemal Electronics International C2338
Intro: 37-pin (DT12) connector for field and studio applications features P/N NE3700M extremely rugged machined body, low profile, reduced weight version, weatherproof insert, patented set screw design prevents insert rotation, wire retention on dust caps, ease of termination, several strain relief options, compatible with existing designs; BNC connectors for serial digital applications NE8000 series are available for most standard 75 ohm cables Teflon insulation, captivated gold contact fast termination using industry standard crimping tools Easy Grip body; Digital audio snake cable, AES/EBU compliant 110 ohm pairs, color coded and numbered pairs UL-CM approval flexible outer jacket.

Network Electronics SU11606
Intro: Network Electronics' 128 router concept, the HD128M HD-SDI version, and the A128M analog audio version join the popular VD128M SDI version providing a very compact frame, hot-swappable architecture, built-in dual redundant power supply and redundant controller functions. Sophisticated control features include TCP/IP control interface and TCP/IP interconnectivity with VikinX.128 control panels, SNMP agent, as well as a comprehensive surveillance of the router's vital parameters; The CP-MDP (Master Display Panel) offers a series of panels with unmatched flexibility, TCP/IP interconnectivity to allow control over the Internet and furnishes a host of unique features including SCK (Software Configurable Keys), EPC (Expandable Panel Concept) and CSD (Customized Surface Design). The CP-MDP features 64 configurable tri-color buttons with easy exchangeable labels, 320x240 QVGA display, B/W or color and 16 GPI ports / 16 GPO ports in 2 RU with only 45mm depth; N-Box, a new housing for ConQuer and flashlink cards, fulfills the need for an ultra-compact single card solution (except DWDM) with its associated standard back-plane. The unit offers a modular, professional and flexible answer for applications where space is limited or only one card is needed. Four N-Boxes can be mounted on a 1 RU shelf to accommodate applications requiring multiple N-Boxes and they can also be stacked upon each other using desktop brackets. Brackets for wall and under desk mountings are also avail-

able. If more flashlink or ConQuer units are needed, the cards including their back-planes can be used at a later stage in the standard ConQuer/flashlink 2 RU frame housing up to 10 cards. This cost-effective solution provides an alternative to inflexible, low quality standalone boxes. N-Box is unique in its ability to offer growth with the same circuit boards. The compact 16-channel CWDM flashlink system is an important and cost-effective complement to the versatile Network Electronics flashlink fiber optical transport platform. The system houses any of the flashlink CWDM modules that provide additional functions such as electrical/optical conversion, embedding, D/A-A/D conversion, data and AES multiplexing, signal regeneration, wavelength transponding and Ethernet media conversion. The system offers one slot for Network's well-known GYDA controller and features a wide set of functions in combination with CWDM lasers; The new Media-16 was developed as a complement to the popular Media-8 RGBHV router. Both units are setting the industry standard in compactness and performance. The compact, 6 RU, 16x16 RGBHV and Stereo Audio Router has tri-step switching, a built-in professional control panel, a multi-panel interface for any external VikinX Compact panel and a simplified audio connection. Also: VikinX Routers, ConQuer Signal Processing products, flashlink fiber optic transport platform. Cameron Francis, CEO Crescent Office Park, Ste. 27 Salt Lake City, UT 84070 Phone: 800-420-5909 FAX: 800-420-5911 E-Mail: ussales@network-electronics.com Web Site: www.network-electronics.com

Network One SL5916

Neumann USA N2812
Intro: BCM 104 broadcast mic is a large-diaphragm condenser capsule with a cardioid directional pattern, switchable proximity effect compensation, and a high-pass filter that reduces frequencies below 100Hz by 12dB/octave; TLM 127 studio condenser microphone has a switchable cardioid and omni polar patterns, and features the new K127 capsule.

Neutrik USA Inc. C5842
Intro: Cost-effective RCA NF2D jacks and NYS373 plugs. The recessed phono jack is available in the "D" series style for universal mounting. The gold plated plugs feature the Neutrik chuck type strain relief. Both the jacks and the plugs feature color coding for easy identification.

New England Satellite Systems C3132
Intro: For media covering the Michael Jackson trial in Santa Maria, CA, the company has built out a broadcast services facility directly across from the court complex offering tape playout, ENG-style editing suites with Beta SP and SX formats, high-profile stand-up locations with camera and crew, insert studios with camera, staff and custom backdrops, and domestic, international NTSC and international standards-converted transmission capabilities. Also: Michael Jackson trial broadcast services

Nixus SL3702
Intro: 3D-Nixus an efficient and affordable real-time on-air character generator and animation system with 3D effects. 3D-Nixus creates characters and animation with 3D objects in realtime for live on-air broadcasts such as volleyball, soccer, baseball and news.

NKK Switches SU7679
Intro: HB2 quiet actuation illuminated pushbutton switches offer a Sliding Twin Crossbar (STC) contact mechanism, ensuring switching reliability as the contacts self-clean with every actuation. The body measures 17mm from PCB to the top of the cap. The HB2 housing measures 7.8mm square with a 7.5mm square cap. Choice of red/green or red/yellow bicolor LEDs. The isolation of the LED circuits allows designers to simultaneously illuminate the bicolor LEDs to produce an amber color, which offers three-color options in each instance. The caps are clear with a white diffuser for the colored light source. Designers can request legend packets designed to facilitate the specifications of the product. The HB2 series is rated at 0.4VA maximum @ 28V AC/DC maximum. It features both long electrical life and mechanical life with 100,000 operations minimum. The liquid crystal display provides a wide, high-contrast viewing area of 13.9x10.6mm with a 36x24-pixel resolution to maximize clarity; NKK Switches' LCD module suits compact electronic devices that require the display of graphics, text or moving images in tight-fitting locations. It is well-suited for use in 1U rack-mount units and in applications where seven-segment displays and LED matrices do not provide enough information. The device features multi-color LED backlighting available with standard or super bright options. NKK Switches offers selections of illuminated, process sealed, miniature, specialty and surface mount switches.

Non-Stop Music Library SU10315
Intro: Music provider to network, local

and cable television worldwide. Renowned for its audio quality, Non-Stop offers music in all genres and styles such as Non-Stop Music, Cavendish Music, Groovers Music, Pointe Co. Music, Media Music, Crashed Music, Countdown Classical, and JW Media Music.

Norsat International Inc. C12034
Intro: Portable terminals for broadcast and military use are rugged and easy-to-transport. Standard and custom units; transmitters, new 4W KU and 2 W and 5 W C-band units, complement 1 W and 2 W KU. KA transmitters. Purchase individually or as transceivers for immediate installation; 3000X C-band 10 MHz LNB, excellent reliability, complements 3000 Series PLL +/-5, +/-10 and +/-25 kHz versions, all in stock; LA-30 line amplifiers, commercial applications, with adjustable gain.

Northern Technologies Inc. C2230
Intro: TCS-CP3 uses SAD technology to provide fast, non-degrading surge protection for CCTV, coax and data transmission lines. Multiple connector options. Two-stage system to ensure continued protection in the event of a catastrophic strike; Single-Phase UPS, scalable for redundancy, power capacity or battery run time, up to 20kVA. In redundant configuration, a failed module will take itself off line while the other modules continue to support the connected equipment; MAC Series Hardwired Surge Suppression, 120, 240/120 or 208/120 VAC Single-Phase, Split-Phase or Three-Phase Remote Status Indication SAD and MOV Surge Protection; Rack-Mounted Surge Suppression, 120 VAC single-phase, two-wire and ground 15 Amp EMI/RFI noise rejection SAD digital-quality surge protection; PowerBay - Battery Backup, DC Power and Equipment Shelter: Optional 200 Amp combination AC service entrance and telco. Demarcation 4000 or 8000 BTU air conditioner with integrated 1000 W heater, hinged roof RF cable raceway for easy cable installation and maintenance access. Scaleable battery storage up to three strings of front access 170 A-hr batteries. Optional door-mounted laptop tray and lighting kit. Also: TCS-CP3

NSI (N Systems Inc.) C5239
On Display: Superquad, Silhouette, NuPod, Super Pod, Cam Pac, MC5, Weather System

Nucoda Ltd. SL2148
Intro: Film Master V2 end-to-end solution for film finishing applications including VFX, DI and multi-format mastering. Users can perform multiple functions

S2ONE + E2V = IOT.

COMPLETE IOT SERVICE FOR WEST COAST BROADCASTERS

IF YOU NEED TO REPLACE THE IOT TUBE IN YOUR TRANSMITTER HERE'S AN EQUATION TO CONSIDER S2ONE IS THE ESTABLISHED WEST COAST REP FOR E2V TECHNOLOGIES (FORMERLY MARCONI). THE SUM RESULT? OPTIMUM SAVINGS AND TRANSMITTER PERFORMANCE. CALL MARK HILLS AT (800) 270-7050 FOR A FREE, NO-OBLIGATION ESTIMATE.




WWW.S2ONE.COM

Microwave Radio Communications

C3206
On Display: Reporter, QuikVue, CodeRunner, DAR Plus, Twinstream

Miller Camera Support **SU10536**

Intro: Solo VJ3 carbon-fiber tripod features four-section legs, 100mm ball base, integral spike feet with spin up/down rubber foot pads and carry strap; Solo VJ-25 camera support system includes DS-25 fluid head, Solo VJ3 carbon fiber tripod, pan handle, carry strap and case; Solo VJ-30 camera support system includes DS-30 fluid head, Solo VJ3 carbon fiber tripod, pan handle, carry strap and case; Solo VJ-Arrow System includes Arrow fluid head, Solo VJ3 carbon fiber tripod, pan handle, carry strap and case. **Also:** DS-60 fluid head; Arrow HD fluid head; Arrow fluid head; DS-25 fluid head; DS-20 fluid head; DS-10 fluid head; DS-5 fluid head; HD; Sprinter, Solo and DS tripod ranges; Pro Jib and lightweight studio pedestal

Mindspeed Technologies **C12013**

Intro: Quad channel video reclockers for SD/GD/2xHD, SD/HD, and SD; independent, quad channel multi-rate video reclockers, SMPTE and DVB-ASI compliant; single channel video-cable equalizer; SMPTE/DVB-ASI compliant from 143 to 1485 Mbps operation, pin-for-pin and functionally compatible with GS1524 and GS9064, cable EQ up to 500m SD and 215m HD, extended temperature range -10 to 85 C. **Also:** M21131V 72x72 1.6 Gbps video crosspoint switch, M21151V 144x144 1.6 Gbps video crosspoint switch.

Miranda Technologies Inc. **SU10129**

Intro: PresStation, a compact multichannel HD/SD master control switcher panel that can control clip layout, dual 3D-DVEs, automated character generation, and four layers of animation/clock insertion; Imagestore HDTV automated master control and channel branding processor with an integrated automated character generator plus Gallery graphics preparation and data interfacing software; IMM branding media management software; Compact Kaleido-Alto 10-input multi-image display processor for monitoring environments; Kaleido-K2 32-input multi-image display processor for larger applications will be demonstrated; monitoring switching bridge feature for the Densité Series 2 RU frame allows any of the inputs to one or more frames to be monitored easily and instantly; Enhancements will be shown to visual/aural monitoring over IP systems; a range of Densité Control Probes for digital/analog video and audio signal measurement will be debuted, along with enhancements to the IP Scope waveform and vectorscopes; iControl Web control and monitoring software has been strengthened with new GPI and SNMP support.

Also: MDC line of electronic acquisition interfaces, DVI-Ramp DVI-to-HD/SD video port

Mirror Image Teleprompters

C2248, SU10653

Intro: The Outsider Teleprompter 15-inch high bright LCD teleprompter with removable, trapezoid shaped, studi style hood and mirror accepts both VGA and composite video; image is reversed by the monitor.

Also: Teleprompters, podium prompters, prompting software.

Modulation Sciences Inc. **C3943**

Intro: A visual aid, SpiderVision, permits accessing sound compatibility for all

audio reception modes-A system dedicated to visualizing surround sound compatibility.

Also: Television stereo generators, stereo reference decoder, SAP and PRO generators, PRO channel receivers, SAP receivers, NTSC precision video demodulators, SpiderVision, television audio processor, TV Modminder.

Modulus Video **SU11241**

Intro: AVE-SD real-time SD, full resolution video encoder for H.264/MPEG-4 AVC; Main Profile@Level 3 and Main Profile@Level 4 feature two to three times bandwidth efficiency carried over MPEG-2 transport streams; AVE-HD non-real time, full resolution, HD video encoder for H.264/MPEG-4 AVC; AVA-SD is a real-time, full resolution, video decoder and stream analyzer for H.264/MPEG-4 AVC that supports Main Profile@Level 3 stream analyzer option.

Monitors and More **SU11739**

Intro: Represents a variety of flat-panel display manufacturers and display accessory manufacturers whose products include LG Electronics 42-inch LCD display, Ergo2000 20.1-inch panel mount TBC consoles, Starfire modular console. **Also:** Clarity, Ergo2000, Ergotron, Human Scale, Juice Goose, LG Electronics, Samsung, TBC, Viewsonic, Zenith

Moseley **N1907**

On Display: DTV-Link, Expedio ENG Link, DV-Mux DS3 Video Multiplex

Motorola **SU11023**

On Display: Solutions to insert digital advertisements cost effectively; multiplexers and transcoders allow broadcasters to tailor their DTV signal to their local market; end-to-end all-digital networks for cable, telco, and IP transport; solutions to add off-air digital content to the cable channel lineup; High-definition plasma displays; SmartStream interactive digital cable networks, commercial digital receivers (IRDs), digital set-top terminals.

MPEG Industry Forum **SL1743**

Intro: MPEG-4 is an ISO/IEC standard developed by MPEG (Moving Picture Experts Group), the committee that also developed the standards MPEG-1 and MPEG-2, that made interactive video on CD-ROM and digital television possible. MPEG-4, whose formal ISO/IEC designation is ISO/IEC 14496, builds on the success of digital television, interactive graphics applications, and interactive multimedia like the World Wide Web, distribution of and access to content.

MTI Film LLC. **SL3413**

Intro: Control Dailies Virtual telecine controls ingest and playout of image and audio data, transport control of Spirit telecine and DVTRs, manages metadata, create FLEX files, logs and links audio and video clip essence and features optional support for simultaneous HD and SD ingest and supports simultaneous recording of multiple output streams. Confirm is automated quality control of digital video and audio being recorded to tape. Compares source material originating from disk storage or from tape input with destination material read by the confidence heads of the output DVTR. **Also:** Correct, Convert

Multidyne **C3151**

Intro: RGB-5000 provides a long-haul, transport solution for high-quality, high-resolution RGB or VGA video sources via one fiber. Fiber optic transport provides the capability for the separation of a video signal source and the monitor.

Systems are available to transport RGB video as well as audio, keyboard and mouse control. Application includes commodity and stock exchanges, medical and MRI displays, advertising and signs, sporting and concert video displays, video walls, digital cinema, radar displays, air-traffic control, military information displays, plus many more; RGB-5000 provides a total analog bandwidth of up to 500 MHz. The system supports loop-through HD15 XVGA input. Resolutions of up to 1600 by 1200 pixels are supported over one optical fiber. The system also supports RGB HV, RGsB, YsUV, YCrCb, VGA, SVGA and UXGA, component and analog HDTV signals; Hydra-8000 Hydra Series supports up to 768 channels of video, audio, SDI, HD-SDI, AES, data, intercom, IFB and telephone over one tactical cable for sports, ENG, field production, fixed installations. Transport up to 32 video and 128 audio channels in one RU with a maximum of more than 768 channels using one tactical cable. The system is available with WDM and CWDM technology with each wavelength supporting up to eight video and 32 audio channels. Tactical fiber cables are available with four, eight or 12 fibers with hermaphroditic or TFOCA II connectors. The system is ideal for sports, electronic news gathering (ENG), field remotes, conventions, concerts and stadium events. The transmitter and receiver units are connected with the military approved tactical fiber optic cable system, TAC-2000; Hydra-8000 video and fiber optic transport offers state-of-the-art performance exceeding RS250C short-haul and broadcast specifications. The video signal-to-noise ratio is greater than 75 dB and a signal-to-quantizing noise ratio of greater than 71 dB. The video bandwidth of 8 MHz supports NTSC, PAL, SECAM and video with multiplexed audio carriers at 4.5 MHz, 5.8 MHz and 6.4 MHz. The differential gain and phase is less than 0.3 percent and 0.3 degrees, respectively. The Hydra-8000 supports 24-bit stereo audio flat from 20 to 20 kHz with S/N greater than 90 dB and THD less than 0.05 percent. The systems supports 110/220 VAC, 12 VDC and 48 VDC. The optical budget exceeds 30 dBm. The system is available with 1310nm and 1550nm wavelength lasers for WDM application. Coarse Wave Division Multiplexing (CWDM) is available with 1470, 1490, 1510, 1530, 1550, 1570, 1590 and 1610nm wavelength Lasers; Multidyne's new routing switcher product line will complement and fully integrate with our core fiber-optic transport systems, distribution amplifiers, test equipment, character generators, loss detectors and XLR interface panels. The product line will include matrix sizes starting at 5 by 1 for small application to 1024 by 1023 for large-scale applications. Systems are available to support composite video, component video, SDI, HD-SDI, TDM, audio, AES/EBU, RS422 and DVB/ASI. A wide array of control panels are available. The panels will allow the use of a large number of different control panels, intelligent software GUIs, and third-party automation systems; Multidyne's new ORS Series of optical routing switchers will complement and fully integrate with our core fiber optic transport systems. The optical switchers are available in 32 by 32, 64 by 64 and 80 by 80 matrix sizes. It delivers guaranteed, non-blocking, deterministic switched video connections on fiber optic links. The optical routing switcher will transparently switch all formats of fiber optic transport regardless of format, data rates and transmission direction. The system supports analog, digital, SDI, HD-

SDI, AES/EBU and telecom formats and data rates. The ORS will transparently switch CWDM and DWDM signals omnidirectionally. The ORS supports a wide range of formats from 19.4 Mbps ATSC through 1.5 Gbps HDTV, NTSC, PAL, SECAM, SMPTE 259M Serial Digital (SDI) Video, broadband analog, L-band, IF, Ethernet, T1, DS3 and many more. The ORS is available in rack-mountable 32x32, 64x64 and 80x80 configurations; The DV-1394 FireWire Fiber Optic Transport is a fiber optic transmission system for compressed serial digital video, providing high quality transmission of compressed video over long distance conforming to the FireWire IEEE-1394A/B protocol. Using a IEEE-1394 PHY and an optical transceiver, the DV1394 is capable of sending IEEE-1394 FireWire signals across a fiber optic cable up to 50 kilometers. Multimode and singlemode system are available. The system is transparent to the FireWire peripherals and is compliant with the IEEE-1394A-2000 and IEEE-1394B draft specifications. Full duplex data is supported at 100 and 200. In future models 400 Mbps will be supported. The system supports Multimode and Singlemode fiber optic cable with LC connectors. Fiber optic cable and adapters for ST, FC and SC connectors are available. The unit includes two six-pin IEEE-1394 copper ports with plug and play support and one IEEE-1394B long haul optical port. Applications include video production, video editing, news production, ENG, video and computer networking, transport links for STLs, studio to studio, studio to CATV head end and distance learning.

Also: RGB5000 RGB/VGA digital fiber link, ORS optical routing switchers, HYDRA-8000 768 channel video audio data intercom phone fiber system, DV1394 Firewire fiber transport
 Jim Jachetta, VP Sales & Mktg.
 191 Forest Ave.
 Locust Valley, NY 11560
 Phone: 516-671-7278/800-488-8378
 FAX: 1-516-671-3362
 E-Mail: sales@multidyne.com
 Web Site: www.multidyne.com

Musicam USA **N1006**

Intro: Road Star offers bi-directional IP and ISDN audio, AAC-LD, MPEG 2, MPEG 3 and G.722 algorithms, linear uncompressed audio, eight contact closures and ancillary data; an auto-fallback system that stays connected when the network turns off; A built-in Web server and a simple user interface in a rugged, road-tough case with a four-channel mixer, 48 VDC phantom power, analog and AES/EBU inputs and outputs and a flexible headphone monitoring system.

MyWeather LLC **C9617**

Intro: A full line of interactive online solutions, from essential weather information to customized Web services and desktop applications will be featured. **Also:** Personal MicroCast, Premium Weather, Desktop Alert

Nada-Chair **C1832**Narda Safety Test Solutions **C11628**

Intro: Narda's SRM-3000 is an RF radiation meter that performs narrowband analysis of multiple emitter sites so that broadcasters can measure the total energy at a site as well as their own energy to determine RF compliance answers; Nardalert XT is an RF personal monitor designed with the broadcaster in mind. Frequency response follows the FCC limits for RF exposures and high-power versions are available for use with

Also: Automation controllers, video servers, storage arrays, storage servers.

Matrox SL4031
Intro: Matrox RT.X100 Xtreme Pro 6.0 for Adobe Premiere Pro offers a selection of realtime 3D effects and filters, realtime analog and DV capture and print-to-tape, realtime MPEG-2 capture and encoding for DVD authoring, and hardware-accelerated simultaneous batch encoding of VCD, SVCD, DVD and Web formats; Realtime filters include color match, color pass, lens warp, and time code overlay; Designed for cable and community television, corporate communications, digital signage, and hospitality channels Matrox InfonetTV 3.0 lets users communicate their messages to any target audience via cable channels, plasma screens, and the Internet or an Intranet and provides an intuitive, multizone, multimedia content creation environment and true broadcast-quality video playout concurrently from a PC. Features include a touch screen kiosk mode, support for all plasma and VGA resolutions, PowerPoint slide show import, and a presentation mode.

Matthews Studio Equipment C10634

Maxell Corp. of America C8228
Intro: The DVD-R Plus series for professional video and data storage applications. DVD-R Plus discs have a 4.7 GB capacity and currently support 8X write speeds for 100 percent more productivity compared to the general purpose 2X discs. Maxell uses advanced proprietary organic dye recording layer materials with the DVD-R Plus Series discs, which have a pre-recorded shelf and archival life of more than 100 years and are write-compatible with any manufacturer's general purpose DVD-R drives and recorders. After recording, the discs are read-compatible with DVD-ROM, DVD-Video and DVD-Audio players.
Also: HDCAM, D-5, DVD-R, DVD-RAM, DVCPRO, DVPRO, DLT & Super DLT, LTO1 & 2, Blue-ray DVD, Holographic DVD, HDDVD, Blue Mammos DVD.

MaxVision Corp. SL6021
Intro: MaxPac X Class is a rugged, portable computer featuring 3.2GHz Intel Dual Zeon processors, 533MHz FSB, high performance PC2700 memory, up to three 19-inch LCDs with projector ports,

option for S-Video in, up to five internal hard drives of a maximum 1.25TB, two 500 GB removable drives, five PCI slots (PCI-X on some models), option for UPS with internal batteries, roller case and Pelican Transit case, variable speed cooling system; the MaxPac M Class rugged, portable, computer features a single Intel processor and high-performance PC3200 DDR400 memory, one 17-inch LCD with projector port, up to two hard drives of a maximum 500GB, one AGP/1 PCI or two PCI slots, roller case and Pelican Transit case, variable speed cooling system.
Also: MaxPac X Class, MaxPac M Class

Media 3 Ltd. SU8148
Intro: BureauCam BCS-1000 Remote Broadcast LiveShot System.
Also: BureauCam line of remote products.

Media Concepts Inc. SU11636

MediaLinks Co. Ltd. SU6575
Intro: MD2000 is a 2 RU HDTV modular processing system including upconverter, down converter, DA, AD, distribution amplifier and audio mux and DE-mux modules; MD-006 is a mobile eight-channel CWDM system that supports HD and SD with eight bi-directional in/outputs multiplexed over a standard HD fiber camera cable; MD6000 is an uncompressed HD over SDH/SONET system; Direct OC-48 and OC-192 interface with optional protection circuit featuring hitless switchover and error protection; MD-003 is a 3 RU 16-channel CWDM system with error protection and in-channel packet management and monitoring that also features automatic video format detection and hot swappable video modules; MD-101 is a portable HD down converter that features direct camera adapter and selectable user presets that are saved in memory.
Also: MD2000, MD-006, MD6000, MD-003, MD-101

mediaproxy ltd. SU6565
On Display: Enigma Series 4 standard configuration logging for disk and/or near real-time monitoring to desktop clients, with user-defined segment durations from one minute to 24 hours per clip Optional features include flexible scheduling, "as-run log" integration to LogPlayer client, hot-swap software modules, and front-end signal processing

options. Uses standard Windows 2000/XP/Windows Media platforms.

Medical Coaches Inc. MM227
Intro: Manufacturers of custom-built expanding-side TV production, edit, and audio trailers with lightweight aluminum mainframe construction; Medical Coaches builds a computer model of the unit before the manufacturing process begins.
Also: Expanding side trucks and trailers.

Merging Technologies N3731
Intro: Pyramix Virtual Studio 4.2 features real-time capability and intuitive multi-track record/editing/mixing interface to synchronized internal or external picture sources. The software shows a host of additional features and enhancements designed for film and TV post production; VCube is a hard-disk-based video player/recorder system designed for audio post production that can operate as a standalone unit or as part of a multi-system network integrated with Pyramix through standard Ethernet offering sync to PAL, NTSC, 24fps film and HDTV frame rates, and can be connected through nine-pin machine control to a third-party DAW system.
Also: Pyramix Virtual Studio 4.2 DAW

MGE UPS Systems SL1869
Intro: Pulsar EX RT True is online double conversion power protection for high-density IT applications and server environments, available in 2200 VA and 3200 VA power ranges and featuring versatile form suitable for use in tower or 2U rack configurations; EPS 8000 True is online double conversion power protection for high power applications, available from 555 to 800 kVA with paralleling capabilities up to 4800 kVA.
Also: Pulsar Evolution, Comet EXtreme, Galaxy 3000, Comet, Galaxy PW, EPS 6000, EPS 8000

Micro Communications Inc. C2025
Intro: Low-to-medium power N-1 and N=1 channel combiners; low-to-medium power DTV mask filters; motorized coaxial switched; broadband pannel antennas.
Also: RF filters, channel combiners, antennas

Micro Research II SL4217
Intro: 3D-Album Commercial Suite

comes with an image organizer that allows for sorting, grouping, searching, touching up and batching of photos. Output can be rendered to video, and video and photos can be mixed in a presentation. Users will have precise timing-control features, professional photo-editing functions, full-featured vector tools, and a contents library, album or catalog. Other features include composition templates for commercial display and productions and a selection of ready-to-use templates for catalog and album printing; encryption, password protection, and time-expiration are supported.

Microboards Technology LLC SL3706
Intro: BrighTech and Microboards announce distribution agreement for MediaBeacon product line providing solutions to industries with content storage and distribution requirements.

MicroFirst Inc. SU7828
Intro: The Digital Automation System (DAS) can support up to 16 play or recording schedules, 2,000 day-of-air events per schedule, 32 serial devices and unlimited Ethernet control, 500 playout channels, 5,000 clips, 500 logos, and 10 GUI workstations with dynamic real-time conflict checking and alarming; the MicroFirst GPI-24x24 General Purpose Interface Unit provides the bridge between modern, serial-controlled automation control systems, and other, non-serial site equipment or activities that must be controlled by isolated contact closures, or monitored by an isolated status circuit; the MPC-3200 is real-time automation control and interface equipment that can execute downloaded event schedules and provide a distributed-control automation environment, without EPROMs to change or microcode languages; MPS 9816 and MPS 9832 auto-changeover redundancy switch senses failure conditions and provides a seamless switch over to the back up system.

Microspace Communications C10643
Intro: VELOCITYLatinAmerica, for organizations that require point-to-multipoint satellite services for video, data and audio content from the United States to locations in Latin America, available as a full solution or on-demand.

All Formats Live All The Time !

The Ultimate Everything to Everything Transcoder From Laird Telemedia.

Converts All Video and Audio Formats Including DV & SDI.

Blows the doors off conventional media converters!



NAB2004
 Las Vegas April 19-22
 Booth SL5860
 Next to AVID
www.nab.org



www.lairdtelemedia.com



casting injection; RS-1200: DVB ASI redundancy failover switch. Supports 1:1 redundancy. Monitor and control via front panel, SNMP, or Web browser interface.

Also: IPE-2500 IP Encapsulator, TSM-1000A multiplexer, DSTS MPEG-2 storage

Logitek Electronic Systems Inc. N3307
Intro: Guest panels for Logitek digital consoles for individual control over microphone, headphone and guest locations; Router control panels for the Logitek Audio Engine where both the RouteXY (rackmount) and MatrixIP (virtual) provide X-Y selection of sources on the Audio Engine; Customizable intercom, standalone or integrated with a Logitek digital console, switched and/or party line operation, director priority switching; IFB functions. Operates as part of the Logitek Audio Engine.

Also: Audio Engine X-Y router; audio level meters including 5.1 and 7.1 surround; digital audio consoles.

Mackay Communications C2023

Intro: Mackay offers Inmarsat, Iridium, MSV and Globalstar equipment and services as well as turnkey audio and video broadcast solutions, utilizing Nera WorldCommunicator GAN units. Mackay is a provider of secure, wireless, portable satellite communications equipment and airtime, which can be operative in minutes to ensure timely reporting. Patrick Fisher, Dir. Satellite Services 3691 Trust Dr.

Raleigh, NC 27616

Phone: 919-850-3100/919-850-3000

FAX: 919-954-1707

E-Mail: satserv@mackaycomm.com

Web: www.mackaycomm.com

MacroSystem Digital Video C3245

Intro: Casablanca Solitaire, a standalone digital video editor that combines fast processing with DVD burner, removable hard drive, City-Disk support for a portable hard-drive and one-button backup solution; Software includes Quadcam multi-camera software package for all Casablanca video editors allows the user to select between 2, 3 or 4 scenes from the scene bin.

Also: Casablanca Solitaire, Casablanca Avio, Casablanca Prestige, SplitX Wedding Images, Quadcam, CBPAINT, SMARTEDIT 3.1, DVD Arabesk 2.0, PIP Studio, BlueBox World

Manhattan Production Music C2935

Intro: LIVE TRAX All new music library from Manhattan Production Music. Uses only real, live musicians and instruments, never any synth or samples.

Also: Apple Trax, BRg, MPM, Chesky Records Classical Series, Audiophile Sound Effects Series

Marketron International C10310

On Display: Marketron TV Sales, Marketron TV Traffic, Marketron TV Business Intelligence

Marshall Electronics SU11614

Intro: V-R65-HD 6.5-inch portable HD/SD LCD monitor for portable HDTV or SD widescreen applications. The compact package offers a flexible input configuration without special adapter boxes and standard inputs with active loopthrough on each connection for HD-SDI/SDI (SMPTE259M, SMPTE-292M) and composite video with PAL/NTSC automatic recognition; 17-inch HD LCD monitor for mobile or studio settings. Occupying 6 RU and weighing 12 pounds, it offers a multi-format connector for HD or SD analog

component signals (SMPTE274M). For computer graphic applications, this unit also has a scaleable VGA input; high resolution 3.9 million pixel (1280W x 1024H dot) 19-inch LCD rack mount monitor, model V-R191P-SDI, features CRT style viewing angles and a bright 450-cd/m² luminance display; The BC-0301-10 precision digital to analog module, which features simultaneous Composite and S-Video D/A (10 bit) conversion with 4x over sampling; The BC-0909-AD is a universal digital con-

verter for analog HD (SMPTE-274M) YprPb, RGBHV to HDSDI or analog composite, Y/C, YUV, RGB to SDI with support of 480i, 480P, 720P, 1080 24p, 1080i.

Also: 30 models of rackmount LCD monitor sets; conversion and distribution products, Tajimi fiber optic products.

MassTech Group

SU7058

Matco

C9443

Intro: MA-3200 MPEG-2 video server with

redundant power, hardware RAID-5, hot-swappable drives, 1 to 5 channels, up to 2TB local storage and dual Ethernet; MA-3300 MPEG-2 video server with redundant power, hardware RAID-5, hot-swappable drives, 1 to 4 channels, up to 4TB local storage and dual Ethernet; MA-3400/MA-3500 MPEG-2 video servers with up to 14 channels and 1.5TB local storage; MA-3600 dual channel ingest station with analog and digital inputs and MPEG-2 and other encoders, and 4:2:0-4:2:2 transcoding; MA-4000 storage servers and storage arrays.

SE4000 MPEG-2 Contribution Encoder

**NTSC AND PAL AND DVB AND SDI Video
AND 4:2:2 AND 4:2:0 MPEG ENCODER AND
Analog AND AES Digital Audio AND BISS AND
PGCA Scrambling AND QPSK AND 8PSK AND
16QAM AND 70 Mhz AND 140 Mhz AND L-band.**

The SE4000 can be purchased with the minimum features at a very low cost, and can be easily upgraded to the most feature-rich encoder available today. The encoder can have BISS, DVB-8PSK, IF and L-Band outputs, and composite video input signal conditioning.

Phoenix: 602-437-9620 • San Diego: 858-458-1800
UK: 44-1420-540233 • Latin America: 858-458-1800
Singapore: 65-6225-4016 • Beijing: 86-10-65831975

www.radn.com • NASDAQ: RADN

See us at NAB2004 Booth #SU11300
World Radio History

TIERNAN
A Radyne Communications Company

wireless receiver with built-in antenna distribution, LCD and USB interfaces, digital hybrid compatibility, in a 1 RU chassis. Also: ENG wireless mics, UHF wireless IFB, antenna multi-couplers and accessories

Lee Filters C8433
Intro: Soft Focus glass camera filter works with the Lee System of filter holders and hoods, and adds a light amount of soft diffusion.

Leightronix Inc. SU11603
Intro: TCD/IP system control with integrated digital video messaging.
Also: NET-164, NET-EC, MINI-T-NET.

Leitch R716, SU9868
Intro: CCS Trax synchronizes the display of device controls, for control panels and application GUIs, with router cross-point selections; Digital Turnaround Processor (DTP) for overlaying graphics/logos on pre-compressed HD and SD streams; New core modules in HD and fiber-optics options available in both the 6800+ and NEO modular processing product lines; application modules for NEO platforms; NEO LogoMotion branding for HD; NEO MTG master timing generator and integrated reference signal system; NEXIO transmission server, NXMTS supports multiple compression formats in both SD and HD; Panacea Clean Switch handles multiple channels of SD and HD signals simultaneously; Panacea Lite features a line of 12x1 routers; VelocityHD, a new HD nonlinear editing system featuring an enhanced version of the same software interface as its multi-stream SD VelocityQ NLE; The latest version of VelocityQ; The new NEO SuiteView Solo offers much of

the same functionality with up to 12 inputs in a compact 1 RU frame.
Also: NEO VR, DPS-575 DPS-575 Digital Processing Synchronizer, LogoMotion II, MediaNet, NewsNet Newsroom Solution, Opus Master Control Switcher, Panacea Routing Switchers, SuiteView and NEO SuiteView

Libec USA C3038
Intro: Dual counterbalance fluid head tripod system for lightweight cameras.
Also: Complete line of Fluid head tripod systems as well as the JB-30 portable Jib arm.

Ligos Corp. SU6770
Intro: MediaRig Encoder is a new PC-based real-time MPEG-2 encoding system for use in contribution, transmission and distribution DTV applications. It is an end-user software application paired with a PCI card for ingest and output of digital NTSC/PAL formats, and is available in single or dual-stream configurations. As a fully ATSC/DVB compliant encoder, MediaRig Encoder supports Dolby Digital (AC-3) 2-channel audio, Static PSIP and PSI/SI control tables, closed captioning, and remote management of multiple encoders. Combining improvements in the PC platform with Ligos' approach to software-based encoding, MediaRig Encoder offers more flexibility and features to video professionals when compared to other encoding alternatives. The product's host-based processing software approach, makes the MediaRig Encoder more "future proof," and more easy to update.
Hans-Peter Riecken, VP of Sales

55 Stockton St., Ste. 450
San Francisco, CA 94108
Phone: 415-249-0100/888-464-8765
FAX: 415-249-0150
E-Mail: marcom@ligos.com
Web: www.ligos.com

Linear Acoustic Inc. SU11043
On Display: At the Sigma Electronics booth, Linear Acoustic will show the OCTiMAX 5.1 DTV Audio Processor shown along with the new upMAX 2251 5.1 Channel Surround-Field Synthesizer. The OCTiMAX 5.1 protects against loudness shifts due to missing or incorrect metadata, while the new upMAX 2251 helps create and maintain 5.1 channel audio from two channel sources.

Link Research C4714
Intro: LinkXPR camera back with reverse video, which allows the cameraman to see the live picture from a second camera or to see the position of results and scores overlay graphics in sports broadcasts. There is also a new wideband transmitter for LinkXP. This operates over the whole of the 2Ghz band and will give the user greater flexibility when working with limited spectrum availability; a purpose-built backpack for easier carrying will also be shown. This has the capacity to carry a 1 W amplifier which will enable further reach; LinkXP, a small digital wireless camera system offering only 4:2:0 MPEG output and one analog video and audio input.
Also: LinkXP wireless camera system, L1000 encoder, L2150 demodulator/remodulator, L2102 receiver, L2202 satellite receiver.

Listec Video Corp. C-6417
Intro: Vu-Lite 17-inch enhanced 700 nit

LCD multi-input prompter featuring fold-down or studio hood. Vu-Lite 19-inch LCD multi-input studio prompter featuring a high contrast of 600:1 and 500 nit brightness; Spectra-Lite 13-inch composite LCD prompter; SOLO standalone lightweight off-camera tripod mounted prompter featuring a wide array of Listec flat panel prompter assemblies; PRESTO digital/analog image reverser with PanelPrompt hardware. Converts an off-the-shelf computer panel into a fully professional flat-panel prompter featuring either fold-down or studio hood.
Also: A-6000WIN and A-7000WIN Windows full-featured prompting software for production and news operation; range of LCD and CRT prompters from 5.6-20-inch.

Logic Innovations SL2155
Intro: ECR-1300 edge content router, integrated receiver-router for ATSC and DVB networks. Ethernet LAN interface with advanced gateway features (Firewall, DHCP, NAT). WAN port for optional return channel (dialup, DSL, cable, satellite); ECD-1300 edge content decoder, integrated receiver-decoder for ATSC and DVB networks. Hardware decode of IP-based MPEG-4, MPEG-2, and MPEG-1 content, streaming or from hard drive storage. DVR functionality as well; ECS-1300: edge content server, integrated receiver-server for ATSC and DVB networks. VOD cache and streaming server for IP-based video (MPEG-4, Windows Media 9, and Real Networks formats); TSM-2400/2800: DVB/ATSC transport stream remultiplexers with four or eight inputs. System information processing and generation, transport stream grooming, opportunistic data-

SAVE A BUNDLE

ON MULTI CHANNEL DIGITAL MASTER CONTROL

Now that your DTV transmitter is on the air, you're probably looking into multicasting. Our NV5128-MC is the only fully featured master control switcher that has been designed expressly for cost effective multi channel operation. Key features include:

- ◆ Up to 128 inputs—digital, analog, or mixed
- ◆ Up to 4 channels per 8 RU frame
- ◆ Both SD and HD versions available
- ◆ Built-in squeezeback and logo store
- ◆ Full 8 channel audio path
- ◆ Optional built-in Dolby-E decoding

For more information, contact your nearest NVISION sales rep, or visit us on the web.



NVISION
Masters in Digital Audio, Pioneers in HDTV

www.nvision1.com

See us at NAB2004 Booth #SU7552



**Come to us for your fiber
optic communication needs.**

We can help.



Video, Audio & Data Fiber Optic Transmission Systems

www.opticomm.com | info@opticomm.com | 1.800.8.OPTICOMM
(1.800.867.8426)

See us at NAB, April 19-22, 2004, Booth SU1130

answer full duplex telephone hybrid. XLR send and receive jacks, passive design, no power required; RA4 rack adapter holds four AutoHybrids in a 1U rack space, an appropriate size and feature set for many monitoring and IFB applications.
Also: ComPack, RemoteAmp, THAT-2, QuickTap IFB, Innkeeper 1r, Innkeeper 4

JLCooper Electronics SU11336
Intro: ES-SloMo, a universal instant replay controller for VTRs, DDRs and disk recorders; the MCS-Clipshot Tactile switch palette with 40 multi-colored LCD Buttons and a 2X40 backlit LCD Display; the eBOX 10/100 (Ethernet) to RS-232/422(9-Pin)/485 and GPI hardware interface; MCS-Spectrum for use with advanced video color correction software and other applications where multiple trackballs with control rings are essential.
Also: MCS-Pro Series, MCS-Media Command Stations, Edit Suite Series, Media Control Station, synchronizers, interfaces.

Just Edit SU10278
Intro: VSN NEWS, a live production and news playout product where journalists register their edited stories from the timeline directly in the on-air rundown; VSN MATIC, a playout and video server to automate a master control room 24/7; VSN PROMPTER, the Teleprompter module of the VSN family which supports unicode characters and is compatible with more than 800 languages as Arabian and Asian languages, Cyrillic and Greek; VSN AUTOREC, the ingest module for VSN, which allows simultaneous recordings from tape, and/or from various satellite feeds or from studios in automatic or manual mode.
Also: VSNNETPLAYER, VSNCG, VSNLEGALREC, VSN SMS, VSNNETSHARER, VSNTRAFFIC, VSNPUBLI, VSNCATALOGUER, VSNINTERNET, VSNSTORAGE

JVC Professional Products C4728
Intro: KH-F870U three-CMOS HDTV point-of-view camera has low power consumption and 1920x1080 native resolution; CU-VH1US mini-HDV recorder/player has true HD recording (720p) via IEEE-1394 input and a built-in 3.5-inch LCD display, and the unit down-converts HD to 480i for playback on standard monitors; SR-MV30U DVD-R dubbing recorder is a dual format S-VHS/DVD-R.
Also: GY-DV5000U DV camcorder; JY-HD10U HDTV camcorder; DM-JV600U MPEG-2 Encoder

K 5600 Inc. C7439
Intro: BlackJack 400 W is a compact daylight balanced focusable Fresnel instru-

ment that can project large patterns and Gobos; a new concept in lighting: newsroom and small studios will also be demonstrated; new battery power solutions including the 800 W Joker-Bug, which will work on special DC packs with the company's own DC ballast.
Also: Joker-Bug, Softube, BlackJack

Kathrein Inc., Scala Division C7817
On Display: K723147 broadband UHF panel

Kathrein-Werke KG C7817A
Intro: DVB-T transmitting antennas; FM and TV broadcast antennas; FM and TV combiners and filters; FM and TV turnkey solutions.
Also: Analog and digital TV antenna systems

Kay Industries N1700
Intro: The Phasemaster Type T-R rotary phase converter with adjustable power output and built-in controls that can operate any 3-phase transmitter from a 1-phase supply at locations where utility 3-phase is unavailable or expensive. It features a load range controller that maintains a balanced voltage on all types of TV and broadcast transmitters regardless of power requirements. It also features built-in controls and surge protection that facilitates quick installation.

Keywest Technology C6839
Intro: MX3-CG standalone CG with network capabilities; MX3-TG ticker generator, a network crawl generator with built in event scheduling; MX3-LG logo generator, a network logo inserter with built in event scheduling; MX1-AVR network audio video router with built in event scheduling and VCR event control; MX3-MVP leveraged media files for 24/7 digital signage.
Also: MX-1, MX3-VP, MX3-MP, QS440

Kino Flo Inc. C9139
Intro: ParaBeam 400 television and broadcast studio lighting fixture; ParaBeam 200 television and broadcast studio lighting fixture; Kamio ENG on-camera ring light; Koloris LED color effects lighting fixtures; mini-flo news desk fill light.
Also: Diva-Lite 400 systems; 4Bank systems; double systems; single systems; Image DMX fixtures; Image 82, 42 and 22 studio fixtures; Foto-Flo 400 and 200 photo and video fixtures; Mini-Flo kit, 12V single kit; Micro-Flo kit; Mega Flos; Blanket-Lite; Trans-Flo S.

Kinoton GmbH 2159-1
Intro: FilmReader, a high-resolution film

scanner for post production and film archives. Scans motion picture film in a resolution of up to 5K at a speed of several fps; the DIPIT, a system for administration, distribution and presentation of digital content, available in different configurations and resolutions; Lifefast, a digital 360-degree display column for animated advertisements, trailers and information in cinema and theatre lobbies. LED virtual holography technology provides visual effects at eye level.

Konan Technology Inc. SL2159
Intro: Konan-DigitalArchive makes media assets more useful and valuable by allowing users to retrieve specific frames from the storage server.
Also: Konan VideoArchive

Kroma Telecom C3136
Intro: BM6010: 350-line 10-inch CRT Monitor. Using a modular construction, it is able to combine two PAL/NTSC/SECAM, two SDI (10 bits) plus one RGB/YPrPb. Apart from 4:3/16:9, remote control and auto setup facilities, it also extracts the embedded audio and outputs it as analog or digital (AES-EBU); a digital video/audio switcher, configurable from 8x2/8x4 to 48x2. The 16x2 Switcher can be rack mounted in only 1 RU. The Audio Switcher has a configuration of 16x2/16x4 up to 48x2; Non-interference DECT Wireless Intercom System, which consists of a base station that allows up to four independent full-duplex communications and wireless belt packs; high resolution triple-5-inch TFT Monitor.

KW/2 Lighting Products Div. SU10341
Intro: A new line of "Smart Lights" that convert standard fixtures to analog, voltage, or DMX dimming by means of a modular ballast housing. Also features easier maintenance when replacing the ballasts because only the module is changed; "Cool Lights" that utilizes the 80 W bi-xial lamp.
Also: KW/2 Lighting Products 1SL, MSL, 1BL, 2BL, LSL Location kits.

Kwill Corp. C2532
Intro: VP2000H, which performs automatic, real-time quality evaluation of HD video. The device is used for debugging encoder/decoder operations and evaluating digital broadcast system quality; VP21S, which carries out automatic, real-time quality evaluation of SD video and can be used for debugging encoder/decoder operations, quality evaluation of broadcast systems, automatic dubbing, DVD authoring and DVD playback; VP2000A, which monitors video quality of live HD and SD

video broadcasts in real-time from remote locations; QuMax, which examines in real-time a broad range of formats including SDTV, HDTV, NTSC and PAL for video and audio errors and is used in broadcast systems for master video monitoring of up to 12 separate sources.

L-3 Communications C1422
Intro: A modified version of L-3's Constant Efficiency Amplifier (CEA) tube for use in analog transmitters to improve efficiency over standard IOTs. The device will work in common mode with performance equal to an IOT in terms of gain, linearity, sync compression, etc. The CEA 80 is capable of 55 percent efficiency in analog service, nearly 40 percent greater than typical IOTs.
Also: L-3 CEA 130, L-3 IOT 80, L-4945A Thyratron

Larcan USA C3846
Intro: Magnum series of digital solid-state UHF transmitters deliver digital power from 2.5 kW to 15 kW or beyond, incorporating new amplifier technologies and multiple power supplies.
Also: M Series; Magnum; DTT Lite 150 W low-power translators/transmitters

Lawo AG N717

Leader Instruments Corp C4142
Intro: LV5750 portable multifunction HD/SD-SDI monitor with waveform, vector, picture, audio, status, data dump, headphone output, timecode, error logging, capture to compact flash card, Ethernet, battery/DC operation, and tripod mount; LV5700A Multi SDI monitor with several options; LT443D multifunction video generator with plug-and-play modules for genlock and analog black supporting SMPTE318M; LF943D, a new field strength meter that includes coverage for sub-band as well as VHF/UHF and CATV, available in analog and digital; LT448 multifunction pattern generator outputs 29 formats.
Also: LV5700A, LT443D, LT444, LV5152DA, LV5100DE, LF983, LT428

Lectrosonics Inc. N3316
Intro: The UCR411A compact receiver, with updated firmware and LCD features include compatibility modes for use with earlier analog wireless transmitters. User selected modes provide backward compatibility in addition to digital-hybrid operating mode; UH400 plug-on transmitter converts any mic with XLR connector to wireless operation, provides selectable 5, 15 and 48 V phantom power, with full 100 mW output power; VR400 venue receiver is a modular 6-channel

Quietest Cabinet In the World

"Hear Yourself Think Different in the Video Suite"

Introducing the **Quietly Cool vCab™** designed to meet the specific needs of broadcast studio suites. This enclosure has 13u's of rack mounting and the addition of 3u's more on top which slide to the rear for easy cabling to your I/O panel or any other equipment you choose.

Visit Us NAB '04 Booth SL3421

Noren Products Inc., 1010 O'Brien Drive, Menlo Park, CA 94025
www.acoustilock.com (650) 322-9500

2003 (NAB) Mario Award Winner

NOISE PROOF CABLE-EASE

QUICK EASY CABLE MANAGEMENT

THE BEST FOR BOTH WORLDS

A large professional ARRI camera is mounted on a tripod. A wooden crate filled with various accessories like lenses, filters, and tools is attached to the side of the camera. The background is a high-contrast image of the Earth from space, showing the curvature of the planet and the blue and white of the oceans and clouds.

The worlds of film and video, that is. Camera operators know that both require a smooth and steady move to look good on the screen. If you are making the transition, or work in both worlds at once, you still want the best camera support you can get. All the reasons that have made OConnor the leading name in film camera support apply to video support too. From DV to HDTV, we have the fluid heads and tripods to get the job done right. Visit our web site for a look at our full line of film AND video camera support products.

YOUR BEST MOVE

See us at NAB2004 Booth #C7628

OConnor

A Division of Sachtler®

100 Kalmus Drive Costa Mesa, CA 92626 Tel (714) 979-3993 Fax (714) 957-8138 <http://www.ocon.com> sales@ocon.com

17-Series Monitors, 80-Series Monitors

illbruck inc./SONEX N1800

Image Video C5321

Intro: GSI-3 tally interface for production switchers; VxV-16 multi-image display system that combines up to 16 mixed format video sources on a high-resolution display; the RDU-1710 series of high-resolution under-monitor displays, which are 1 RU and only 0.9-inch deep, with character sets such as Chinese, Japanese and Arabic. The 16X160 dot resolution allows for the display of two lines of up to 32 characters per line; the LVX-4, a rack or wall mount LCD panel that has a built-in quad splitter with UMD tally capability. **Also:** RDU 1510, 1610, 7721 series UMDs, TSI-1000, 7115 Signal Integrity Alarm System

Independent Audio Inc. N1300

Intro: Pearl Lab linear microphones. Models ELM-B in figure of eight pattern and ELM-C in cardioid pattern are recommended for stereo recording. New linear capsule has more than twice the surface area of large diameter, round capsules. Delivers very accurate, uniform, and consistent response pattern; Sonifex Redbox RB-LC3 three way power/light controller designed specifically for radio and TV studio light signaling, which allows "on-air" and "mic/live" signs to be powered and controlled remotely from a mixing console.

Also: CEDAR DNS1000 and DNS2000, Coles 4104 Mic, Signex Pro Patchbays, Pyramid Reference Speakers, MicMate

IneoQuest Technologies SL5957

Intro: Singulus G1-T video over IP network traffic stimulus and analysis system for 10/100/1000 Ethernet with built-in hardware "Sniffer," ideal for video over IP test applications.

Also: Singulus G1-T

InnovaSON N2812

Intro: Sensoft 8.1, upgrade software for the Sy40 digital live mixing console will be introduced. New features include Xfad (expanded fader) mode for inputs and buses, fee assignment of VCAs and freely

configurable fader layouts. Groups, auxiliary buses, and master buses may be separately configured as mono, stereo, LCR and LCR+M. Matrix assignments offer direct input routing, and the monitor bus supports three output circuits. Automation features have been enhanced with the addition of MIDI program change, MIDI timecode, crossfade, mute control, and fader start.

Also: InnovaSON SY 40-8

Innovision Optics C7618

Intro: Innovision 45-degree angle attachment for HD probe, a high-resolution tubular lens system with a choice of three attachments for 90-degree periscope, straight, and 45-degree viewing angles and five, high-resolution prime optics; Mini-shuttle HD, a compact remote-controlled platform for broadcast cameras; BulletCAMS remote camera head, a movie engineering high-speed portable camera system; Radcam omni miniature camera car, a remote-control car that accommodates a variety of compact digital cameras.

Also: Radcam DV miniature camera car, Series 6000DV lens system, 4-Axis Mini-Mover motion control, Super Shuttle.

Inovonics Inc. N3009

On Display: TVU on-screen audio level display

Inscriber SL4718

Intro: Inca RTX, the latest generation of RTX, Inscriber's broadcast development tool; Inca AutoCG is Inscriber's newsroom automation system with CG, multi-layer graphics, clocks, logos and real-time clip-to-clip transition capabilities on a single channel. Inca AutoCG is CIL protocol compatible, and can be used with major news service providers such as Avid/iNEWS, AP ENPS, ProBel, DCM (Q-News) and others.

Also: Inca Studio, InfoCaster, InfoCaster Network Manager

International Datacasting Corp. N2409

Intro: SR2000plus DVB/IP satellite receiver with 256 kbps to 45 Mbps range; IPE/IPD 2100 series IP encryptor and decryptor; SFX expansion unit for the

SFX2100 series of satellite multimedia server appliances to 2.4 GHz Pentium 4 operation

Also: SuperFlex DVB/IP satellite receivers, SFX 2100 satellite multimedia server appliance, SRA2100 satellite multimedia receiver appliance, Datacast XD content distribution software, NetManager, IP encapsulator, DM2000 DVB modulator

IPV Ltd. SL4000

Intro: The SpectreView SVPClcard is a two-channel SDI input, MPEG-1 or MPEG-2 encoder PCI card with external LTC timecode input. The SVPClcard ingests high quality broadcast source material through its two SDI inputs. The material is converted to MPEG-1 or -2 format with frame-for-frame accuracy in real time and can be streamed out to a LAN via the network connection of the host PC. The external LTC timecode input can be used by the SVPClcard to allow recordings to be triggered from a "house" timecode source. This product compliments IPV's SpectreView "shadow browse" technology and can also be used as a standalone encoder; SpectreView nSpectreSDI, a dual channel, SDI input, MPEG-1 and -2 hardware encoder with timecode. The nSpectreSDI is two or four channel with MPEG-1 or -2 output. It is a 1 RU high, 19-inch rack mounted hardware encoder with external LTC timecode input. The nSpectre ingests high quality broadcast source material through its two SDI inputs. The material is converted to MPEG-1 or -2 format with frame-for-frame accuracy in real time and can be streamed out to a LAN. The external LTC timecode input can be used by the SVPClcard to allow recordings to be triggered from a "house" timecode source. This product also compliments the SpectreView "shadow browse" technology and can be configured either using the SpectreView API or over the Web; SVStudio, a browse software using DirectX technology, SVStudio is a collection of DirectShow filters designed specifically to "drop in" to DirectX based media applications such as Windows Media Player. It provides a simple solution for end users, giving

them the functionality required by professionals but using proven IPV technology to cope with real-time media. This product also compliments IPV's SpectreView "shadow browse" technology.

Also: SpectreView, FMA, Samuel Poupinet, Sales Mgr. Mount Pleasant House, Cambridge, Cambridgeshire CB3 0RN United Kingdom
Phone: +44 (0)-1223-477000
FAX: +44 (0)-1223-506282
E-Mail: sales@ipv.com
Web Site: www.ipv.com

Irdeto Access SU10106

Intro: Irdeto Inside, an embedded access-control system for deploying large numbers of set-tops with a single-tier subscription service; Irdeto's Chip On Board (iCOB) module for distribution of Common Interface Conditional Access Modules (CI-CAMs) with an embedded Irdeto Access smart card inside. The CI-CAMs will work in any compliant STB and are designed for allowing an auto-expiring "free trial" viewing period as well as a normal subscription; Irdeto's Content Protection for IP. The company will demonstrate the integration of Irdeto Content Protection for IP with partners such as Minerva Networks, Kasenna and Amino. **Also:** Irdeto M-Crypt

ISIS Group Inc. C2039

Intro: The Isis Innovation, a 16x2 broadcast router with input DC clamping in nine new sizes; Analog version of ENG/SNG switcher; all-analog NTSC or PAL version of S-8400 switcher for ENG/SNG and Fly-Away mobile use; OpenStore, a Tapeless Transmission Archive System with user selectable format, resolution and data rate; automatic recording in time loops, analog video and audio connections, RAID-5 protection, still picture, slo-mo and viewable shuttle of selected sequences, timecode insertion; and recording of marked clips to CD/DVD or tape.

Also: Innovation Broadcast Routers up to 32x32, Innovation Multimedia Routing Switchers, Digital S-8400: the "mobile production switcher in a box," ARTS/DRTS protection switchers, Analog and digital video distribution equipment.

J.L. Fisher Inc. C7447

Jadoo Power Systems Inc. C10910

Intro: NABII fuel cell power for ENG cameras, a technology that provides two to three times increased battery life and hot-swap.

Jampro Antennas & RF Systems Inc. C2514

Intro: A wide-band version of Pro Star slot antenna allows multiple stations to share a single antenna, with typical 30 MHz band pass, RCSF RF coaxial transfer switches, available in 7/8-, 1 5/8-, 3 1/8-, 4 1/2- and 6-1/8-inch sizes, four ports with manual operation to back up the electrical 120 (or 220) VAC operation, dual connector rotor assembly.

Also: Master antenna, stacked aperture, dual aperture antennas, JAT bat wing, JTW slot, JA/LS slot, JA/MS slot, JSL slot, JSH slot, JA-SS slot, JUHD panel, JTC spiral, JHD-LV2 VHF panel, JHD-HV2 VHF panel, JHD-HV4 VHF panel, JHD-HR2 VHF panel, JADP cavity B.

Jennings Technology LLC N3127

JK Audio Inc. N4615

Intro: AutoHybrid, a small desktop auto-


K 5600[®]

LIGHTING

THE COMPLETE FAMILY


Joker-Bugs and Blackjack

200W




JokerBug 200 Kit

400W



JokerBug 400 Kit

800W



JokerBug 800 Kit

BlackJack 400 Kit

NAB Booth# C7439

www.K5600.com

10434 Burbank Blvd. • North Hollywood, CA 91601 • Tel: (818) 762.5756 • Fax: (818) 762.6629 • (800) 662-5756

FAMILY VALUES

- Versatility
- Reliability
- Innovation
- Compactness

It's not the first time we changed
the way you look at pro-video test equipment.
And some people noticed...



- First to introduce and deliver Serial Digital HD test solutions
- First to implement 720P capabilities in our products
- First test equipment provider to include both analog and digital input capabilities in one package
- First to provide built in 10 bit analog decoding for picture monitoring
- First to introduce an HD Rasterizer with built in XGA display capabilities

And now Leader is the first to bring pro-video test and measurement information to the palm of your hand! No more endless trips from the set to the camera to view the action.

Our easy to use software connects the award winning LV5700 Multi-SDI monitor to a wireless capable PDA, allowing the user to monitor key signal functions such as waveform, vectorscope, audio, status, as well as view the picture the camera is producing... away from the camera.

When it comes to industry innovations... Leader is first.

LEADER
FOR PROFESSIONALS WHO KNOW
THE DIFFERENCE

Leader Instruments Corporation
6484 Commerce Drive
Cypress, CA 90630

Come Celebrate Our
50th
Anniversary
At NAB Booth # C4142

TF 800.645.5104
T 714.527.9300
F 714.527.7490

sales@LeaderUSA.com
www.LeaderUSA.com