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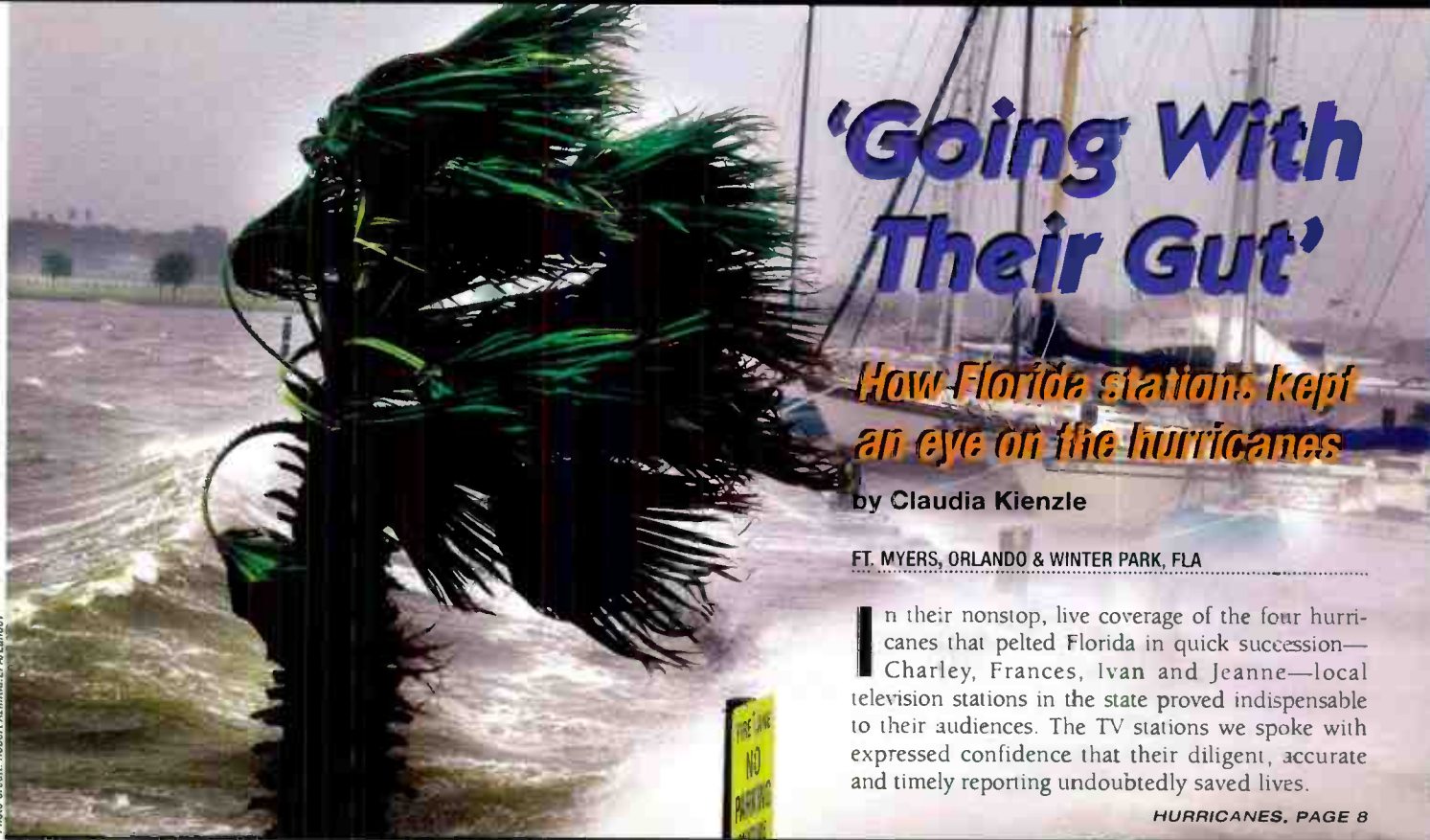


Photo credit: Robert Armitage/EPA/Landov

'Going With Their Gut'

How Florida stations kept an eye on the hurricanes

by Claudia Kienzle

FT. MYERS, ORLANDO & WINTER PARK, FLA

In their nonstop, live coverage of the four hurricanes that pelted Florida in quick succession—Charley, Frances, Ivan and Jeanne—local television stations in the state proved indispensable to their audiences. The TV stations we spoke with expressed confidence that their diligent, accurate and timely reporting undoubtedly saved lives.

HURRICANES, PAGE 8

TV Measures Eclipsed in Spy Games

Transition date will be left for next session

by Deborah D. McAdams

WASHINGTON

For all the sound and fury this year over ending analog TV transmissions and increasing indecency fines, actions taken by lawmakers in both realms signified, if not nothing, then very little.

DTV legislation attached to the intelligence reform bill took a

backseat to a standoff over how much power a new top spy guy should have. At press time, the 21 members of the conference committee charged with hammering out a final version of the bill could not agree on the main issues affecting intelligence reform, much less a couple of DTV riders.

The president, anxious to sign a bill implementing 9/11 Commission recommendations

before the Nov. 2 election, phoned House and Senate Republican leaders, urging them to break the gridlock. He also sent a letter to members of the conference committee opposing a \$1 billion subsidy program to buy set-top converter boxes for low-income households. The Bush Administration instead reiterated its preference to charge broadcasters an analog spectrum fee as an incentive to get them to

hand over their analog licenses. Such a spectrum fee—also proposed by the first Bush Administration—would not resolve the issue of how many owners of the public airwaves would be left with no TV reception. Consequently, the proposal has had little traction in Congress.

The DTV-related legislation that reached the conference com-

CONGRESS, PAGE 10

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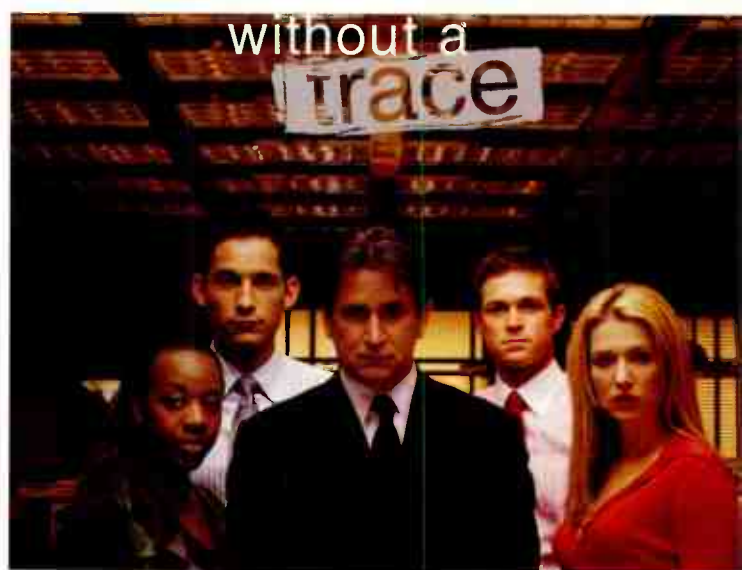


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Beam-tilting at windmills



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Canada's animator

P.48 Moving from linear to non-linear



CONTRIBUTING WRITERS

NAME:
Andy Ciddor

COLUMN:
Let There Be Lighting



After the opening ceremony for the 2000 Summer Olympics in Sydney, many people in the entertainment industry said that this lavish theatrical spectacular... would not, and was unlikely to ever be out-done....

PAGE 24

NAME:
Dave Moulton

COLUMN:
Inside Audio



This column will be devoted to the basics of time-domain signal-processing effects, most notably reverb. Happily, this is fairly easy to get a handle on, and its use for most television production is pretty straightforward.

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NAME:
Jerry Whitaker

COLUMN:
ATSC Outlook



Following nearly three years of work, the Advanced Common Application Platform (ACAP) specification for future interactive television (iTV) services has taken another step forward within the ATSC.

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FROM THE EDITOR

Your Tax Dollars At Work

"I'm from the government and I'm here to help."

While he may not have actually spoken those very words last month, FCC Chairman Michael Powell's press conference announcing the launch of a consumer DTV education campaign brought to mind that classic line.

The FCC's newest "public service outreach" program—"DTV—Get it!" was announced amid great fanfare at commission headquarters. The event was accompanied by several panel discussions among industry heavyweights extolling the great progress in the DTV era, with much pontificating about DTV set sales (10 million and counting!) and gladhanding among former enemies. It had a familiar ring, apart from the ingrates at the FCC entrance protesting that the commission had better things to do than to sell TV sets.

The commission's new pr campaign includes a Web site, www.dtv.gov intended as a "one-stop" source of information on the DTV transition and available HD programming.

Haven't we been down this road before? How many DTV promotional campaigns have come and gone over the past six years, including NAB's "DTV—It's Like Being There," not to mention numerous similar promotions from CEA and others. Let's not begrudge these organizations their efforts; these campaigns were needed and still have some benefit. But why the FCC—a government agency, and why now? Chairman Powell noted that the confluence of more programming and lower prices may finally bring HDTV to the "tipping point" this year. If so, then let the market make that determination and find a better use for our tax dollars.

A better alternative was announced the same day. Decisionmark, a Cedar Rapids, Iowa-based developer of online software and information on DTV launched "CheckHD," a Web site (www.checkhd.com) offering even more DTV information and supported by the major networks and station groups. CheckHD also offers a way for HDTV viewers to get a daily e-mail update on upcoming HDTV programming.

CheckHD's privately financed program represents the right way to go about promoting HDTV, and while the FCC's site is informative and helpful, I doubt that it's going to make much of a difference.

Tom Butts
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LETTERS

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

Take Action Now

Dear Frank Beacham:

Once again, I am quite thrilled with another one of your articles. Your piece regarding the "Induce Act" ("Law Could Lead to High Tech Terrorism", Sept. 8) was extremely enlightening and intriguing. I'm going to pass it along to my many friends who would find this pending law a travesty.

Your last paragraph states that it's time to "give a damn" about the Induce Act if one cares about their freedom. To that end, what should one do? Is there a way to garner support for or lend support to the efforts of the Electronic Frontier Foundation, which seems to be the only organized effort to block this act?

I thoroughly enjoy every one of your columns. Thanks for the insight.

Bobb Rayner
Deptford, NJ

Frank responds:

As Congress took its election break, Sen. Orrin Hatch temporarily shelved the Induce Act under mounting pressure. By then, in addition to the EFF, 42 high-tech companies, among them Google, Yahoo, CNet and Intel, had signed a letter denouncing the proposed legislation. However, the record industry vows to be back pushing similar legislation in the next Congress. Oppose it now by letting your representative know that you are against it and write Sen. Hatch a letter letting him know how you feel.

Hit 'Em Where It Hurts

Dear Frank Beacham:

First I want to tell you how much I appreciate your articles in **TV Technology**. I am happy to know there are others out there who think just a little differently than the big corporations want us to and are willing to

be public about it.

I read about this "inducement law" several weeks ago when it first broke. It got me to thinking, if they can outlaw VCRs, DVRs, CD/DVD recorders and other similar devices because they might be used in a crime (copyright infringement). Surely they are next going to have to outlaw all guns, knives, chemicals and perhaps even paper clips because they can also be used for the most serious of all crimes—murder. OK I guess they can't take away guns at least without a constitutional amendment, but I haven't read where any of the other items listed are protected in the constitution.

On a side note to this story, it was the years 2000 and 2001 that I bought more recorded music than any other year of my life (I am approximately your age). It was back then when Napster was in full use and I was able to sample music, determine the title and artist and then purchase what I liked. I already have a huge library on vinyl, so it seems to me I have the right to listen to any of that music regardless of how it may come to me. But when the big corporations told me it was wrong to download their music, I simply stopped buying it—on any media type!

That gets me to the point I want to make here. The record companies have been claiming that they are losing money because people are downloading their fares for free. While that may be true, I know there are plenty of people like me that simply don't want to feather their nest any further—and apparently it is working. So what should the average person do when the "broadcast flag" and DRM are fully functional, or if and when the induce act is law? Simple: Do not buy any pre-recorded DVDs or CDs or other material. The only way you can make big corporations listen is to hit them where it hurts. Even if 10 percent of us did not buy recordings, and made it clear why we were doing so, I'll bet we would be heard.

George McLam
Sacramento, Calif.

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Hurricanes

CONTINUED FROM PAGE 1

Because local broadcasters were able to focus their resources on the needs of their particular markets, their viewers were better prepared for the impact of the storms, or made a decision to evacuate based upon the judgment calls of their trusted local TV weathermen.

"There's just no doubt in my mind that our live weather reports saved lives. Our experience, especially in the coverage of Hurricane Charley, proved the case for why we still need powerful, local affiliates in each market," said Steven Pontius, executive vice president and general manager of Waterman Broadcasting, the licensee of WBBH-NBC 2 in Ft. Myers. Through an LMA with Montclair Communications, Waterman also manages WZVN-ABC 7 in Ft. Myers. Pontius said that the two stations' news and weather resources were combined into a highly competitive, informative round-the-clock simulcast, with audio carried on local radio.

CHARLEY TAKES A TURN

At 10:30 a.m. on Aug. 13, 2004, when the National Hurricane Center (NHC) was reporting that Charley was a Category Two hurricane headed north toward Tampa, the weather experts at WBBH and WZVN saw a different scenario emerging. Using the stations' live weather radar feed, they realized that the storm was actually turning—and the slight veer to the northeast put Charley in the direct path of their Ft. Myers, Punta Gorda, Cape Coral market.

"At 11 a.m., the NHC was sticking to their Tampa trajectory," said Pontius. "But our guys were certain that the storm now presented a danger to our market, so we immediately decided to go with it."

In their live report, WBBH chief meteorologist Robert Van Winkle and WZVN meteorologist Jim Reif explained to viewers that while the NHC had the storm heading for Tampa, they believed that Charley (now a Category Four) had taken an obvious and distinct turn to the northeast, making it a serious threat to their area.

"Our report gave our viewers a one and a half hour 'heads-up' in which they could evacuate or hunker down, before the storm knocked the power out," said Pontius.

In a letter to WBBH, Jan Ramos, a viewer in North Ft. Myers, thanked the meteorology team who "dared" to veer from the NHC's predictions: "I am certain that you are responsible for saving many lives. You gave many area residents a 'golden' hour or so to prepare for the completely unexpected! I am certain you made the difference between life or death in many, many cases."

During Charley, the broadcast facility housing WBBH and WZVN sustained significant damage, including its satellite dishes behind the building. The fleet of ENG trucks sustained significant damage, and two news vehicles were completely destroyed along with a satellite truck.

In Punta Gorda, the walls and windows of an office building that served as the stations' news bureau blew in, trapping WBBH reporter Amy Oshier inside. She was rescued by the station's videographer Mike Mason.



Hurricane Charley blew in the walls and windows of the office building in Punta Gorda that houses the Charlotte County news bureau for WBBH-TV and WZVN-TV, trapping a reporter and videographer.

"They then got into one of the damaged news vehicles, which had its windows, windshield and headlights broken, and drove it in the dark for 30 miles over downed power lines back to the station," said Pontius.

Another news crew stationed on the fifth floor of a condominium on Ft. Myer Beach (one of the area's barrier islands) also provided live coverage of the hurricane.

By overlaying local Doppler and Nexrad radar graphics on top of the

stations' newly installed Baron's street mapping software, meteorologists in the studio were able to predict the exact moment that the live crews would see the eye of the hurricane arrive. Pontius said after stripping everything off the Web site, they focused all their bandwidth on the delivery of this radar graphic via their Web sites.

MAKE OR BREAK

At WFTV-TV, the ABC-9 affiliate in Orlando, Chief Meteorologist Tom Terry had a similar experience. At 10:30 a.m. on Aug. 13, he and his weather team determined that Hurricane Charley had veered from the northerly track predicted in the NHC advisory, and instead would likely go through Ft. Myers and ultimately into Orlando.

"At 11 a.m., we had to break into the ABC News Special Report where anchor Elizabeth Vargas was reporting that the NHC advisory had the storm headed for Tampa and that Tampa had been evacuated. We broke in and said, 'Folks, what you just heard is incorrect. Charley's coming to Orlando,'" said Terry. "We took a big risk here because the NHC continued to report the storm as headed to Tampa. In fact, our local emergency operations center was planning to dismiss everyone for the afternoon until they saw our report."

By 12:05 p.m., Terry was on the air with a graphic that he had physically drawn (using Doppler radar, Baron's radar software and WSI's weather graphics system) to show the new track, which was a whole lot different from the NHC track. Terry said that a big storm in the Gulf was pushing against Hurricane Charley, causing it to change course toward the northeast.

"It was a very trying time because we were going against the NHC advisory. A lot was at stake, but we stuck to it because we knew we were right," said Terry.

By 2 p.m., the NHC had corrected its track to show Charley's new northeasterly direction, but WFTV viewers already had a three-hour advance warning to hunker down or evacuate.

"We were already the number one station in Orlando, but that new storm track, and our coverage that followed, made my personal reputation in this market; and it boosted our station's credibility and standings," said Terry. "We made our reputation that day."

WFTV provided extensive coverage of all four hurricanes, paying particularly close attention to Charley, Frances and Jeanne, the three that directly affected the Orlando area.

According to Craig Mazer, WFTV's Web site manager, "We were streaming our live TV weather graphics on our Web site, along with text-based information about school closings and evacuations. Also, as a Cox-owned television

Tower Troubles

In Robertsdale, Ala., Tornadoes spawned by Hurricane Ivan caused significant damage to the 1,633-foot tower owned by Clear Channel station WPMI-TV.

"The tornado's powerful winds knocked down trees, damaging the tower's supporting guy wires, and inflicted excessive stress on the tower top. This combination of forces resulted in the top 1,100 feet breaking off, narrowly missing several nearby mobile homes," said Jack Boone, vice president of operations, for Sarasota, Fla.-based Broadcast Tower Technologies, Inc.

There was no loss of life or injuries; however, fallen guy wires did inflict some damage to neighboring property. After learning of the incident, which occurred just after midnight Sept. 16, and at the request of Clear Channel and WPMI's General Manager Sharon Moloney, Boone flew to Atlanta, then drove down to the tower site in Robertsdale to survey the damage and take charge of the cleanup and recovery. Road closures due to the storm made travel difficult. And with so many properties affected by Ivan, the demand for rental equipment and other critical cleanup services caused some delays.

After arriving Sept. 17, Boone surveyed

the tower with binoculars, high-powered cameras and surveying equipment.

"The next day, we enlisted the help of a sheriff's helicopter to take me and a cameraman up for a closer, firsthand look but he couldn't get us close enough," said Boone. "So a couple of days later, after the power



A helicopter carries a crew to reattach a portion of WPMI's tower knocked down by Hurricane Ivan.

company had killed all electrical service to the site, we got a more-experienced helicopter pilot who got close enough that three of us could step onto the remaining 533-foot tower and secure the hanging section."

Assisting Boone were Anthony Sutton and John Teague, owner of Monarch Services, a tower services company in Oolete-wah, Tenn. In all, antennas for WPMI and WHBR-TV and a radio antenna serving four FM stations were damaged by the storm and knocked the stations off the air.

"The team of Clear Channel engineers did an amazing job of getting WPMI back on the air only one week after the antenna and tower were so badly damaged by Ivan," said Moloney. "Fortunately over 80 percent of the market was able to receive WPMI through cable and [DirecTV] satellite. Our continuous news coverage was uninterrupted on Comcast due to a direct fiber feed from our studios."

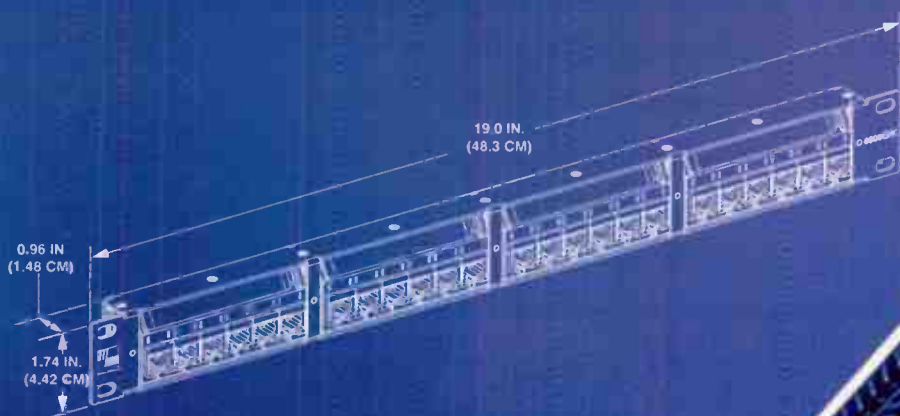
Boone said, "DirecTV had an antenna 100 feet up the tower and a backup generator and so it was able to continue carrying that station's broadcast signal."

Regarding plans for the future, Moloney said, "We just completed negotiations with SpectraSite for a permanent position on their tower. And, we have hired a tower crew to begin work on the remainder of the tower to stabilize the [remaining] structure and meet the current standards. At this point we are not planning on rebuilding the tower to its original height."

Claudia Kienzle



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Revamping 'The Mansion'

New reality show challenges home remodelers

By Lauren Evoy Davis

CINCINNATI

The Mansion" on TBS is the latest in home remodeling reality TV. For seven weeks, eight amateur home remodelers live in and renovate a 13-room house in Cincinnati, Ohio. During the final episode in November, the audience decides who gets the keys to the 1920s Tudor-style home, estimated to be worth \$1 million, post-completion.

Jeff Rhoads, whose credits include "Fear Factor" and National Geographic's "Death on the Mountain: The Women of K2," is the director of photography (DP) for "The Mansion." Rhoads said that he feels privileged to shoot with several Sony XDCAMs because "The Mansion" is one of the first reality shows to use Sony's Professional Disc system.

"We have five on-site. We found that we need five cameras for the stage setups," he said. The stage setup occurred in the carriage house, where the contestants were split into two groups of four, and two XDCAMs were used for tight shots of the contestants and the host, Mark Walberg, whose other hosting duties include

the steamy relationship series "Temptation Island."

Rhoads said camera operators and story editors liked the tapeless XDCAM because right after shooting, they could look at the footage immediately.

"Instead of having to run tape backwards to find something, you can always pull up a thumbnail, and they've got their own little files," he said. "You can look at a master list of all the shots where you've run tape and stopped tape, and if there's something specific you're looking for, you can go right to it."

The thumbnails provided a quick way for the production crew to look at what they captured in each segment.

"That's the main thing that kept sticking out at us. Going back to the thumbnails. Oh there's that one shot. Let's look at that," he said.

FOLLOWING THE DRAMA

"The Mansion" was shot at 40 Mbps.

"We went with 40 because it's well above broadcast quality, so it's gonna look really good," he said.



Kevin Bray shoots "The Mansion" with the Sony XDCAM.

The 23 GB optical discs are reused, saving the crew money and storage space. The post-production group makes clones of the footage, and then they ship them to a facility in Los Angeles, erase the discs and send them back.

Users sometimes find little idiosyncrasies when they are the first to try out new technology. Rhoads said that the XDCAM discs take about 10-15 seconds to format when changing discs, which got a little nerve-racking if the contestants were in the middle of a

heated discussion. The people behind the cameras don't want to lose a second of the drama unfolding.

Veteran reality TV sound designer Stacy Hill is the audio supervisor for "The Mansion." He's also worked on "Fear Factor," although during different seasons than Rhoads. Other reality shows that Hill has worked on include "EcoChallenge," "House Rules" and "Extreme Makeover."

Hill put wireless mics—the Lectrosonic 411 and the TRAM-TR-50—on all the contestants and anyone who came into the house. He said that wireless mics work well in a noisy environment—they can filter out some of the extraneous background noise while preserving the natural sound when capturing what people are saying.

The sound is recorded on a PD6 digital timecode recorder and a mix is sent to the XDCAM.

According to Hill, audio should be to be multitracked when recording several people talking at the same time.

"The big thing in reality [TV] is redundancy, redundancy, redundancy," Hill said.

"The Mansion" has been in production since May 2004 and the first episode aired on TBS in early October. ■

Congress

CONTINUED FROM PAGE 1

mittee included an amendment that would affect 75 full-power television stations. That deadline involved the reclamation by the end of 2007 of Channels 63, 64, 68 and 69 for public safety agencies, (in the event that such agencies wanted the spectrum.) According to the Association for Maximum Service Television, adjacent channels would also have to be abandoned to circumvent interference.

The bulk of the DTV measures that became part of the intelligence reform bill came from Senate Commerce Committee Chairman John McCain (R-Ariz.). The original amendment, introduced by McCain, included a hard shut-off date of Jan. 1, 2009 for all analog TV operations. McCain's proposed deadline was subsequently weakened by another amendment from Sen. Conrad Burns (R-Mont.) to allow waivers in the event of "consumer disruption." Thus, the deadline reverted to the 85-percent audience-reach threshold as defined in the 1997 Balanced Budget Act.

House Commerce Committee Chairman Joe Barton (R-Texas)

reacted with a nonbinding resolution in the House intel-reform bill to eliminate the 85-percent threshold. The Barton camp was expected to wrangle any other DTV provisions out of the final intelligence bill, since the Congressman wants to author his own comprehensive DTV legislation next year.

Barton would like to end analog broadcasting by 2006, but sources on Capitol Hill said there's no way the Senate will agree to a 2006 deadline when McCain couldn't get 2009 through the chute.

INDECENCY UNDECIDED

It is not clear whether indecency fines will become part and parcel of any wide-reaching DTV bill. While broadcast indecency fines were a topic du jour among lawmakers during much of the year, legislation to raise them languished before the full Congress shut down for the election.

In the meantime, the FCC slapped Fox with a combined fine of nearly \$1.2 million against the network affiliates for airing an episode of a now-defunct reality program, "Married by America."

The program, aired in April, 2003, involved a bunch of strangers

who agreed to get engaged and then married as the plot of a TV program. The fine was levied for hijinks from the "Las Vegas bachelor and bachelorette parties" thrown for the two couples left standing after America apparently voted the other participants off the show.

Fox contended that it edited out the indecency, but the FCC disagreed.

"The episode includes scenes in which party-goers lick whipped cream from strippers' bodies in a sexually suggestive manner. Another scene features a man on all fours in his underwear as two female strippers playfully spank him," stated the FCC's Notice of Apparent Liability (NAL). "Although the episode electronically obscures any nudity, the sexual nature of the scenes is inescapable, as the strippers attempt to lure party-goers into sexually compromising situations."

The fine breaks down to \$7,000 for 169 Fox affiliates, 14 of which belong to Fox. In the Super Bowl case, CBS affiliates were held harmless because the show was live and the FCC determined that they couldn't have anticipated the appearance of Janet Jackson's nude breast.

"This program, in contrast, was a taped episode in a taped series, and

the affiliates could have preempted it, as at least one affiliate did," the NAL said.

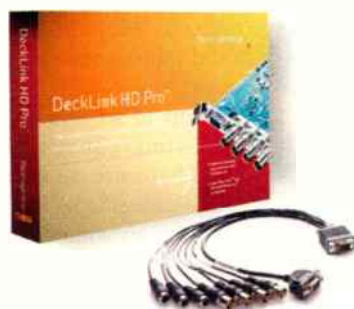
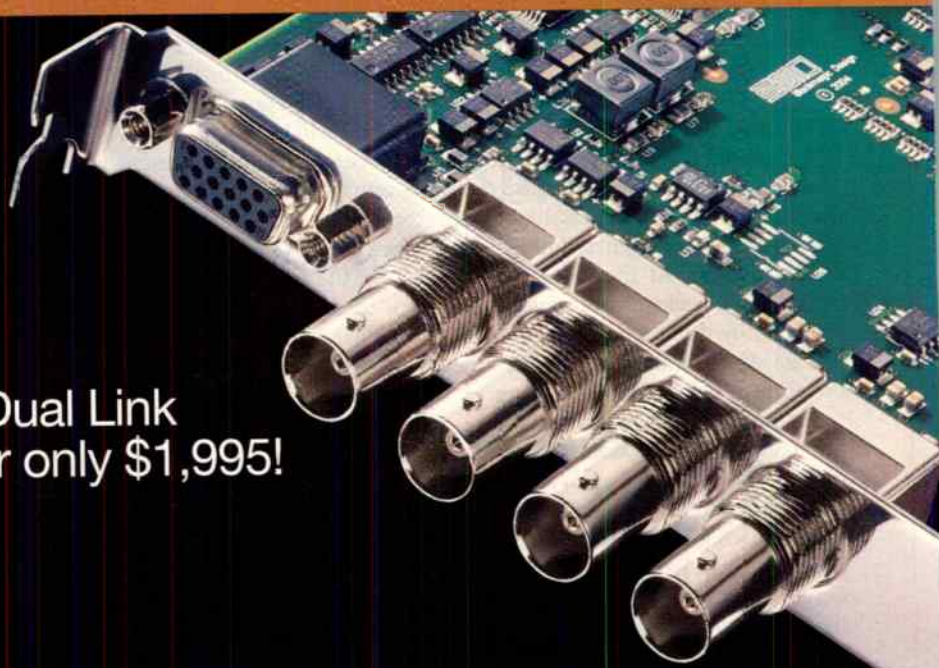
The FCC said it received a total of 159 complaints about "Married by America," but Parents TV Council chief Brent Bozell claimed that the PTC alone filed 25 times that number. The PTC ramped up its campaign against TV and radio sleaze after the Super Bowl incident last January. The organization is now pressuring the FCC to weigh content in its license renewal considerations.

"A fine of \$1,183,000 should make Fox and other networks sit up and take notice... This gross violation of the law must be considered by the FCC when it reviews station license renewal requests," Bozell said in a statement.

Legislation to raise individual fines from a maximum of \$27,500 to \$500,000 failed the compromise process before lawmakers left town, but a source familiar with the legislation said the issue is far from dead, and could very well wind up on the inevitable omnibus spending bill that will have to be passed during the lame-duck session scheduled to start Nov. 16. ■

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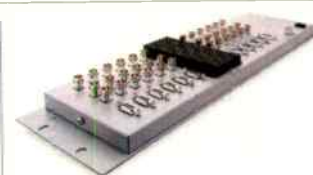
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Hurricanes

CONTINUED FROM PAGE 8

station, our signal was simulcast by many Cox-owned radio stations in the market." Although there was no damage to the station's facility, WFTV did shift over to a back-up generator to ensure uninterrupted operations during the hurricanes.

REACHING VIEWERS

WESH-TV2, a Hearst-Argyle station in Winter Park, Fla., provided 35 straight hours of live coverage for Hurricane Charley, 68 hours for Hurricane Frances and 37 hours for Hurricane Jeanne.

"When a hurricane comes to our market, it's a total station effort. One of the things we do here that's important is our 'WESH Hurricane Helpline.' This year, we had 10 phone

lines that were manned by employees and their spouses who were set up in Studio 3 and shown working there as part of our live coverage," said Bill Bauman, president and general manager of WESH-TV. "By having the Hurricane Helpline (1-800-TEL-WESH), we have an interactive connection with our viewers, and a means of providing a public service where viewers can get answers to their specific questions. This also takes the

pressure off our assignment desk, where our news director is busy coordinating reporters, live reports and other news logistics."

Among the logistics to be determined are which of the neighboring counties' Emergency Operations Centers' news conferences to cover live, in addition to Governor Bush's 9 a.m. and 4 p.m. hurricane news briefings. At WESH, the station's Hurricane Committee also reviews procedures and checks supplies, such as fuel for the live trucks and backup generator power for the operations and transmission sites.

"After Hurricane Frances, 1 million homes were without power and after Hurricane Jeanne, 800,000 homes were without power," said Bauman. "We know we're on the power grid too so backup power and plans are essential."

If their viewers did not have battery-operated TV sets, they could turn to radio partner (Clear Channel) Magic 107.7fm to hear WESH's live coverage. Also, the station's two Web sites, www.wesh.com and www.orlandoweather.com, registered 30 million page views in August and September, surpassing all of 2003.

"We also live-streamed our on-air coverage to both Web sites, and people from around the world watched as the hurricanes passed over Central Florida. We got e-mails from Singapore, Japan, UK, Europe and throughout America," said Bauman.

During the live storm coverage, WESH's procedures split the station's personnel into an "A team," which worked from 3 p.m. to 3 a.m.; and a "B team" which worked from 3 a.m. to 3 p.m.

"On-air anchors got regular breaks, and we sent two crews with every truck, to keep the reporting fresh," said Bauman.

Immediately following the hurricanes, WESH-TV sent up its news helicopter (with gyro lens) to televise live "Sky Tours," where they flew over their market's key counties—Brevard, Volusia, Orange and Seminole—so viewers could get a firsthand look at the damage.

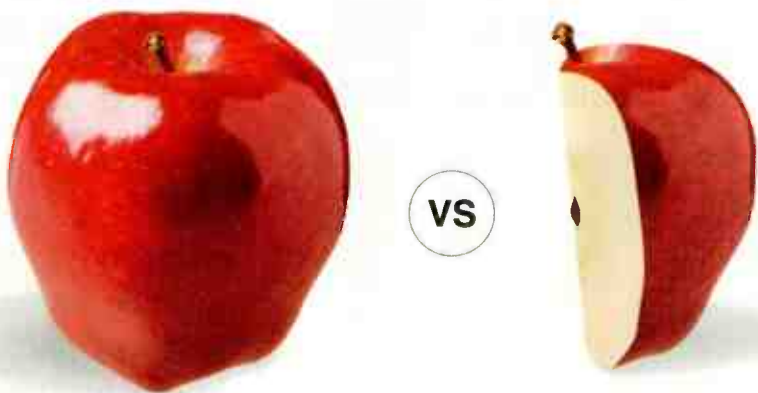
"Orlando had not had a direct hit from a major hurricane since 1961 and suddenly we had three come through in six weeks," said Bauman. "Our extensive hurricane planning really paid off."

The stations we spoke with said that, during the hurricanes, they were without overnight Nielsen reports, so there was no way to assess the impact of their storm coverage on viewership. They also said that they stressed safety for their news crews, and even allowed employees time off so they could board up their houses. Once they knew their families were taken care of, they could focus on covering the breathtaking experience and costly devastation of the Florida hurricanes. ■

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Microsoft Not Rallying Around the Flag

Media center to have mixed effects on TV

by Craig Johnston

REDMOND, WASH.

If TiVo lets you time-shift one show at a time, Microsoft's Media Center 2005 thinks three at a time might be better, and by-the-way, one of them can be HDTV.

For Microsoft's part, the mid-October launch of Media Center 2005 is actually a tricked-out version of the Windows XP operating system. PC makers are building high-end computers around the operating system to allow TV show time-shifting, music listening and picture viewing.

For over-the-air broadcasters, there's an advantage. In the new version, the first to support HD recording, only the ATSC over-the-air signals can be recorded.

"It's the conditional access part that's tripping us up right now," said Tom Lammel, Product Manager for Microsoft's Media Center 2005.

"It's a combination of technology, and making sure we do the right things legally, that you end up still with the high-def signal that you're supposed to get. That's why the satellite and the digital cable stuff come later."

Although this may drive over-the-air HD broadcast viewing to higher levels in the beginning, broadcasters could find the Media Center a mixed blessing later on. During the launch week Microsoft Chairman Bill Gates and other company executives were encour-

aging content providers to think about delivering their goods to Media Centers directly over the Internet for a fee, bypassing the middle men. The middle men, in this case are TV stations, cable and satellite services.

"It's the conditional access part that's tripping us up right now."

—Tom Lammel,

Product Manager,

Microsoft's Media Center 2005

The Media Center is not a new concept from Microsoft. About a million have been sold previously, but analysts say those relatively slow sales are due to the high prices, the noise the machines make, and the fact many people don't want to watch TV on their computer monitor.

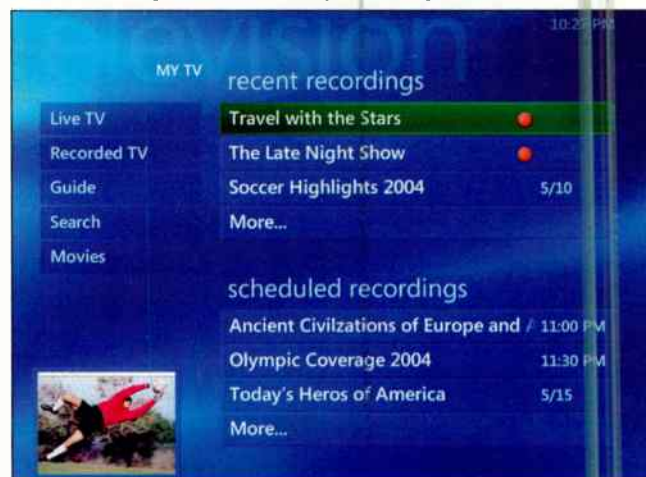
Media Center 2005, the third version, has made strides to overcome those objections. For one, "Media Extenders" are available to allow viewing of Media Center material on household TVs.

PC makers are also quieting down their machines, and though a full-featured Media Center PC is priced at upwards of \$2,000, a stripped-down version, with no video recording, can be had for approximately \$1,000.

At launch time, none of the PC makers offered the HD recording option, citing last-minute delivery of that portion of the operating system. But by the end of the year, HP is promising to add the feature. The technical limits provide

"You end up, at the highest quality, in MPEG-2, with an hour's worth of TV show at about 3GB."

Also introduced were portable Media Centers, small-screened players made to carry onto airplanes and such. With



Microsoft's Media Center 2005 marks the company's latest attempt to merge the PC and the TV.

for recording two SD analog signals along with one digital HD signal at a time.

Early buyers of Media Centers aren't stuck without HD forever. HD encoder cards will be available. "It will also be possible, if you were sort of a hobbyist... to upgrade it yourself," said Lammel.

He pointed out that though Microsoft has its own Windows Media 9 video codec, Media Centers will encode and store video material in MPEG-2. "Because the industry standard is pretty much MPEG-2, and that's the encoder, the hardware encoder on these cards, so that's the way it's stored.

screens on the order of 4 inches by 3 inches, there's no need for the quality the 3GB/hr MPEG-2 provides.

The portable Media Center is docked to the full-featured Media Center, and a syncing process moves material across to the smaller unit.

"What we do is transcode it, and a 3 GB file becomes kind of a 2 MB file, for an hour's worth of television," said Lammel.

That transcoding process takes place with the music and picture files as well.

MOVIES VIA THE NET

Although the business of renting movies over the Internet is in its fledgling stage right now, it's definitely part of Media Center's future. Two existing services are Movie Link and Cinema Now.


"Movie Link or Cinema Now tend to have a business model that once you download it you have 30 days to watch it; once you begin watching it, you have 24 hours to watch it as many times as you want," said Lammel.

The cost is about the same as renting from the store, and there's no need to make two trips, one to pick the movie up, one to return it.

"Those movies are in Windows Media format," said Lammel. "That's because we'd rather download a 500 MB file of higher quality rather than a 3 GB file of lower quality. And plus they can do the copy protection, digital rights management, more easily in the Windows Media format."


Using the Media Extenders, the Media Center audio and video material can be routed throughout the house on a wired or 802.11A or G WiFi network. ■

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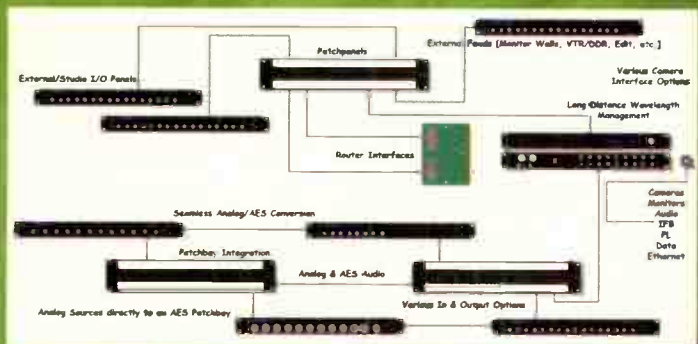
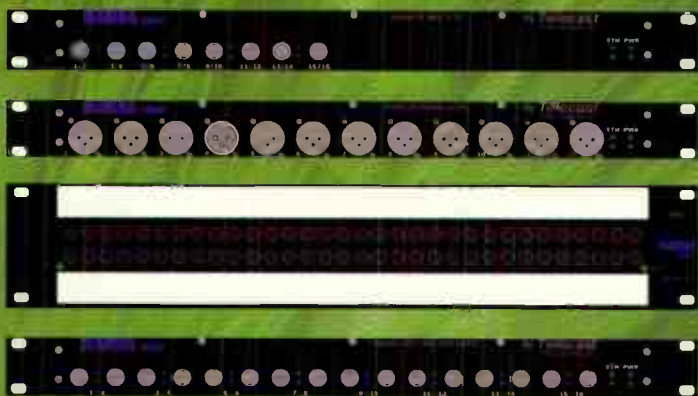


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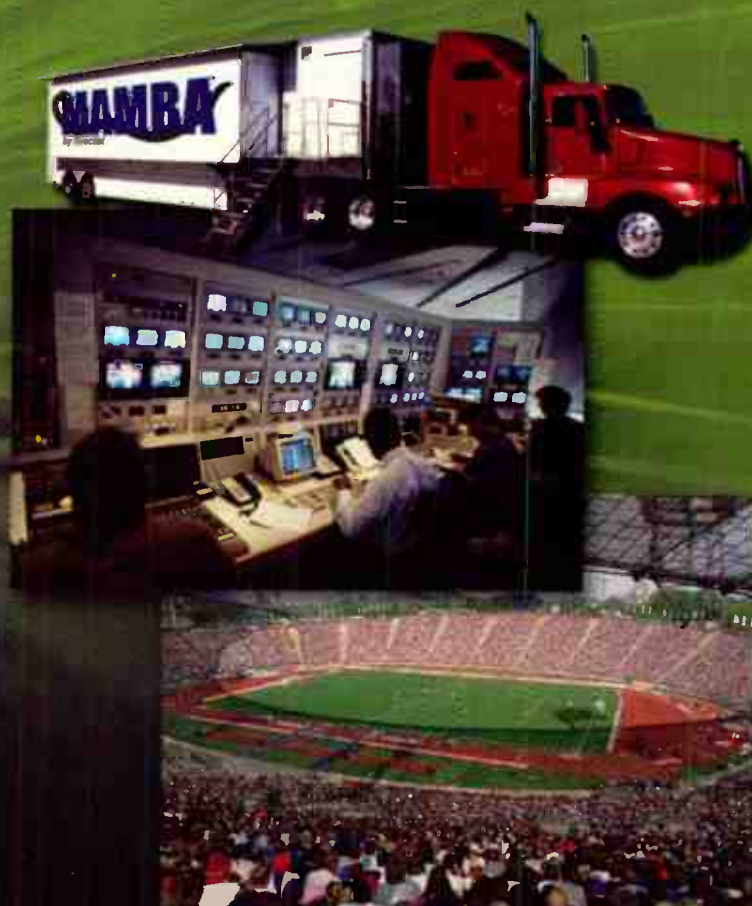


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COMMENTARY

MARK BROOKS

Triax Provides Value for HD Productions

Fiber or triax? The debate continues

by Mark Brooks

HAMPTON, N.J.

As a veteran of thousands of live events, I'm always looking to streamline the productions I work on to make them as efficient and cost-effective as we can without compromising quality or signal integrity. When it comes to HD telecasts, this is especially true.

The issue of distributing HD signals between cameras located throughout a venue and the production truck has come to the forefront recently. The debate has come down to using fiber-optic or triax cables. When using fiber, there's no signal degradation, outside interference problems or visual artifacts that we sometimes see with triax. Yet what we deliver to our clients (and I work with all the major networks and

sports program producers in the country) is more than acceptable. In fact, 75 percent of the HD clients I work with specifically ask for triax to avoid the cost of cabling an arena or stadium.

PLUG AND TRANSMIT

My objective in these kinds of "format wars" is to do my own testing when possible and listen to my client. For me the clear choice for transmitting HD signals is over triax cable. The issues of ease of maintenance and signal reliability cannot be denied and outweigh benefits of fiber. That's why working with Thomson's Grass Valley LDK 6000 Mk II WorldCam cameras is a great benefit.

Virtually every professional sports arena or stadium I work in is outfitted with triax. We simply pull up to the venue and plug in the cables. This is a

huge benefit for the client and crew, as many times we are challenged with setting up a production in a matter of days or even hours.

This can be done with fiber, but in most venues, the cable and connections are not yet in place, so we would have to install and break them down with each production. Neither the stadiums nor the mobile production companies want to lay out the expense for fiber at this time, so equipment made today needs to provide the ability to work with triax. As new stadiums are built or older ones remodeled, triax cabling may be replaced or supplemented with fiber, but triax is the only practical and cost-effective option today.

I understand the distance limitations of sending HDTV over triax, yet in our tests and daily experience, triax has been proved to maintain a strong signal at distances greater than 2,500 feet, which is satisfactory for most HDTV applications. We have used fiber for longer distances (such as televising golf, auto racing or skiing events), but that's the exception. In every case where we had an exceptionally long cable run, we've found a way to make it work with triax.

There's no disputing that fiber has its place, and it will probably be the transmission method of choice in the future—due to the superior strength of the signal—but currently triax is what clients want. Using fiber will only increase the cost of production. The time to lay fiber-optic cable is during new construction or rebuilding of stadiums. This allows for the expense of installation to be absorbed into new construction.

ALREADY THERE

ABC is a longtime client of National Mobile Television, which I used to work for, and has been a pioneer in HD production in the United States. It understands the issues with fiber and triax, and the network chooses triax every time. For complicated productions such as "Monday Night Football," which typically uses 22 cabled cameras, it's unrealistic to expect production personnel to run new cable at every venue.

"Obviously, the fact that the Thomson HD camera could create a native 720p image was an important criteria, but the fact that triax cabling was supported was a major factor as well," said Mike Strein,



Thomson Triax Repeater

assistant director, Technology and Strategic Planning, at ABC. "We have been, for many years [like everyone], seeking to reduce costs in field production. By using existing triax cables already installed at sports venues, it made an HD production much more palatable. This viewpoint is shared by ESPN as well: there is no way they could have broadcast the more than 100 HD sporting events they produced in 2003 without triax-based cameras."

With recent announcements from other manufacturers of their intentions to introduce new versions of triax camera systems, and from companies like Telecast Fiber Systems that offer HD-over-triax products, it's clear that the industry acknowledges the value of triax.

Using the Grass Valley cameras from Thomson had a lot to do with the LDK 6000's image processing quality, its ability to capture pictures in all the HD formats, as well as its triax transmission system. This is predicated on the fact that Thomson as a company has experience with both fiber (Thomson has introduced its Grass Valley Hybrid Fiber Adapter, which supports high-bandwidth transmission of HD video up to 4,000 meters over fiber-optic cable) and triax systems, so I know I'll get support no matter what transmission system we use.

For me, the production is and has always been the most important thing, and I believe that triax is the most practical and economic choice for today's standard-definition and HD productions.

I support Thomson's efforts to address the near-term use of HD triax and the larger benefits of a platform that supports both triax and fiber going forward into the future, using each in an application that makes sense for each unique circumstance. ■

Mark Brooks is an HD technical consultant based in Hampton, N.J.

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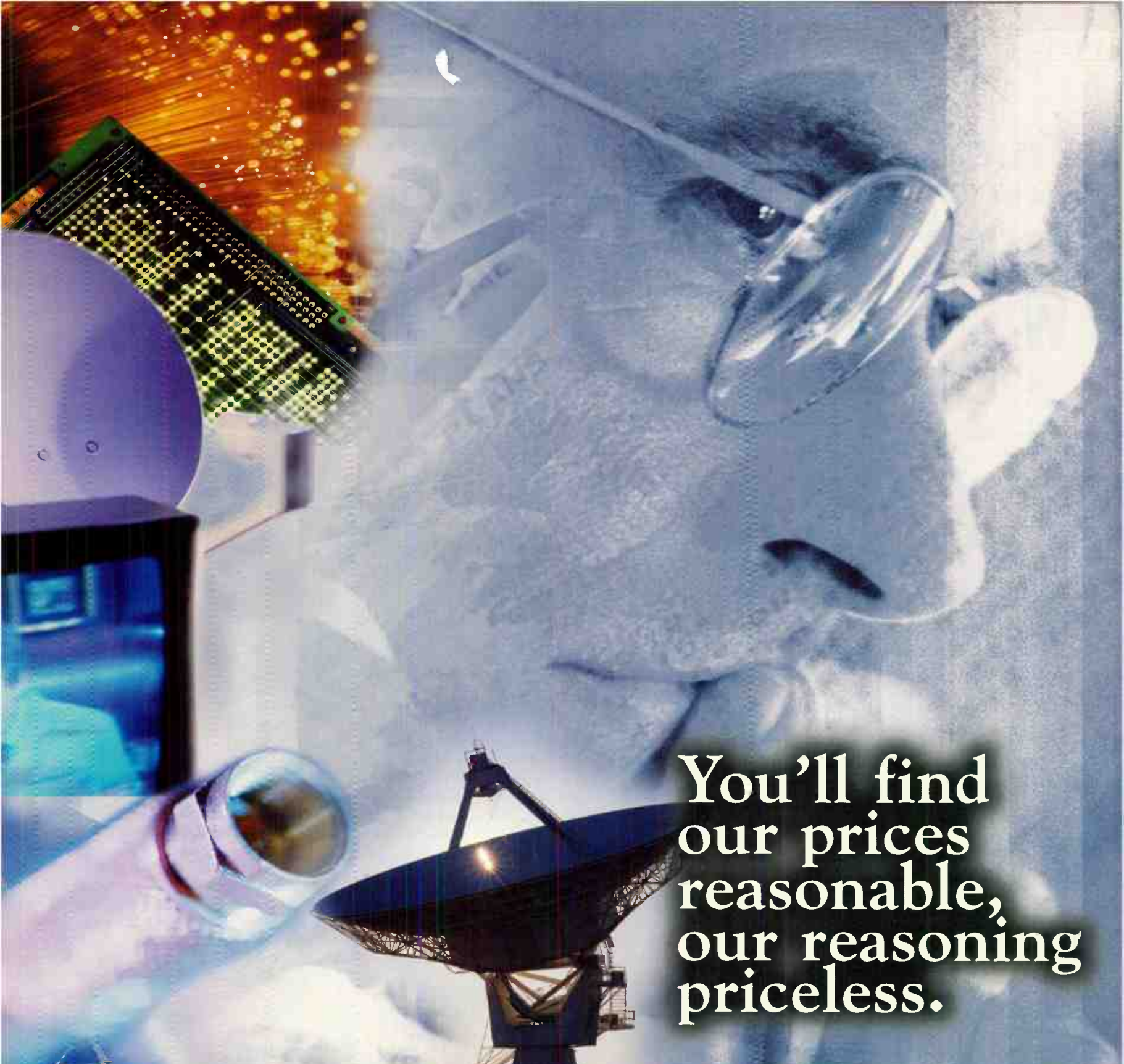
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Trucks Look to Fiber Future

But for now, technology limited to special applications

by Mary C. Gruszka

NEW YORK

With the greater bandwidth requirements of HDTV, it would seem that fiber-optic technology would be a perfect fit for mobile HD productions. And it is in many circumstances, but not universally.

"Fiber is used in special-purpose applications outside of the truck," said George Hoover, senior vice president of engineering for Pittsburgh-based NEP Supershooters. "But in a typical show we don't use fiber." NEP has five HD trucks on the road, including the SS24HD for CBS's NFL coverage.

TRUCK TO TRUCK

One of those special applications is truck-to-truck HD interconnections used for CBS. Hoover explained that SS24HD consists of two trucks, one for video production and graphics, and the other for audio. NEP is using Mamba by Telecast Fiber, which can carry up to 48 HD channels.

It wasn't the distance between the trucks that was a factor in using fiber, because the distances weren't that great. As Hoover said, it was "not having to hook up all those BNCs."

Central to the Mamba system are audio and video jackfields and connector panels that integrate fiber-optic encoders. "All electrical signals in and out are converted to optical signals within the patch panel unit itself," said Richard Cerny, president, Telecast Fiber Systems, based in Worcester, Mass. "All

connections between these panels are done with fiber."

Considering that setup times for events keep decreasing, Cerny said that fiber connectivity can speed things along. "With hundreds of video and many more audio cables between trucks, it takes a long time to hook up," he said. "We can put 48 signals in a given [fiber] cable. That makes hookup time faster and easier to manage."

"We are just a little ahead of the curve before fiber hits the trucks."

—Dave Shaw,

Venue Services Group

Venue Services Group, builder of NMT's HD7 and HD8, has not added a lot of fiber within the mobile units it has built.

"We are just a little ahead of the curve before fiber hits the trucks," said Dave Shaw, president of Venue Services Group. "The best advantages of fiber are seen in long-distance use. We at Venue Services Group are certainly considering adding fiber for the future due to the reduced weight compared to wiring, but have not yet, due to the short distances within the trucks. The electronic-to-optical and optical-to-electronic conversion equipment still adds costs, although prices have improved. There are also heat and air-conditioning issues to consider."

Both of NMT's HD7 and HD8 trucks connect to fiber distribution from the truck to the announce booths through Telecast Fiber, per the request of NMT's client, Fox Sports, Shaw said. "DX6 [another NMT truck] used Telecast Fiber to move camera signals for golf remotes as well," he said. "Other NMT mobile units have interfaced via fiber in truck-to-truck usage for large events."

Hoover said that triax is still very much in use on HD shoots. (See "Triax Provides Value for HD Productions, p. 18.) But the CBS NFL production uses Sony cameras that are connected with SMPTE hybrid cables (a combination of fiber and copper).

"Newer stadiums have a mix of single-mode and traditional copper cable, but almost none have the composite camera cable," Hoover said. "It's cost-prohibitive for most."

To interface with the hybrid cable, NEP uses Telecast Fiber's SHED (SMPTE Hybrid Elimination Device) to convert from hybrid to standard single-mode fiber to connect into a stadium's fiber wiring.

Point of view (POV) cameras is another fiber application to consider. "For POV there are a range of products from Telecast, Evertz and Multidyne, but in our case we use Stratos Lightwave, a little tube with BNC on one end and an ST [fiber] connector on the other end. It converts [digital HD] to single mode



NEP is using Telecast Fiber's Mamba to fiber-connect its new SS24 HD truck with another truck.

[optical]," Hoover said.

Network Electronics offers the N-Box, a one-slot housing that provides point-to-point fiber connectivity and can be used between the truck and a camera.

Fiber can come into play, not just for HD but for SD and audio as well, to multiplex a number of signals, reducing the number of cables run to a certain area, like announce booths. Some products applicable here include the Evertz Mobile Fiber Optic

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System, Multidyne Hydra-8000 series, and Telecast Fiber DiamondBack and Sidewinder.

Other companies, like Opticomm, Network Electronics and ADC, also make fiber-optic gear for broadcast.

Opticomm offers the DVX-6400 and DVX-6800 multichannel systems for uncompressed SDI and HD-SDI over one fiber (four and eight channels, respectively). Opticomm's DVX-5000 and FMV-564 Systems were used to wire the Hollywood Park Racetrack.

Mitch Hayden, Network Electronics vice president for technical sales and service for the U.S., said that the company is not in the mobile business per se, but its flashlink wave division multiplexing (WDM) fiber-optic system has applications for field use.

"WDM technique allows you to put multiple signals on one fiber," Hayden said. "Three types of standards are used—WDM, CWDM [course] and DWDM [dense]."

With WDM, two signals can be multiplexed on one fiber; with course, up to 16 signals, and with dense, up to 40. Single-mode fiber must be used for WDM, Hayden said.

ADC, as part of its OptEnet media converter platform, includes a CWDM module.

CONNECTING PLASMA

A potential use of fiber in trucks is to feed large plasma screens, if they are used as replacements to traditional CRT monitor walls. Here fiber can be used to send HD feeds to the screens via DVI (digital visual interface), extending beyond the 5-meter limit for copper cable.

Gefen makes the DVI-1000 HD and the DVI-2000 HD (dual link for two displays) for this purpose. The unit takes in an HD signal, converts it to DVI and sends the DVI signal over a provided fiber-optic cable to a receiver located near the screen. Gefen also makes the HD-SDI to DVI converter that works both ways.

Also for this application Opticomm provides its DVI-1000 system that extends a DVI source to a monitor. The system includes a transmitter and receiver connected by a single multimode fiber.

"Manufacturers are developing equipment for truck applications," Shaw said. "While Evertz has had many offerings for multiple signal distribution, they have recently shown their new multiviewer. This will allow display units to be much further away than the electronics, and gives us food for thought on monitor wall displays for both mobile units and fixed facilities."

For fiber-optic patching applications, ADC introduced the Pro Patch optical normal through patch panel at NAB2004. Unlike other fiber patch panels that require small fiber jumper

cables for cross-patching, the ADC normal through panel is a "patch by exception" panel.

"Source and destination are routed together until you flip a switch, and then you can put in a patch cord where you want the signal to go," said Jeff Peters, senior product manager for broadcast and entertainment, ADC, based in Eden Prairie, Minn.

Fiber certainly has its applications

in mobile productions, but with its expense and added complexity, sometimes running copper, even for HD, costs less. It is applicable, as Hoover said, "if it adds some efficiency to a production."

With the long video and audio runs involved in venues for NASCAR and golf, "you would not get the shot otherwise [unless you used fiber]," Hoover said. In these cases, fiber

"saves setup time, money in renting and shipping wires, and it saves labor, whether HD or SD."

Shaw said that using fiber has its advantages, including reduced weight. As he said, "there are improved connectors that can stand up to harsh environments, interfaces have improved, costs have been reduced, all of which lead to fiber offering good alternatives to copper." ■

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Here's what Buck McNeely, of the TV Show "THE OUTDOORSMAN WITH BUCK MCNEELY" has to say about the 1000:

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Craig Caples of Caples Productions in Las Vegas says

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DIGITAL JOURNAL

Bill Hayes

Bargaining with Cable

MSOs want broadcasters' DTV programming, but at what price?

JOHNSTON, IOWA

One of the functions of my position as director of engineering for Iowa Public Television is to act as the cable relation representative for our network. In Iowa we deal primarily with one large cable operator which is Mediacom, whose systems cover the majority of the state. There are a number of smaller independents owned by local phone companies and in a couple of the border markets we deal with other larger operators like Comcast in Omaha.

Cable relations for a PBS station in the analog domain are fairly simple. As a qualified non-commercial educational (NCE) station we are treated differently under the cable carriage than commercial stations. Since public funds are used to support the PBS network as well as the individual stations' federal appropriations and grants, neither the cable operators nor the stations have the right to deny any viewer the right to watch qualified public stations. Nor do we have any right to ask a cable operator to pay us to carry our signal. So we are not eligible for retransmission consent payments and we cannot be denied must-carry rights as long as we meet the technical requirements for providing a signal to the headend location.

Even in the border markets where there may be more than one PBS station, the size and capacity of the cable system generally requires that they carry all the stations. In the years that I have been doing the cable relations, I have never had a cable system argue to not carry our signal and there are a number of them carrying our signals well beyond the mandated range.

THE NEW REALITY

Of course in the DTV world the carriage requirements are not anywhere near so well defined. Consolidation in both the broadcast and cable ownership ranks has created large conglomerates focused more on debt management and generating profits than on service to their communities. At these companies' sizes and levels the first communities that their management must be sure are adequately served are the investors and shareholders. It is easy to lose track of the local communities' individual requirements and subtle differences when evaluating operational considerations from such great distances. During the this time of consoli-

dation of systems there also has been a tremendous increase in the capacity that can be delivered to the home user as well as an expansion of the quantity of content sources available. In the vast majority of cases, the cable operator is in a sense a monopoly of sorts since most communities and cable operators negotiate exclusive franchise agreements. So here you have massive



growth in service capacity, huge increases in the number of homes passed and essentially no competition in an environment in which the potential for long-term profitability is so bright that the operators need to wear shades. Unfortunately the shades in many cases blinded the operators to the need to deal with the growing dissatisfaction among their customers.

Doing cable relations for a statewide network like IPTV and previously for the essentially statewide CBS affiliates in New Mexico, I met with many cable operators and their customers. Working with viewers to sort out problems I often heard tales and experienced treatment from cable operators that reminded me of Lily Tomlin's character of Ernestine the Operator on "Laugh-In" whose response to complaints was to snort and laugh and quip that they were the phone company and they didn't need to care. Many cable operators in my experience have this same attitude.

Of course that is changing now because of market forces... sort of. The satellite industry through technological advances has been able to offer competitively priced services to compete with cable. Through their government-forced benevolence they now also offer carriage of some local stations in many markets that makes them even more attractive to end users. No longer do they need a 10-foot satellite dish in their back yard, they can receive their local network affiliates and since the cable companies have been treating

them like a necessary evil, the opportunity to break free is very appealing.

The cable industry is now on a campaign to improve its image and you can see it in their promotional spots as they tout their local presence, their contribution to the communities by employing local people and contributing to the local economy. They justify rate increases as the result of having to pay more and more to the content creators so that they can supply the viewers with this vast array of services. And now that they have a true competitor they are looking for ways to differentiate themselves from that competitor.

One big interest is local HD broadcasts. We began broadcasting on three of our nine DTV sites in early August. Since we are currently building out our fiber interconnect system and will not be implementing our ACE master control solution until late January of next year, we are limited in how we can run our DTV transmitter streams. Within a few days of being on the air in HD, I was contacted by cable operators wanting to know what arrangements were needed to obtain our permission for carriage of our HD content. Local HD content from both the commercial and NCE stations is a service that cable can offer viewers that satellite cannot. However, we have been giving this matter considerable thought literally for years. IPTV wants our complete bit-stream carried regardless of whether we are broadcasting in HD or multicast SD and datacasts. As we have planned our future in the digital broadcast realm, each of these facets of operation has a crucial role in our service to Iowans and we are unwilling to negotiate away any service.

GOT WHAT THEY WANT

I don't know how easy it will be to work out an acceptable carriage arrangement but we have considered a number of the arguments that we heard from cable. The cable operators want to carry our HD and initially we are planning on airing exclusively HD only; our infrastructure is still not ready to handle the complexities of multicast switching and such. However, since we know from our own tests that we can do all of the services within the ATSC broadcast stream, and since cable is ready and willing to carry our HD content, even if it takes up the entire ATSC stream, we don't buy the capacity argument since implementation shouldn't require any change in capacity regard-

less of what we are doing with our content. I'm sure there are technical challenges to be dealt with but the number of bits used is constant and therefore capacity isn't a real issue. In our multicast environment we plan on offering multiple free services and we want them available to all Iowans through whatever means they receive our digital signal. We plan on using addressable datacast technology to supply multimedia content to K12 schools so that they do not have to wait for a van to deliver a VHS tape. Since the majority of schools have cable already, if this service cannot be delivered by cable, the schools would have to install antennas which can be done but puts an unnecessary burden on them. If we were to offer any premium service that required some sort of subscription from which we would profit and the end-user is using the cable pipe to receive that service, we would negotiate a payment plan to cable for carriage. But that is not what we're about.

One cable operator wants access to our library for a video-on-demand type service. We have a considerable library of Iowa-centric content that sits on shelves and gets played occasionally. Potentially it could be a tremendous service to offer to Iowans in their homes and schools for research and entertainment. For the cable operator it provides them with another differentiated service from satellite that they can promote. If you do any in-depth investigation you'll find that a significant percentage of VOD or PPV services that are purchased are pornography and not something that the cable operator can promote openly. It may be hypocritical for them to offer a service that many in the communities they serve would decry if they promoted it, but then again the cable operator is in the business for profits and if members of the community weren't purchasing the service they'd pull it in favor of something more profitable.

So, we are just starting down this road and although we're not certain how smooth the trip will be or how long it will take, we believe in the end we'll end up getting full carriage because we have products in these critical areas that our communities want that our cable partners can promote and deliver with pride. ■

Bill Hayes is the Director of Engineering for Iowa Public Television. He can be reached via TV Technology.



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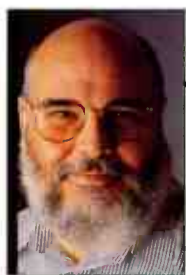
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Andy Ciddor

Another Olympic Achievement

After the opening ceremony for the 2000 Summer Olympics in Sydney, many people in the entertainment industry said that this lavish theatrical spectacular, with its hundreds of set pieces and thousands of dancers, singers, musicians, fire-eaters, acrobats and horsemen, would not, and was unlikely to ever be outdone. Not surprisingly, four years later, the opening ceremony for the Athens Summer Olympics took a dramatically different approach.

The aerial and flying work were astounding in their complexity and breathtaking in their beauty.

The Sydney production was a wildly exuberant extravaganza, conceived, designed, choreographed and staged for an audience of 80,000 in the stadium. The worldwide audience of some 3 billion was treated to a television version of the show at the hands of Director Peter Faiman, who before he directed the movie "Crocodile Dundee," spent a few decades mastering the art of live variety television.

In Athens, the production was very compact and clearly intended for television transmission, with few concessions appearing to have been made for the stadium audience. The function of this audience, as with many television productions, seems to have been to

provide color, atmosphere, an applause track and a handy supply of cutaway shots.

AUDIENCE AS EXTRAS

In essence, the Sydney 2000 production was highly labor-intensive, with large crowds of designers, technicians, production crews and performers filling an entire stadium while the television audience looked on. The broadcast audience was treated to a few extra close-ups that the live audience saw only on the large monitor screens. By contrast, the Athens production was technology-intensive, being based around the world's most sophisticated temporary stage, the world's most advanced motorized flying system, and what must be very close to the world's largest pyrotechnic control system.

The lake stage, with its embedded light sources, 60-foot-diameter scenic trap with hydraulic lift, submerged gas jets for the flaming Olympic Rings, submerged water mist screen and a drainage system that allowed it to empty its half-a-million gallons in less than three minutes was the kind of facility envied by every opera house and casino showroom in the world.

The 72-winch computer-controlled flying system enabled 35 "runners" to moonwalk through the air, and 18 scenic units totaling more than 20 tons, to dance in a graceful aerial ballet. Virtually all the thousands of choreographed pyrotechnic shots were located on and above the roof structure of the stadium. Yet the full impact of these spectacular images and effects was only apparent either to aerial cameras above the arena or cameras located far enough away from the sta-

dium to be able to take in the entire structure from an elevated viewpoint.

Most of the scenic elements and choreography, particularly on the 11 wagon stages that formed the magnificent "Clepsydra" procession, were crafted at a level of detail that would be invisible even to those in the very front rows of the stadium seating. Only the 3 billion television viewers

trated in a well-lit pool, directly in front of our locked-off viewpoint; thus, we were given no clue as to the look of the rest of the stadium. This might have passed unnoticed, except that it became increasingly obvious as the procession continued that we were never going to be granted the essential wide shot that would give us a sense of the scale of 1,000 feet of rolling stages.

The only lighting effect seen in the entire "Clepsydra" sequence was a couple of yards of festoon bulbs strung across the back of the "Modern Greece" scene.

Considering the capabilities of the control system, the luminaires and the lighting design team, I was disappointed in what they were allowed to



Pieces of sculpture are elevated to form an olive tree during the opening ceremony of the Athens 2004 Olympic Games.

were able to appreciate the subtle design and clever movement of the figures in these tableaux. So carefully were these scenes designed and built, that the majority of coverage was from a single, precisely placed, locked-off camera. My guess is that this shot coincided exactly with the viewpoint used in the designer's renderings of these scenes.

WIDE-SHOT DEPRIVATION

It seems that the lighting for this sequence may well have been concen-

achieve. Despite a dozen auxiliary generators, 1,700-plus moving lights and hundreds of conventional fixtures used in this production, much of the time there was a sense that the lighting was only there to provide an exposure for the cameras.

I am proud to be a minimalist when it comes to the number of colors and sources that I like in a scene. Nevertheless, I was surprised when lighting designers, Bob Dickinson and Eletheria Deko, hardly used any dis-

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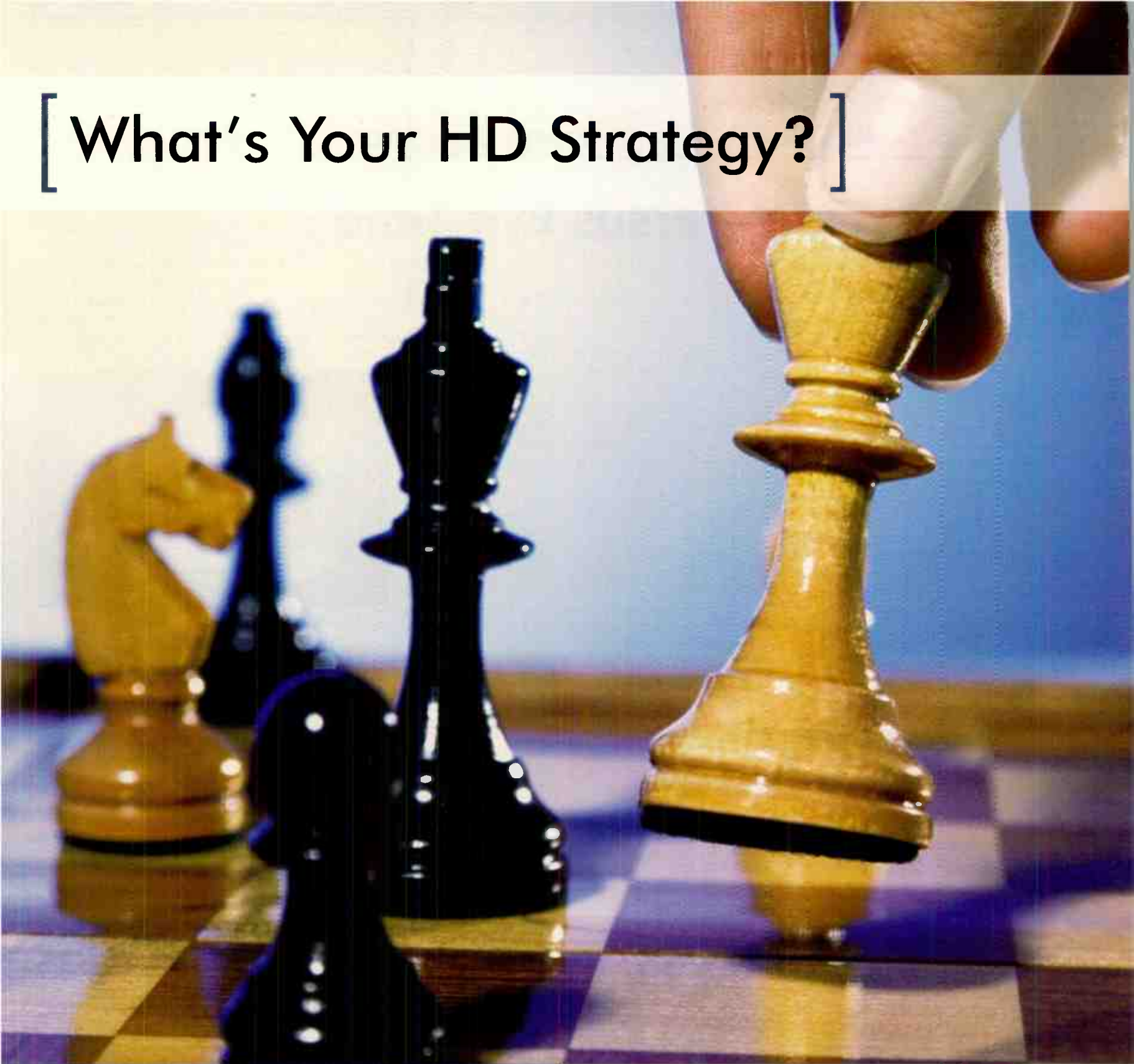
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NET SOUP

Frank Beacham

Ear Time Versus Eye Time

Photo: Steve Jordan

I was Nicholas Negroponte, founding chairman of the MIT Media Lab, who once pointed out to me that most people have more "ear time" than "eye time" in their typical day.

Yes, of course. We have far more time to listen to media than we do to watch media—a simple, yet very astute observation.

Regardless of this fact, many supposedly smart companies are about to bet gazillions of dollars on the side of eye time. By Christmas, we'll be seeing a flurry of new portable devices that store, playback and allow the personalized viewing of video programming away from home.

Essentially, these companies will all be trying to out-iPod Apple's phenomenally successful iPod portable music player. They think that by adding PVR-style video capability to their portables, they will be creating an iPod killer.

Apple's visionary-in-chief Steve Jobs, who has so far resisted this trend because he knows better, will no doubt be howling with laughter as his arrogant competition plows ahead to failure in the marketplace.

I don't think anyone is suggesting there is no market for portable video players. It's just that such a market will probably never be nearly as large as the one for well-conceived audio-only devices like Apple's iPod. And this goes well beyond the ear versus eye time observation.

Video players might become extremely popular for the entertainment of kids during travel. Certainly a week's worth of TV fare loaded on a portable hard drive might prevent backseat bedlam during a long drive. At best, however, that's a niche market.

What portable video manufacturers are missing is a complete understanding

of what is driving the real success of the iPod. I, like so many others, failed to grasp the power of Apple's iPod until I purchased one and began using it.

Put simply, the iPod changes everything about the way I listen to and engage with music, both at home and on the road. The device's effect on my listening habits has been so dramatic that I cannot imagine going back to my pre-iPod days.

I'm also convinced that only iPod users "get it." This explains why over the past two years that some of the world's top electronic product designers have failed to create a device that can compete with the iPod. It also helps explain why music companies have been so slow to change their ancient ways.

First, the myth. Contrary to what record companies would have you

believe, the success of the MP3 revolution and devices like the iPod are not predicated on stealing music. I personally know no one—even among some prolific college-age music downloaders—who intentionally steals from a favored artist. Record companies, unfortunately because of their own doing, are something else.



Bose SoundDock

There's plenty of evidence that the poor financial results at the major labels in recent years have a lot to do with self-inflicted foot wounds. These short-sighted companies do little to resolve the situation by suing their best customers. Most importantly, they have little to do with the exciting

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Olympic

CONTINUED FROM PAGE 24

cernable broad color or texture in the production. I had the distinct impression that much of what may have been possible was constrained by a notion that the purity of the vision of the set and costume designs was not to be compromised by the application of sympathetic or creative lighting.

Although color washes were applied to both the audience and the arena structure, I was able to make out a mostly white coverage on the critical elements of the production. A gentle blue wash was used as an overlay on the water sequences and some amber was used to enhance the fiery rings. A major exception was the striking red on the figure of the centaur in the lake. That red seemed to be boosted by some of the 26 followspots that were also the primary tool for kicking up exposures on dignitaries and soloists.

While I may have some misgivings about the creative use of lighting in the theatrical parts of this production, and I may also have a strong feeling that most of the camera shots we saw were straight off the designer's original

storyboards, none of this takes away from the technical achievements of this production.

The aerial and flying work were astounding in their complexity and breathtaking in their beauty. The projections onto the water mist and the 19 set pieces were indeed beautifully constructed and executed. The tricks built into that central stage (which was dismantled and removed immediately after the opening ceremony) were spectacular and seemed to go off without a hitch.

Still, I came away from watching this broadcast with the distinct feeling that it was a superbly clever TV show with a studio audience of 75,000 who had no idea what was actually going on. Maybe that's what the Athens organizing committee and the broadcast rights-holders wanted, but I was left wondering if the studio audience wasn't short-changed for the price of very expensive tickets. Maybe it's just my theatrical roots showing. ■

Andy Ciddor has been involved in lighting for more than three decades as a practitioner, teacher and writer. You can reach him via e-mail at acid-dor@kilowatt.com.au

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INSIDE AUDIO

Dave Moulton

A/V 104: Time-Domain FX and Reverb

This column will be devoted to the basics of time-domain signal-processing effects, most notably reverb.

Happily, this is fairly easy to get a handle on, and its use for most television production is pretty straightforward. Once again, I hope you find it useful, and/or that you can pass the column on to some of your video colleagues.

REVERB & AMBIENCE

Reverberation and ambience are absolutely essential acoustical behaviors in everyday life. They are inescapable facets of our sonic landscape, and we use them, subconsciously, as vital cognitive tools to assist us in perceiving the reality of our environment at any given moment, as well as perceiving our place in that landscape and the identity and location of other persons and objects.

Because microphones do not "hear" in the same way that humans do, the detection of reverberance and ambience by microphones when making a recording is often undesirable, and we regularly take considerable pains to suppress or minimize it. This is particularly true in video production.

Sometimes, however, we wish to have a sense of space in a recording, and so we desire to add reverberance back to our dry recordings. Toward that end, we have invented a series of effects boxes called reverbs that allow us to do exactly that. A reverb generates a series of reiterations of the signal over time to mimic the acoustical behavior of an enclosed space.

There are two parts of this, due to the way our hearing works.

First, there is a volley of what we

call "early reflections," which follows the direct sound that we hear during the first 50 milliseconds after the direct sound has reached our ears.



Yamaha SREV1

These are perceptually fused with the direct sound and we do not consciously perceive them as reflections or echoes, but rather as an enrichment and "widening" of the direct sound source. We call this stuff "ambience."

Usually, this is all we get when we listen in small rooms. In large rooms, it usually constitutes the "first part" of the reverberance process.

In large rooms, after 50 milliseconds, we begin to hear the reflections from the room coming back to us as a wash of sound dying away over time. The amount of time it takes for the sound to decay or die away is called "reverb time."

In general, the larger the room, the more time it takes for sound to die away. For a given space, the more sound-absorbent materials that are in the space or on the walls, the shorter the reverb time will be. We call this a "drier" room, as opposed to a "wetter" room; sometimes we refer instead to "live" (reverberant) or "dead" (non-reverberant) spaces.

When we do this with reverb-effects devices, we usually generate ambience with a few discrete short delays (typically between 15 and 35 milliseconds) and/or extremely short reverb times; we generate the sense of reverberance by using a longer onset time for the reverberance (called "pre-delay") and much longer reverb times (typically 1.5 to 3 seconds).

The important thing to keep in mind is that the ambience adds a sense of solidity and palpable body to the sound, while reverberance adds a sense of spaciousness trailing after the sound.

AT THE HEART OF STEREO

Ambience and reverberance are inherently spatial, and in many respects they are at the heart of the power of stereo. It is reasonable to think of reverb as the primary stereo enhancer—indeed, many old mono records are reissued in "stereo" by simply adding stereo reverb. Ambience is even more striking. We don't hear it as such, but it is profoundly evident that there is some sort of "roominess" enveloping an otherwise dry sound when we add early reflection ambience.

Therefore, we can think of ambience and reverb as "adding stereo" to a mono signal or signals. It can be a very handy tool.

Ambience can be easily generated in a digital audio workstation these

days by adding some short delays (20–35 ms) panned left and right. They should be slightly different times and barely audible. Such an application is called a "spreader" in multi-track mixing.

Good digital reverbs can be fairly expensive. If they reside in software, they can use up most of the computational capacity of a computer. I find them absolutely seductive—I'm a reverb junkie! That said, less is more, and my advice is that you use the effect sparingly, especially in live production.

THE MEANING OF IT ALL

In the television world, post-production reverb has a profound place in the production of dramatic and musical shows, as well as commercials. It has almost no place in talk shows, newsgathering, voice-overs and general-purpose video production. As I've mentioned in previous columns, we have made a production tradition of absolutely bone-dry voice-tracks and almost any live on-camera sound. We have become so accustomed to such a sound quality that when ambience is added to such material it usually sounds quite odd. This means you generally can't go wrong by leaving reverb out.

Nonetheless, there are moments when it can really help. I remember the live stereo ambience that Ron Estes got on those priceless Johnny Carson stereo broadcasts that I wrote about recently. It added a liveness and zest to the proceedings that was simply stellar.

So use reverb sparingly, but use it to good effect. Keep it in your effects toolbox for when you need to make a point about being in stereo, or in an ambient or reverberant space. It's easy to use and it really works. Enough said.

Thanks for listening. ■

Dave Moulton repeats himself a lot, and has quite a striking ambience about him whenever he forgets to shower! You can complain to him about anything at his Web site, www.moultonlabs.com.



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ATSC OUTLOOK

Jerry Whitaker

ACAP Standard Moves Forward

Following nearly three years of work, the Advanced Common Application Platform (ACAP) specification for future interactive television (iTV) services has taken another step forward within the ATSC. The result of a landmark effort between the ATSC DTV Application Software Environment (DASE) and CableLabs' Open Cable Application Platform (OCAP), the specification is now being balloted by the ATSC Technology Group on Distribution (T3).

The work, done within the ATSC Specialist Group on ACAP, was led by Craig Smithpeters of Cox Communications. The ACAP specification is expected to be completed and published as an ATSC standard in Q1 2005.

ACAP will provide consumers with advanced interactive services and offer content providers, broadcasters, cable and satellite operators, and consumer electronics manufacturers the technical details necessary to develop inter-

operable services and products. A common standard is thought to be an essential element for the successful rollout of interactive television.

ABOUT INTERACTIVE TV

Two worlds that were once barely connected—television and the Internet—are on the verge of being combined into an entirely new service—namely, iTV. This combination leads to powerful new applications. For example, computers can be turned into traditional TV receivers and digital set-top boxes can host applications such as iTV, e-commerce and customized programming.

iTV may include customized news, weather and traffic reports; personalized stock market data; enhanced sports scores and statistics; games; online real-time purchases; and video-on-demand (VOD).

There is no shortage of reasons why iTV is viewed with considerable interest around the world. The back-

drop for iTV growth comes from both the market strength of the Internet and the technical foundation that supports it. With the rapid adoption of digital video technology in the cable, satellite and terrestrial broadcasting industries, the stage is set for the creation of an iTV segment that introduces to a mass consumer market a whole new range of possibilities.

For example, technologies are available that support interactive features for game shows, sports and

other programs, as well as interactive advertising, e-mail and Internet access. Rather than concentrating just on Web services, the goal is to deliver a better television experience.

ABOUT ACAP

In essence, ACAP makes it appear to interactive programming content that it is running on a so-called "com-

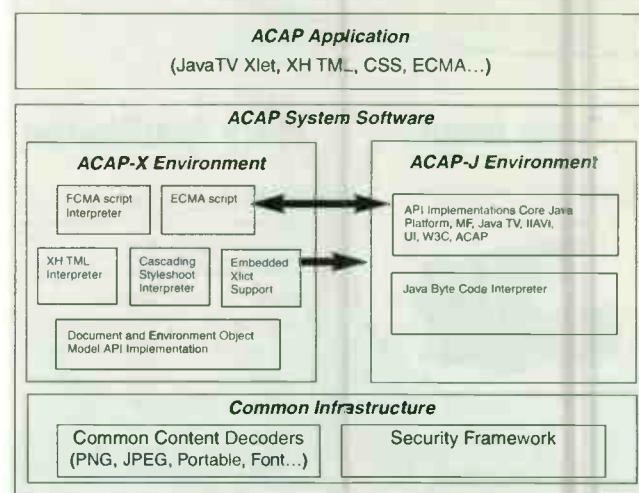


Fig. 1: ACAP application and system software

mon receiver." This common receiver contains a well-defined architecture, execution model, syntax and semantics. As a middleware specification for interactive applications, ACAP gives content and application authors assur-

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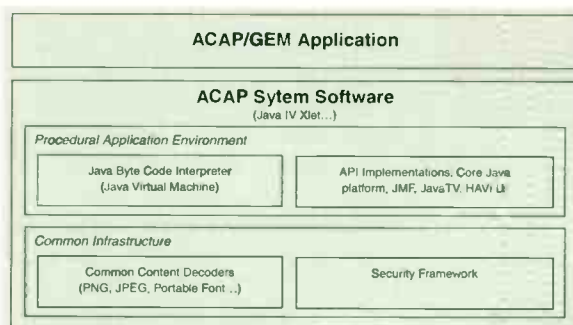


Fig. 2: ACAP-J system architecture

ance that their programs and data will be received and run uniformly on all brands and models of receivers.

Trial implementations have already been done in Korea by a consortium of organizations. In addition, an extensive ACAP demonstration was held at NAB2004.

An ACAP application is a collection of information processed by an application environment to interact with an end-user or otherwise alter the state-of-the-application environment.

ACAP applications are classified into two categories, depending on whether the initial application content processed is of a procedural or a declarative nature.

These categories of applications are referred to as procedural (ACAP-J) and declarative (ACAP-X), respectively. An example of an ACAP-J application is a Java TV Xlet composed of compiled Java byte codes in conjunction with other multimedia content such as graphics, video and audio. An example of an ACAP-X application is a multimedia document composed of XHTML markup, style rules, scripts and embedded graphics, video and audio.

An ACAP application need not be purely procedural or declarative. In particular, an ACAP-J application may reference declarative content, such as graphics, or may construct and cause the presentation of markup content. Similarly, ACAP-X applications may use script content, which is procedural in nature. Furthermore, an ACAP-X application may reference an embedded Java TV Xlet.

The architecture and facilities of ACAP are intended to apply to broadcast systems and receivers for terrestrial broadcast and cable TV systems. In addition, the same architecture and facilities may be applied to other transport systems, such as satellite.

ACAP is primarily based on the GEM (Globally Executable Multimedia) home platform specification developed by the DVB consortium and DASE, developed by the ATSC.

ACAP includes additional functionality from CableLabs' OCAP specification. ACAP builds upon GEM by adding specification elements to offer a higher degree of interoperability among different environments based on DTV specifications from ATSC and SCTE. Where ACAP-X applications are supported, the application and

systems software are configured as illustrated in Fig. 1. Where only ACAP-J applications are supported, the application and system software are as shown in Fig. 2.

The ATSC will conduct a one-day

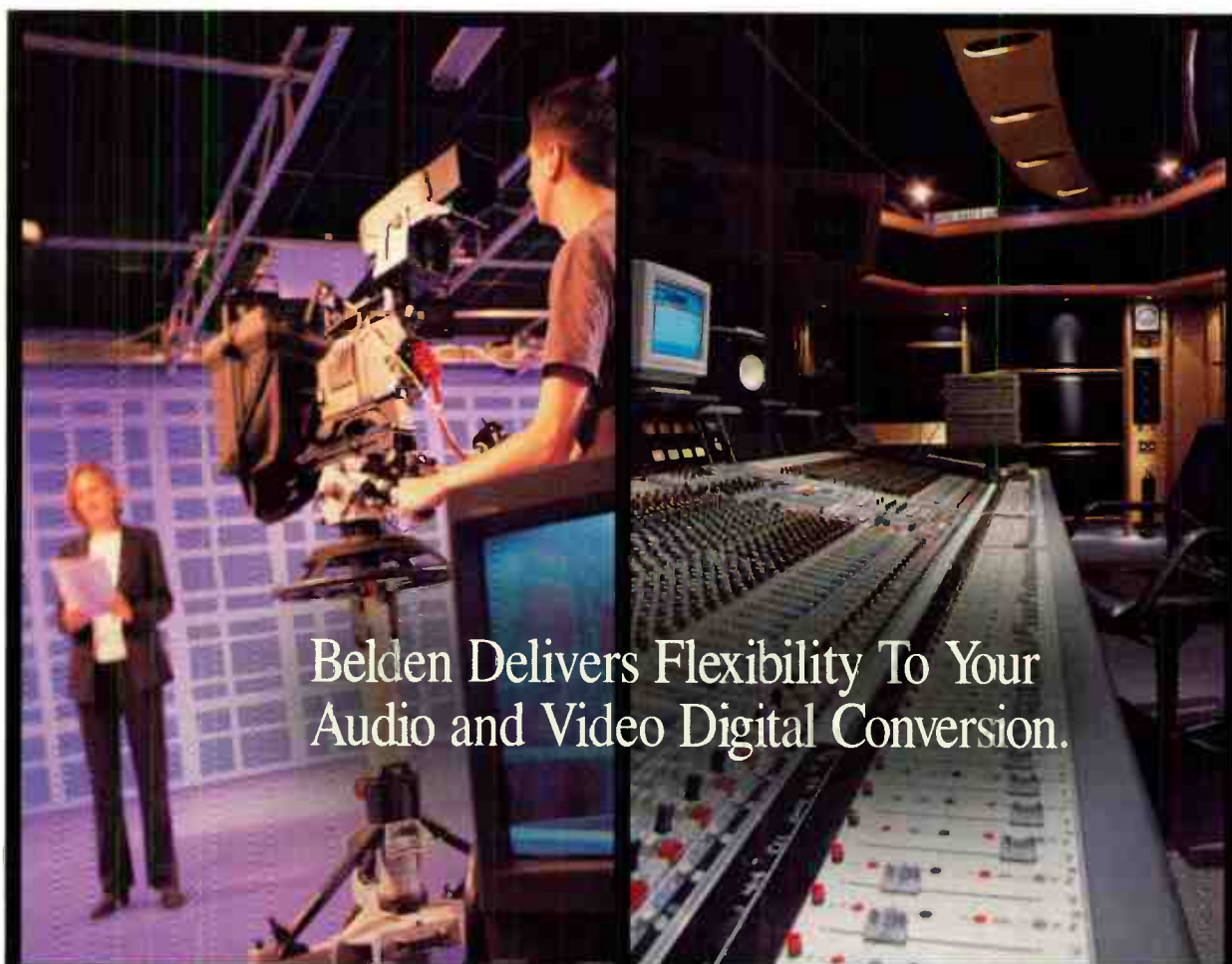
seminar on the ACAP specification Dec. 7, in Washington, D.C. at the Radisson Barcelo Hotel.

The seminar will include presentations outlining how ACAP will provide consumers with advanced interactive services while offering content providers and consumer electronics manufacturers with technical details necessary for developing interoperable services and products. The

speakers will be many of the same experts who developed ACAP and related standards.

For detailed information, see the ATSC Web site at www.atsc.org. A preliminary schedule of presentations is also available. ■

Jerry Whitaker is vice president of standards development for the ATSC. You can reach him via TV Technology.



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RF TECHNOLOGY

Doug Lung

Coverage Complicates Channel Elections

Over the last few months, I've discussed some items to consider when selecting a final DTV channel and building out final DTV facilities. In September, the FCC released the Report and Order in the Second Periodic Review of the DTV transition, clearly outlining the steps stations need to take to elect their final DTV channel and to protect authorized DTV coverage areas.

Stations with at least one in-core channel (2 through 51) will have to make their first channel election before the end of the year. (See RF Report, Sept. 14, 2004, available at <http://www.tvtechnology.com/dlrf/issue.php?w=2004-09-14>, for a summary of the Report and Order and the timeline.)

The FCC posted the initial Table of Station Assignment and Service Information in early October. In it, you will find the predicted DTV population and area within the DTV service contour. For many stations, these numbers reflect coverage quite different from what more accurate studies reflecting real-world conditions would show.

This month, I'll examine the options stations have in the channel-election process. I'll also describe a filing by Hammett and Edison that pointed out FCC coverage and interference calculation simplifications that, if uncorrected, will pose a major problem for a number of TV stations.

If you've studied the Second Periodic Review Report and Order,

you should have some understanding of how complex this will be. Although stations have the option of allowing the FCC to assign them a final DTV channel, I imagine most stations will want to pick their own. If your station's current DTV coverage is maxi-

keep it up to date. By the time you read this, I hope MSTV, NAB or some other broadcast organization sets up a way for stations to coordinate channel choices.

Stations with at least one in-core channel do have the choice of returning

By the time you read this, I hope MSTV, NAB or some other broadcast organization sets up a way for stations to coordinate channel choices.

mized on an in-core channel, the safest approach is likely to be to leave things as they are.

If your current DTV channel is out-of-core or on a low-VHF channel (2-6), deciding what channel to use could be very complicated. Returning to an in-core analog channel may not be the best option. As I pointed out in my Aug. 4 column, a station operating at maximum power on its analog channel could find interference to existing DTV stations (which have preference under the FCC's plan) will limit future DTV power on that channel.

Knowing what channels nearby stations will choose would be helpful. I've considered setting up a Web site to summarize channel elections, but realized I wouldn't have the time to

their in-core channel(s) and waiting until a later round to select a DTV channel from one of the remaining channels that may be better than what they have now. By "better" I mean the channel receives less interference or, if UHF, is closer to the center of the band. While this may seem attractive, remember that other stations may have the same idea, leading to conflicts over desirable channels. The FCC set guidelines for evaluating competing applications for the same channel based on MSTV recommendations. In general, stations that built higher-power DTV facilities early on their current DTV channel will be given preference over stations that didn't.

If a station is unable to find a channel, it can ask the FCC to specify a

channel for its use at full replication. The FCC will select a channel that minimizes new interference to all affected stations. For UHF stations, coverage is likely to be less than what could be obtained with a maximized facility.

REAL-WORLD CONDITIONS

As I've explained before, the FCC analysis often does not reflect real-world conditions. One problem is current DTV receivers, which perform worse than the ATSC planning factors require. This will diminish as newer receivers make it to market.

Of greater concern are the simplifications used in the FCC software that made it possible to do the large number of calculations required to assign every analog TV station a DTV channel and calculate the result of one station's modifications on surrounding stations using computer hardware available in the mid-1990s. These simplifications include the use of one DTV and one analog antenna-elevation pattern per TV band (low-VHF, high-VHF and UHF), limited consideration for mechanical beam-tilt, and incorrect depression-angle calculation.

For depression-angle calculation, the FCC source code uses height above ground (AGL) rather than height above mean sea level (AMSL). While this may offset some of the errors caused by using a default electrical beam-tilt of 0.75 degree for mountaintop facilities employing much greater beam-tilt, the results won't be the same as if the correct antenna elevation pattern and correct depression angle were used.

There is also a lot of concern about the FCC's software, which assumes cells that return Longley-Rice Error Code 3 (EC3) are receiving coverage, not receiving interference and are not creating interference. Consulting engi-

ELECTIONS, PAGE 36



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Ear Time

CONTINUED FROM PAGE 26

music revolution now being driven by digital technology.

I also don't believe the iPod's remarkable success is fully due to Apple's iTunes music store. Though I find the store a wonderful place to sample new CDs, I have yet to purchase a downloadable song from Apple or anyone else.

Most of the more than 3,000 songs on my iPod come from commercial CDs that I purchased over the years at retail or directly from an artist's Web site. The rest come from here or there, including transfers from vinyl records, song samples directly from musicians, and miscellaneous downloads from the Net.

What makes the iPod so revolutionary is not where the music comes from, but what the iPod allows me to do with it. In the beginning, we Baby Boomers listened to individual songs (via single 45s or radio). Later, we listened to compilations of songs on an album. Now, thanks to the iPod, we listen to playlists.

Playlists are songs grouped together by some predetermined characteristic, such as artist, genre, era or any other commonality. A playlist can be as simple as a group of songs that one selects as appropriate for listening while running on the treadmill in a gym or for a Saturday night party with

friends at home.

A New Orleans-style restaurant in my New York City neighborhood has a great mix of authentic Cajun music on its house sound system. I recently discovered it is driven off a collector's playlist from an iPod. I should have known.

The deeper power of playlists comes in exposure to new music. Say an artist you already like shares his or her playlist of personal or influential favorites. Duplicating that playlist on your own iPod can open a window to

I possessed. Playlists, I learned early, can unlock many doors—including those to recordings that have long been out-of-sight and out-of-mind.

The iPod also introduces an element of serendipity into music listening. Fortunately, these wonderful accidents of musical discovery are now no longer limited to earphone listening.

Bose recently introduced an elegant way to extend the power of the iPod through its SoundDock, a \$299 compact sound system that offers some

time, the SoundDock unleashes the iPod from its portable roots for easy use in the home.

While listening through the SoundDock, I allow my iPod to randomly select songs. If don't want to hear a selection, I use the remote to shift to the next song. If the phone rings, I mute or lower the volume. If I hear something I don't know, I look up to see what's playing on the iPod's screen. Nothing in itself is so profound here, but Bose adds a welcome new functionality to the iPod—a feature that I predict will eventually make this portable music player the centerpiece of many full-sized home music systems.

Again, as with most revolutionary new ideas, there's more than first meets the eye.

Ah yes, the eye again. It will be worth watching to see if any manufacturers of portable video devices attempt to break new ground in viewing habits. If the best they do is help viewers catch up on a missed episode of "The Sopranos" on a subway commute, then one wonders how successful these pricey devices will become.

However, if they can redefine the concept of eye time as Apple did with ear time, then watch out. ■

Frank Beacham is a New York City-based writer. You can contact him through [TV Technology](mailto:TVTechnology@earthlink.net).

What portable video manufacturers are missing is a complete understanding of what is driving the real success of the iPod.

an entire new world of music by allowing you to discover the works that influenced your favorite artists.

Take, for example, an artist like Bob Dylan. Create a playlist of musicians and songs known to influence his work and you enter a world that offers a remarkable journey through the history of American roots music.

Not only have my eyes been opened many times to new music through playlists, but I have discovered that I often already have music in my own collection that I previously didn't appreciate, recall or even know

subtle, but powerful, new functions.

Ideal for desktop or bedside use, the sweet-sounding Bose system "docks" with any late model iPod, giving it a solid home base for battery-charging when not on the road. However, less obvious is the SoundDock's capability to shift the iPod's playlist power to a new dimension through a tiny credit card-sized wireless remote.

As one might expect from two of America's best industrial design companies—Bose and Apple—there's more to this product than is revealed at first glance. In essence, for the first

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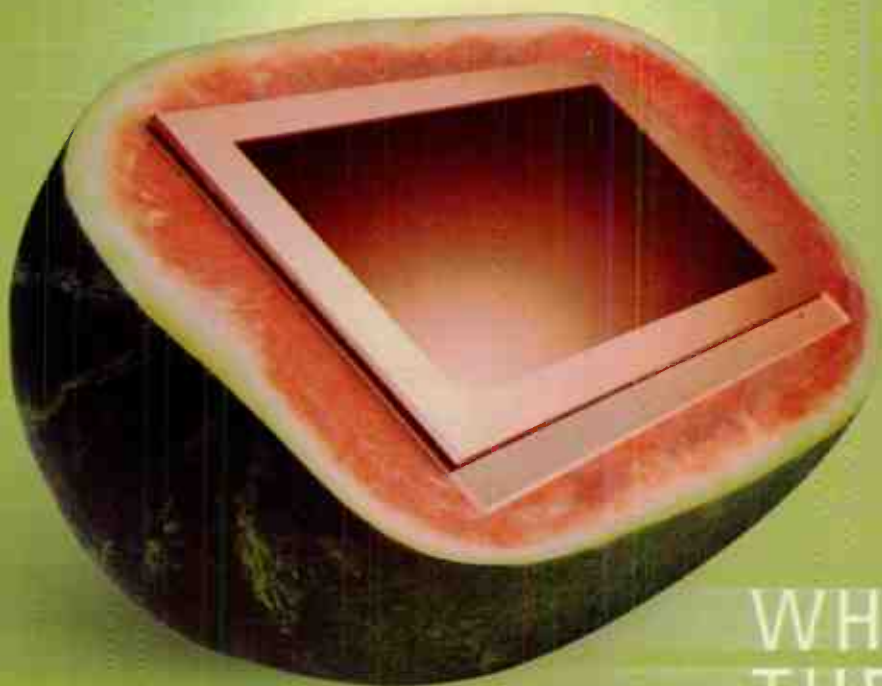
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Elections

CONTINUED FROM PAGE 32

neering firm Hammett and Edison have repeatedly asked the FCC to change their treatment of EC3.

In early October, Hammett and Edison filed a Petition for Reconsideration of the FCC's Second Periodic Review of the DTV, listing several technical corrections that need to be made to the FCC rules and procedures for calculating DTV coverage and interference.

Hammett and Edison warned, "Failure to make these technical corrections will result in some final DTV assignments that will likely be fundamentally flawed, especially for DTV stations transmitting from mountaintop sites.... The laws of physics and radio-wave propagation do not respect engineering or software 'simplifications.'" The petition "implores the commission to take these corrective steps now that it is at a new juncture, requiring recalculation of all NTSC baseline populations using 2000 census data, and then the calculation of allowable final-DTV-channel ERPs."

Hammett and Edison asks the FCC to modify OET-69 software to ignore EC3, to correctly calculate depression angles, give stations the opportunity to submit their actual elevation patterns and, if mechanical beam-tilt is used, their main beam-elevation patterns. Once this information is available, OET-69 software and the CDBS need to be modified to include a station's main beam-azimuth pattern, actual elevation pattern, actual electrical beam-tilt, actual mechanical beam-tilt and actual mechanical beam-tilt direction.

For an earlier filing, Hammett and Edison looked at the impact of OET-69's treatment of EC3 cells on DTV allocations in the contiguous United States. It found that on average, 18.2 percent of a DTV allotment's population fell in EC3 cells.

The filing notes, "It made little sense to have a 2-percent de minimis criteria for DTV stations and a 0.5-

Comparison: Main Beam & Horizontal Plane Azimuth Patterns for a UHF Station with 1.6° EBT Plus 0.6° MBT at 255° T

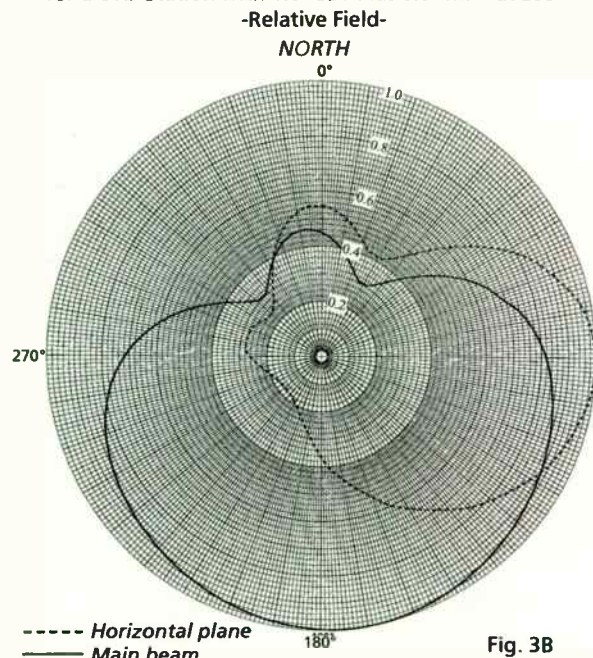


Fig. 3B

percent de minimis criteria for NTSC stations when the underlying prediction model had an average error of 18 percent. And it borders on silly to use a 0.1-percent de minimis criteria, as now proposed, while retaining a prediction model with an average uncertainty that is 182 times greater."

RECOMMENDATIONS

Hammett and Edison devotes three pages of its filing outlining the problems caused by miscalculation of depression angles and the use of generic elevation patterns. The conclusion?

"The regrettable failure to use actual elevation patterns, actual ebt [electrical beam-tilt] and, for stations employing both ebt and mbt [mechanical beam-tilt] basing cell calculations on the main beam-azimuth pattern rather than the 'distorted' horizontal-plane azimuth pattern, means that a significant percentage of the commission's OET-69 studies were inaccurate, with little linkage to reality."

The petition asks, "Can the commission afford to have significant calculation errors in these final rounds of DTV calculations?"

Comparison: Main Beam & Horizontal Plane Azimuth Patterns for a UHF Station with 1.5° EBT Plus 1.5° MBT at 195° T

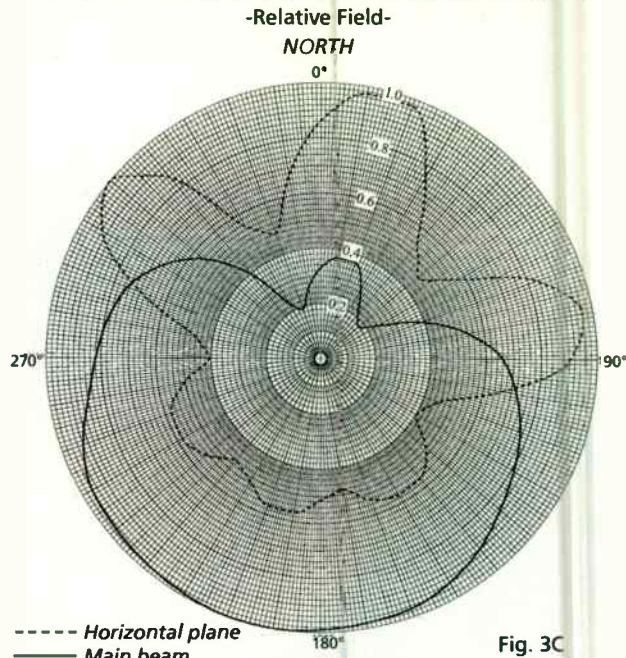


Fig. 3C

I included Figs. 3B and 3C from Hammett and Edison's filing to illustrate the severity of the problem. Note that these combinations of electrical and mechanical beam-tilt are not uncommon at high elevation sites like Mount Wilson.

A copy of the filing should be available on Hammett and Edison's Web site, www.h-e.com.

The inaccuracies in the FCC's coverage software will have little if any impact on stations transmitting from buildings or towers over relatively flat terrain and probably won't have a significant impact on maximized stations operating at the FCC's maximum allowed power (1,000 kW at UHF), except for interference in EC3 cells.

Impact on other stations could be significant. If your station transmits from a mountaintop and you are considering a different DTV channel, I'd recommend doing a Longley-Rice coverage study ignoring EC3, using the actual antenna elevation and main beam azimuth patterns and the correct depression angles to get a more realistic idea of what the actual interference-free coverage on the channel looks

like. If you can obtain actual elevation patterns for interfering stations, it would be a good idea to see how they impact the channel without the "free-parking" allowed on EC3 cells in OET-69 calculations.

If your NTSC replication pattern is based on a UHF facility using an antenna with mechanical beam-tilt, compare the FCC coverage with the coverage calculated using the antenna's actual azimuth pattern and the true elevation pattern, including the correct electrical and mechanical beam-tilt. If the numbers differ substantially, check with your FCC consulting engineer and FCC attorney for options on how to deal with this. Note that it may be possible to use a combination of electrical and mechanical beam-tilt on the DTV antenna to improve DTV real-world coverage, especially at higher signal strengths, with little or no extension of FCC calculated coverage. ■

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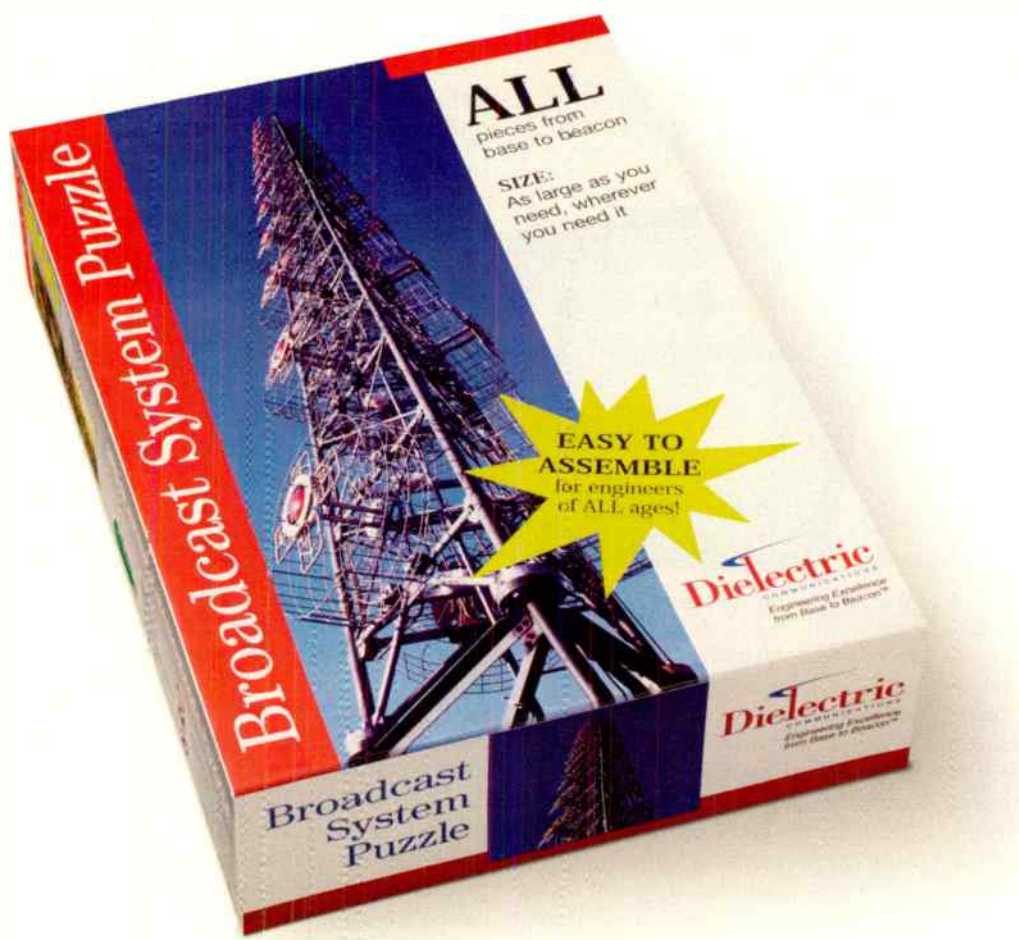
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TECHNOLOGY CORNER

Randy Hoffner

LCD Displays: Fixing the Problems

This column recently discussed several advanced television displays, including liquid crystal displays (LCDs). As is true of all display types, LCDs have positive and negative attributes, but enough are positive to justify efforts to fix the problems. Principal shortcomings, we will recall, include narrow viewing angles and slow response times. Let's look at how one shortcoming is being addressed.

In the previous column, I described the operation of the thin film transistor (TFT), twisted nematic (TN) LCD, the type most commonly used for computer monitors and television displays, both direct-view and projection types. Let's review.

LCD REFRESHER

Liquid crystals exist in mesophases—phases that fall somewhere between liquids and solids. One of the mesophases of liquid crystals is the nematic phase in which the molecules, shaped somewhat like sausages, prefer to line up parallel to one another, but in no particular positional order. This preferred order, called the nematic director, can be easily influenced by the application of weak electrical, magnetic or optical fields.

In a twisted-nematic LCD, nematic liquid crystal is introduced between two substrate surfaces, one on the side of the display where the backlight is located, and the other on the viewing or projecting side. Each substrate sur-

face has been prepared to establish the initial positional orientation of the liquid crystal molecules.

Alignment preparation is accomplished by brushing the substrate sur-

face of each molecule is dependent on its distance from the input substrate. That is, the molecules adjacent to the input substrate are not rotated at all, while the molecules adjacent to the

output substrate are rotated a full 90 degrees relative to the input substrate.

Each of the two substrates has a polarizing filter covering its outside surface, and the plane of polarization of each filter is parallel to its respective alignment preparation.

When polarized light is passed through the crystals under these conditions, the plane of the light's

polarization is propagated along the nematic director's helical axis, following its twist. The result is that light polarized in the vertical phase, for example, by the input polarizer, ends up polarized in the horizontal plane when it arrives at the output polarizer.

Because the output polarizer's plane of polarization is also horizontal, the light passes through it and emerges from the output surface of the display device.

CREATION OF COLOR

When an electrical signal is applied to such a liquid crystal cell, the molecules and their nematic director

"untwist" to a degree proportional to the applied voltage. If the voltage is sufficient, the nematic director completely untwists, causing the plane of the light's polarization to arrive at the output surface perpendicular to the output filter's polarization, preventing it from passing through the viewing or projecting surface.

When the applied voltage is modulated by a video signal, the degree of nematic director twist dynamically varies, resulting in a dynamically varying light output from the liquid crystal cell.

This generates a grayscale display at the output of the LCD device. Each pixel of a color LCD screen has three subpixels, covered with red, green and blue filters, respectively. These generate red, green and blue grayscales that, when combined by the human visual system, produce a color display.

In simpler monochrome LCD displays, the liquid crystal pixels are directly driven with electrical currents. In the more complex color LCDs used for television, thin film transistors or TFTs, etched onto the liquid crystal substrate surfaces, are used to drive the pixels.

One of the principal shortcomings of traditional TN LCD displays is a limited viewing angle. This is not a great problem on laptop computers, which are typically viewed straight-on from a close position. But, it can be a big problem for a television screen or a projection device because television displays are typically viewed from greater distances and at greater off-axis angles than laptop screens.

Poor off-axis viewing manifests itself in several ways, including reduced brightness and contrast ratio, color distortions and, in the extreme case, grayscale reversal, which makes portions of the image appear to be photographically negative.



Marshall Electronics V-R 191P SDI 19-inch LCD monitor

face in the desired direction with a cloth, causing microscopic scratches along which the adjacent liquid crystal molecules align themselves. When the alignment preparations of the two substrates are perpendicular to one other, the molecules and their nematic director rotate in a helical fashion from one surface to the other along the twist axis, creating the so-called 90-degree twisted-nematic phase.

If we envision this, considering the molecular alignment adjacent to the input substrate to be the "reference" molecular orientation, it becomes apparent that the degree of twist of a

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As previously discussed, in the traditional twisted-nematic LCD cell under conditions of no electrical stimulation, the degree of twist of an individual molecule depends on its distance from the input substrate—molecules adjacent to the substrate have no twist, while those a little further away from the substrate are twisted slightly. The degree of twist increases progressively until the output substrate is reached, at which point the molecules are twisted a full 90 degrees with respect to those at the input substrate.

One solution to the LCD viewing angle problem is called in-plane switching, or IPS.

There is an electrode on each substrate within the cell, but only the electrode on the output substrate is switched; the electrode on the input substrate serves to "anchor" the molecules adjacent to it. Thus, when the switching current is active, the molecules adjacent to the input substrate remain stationary or anchored; those adjacent to the output substrate are untwisted up to a full 90 degrees, while those in between the two substrates are untwisted to a lesser degree determined by their distance from the switching-signal electrode on the output substrate. It is the effect of these variable degrees of twisting, and the resultant variations in polarization angles at varying depths within the cell, that are at the root of the small viewing angle problem.

IN-PLANE SWITCHING

One solution to the LCD viewing angle problem is called in-plane switching, or IPS. In an unswitched liquid crystal cell in an IPS device, all the molecules and both substrates' alignment preparations are oriented horizontally—parallel to one another—rather than being twisted. Both switching electrodes are mounted on the output substrate in the same plane. When the electrodes are stimulated with switching signals, all the liquid crystal molecules in the cell rotate up to 90 degrees, always remaining parallel with each other and the two substrate surfaces.

Thus, the fully switched condition rotates all molecules to the vertical orientation, while in the fully unswitched state, they are all in the horizontal orientation. This eliminates the problem of the light-angle restriction that is found in the twisted

nematic cell, greatly increasing the viewing angle of the display to about 140 degrees in all directions.

This is not, of course, a perfect world, and there are some tradeoffs for this widened viewing angle. The presence of two switching transistors rather than one on the output substrate obscures more of the substrate's surface, requiring stronger backlighting to achieve a good level of brightness.

This makes IPS displays inappropriate for battery operation, but acceptable for mains-powered devices. Because molecules in an IPS display cell must be switched through the full rotational angle rather than the reduced switching angle, IPS crystal switching speeds are inherently slower than those of TN crystals. This problem is being addressed in various ways by interested developers and

manufacturers. It is thought by the industry that the problems of IPS display devices are minor with respect to the potential of these devices. ■

Randy Hoffner is manager of technology and strategic planning at ABC, New York, N.Y. The views expressed in his column are his own, and not necessarily those of ABC. Write to him c/o TV Technology.

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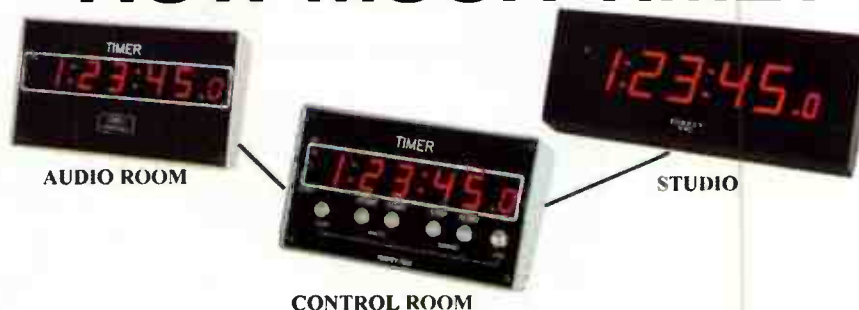
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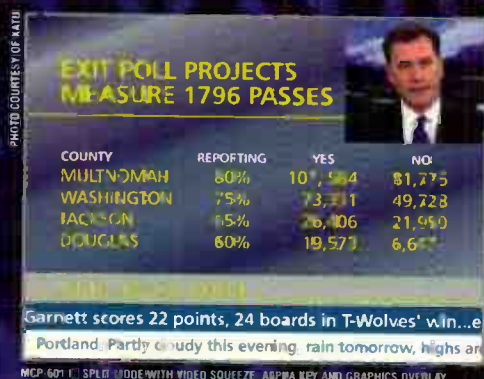


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BUYERS GUIDE

Editing, Graphics & Animation

USER REPORT

Leitch Velocity Speeds HD Post

by James L. Arthurs

Founder
Image Shoppe

COLORADO SPRINGS, COLO.

Image Shoppe was founded in 1992 as an animation and visual-effects house. We provide character animation, compositing, NLE and stock photography to both regional and national clients.

Even in our "small" market (the Colorado Springs/Denver area), local and regional producers have been making the transition to HD for image acquisition. However, cost-effective post solutions have been problematic.

Until recently, standard definition was the common target delivery format, so HD materials were downconverted and edited in SD. Workflows that involve down-converting HD material to SD for offline editing and then conforming it back to HD in a linear online process are certainly viable but this often limits the processing (such as effects) that can be performed and are expensive. At the same time, nonlinear HD solutions have traditionally either been extremely expensive or offered minimal real-time performance—requiring rendering for most transitions and effects.

The fact that more programs were beginning to be produced in HD convinced me it was time to offer true HD post production to my clients. We'd been searching for a cost-effective HD nonlinear editing system that would meet our requirements before we finally found it in Leitch's VelocityHD.

With VelocityHD, we now have a cost-effective HD solution that provides the real-time performance we had come to rely on in SD solutions. With VelocityHD, we don't need separate online and offline facilities; we work directly with the HD media in full quality, with real-time transitions and effects.

TRUE REAL-TIME

This is true real-time—instant, full-quality playback on the video monitor, with no rendering (processing time) required for final output. This is exactly what we need with a client watching over our shoulder.

In fact, I often take my VelocityHD system on-location with me. In addition



Margaret Kelly, CEO of Re/Max, uses a virtual set in an HD production edited by the author on the Leitch VelocityHD.

tion to HD-SDI input and output, VelocityHD also includes VGA output of the HD playback at full-HD resolution and frame rates. This feature enables me to take a transportable 16:9 flat-screen 23-inch VGA monitor with me for HD monitoring, rather than a less-portable HD-SDI monitor.

VelocityHD supports both compressed and uncompressed HD video. Although the ability to playback dual streams of 10-bit uncompressed HD

(with the optional SCSI card) is attractive, its support for compressed HD has allowed me to use an inexpensive SATA (Serial ATA) RAID for initial projects.

Using lightly compressed HD footage allows for increased storage capacity, which is great for long-format shows. The system's uncompressed support is perfect for visual effects work.

For one of our clients, the Re/Max Satellite Network (RSN), we used a combination of compressed and

uncompressed recording. The project involved sequences with the talent shot on green-screen, to be composited into virtual sets created in LightWave 3D. The HDCAM footage was captured into VelocityHD uncompressed at 1080i (essential for extracting the best possible mattes), while non-green-screen segments were captured using mild compression to save drive space.

The ability to work in multiple HD formats—as well as in SD—also is ideal for us, as our clients use a mix of formats including Panasonic (720p), Sony CineAlta (1080/24p), and 1080i. The flexibility to use any of these formats makes VelocityHD well-suited for any of our projects.

VelocityHD has opened up new market opportunities for us and our clients. We can work directly in HD without sacrificing the performance, productivity and ease that we've been accustomed to with SD systems. ■

Jim Arthurs is the founder of Image Shoppe and can be reached at jim@imageshoppe.com.

For more information, contact Leitch at 800-387-0233 or visit www.leitch.com.

USER REPORT

Encore 'Charmed' by Red Giant

by Jason Fotter

Visual Effects Artist
Encore Hollywood

HOLLYWOOD

I work on various TV episodic programs and am responsible for compositing and designing visual effects, including those on the WB's "Charmed."

Encore Hollywood, an Ascent Media company, has served clients in the production community since 1985. A combination of engineering, technology and a terrific staff makes us a one-stop shop for TV episodics, movies-of-the-week, feature mastering, feature promos and visual effects. Our credits include HBO's "Deadwood," "Carnivale" and "Six Feet Under," CBS's "JAG" and "Navy NCIS," Fox's "Nip/Tuck" and "Charmed."

We have done post production for "Charmed" since the program's debut in 1997. This season's premiere, "A Call to Arms," presented a unique set of visual effects challenges.

The script called for one of the show's characters, Piper Halliwell (Holly Marie Combs), to grow two additional sets of arms after a faulty magical blessing. This meant that, for half the episode, Piper would have six arms.

To get the job done for this episode of "Charmed," I used the following Red Giant Software products: Primatte Keyer for After Effects, Composite Wizard and Knoll Light Factory. To simulate the effect, we needed to composite more than 2,000 frames of a body double's arms positioned at various angles shot against a green-screen.

TIGHT SCHEDULE

The tight production schedule allotted only a few days for keying before starting the long task of compositing the many arm positions. The scenes were also complex, ranging from Piper hugging her husband to fighting demons.

I use Primatte Keyer on many of our projects and felt comfortable turning to it again for this complex project.

'CHARMED', PAGE 43

'Charmed'

CONTINUED FROM PAGE 42

In real-world productions, you do not always get perfect lighting and Primatte Keyer enables me to key even poorly lit greenscreens. With Primatte Keyer, I can take control with greenscreen shots that would otherwise be a nightmare to clean up.

Composite Wizard is an effective complement to Primatte Keyer for me, and it worked well for these particular shots. In "A Call to Arms," once I pulled the keys of Piper's arms in Primatte, it was a matter of putting them onto the actor. I used Composite Wizard's edge blur to slightly feather the edges of the mattes and Light Wrap to blend layers into the background, making the arms look natural.

Once compositing was done, I added visual effects. In the scene where Piper fights multiple demons, I used Knoll Light Factory with stock footage of lightning. I applied a standard blue flare with a stripe to initiate the lightning power coming out of Piper's hand. With its versatile customization features, Knoll made this easy.



Red Giant software helped Piper Halliwell (Holly Marie Combs) cope with four new arms on the WB's supernatural show, "Charmed."

In evaluating a complex project like this, we have one fundamental benchmark: the client's feedback regarding the quality of the product. In this case we scored high marks. ■

Jason Fotter is a visual effects artist for Encore Hollywood and can be reached at jfotter@encorehollywood.com. The opinions expressed above are the author's alone.

For more information, contact Red Giant Software at 260-625-5343 or visit www.redgiantsoftware.com.

BUYERS BRIEFS

The XPR1 system from Sony Broadcast is compatible with the MXF file format for file exchange with other MXF-compatible devices such as the MSW-M2000 recorder.

XPR1 can upload proxy A/V data from an XDCAM professional disk at up to 30 times normal speed. This feature enables all logging decisions to be made by referring to the uploaded proxy A/V data on the hard drive. Once logging is complete, the editor can transfer high-resolution MPEG IMX material from the optical disc to the hard drive at 2x realtime. XPR1 is compatible with Adobe After Effects.

For more information, contact Sony at 800-686-7669 or visit www.sony.com/professional.

The new Paintbox from Quantel was designed to have the same user interface as past Paintboxes, making it accessible to its many fans. Under the covers, the company gave the system the power of modern computers to give it a big increase in performance. Hundreds

of plug-ins are available for the Paintbox from popular developers and are fully integrated into the system's multiview compositor. This allows multiple plug-ins to be chained together and the results immediately viewed.

For more information, contact Quantel at 203-972-3199 or visit www.quantel.com.

Canopus recently announced an editing system for high-definition, Edius HD. Keeping affordability in mind, Edius HD provides realtime, multiplayer HD editing and effects processing with scalable functionality. The system supports both SD and HD simultaneously.

Edius HD consists of three key components; Edius Pro application software; high-quality software codecs, which include lossless, uncompressed, HD, HDV and DVCPRO50; and the HDRX-E1 input/output hardware card.

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USER REPORT

VertigoXmedia Animates CTV

by Kevin Watson
Director of Advertising
CTV

TORONTO

In Canada, CTV reaches 99 percent of English-speaking Canadian households, bringing millions of viewers a wide selection of existing hits like "CSI" and new hits like "Lost" and domestic favorite, "Corner Gas."

To extend our leadership during primetime, CTV wanted to connect even better with viewers. Our goal was to use dynamic program IDs and on-air promos to inform our viewers about important upcoming programming they won't want to miss.

To facilitate this goal, CTV's engineering department turned to VertigoXmedia's broadcast graphics automation solution, which allowed us to create and distribute promos quickly and easily across all 21 CTV stations.

At our Toronto headquarters, three VertigoCG character generators are controlled by a Harris automation system to create graphics with messages like "Law & Order New Episode Next." Such messages, played inside program content, provide CTV with a new tool for on-air promotion.

An example of a typical promo might be an overlay graphic—with transparency over the program—that animates on-screen, wiping from left, with text, then wiping on with a soft edge. Though the graphic itself is not especially complex, performing this operation for each region and in each time zone was challenging.

Once CTV's engineering department set up the technology, creative and scheduling responsibility for these messages was put into the hands of advertising staff. Vertigo's Xmedia Studio was used to build templates



CTV uses VertigoXmedia's character generator to insert promos for upcoming programs.

based on the design provided by the network.

All the network's templates, playlists and schedules are stored on a networked Xmedia Server and made available throughout our facility. Advertising staff use simple drop-down menus to create or update program information. The playout time and duration are also under control of advertising staff.

PLAYLIST TRANSFER

Commercial break and promo playlists created in the advertising department are transferred automatically to the server, from which VertigoCGs read the assets and playlist content. The automation system, also linked to the VertigoCGs over our internal network, determines the scheduling for playout and triggers the broadcast from the server. In the event that master control requires manual control over playout, each CG is equipped with an Xpanel soft-control panel.

This system has eliminated the technical complexity of managing and scheduling content. Advertising staff simply browses and updates a series of pre-built promo templates and can

respond to schedule changes rapidly, maintaining a consistent look for our viewers.

The result? We have complete control over our messaging and are succeeding in keeping our viewers onboard throughout the evening. Though the Vertigo technology offers CTV the opportunity to add additional graphics, CTV limits its promos to two messages per segment so that the

information is helpful and user-friendly rather than cumbersome.

Since the system launched earlier this year, CTV has relied on its promo automation system seven nights a week and almost exclusively in primetime across Canada. It has proved to be a valuable tool in encouraging viewers to watch programming that we think they will find interesting and the flexibility of the system allows CTV to develop its messaging in new ways as our future growth requires. ■

Kevin Watson is the director of advertising for CTV and can be reached at kwatson@ctv.ca. The opinions expressed above are the author's alone.

For more information, contact VertigoXmedia at 514-397-0955 or visit www.vertigoxmedia.com

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The PowerScript 4000 character generator from **Focus Enhancements** provides high-resolution video characters for live on-screen keying of titles. The product generates anti-aliased characters and graphics using a 10-bit component digital architecture. The PowerScript 4000 is rack mountable and comes standard with its operating system on a PC Card.

For more information, contact Focus Enhancements at 800-338-3348 or visit www.focusinfo.com.

The Galileo Weather System from **AccuWeather** produces weather animations for broadcasters. The product can be used to deliver accurate, street-level forecasts, maintaining interest with Galileo's lifelike WeatherRider FlyThru animations. AccuWeather's UltraLocalCast displays microscale

variations over distances as short as one mile. Making allowances for factors affecting local conditions, UltraLocalCast provides accuracy and super-local detail.

For more information, contact AccuWeather at 814-235-8600 or visit www.accuweather.com.

Inca Studio from **Inscriber** is a multilayer character generation environment featuring the ability to achieve multichannel effects on a single channel. Inca Studio performs real-time clip-to-clip transitions, dissolves and page-formatted crawls and rolls. It integrates with leading media file formats and is compatible with other Inscripter products.

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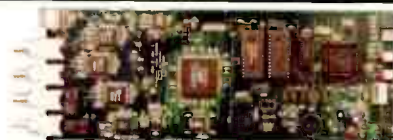
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The **Model SDI-313** is a **Universal Transcoder** that converts any analog video format (525/625 lines 50/60 fields/sec) to SDI as well as to any other analog format having the same scanning rates. It also converts a SDI input to any corresponding analog format. List price \$1495.

The **Model SDI-333** is a **Universal Analog to SDI Converter**. It converts any analog format (NTSC or PAL scan rates) to SDI. List price \$895.

Other SDI products from Xintekvideo include the **SDI-1 SDI to NTSC Converter** (\$295), the **SDI-3 Analog to SDI Converter** (\$345), the **SDI-10 Noise Reducer** (\$1295), the **SDI-110 Professional SDI to Analog Converter** (\$895), the **SDI-310 NTSC to SDI Converter** (\$995), the **SDI-330 Components to SDI Converter/Noise Reducer** (\$1395), the **VP-3000 Pre-Compression Processor with SDI output** (\$2995).

USER REPORT

NBA TV On the Ball With NewsEdit

by Mike Rokosa

Senior Director of Engineering
NBA Entertainment

SECAUCUS, N.J.

NBA TV, a 24-hour sports channel that produced 95 regular season NBA games and several NBA Playoff games in 2003-04, reaches more than 66 million households.

The network launched on Nov. 2, 1999, and produced its first HD telecast in January 2003—a game between the New York Knicks and Los Angeles Lakers. Since then, we have produced roughly 70 games in the 1080i HD format.

The National Basketball Association Entertainment (NBAE) group rebuilt its facility in October 2003, to support a fully digital and HD environment to prepare for the start of the 2003-04 basketball season.

When it came time to select an editing platform, we were careful to pick a system that would stand up to the daily rigors of producing sports highlights and could also be flexible and fit the way we like to work. We chose the Grass Valley NewsEdit non-linear editing system, supported by Grass Valley Profile servers.

We produce standard-definition (SD) highlight packages from as many as 15 games per night with updated packages airing every 15 minutes, so our editors have to turn around stories as soon as they get game feeds. During most evenings, our editors work until around 2 a.m.

In addition to creating highlight reels for air on NBA TV, we produce a number of other highlight packages, such as "On the Quarter," for publishing to NBA.com as well as individual team Web sites. At the end of the



NBA Entertainment uses Thomson Grass Valley NewsEdit systems and Profile servers to quickly create highlight reels of NBA games.

evening, we also put together a 30-minute loop that runs from 2 a.m. until late the next morning. While we are on air live, the NewsEdit systems feed completed packages to a Grass Valley Profile PDR 300 server that plays directly to air.

With the start of this season, we will also be using NewsEdit to produce video-on-demand content for distribution by Comcast Cable on its digital cable systems.

EDITING ON-THE-FLY

For our fast-paced live-to-air sports news production workflow, we've

been using six NewsEdit systems and just added two more. The systems we chose include full stereo audio capability and tight integration with a Chyron Duet for CG and animation.

We did not build our news system with shared storage; instead, we use a distributed-storage model in order to make better use of the bandwidth capabilities of the PVS platform.

Four additional Profile PVS XP Media servers (totaling 160 hours of storage) are the workhorses of our system and act as the logging-and-retrieval platform. With distributed storage, clips may be in any of a number of

machine or bin locations. We developed a custom software program with Dixon Sports, that runs on the NewsEdit system to allow editors to browse all clips coming into the facility.

The NewsEdits are networked together via Fibre Channel, so if two guys want to access the same clip, all they have to do is import it to their local workstations and begin editing. Once they are finished with the edit, the piece is checked by a producer and then transferred to the on-air servers.

When broadcasting games in HD, we flip our entire production studio to HD operation. We don't have editing capability yet, so it's just the game and pre-and post shows in true 1080i HD and highlights are upconverted for air.

Until recently, there were not enough game feeds in HD, so it has not been an issue for us. However, the increasing competition in HD sports has dramatically increased the number of events available, placing HD editing now fully on our radar screen.

Our goal is to be HD-capable (including HD servers for ingest and air) by this time next year and we have been talking to both our edit platform providers about beta-testing upcoming HD systems. We are also close to identifying a large file-based storage system and a digital asset management software vendor to both streamline the process and to place the NBA library on a platform for the future. ■

Mike Rokosa is the senior director of engineering for NBA Entertainment and can be reached at mrokosa@nba.com. The opinions expressed above are the author's alone.

For more information, contact Grass Valley at 800-547-8949 or visit www.thomsongrassvalley.com.

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USER REPORT

Editware Has Hammerlock on WWE

by Kevin Quinn

Senior Editor

World Wrestling Entertainment

STAMFORD, CONN.

I have been editing with World Wrestling Entertainment for about 15 years.

Until recently, I've been a hardcore linear editor. With nonlinear editing taking on a major role in post production, linear editors have been forced to cross over to "the other side."

Editware's Fastrack allows me to keep the external effects equipment I rely on heavily for quick, high-end, real-time looks, and has allowed me to bang out long portions of programming without having to sit and watch it go by in real time.

World Wrestling Entertainment prides itself on being a pioneer in the latest technologies. We also take pride in our high-quality product and extremely quick turnarounds.

Our workflow can be compared to a mixture of complex Hollywood entertainment and quick news-production-style gathering and turnaround. A challenge has been to



Kevin Quinn (r) discusses an edit on the Editware Fastrack with WWE associate producer Todd Moulén.

produce nine hours of original domestic programming, and from that create roughly 40 hours of international programming—all in one week. There are also specials and home-video productions, and we're increasingly active in video-on-demand.

Although only a small portion of our programming is live, we create a feeling of live production in all we produce. At the same time, we make the live portions look as though they were post-produced with a high degree of complexity.

DEMANDING WORKFLOW

With such a demanding workflow, we constantly reach out to vendors like Editware to meet our extreme needs. Editware worked closely with us to develop its Fastrack system to help us meet those needs. Fastrack pushes linear editing into the nonlinear world, while allowing us to keep the older—but sometimes quicker—linear techniques available.

When the time came for WWE to consider a tapeless environment and centralized media storage, the Grass

Valley Profile and Editware Fastrack complemented each other in a way that made our decision easy. Transitioning from tape editing to Fastrack/Profile was also made easier with Fastrack's ability to work linearly.

Our edit staff could continue to meet the heavy weekly workload in ways it was already familiar with, while at the same time having tools to explore some new and speedy nonlinear techniques. I was an editor who always found it quicker and more reliable to operate mixers, switchers and DVEs manually. However, once I had an advanced understanding of Fastrack's ability to control my external gear, I now let Fastrack do the work.

We have now been working with Fastrack for about a year and are still discovering its potential to complete our work faster and with more creativity. ■

Kevin Quinn is a senior editor with World Wrestling Entertainment and can be reached at kevin.quinn@wwecorp.com. The opinions expressed above are the author's alone.

For more information, contact Editware at 530-477-4300 or visit www.editware.com.

USER REPORT

Pixel Power Brings Clarity to CHtv

by John Jarrett

Manager of Engineering and Operations

CHtv Hamilton

HAMILTON, ONTARIO

CH Television, a division of Global Communications, recently celebrated its 50th anniversary of broadcasting.

Our role is to provide live local programming, more than any other major broadcaster in Canada, and we provide seven hours of live local programming each day. Shows include public information, a morning magazine, newscasts, phone-in shows where various topics are discussed and a few new shows that are a little edgier in terms of interviewing style.

We've just started a new show aimed at teenagers and it requires a totally different graphics look compared to our other shows.

We invested in two Pixel Power Clarity systems after a great deal of



CHtv uses Pixel Power's Clarity to do its on-air graphics.

investigation. Prior to purchasing the Clarity systems, our operators worked on multiple platforms from different manufacturers to try and get the "look" requested by each production. Besides not always being able to provide the look, using the multiple systems with multiple interfaces and controls made no sense from an efficiency and productivity standpoint.

We wanted a single, easy-to-use, redundant system that would allow us to upgrade our on-air graphics while fitting within our budget. We

got our graphics, broadcast and IT departments involved in this decision, as each had unique requirements that would have to work together.

After a great deal of investigation and testing, we chose Clarity from Pixel Power. Although perhaps not as well known as other systems in the market, we found Clarity to be very robust in terms of features, open-architecture and ease of use.

CUSTOM APPLICATIONS

Writing software and custom applications enhances our use of the system. We had our graphic artist redesign our on-air graphics to take advantage of the new capabilities and she created templates for the on-air operators.

Although we can do newscasts using only one of the systems, we prefer to use two because it's operationally more convenient and provides complete redundancy. Our staff isn't trying to deal with multiple

interfaces like before, but instead a single easy-to-use one.

With our other older proprietary systems, importing graphics was a major hassle. As an example of what we do with the Clarity, we can import a JPEG of a wanted poster from the local police department's Web site, set it into one of our graphic templates and go to air very easily.

One application we particularly liked using the Clarity for is election results; it integrates easily with different database systems. From the operator's point of view, the database is in the system and is visually seamless to our other graphics—a big plus for us.

Pixel Power is very responsive to our requests and has incorporated them into software releases to provide additional capabilities. This lets us continue to upgrade our on-air graphics, whether for existing looks or new looks for new shows as they are developed. ■

John Jarrett is the manager of engineering and operations for CHtv Hamilton and can be reached at jjarrett@chtv.ca. The opinions expressed above are the author's alone.

For more information, contact Pixel Power at 954-943-2026 or visit www.pixelpower.com.

USER REPORT

Avid Edits 'Without a Trace'

by Mark Sherman

Online Editor, "Without a Trace"
Encore Hollywood

HOLLYWOOD

Last summer, as we began preparing for post production on the third season of the CBS primetime series "Without a Trace," we decided to upgrade our online editing suite from a linear bay to a nonlinear HD system.

Like many post-production professionals, we wanted the benefits of a nonlinear workflow: improved integration between the offline and online processes, the flexibility of making editing changes during the online stage and tools that would allow us to perform tasks that would be either impossible or impractical in the linear domain. We chose the Avid DS Nitris system, which gives us a deep palette of effects and compositing tools, real-time HD, and an integrated workflow with our existing Avid offline editing systems.

Once we made the purchase, we hit the ground running: We installed the system one day and were doing our

first assembly on "Without a Trace" the following day.

The basic workflow for the show is straightforward. I work closely with co-producer Nancy van Doornewaard and post supervisor Reid Nakamura to ensure that the effects and transitions from the offline edit come across correctly. Another key player is Encore post-production supervisor Mike Brosius, who coordinates the entire workflow for the client, from telecine to the finishing session.

Offline editors John Showalter, Lance Luckey and Jane Kass work on Avid Media Composer systems and deliver their project files and Avid bins to the online suite at the end of each editing session.

LOADING NITRIS

Once we have all that material, we load the dailies and bump them up to D5, which is the format at which the show is captured. Then we load the project onto the Nitris system and make sure that all the effects and transitions match.



The author edits "Without a Trace" in HD on an Avid DS Nitris system.

The Nitris is extremely fast with render times and it allows us to maintain consistency with the signature transition on "Without a Trace," which is a flashback/blur effect. Once I sat down with Nancy and Reed, and did the first show, I was able to save a preset for that effect and adjust it accordingly during each episode. Now they know that we'll be able to recreate the same effect every time, even if the

offline editors build it a little differently in their sequences.

Another feature of the Avid DS Nitris system that we use on an almost daily basis is its ability to use two uncompressed HD streams in real time. That's a big plus for us, especially since we work only with uncompressed media in the online stage on "Without a Trace."

I find it interesting that the advances in technology in the last few years have given us more options and made us more productive, but at the end of the day, the mark of success of an online editor is to be transparent. The less you're noticed, the better job you've done.

I'd like to think that when people watch "Without a Trace," they're not wondering about the editing or effects or transitions. They're just getting into the show. ■

Mark Sherman is an online editor at Encore Hollywood and can be reached at msherman@encorehollywood.com. The opinions expressed above are the author's alone.

For more information, contact Avid at 978-640-6789 or visit www.avid.com.

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USER REPORT

Rainbow Finds Gold With Accom

by Jimm Popowytch
Director of Engineering
11 Penn TV/Rainbow Media

NEW YORK

Eleven Penn TV is the production/post production arm of Rainbow Media and provides post-production for Voom's HD satellite service. The facility has 32 nonlinear standard-definition edit suites, three Avid Unity servers, seven nonlinear high-definition online suites, one HD linear suite, three studios and a sprinkling of Final Cut Pro and Avid Xpress workstations.

Voom HD Originals is an all-inclusive package of 21 commercial-free channels created by Rainbow Media and available exclusively to subscribers of Voom, the first satellite service to offer a comprehensive array of HD programming to customers in the continental U.S.

Voom HD Originals include HD coverage of international soccer on World Sport HD; artistic masterpieces from around the world on Gallery HD; an inside look at live auctions on Auction HD; spine-chilling movies brought to life in hi-def on Monsters HD; 24/7 news shot in native HD on HDNews; breathtaking world culture and natural history programming on Equator HD; experimental non-narrative video art on MOOV; the latest pop music concerts on Rave HD; in-your-face action sports on Rush HD; fashion, food and fine living on Ultra HD; and HD Cinema 10, a



Jimm Popowytch uses an Accom Axial 3000 to anchor the linear HD editing room used by Rainbow Media

10-channel multiplex of uncut, commercial-free movies in HD, including Divine HD—the first high-definition 24/7 gay movie channel.

A little more than a year ago, my division was tasked to create an HD post facility to handle content creation for the Voom HD channels. This made us take a hard look at the resources we needed to accommodate these channels. After discussions with the producers and heads of each channel, we came to the conclusion that we needed offline editing, nonlinear online editing and a full-blown linear online room.

ALL REAL-TIME

Linear editing is all real-time—no

waiting—and in many instances is the most efficient way to get the job done. Once the decision was made to have a linear online room, it was up to me to find the best fit.

Looking at what was available and who would run the room became a big concern for our linear editing system. Since good linear editors are harder and harder to find, I needed an edit system that was easy to operate and would be familiar to an old-time online editor.

We decided to use the Accom Axial 3000 for its excellent feature set. What makes it work for us is that Accom has spec files for HD cam-

eras as well as our Snell & Wilcox 1012 switcher.

It was good to see this room come alive just like any SD room I'd built in the past. Another great thing about the 3000 is the familiarity the engineering staff has with the box. Working at other facilities, we knew that the Accom 3000 was reliable and would give us the greatest flexibility.

Since we installed our Axial 3000, we edit up to 16 hours a day in our online room with virtually no downtime due to equipment failure. Rave and Anamania are the most frequent users of the room; Rave is editing classic Montreux Jazz festivals in HD and Anamania has been using the room to reformat all its programs.

The amount of use our linear HD room gets has amazed many of the staff here. With everyone so focused on the nonlinear environment, it's good to see that there is a place for linear techniques in an HD world. ■

Jimm Popowytch is the director of engineering for 11 Penn TV/Rainbow Media and can be reached at jpopowytch@rainbow-media.com. The opinions expressed above are the author's alone.

For more information, contact Accom at 650-328-3818 or visit www.accom.com

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Orad's CyberGraphics is powered by the company's scalable hardware platform, the DVG. It is capable of chaining any number of graphical nodes to produce realistic 3D graphics live on air and has four video inputs. SD and HD formats are available.

Live rendering is done using the CyG render engine module and an internal DDR is used to seamlessly integrate pre- and live-rendered objects. Other features include a special 3D maps module, extensive assets libraries, built-in character generator, lighting effects and interfaces to data services, newsroom systems, financial packages and sports statistics collection systems.

For more information, contact Orad at 888-770-0713 or visit www.orad.tv.

Adobe Premiere Pro 1.5 is the latest in the company's line of nonlinear editing products. With continual upgrades for more than a decade, Premiere Pro 1.5 features improved

audio editing capabilities, enhanced color correction, multiple nestable timelines, and real-time editing and effects.

For a greater palette of effects, Adobe's After Effects is the industry-standard software for creative video effects. After Effects works directly from Premiere Pro and is also available as a plug-in for many other editing products.

For more information, contact Adobe at 800-833-6687 or visit www.adobe.com.

Discreet's inferno provides an interactive 3D design environment with tools for video, high-definition video, 2K digital cinema and 4K feature-film production. Inferno's visual effects system is used extensively on projects ranging from feature-film effects work, opening title sequences and trailers, to commercial spots, music videos, broadcast IDs, and promos.

For more information, contact Discreet at 800-869-3504 or visit www.discreet.com.

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SGL Scores in Athens

During pre-build, we were pleased that the Tezro was an extremely fast, well-built machine, with tremendous processing speed. In Athens, the speed of rendering and completing the 3D projects on the two four-processor Tezro workstations running Alias Maya V6 was just superb.



Phil Paully (r) and Neil Wright, 3D artist for NBC Olympics, discuss a graphic to be used at the Summer Olympics in Athens.


Tezro is really specialized, yet it maintains an open platform. Like all SGI Irix OS-based solutions, Tezro integrated very well with our existing graphics network, which included character generators and still stores. Integration was flawless.

At NBC, we've got to get everything done yesterday. SGI's Tezro doesn't give you yesterday but it comes very close to the immediate present. ■

For more information, contact
Silicon Graphics at 650-960-1980 or
visit www.sgi.com.

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Percent Paid (Sum of 13.15.1, 13.15.2, 13.15.3, 13.15.4, 13.15.5, 13.15.6, 13.15.7, 13.15.8, 13.15.9, 13.15.10, 13.15.11, 13.15.12, 13.15.13, 13.15.14, 13.15.15, 13.15.16, 13.15.17, 13.15.18, 13.15.19, 13.15.20, 13.15.21, 13.15.22, 13.15.23, 13.15.24, 13.15.25, 13.15.26, 13.15.27, 13.15.28, 13.15.29, 13.15.30, 13.15.31, 13.15.32, 13.15.33, 13.15.34, 13.15.35, 13.15.36, 13.15.37, 13.15.38, 13.15.39, 13.15.40, 13.15.41, 13.15.42, 13.15.43, 13.15.44, 13.15.45, 13.15.46, 13.15.47, 13.15.48, 13.15.49, 13.15.50, 13.15.51, 13.15.52, 13.15.53, 13.15.54, 13.15.55, 13.15.56, 13.15.57, 13.15.58, 13.15.59, 13.15.60, 13.15.61, 13.15.62, 13.15.63, 13.15.64, 13.15.65, 13.15.66, 13.15.67, 13.15.68, 13.15.69, 13.15.70, 13.15.71, 13.15.72, 13.15.73, 13.15.74, 13.15.75, 13.15.76, 13.15.77, 13.15.78, 13.15.79, 13.15.80, 13.15.81, 13.15.82, 13.15.83, 13.15.84, 13.15.85, 13.15.86, 13.15.87, 13.15.88, 13.15.89, 13.15.90, 13.15.91, 13.15.92, 13.15.93, 13.15.94, 13.15.95, 13.15.96, 13.15.97, 13.15.98, 13.15.99, 13.15.100)		71.0%	75.1%
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COMPANY PROFILE

Chyron Performs With Duet

By Bob Kovacs and
Lauren Evoy Davis

The name Chyron is practically synonymous with TV graphics. Over the years, people have seen Chyron graphics on more big events—think Superbowls and Oscar ceremonies—than any other graphics.

“Our main claim to fame is real-time graphics,” Chyron President and CEO Michael Wellesley-Wesley said.

The first Chyron product to hit the market was Chyron I in 1970. The first Chyron I was sold to LaGuardia Airport for flight scheduling displays.

After several more generations of the CG product, Chyron IV was introduced in 1977, bringing a level of sophistication to television graphics that made it the “must-have” product of the day.

“The real breakthrough product in the modern age, for Chyron, was the iNfiniT! and its derivatives, Max and Maxine,” Wellesley-Wesley said.

iNfiniT! started shipping in 1989 and by the 1990s, Chyron had nearly 80 percent of the market share of the broadcast CGs in the United States.

Although Chyron has been a leader in the market for decades, its competition has been making inroads, particularly with PC-based graphics platforms. However Wellesley-Wesley does not think that clients would make the sudden switch to a new product.

“Nobody would trust [PC-based] graphics for an Oscars ceremony, Grammys ceremony or a Superbowl to the new guys on the block,” Wellesley-Wesley said.

The 95-person company—based in Melville, N.Y.—stopped selling the iNfiniT! line in 2000, but continues to support it.

The next CG generation, Chyron Duet, debuted in 1998, and combined a clip server with the company's Lyric character-generator software. Duet is available in different versions for different markets, and the product line

includes the Duet LEX, LE, SD and most recently, HyperX.

Although the core customers for Duet products are mostly news and sports broadcasters, the lower-end Duet LE is sold to corporate, government, education customers and churches. However the company does not want to lose sight of its primary focus.

“TV technology is absolutely our heartland,” Wellesley-Wesley said.

Chyron can focus on its CG business and new technologies now that it has paid down substantial debt by selling its Pro-Bel division earlier this year.

A new direction for the company is in the digital signage arena. ChyTV is intended for airports, train stations, malls and other applications where on-screen text is combined with graphics and video.

Wellesley-Wesley is also looking forward to NAB 2005 and expects that more functionality will be added to

CHYRON

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Melville, N.Y. 11747

Tel: 631-845-2000
Fax: 631-845-3895

www.chyron.com

the Duet line. NAB attendees can expect to see a new range of special effects features added to this product.

Another plan for the company is to expand its international presence. Chyron's primary market is in the United States but has expanded recently in the European and Asian markets.

According to Wellesley-Wesley, for 2004 systems sales are approximately 80 to 85 percent in the United States and 15 to 20 percent of sales are from the rest of the world.

“In 2005 we would expect international sales certainly to contribute to 20 percent of the total,” he said. ■

REFERENCE GUIDE

The Reference Guide is a selected sampling of current products. Specifications and prices are supplied by the manufacturer and are subject to change without notice.

MANUFACTURER	MODEL & O.S.	APPLICATIONS	NETWORK OPTIONS	# OF PROCESSORS	STORAGE OPTIONS	RAM OPTIONS	CUSTOMIZATION	RECOMMENDED SOFTWARE	PRICE
Apple Computer 800-692-7753 www.apple.com	PowerMac G5 (OS X 10.3)	Graphics, editing, compositing, effects	Built-in Ethernet; optional AirPort Extreme card; Bluetooth option	Dual 1.8 GHz PowerPC G5	Two 3.5-inch hard drive bays, serial ATA controller	256 MB DDR SDRAM, supports up to 4 GB	Users customize at online Apple Store	Final Cut Pro	From \$2,000
Dell 800-433-9029 www.dell.com	Dimension XPS Gen 3 (Win XP Pro/HE/MCE)	Gaming; video and image graphics	Integrated Gigabit Ethernet	One	Three 3.5-inch hard drive bays, 8 USB 2.0 ports	512 MB Dual channel DDR SDRAM	User customize through Dell	Windows XP	\$3,939
Gateway 800-846-4208 www.gateway.com	Gateway 7200XL (Win XP HE)	Graphics, digital photography editing, gaming	Gigabit Ethernet	One	250 GB Serial ATA100 7200 RPM hard drive	Up to 1024 MB DDR SDRAM	User customize through Gateway	All PC-compatible applications	\$2,300
Hewlett-Packard 800-752-0900 www.hewlett-packard.com	HP Media Center m1180 Photosmart (Win XP MCE)	Editing, graphics and compositing	10/100Base-T network	One	250 GB 7200 RPM serial ATA	1 GB PC3200 DDR SDRAM	Customize through HP	HP Image Zone Plus, Intervideo DVD creator	\$1,499
IBM 888-746-7426 www.ibm.com	Intellistation Z Pro (Win XP, Red Hat Linux)	Editing, graphics, compositing, finishing	Gigabit Ethernet	One	ATA/100, 40 GB and 80GB	512 MB or up to 8 GB ECC DDR SDRAM, dual channel	By either user or company	Pinnacle, DPS and others	From \$2,619
SGI 800-800-7441 www.sgi.com	SGI Terzo visual workstation (IRIX OS)	Compositing, editing and film mastering	1000Base-T	Up to four at 800 MHz	Up to two 18 GB 15,000 RPM or 73 GB 10,000 RPM	512 MB-8 GB synchronous double-data rate RAM	SGI DMedia Pro DM5 and DM3 options	Discreet, Piranha HD, Thomson Phantom InfiniteStorage Engine	\$20,500
Sun Microsystems 800-786-0404 www.sun.com	Sun Java Workstation W2100z (Solaris, x86, Linux, Win)	Digital content creation	Gigabit Ethernet	Up to two	Up to two 73 GB Ultra 320 SCSI	Up to 16 GB of PC3200 registered ECC memory	Through Sun or owner can customize	Range of 32-bit and 64-bit applications	From \$9,995

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ANTENNAS/TOWERS/ CABLES

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Andrew ATW-29S slotted UHF bdct antenna, 50 kW input, omniod pattern, horizontally polarized w/pressurized radome, currently lying on ground on wooden supports, capped, ready for delivery, removed from service at WGTU, Chnl 29, Traverse City MI early September 04, newly installed late 1993, 11 yrs old, perfect cond, reason for removal, replacement w/Dielectric TUF combined NTSC/DTV antenna for four full pwr chnls, 59.2 feet long, 8700 lbs, \$50000. ; (63) 19-1/2" sections Andrew 6-1/8" HR Line, 61.5 Ohms, 60 kW rated, on ground in wooden crates, capped, ready for shipment, full compliment of various elbows, complete set of hangars for use in Stainless G-7 7' twr, matching transformers, spare parts, removed from service on 1200 foot twr at WGTU, Chnl 29, Traverse City MI, September 04, newly installed late 1993, xlt cond, replaced w/new line w/higher pwr handling capability to accommodate four full pwr UHF Chnls on twr, BO. T Scanlan, 906-289-4710 or tom@scanlantelevision.com.

Bogner B16UO antenna on TV chnls 28 & 29, vgc, return loss tested good, \$7000; Scala SL-8 on TV cnl 66, vgc, return loss tested good, \$400; 8' grid dish w/mount, \$300; 10' solid dish w/mount, \$400. A Martin, 218-765-4321.

AUDIO PRODUCTION

Want to Sell

Symetrix 628 digital processor, \$400/BO; Valley People dyna-mite, \$95/BO; Shure FP-42 audio mixer, \$325/BO; Orban 622A, one-chnl EQ, \$95/BO; Sony MPX-2900, 21x4 audio mixer, \$800/BO; Shure EZG/18SE cardioid condenser 18" gooseneck mic, side exit cable, new in box, never used, \$100/ea; Lexicon MPX-1 multi processor FX, like new, in box, \$475. 203-322-3000.

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PSI 16-bay 2kW antenna for chnl 27, omnidirectional pattern w/14.61 dB gain, horizontal polarization, xlt cond, must sell, BO. 340-713-9927.



Aiwa 1/4" R-R audio rcdr, \$50. M Connell, 978-640-1900 or mconnell@pinnaclesys.com.

Euphonix CS2000 mixing console, fitted w/40 faders, 8 dynamics chnls, 4 custom analog VU meters, Euphonix patch bay, latest software v3.22, xlt cond, 8x8 custom monitor matrix avail, \$35000/BO, all reasonable offers considered. Contact Nathan at fvsound@calarts.edu.



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Panasonic AJ-D900WAP DVCPR P camera, \$12000. 818-788-4700 or www.tvprogear.com.

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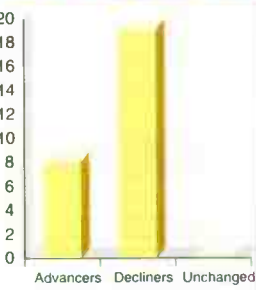
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# TV TECH STOCK INDEX

## WIN-LOSE RATIO



To have your company listed, contact Deborah McAdams at [dmcadams@imaspub.com](mailto:dmcadams@imaspub.com).

### TOP ADVANCERS BROADCAST STOCKS (Oct. 1 - Oct. 15)

GRAY +5.51%  
HEARST ARGYLE +0.44%

### TOP DECLINERS BROADCAST STOCKS (Oct. 1 - Oct. 15)

NEXSTAR -23.79%  
PAXSON -18.92%

### TOP ADVANCERS TV STOCKS (Oct. 1 - Oct. 15)

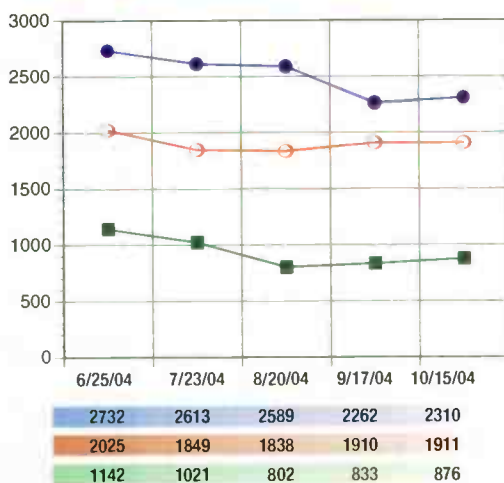
HARMONIC +5.40%  
HARRIS +3.39%

### TOP DECLINERS TV STOCKS (Oct. 1 - Oct. 15)

PINNACLE -13.93%  
TEKTRONIX -8.38%

TV TECH TREND

TV TECH AVG. NASDAQ COMPOSITE BROADCAST AVG.



## TV Tech STOCKS as of Oct. 15

| Company Name | 52-Week Range | Oct. 1 | Oct. 15 | % Change |
|--------------|---------------|--------|---------|----------|
| Avid         | 38.43 - 55.92 | 48.56  | 48.4    | -0.33%   |
| Ciprico      | 3.15 - 7.21   | 3.72   | 3.85    | 3.49%    |
| Harmonic     | 4.86 - 13.75  | 6.85   | 7.22    | 5.40%    |
| Harris       | 35.15 - 58.77 | 56.12  | 58.02   | 3.39%    |
| Leitch       | 9.11 - 9.25   | 9.59   | 9.22    | -3.86%   |
| LSI Logic    | 4.39 - 11.73  | 4.41   | 4.29    | -2.72%   |
| Pinnacle     | 3.25 - 9.91   | 4.33   | 3.75    | -13.39%  |
| S-A          | 24.61 - 38.59 | 26.98  | 27      | 0.07%    |
| SeaChange    | 11.22 - 21.88 | 16.2   | 16.5    | 1.85%    |
| Tektronix    | 24.36 - 35.00 | 33.4   | 30.6    | -8.38%   |

## Broadcast STOCKS as of Oct. 15

| Company Name  | 52-Week Range | Oct. 1 | Oct. 15 | % Change |
|---------------|---------------|--------|---------|----------|
| Acme          | 5.74 - 10.21  | 5.95   | 5.75    | -3.36%   |
| Belo          | 18.00 - 29.90 | 22.97  | 22.7    | -1.18%   |
| Emmis         | 17.40 - 28.65 | 18.23  | 17.95   | -1.54%   |
| Entravision   | 6.85 - 11.67  | 7.85   | 7.5     | -4.46%   |
| Fisher        | 44.40 - 52.50 | 47.28  | 47      | -0.59%   |
| Gray          | 11.20 - 16.22 | 12.15  | 12.82   | 5.51%    |
| Hearst Argyle | 22.42 - 29.25 | 24.82  | 24.93   | 0.44%    |
| Nexstar       | 6.58 - 14.50  | 8.7    | 6.63    | -23.79%  |
| Lin TV        | 17.57 - 27.49 | 19.62  | 17.71   | -9.73%   |
| Paxson        | 0.90 - 6.07   | 1.48   | 1.2     | -18.92%  |
| Sinclair      | 6.87 - 15.43  | 7.43   | 7.04    | -5.25%   |
| Liberty       | 39.00 - 51.79 | 40.32  | 39.31   | -2.50%   |
| Univision     | 28.38 - 40.05 | 31.81  | 30.23   | -4.97%   |
| Young         | 9.29 - 22.52  | 11.27  | 10.26   | -8.96%   |
| Tribune       | 39.20 - 53.00 | 42.49  | 42.53   | 0.09%    |
| Meredith      | 47.53 - 55.94 | 52.06  | 52.05   | -0.02%   |
| EW Scripps    | 45.16 - 54.65 | 48.25  | 47.09   | -2.40%   |

## COMPANY FOCUS Harris Acquires Encoda

CINCINNATI AND DENVER

**H**arris acquired Encoda Systems for \$340 million in a deal that was expected to close earlier this month. Harris said the acquisition would expand its automation, asset management and ingest systems by adding Encoda's automated advertising traffic, billing and scheduling technology.

"Encoda will also give Harris reach beyond our existing customer base into new cable and satellite markets," Harris President and CEO Howard Lance said.

While Harris—provider of transmitters and more recently, automation for master control systems—has the largest installed base in North America, Encoda has the largest installed base with international broadcasters.

Jeremy Weinsinger, president of Harris Broadcast, said Harris will continue to support Encoda's installed base.

"We will support legacy products because these are back-office mission critical system, these customers are looking for a long-term platform," said Jeremy Weinsinger, president of the Harris Broadcast.

"Just like with transmitters, we're looking at a 20-year commitment. These type of products don't necessarily have that long period of commitment, but rather an upgrade curve. You don't want to leave anybody behind," he said. "We will always design around an open set of APIs. Whether they buy an automation solution from us and not a traffic solution, it will still work seamlessly."

Encoda has 700 employees and offices in Denver, Colorado Springs, Colo., Grand Rapids, Mich., New York, Memphis, Tenn. and London. Weinsinger said there was "very little redundancy" between the Encoda and Harris staffs.

Lauren Evoy Davis

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smooth and seamless. And whether it's automating labor-intensive processes, originating live products outside of master control or seamlessly sharing assets throughout your enterprise, HRS helps to take your organization to higher levels of efficiency in the competitive broadcast environment. So turn on a whole new world of productivity with the Harris HRS.

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## **ParkerVision Inc. SU8052**

**Intro:** New CRX series of production automation systems feature expanded features and functionality. The new CameraMan 3e Robotic camera offers digital and analog output, switchable 4:3/16:9 aspect ratio, auto focus and other features.

**Also:** PVTV, XSWITCH, CameraMan, autoTRACK, PVTV Learning.

## **Patchamp C6140**

**Intro:** PatchAmp Multi-Rate WideBand Digital DA Automatic Reclocking and cable Equalization for SMPTE 292M, SMPTE 344M and SMPTE 259M. Supports data rates of 143, 177, 270, 360, 540, 1483.5, 1485 Mb/s. Single 1x9 or Dual 1x4 Operation; PatchAmp PA-3200HD Multi-Format Distribution Frame for high density video/audio application. Specifically designed for Mobile Units and Flight Packs. Supports all Coaxial Video & Audio Formats. Up to 32 single 1x9 or 64 Dual 1x4 modules in four-rack unit; PatchAmp PA-3200AHD Multi-Format Audio Distribution Frame for high-density audio application is specifically designed for Mobile Units and Flight Packs and supports all audio formats Analog/Digital. Up to 32-1x18, 64-1x9, or 128-1x4 in 4 rack units; PatchAmp Broadcast Brick Broadcast Quality Compact Single DA Frame accepts all PatchAmp 1x9 or Dual 1x4 DA and is a hot swappable DA with Dual Looping Power Input. Can be mounted side by side for single rack unit installation. Patchamp 8x1 Switcher Module, PA-6000-610 is an 8 input/ dual output Vertical Interval switcher. Runs on Single string command software via RS 485 bus. Front Panel card edge comm port for software upgrades.

**Also:** PA-5032, PA-3200

## **Path 1 Network Technologies SU9616**

**Intro:** Path 1 Chameleon VidXwan, the newest addition to the Chameleon family of products is a multiport, full-duplex real-time IP video gateway supporting Pro-MPEG's code of practice for live broadcast applications. Designed for use by broadcasters and network service providers, VidXwan enables them to distribute live, real-time broadcast -quality MPEG-2 video in both SD and HD to remote sites over IP networks. Path 1's VidXwan can be used in impaired networks while maintaining video integrity and quality by utilizing Pro-MPEG com-

pliant forward error correction (FEC) techniques, advanced synchronization algorithms that compensate for network jitter and DiffServ QoS support. Like all Chameleon products, the VidXwan architecture is based on a software-driven, network processor powered, hardware platform, and is software-upgradeable in the field. Each unit delivers up to eight DVB-ASI full duplex configurable video ports. Key features include: up to eight ASI input and output ports per 1 RU product. Four ASI ports can be selected for transmit, while simultaneously leaving four available to receive up to 320 Mbps total ASI Transport Stream (TS) throughput. Dual Gigabit Ethernet Network Ports (Single Active), Optical and Copper.

**Also:** Cx1000, Cx1410, Chameleon vidX demuX, Chameleon vidX muX, Chameleon vidX Passthru

## **Pathfire SU10000**

**Intro:** DMG Server Connect for News enables digital file transcoding and file transfer of news content directly to play-to-air servers and video-editing platforms; DMG Server Connect for Programming enables digital file transcoding and file transfer of syndicated programming, spots, promos and other short-form content directly to play-to-air servers; 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; DMG Automation Connect software enables a station's automation system to manage and move content and metadata throughout its facility; Point-to-Point is a digital content distribution and management system that enables networks to move live as well as store-and-forward video easily from point to point.

**Also:** Digital Media Gateway; DMG News; DMG Syndication; DMG Ad Delivery; DMG Short-form

## **Patriot Antenna Systems C12039**

**Intro:** Mobile VSAT with Skewable Mount .76m - 1.8m Ku-band includes reflector mounted on base, One Touch Auto Located Controller, Cros-Pol Filter/OMT, GPS & Fluxgate Compass; Flyaway Antenna Systems .76m - 2.4m Ku-band includes Reflector, Case(s), Az-El Head, Tripod, Ku-band feed horn, Cros-Pol Filter/OMT; 3.8 and 3.0 meter Offset antenna Linear or Circular, Ku-band or C-band, includes reflector, Az-El Motorizable Kingpost Mount, Ku-band

feed horn, Cros-Pol Filter, OMT. Motorization kit available.

## **Peak Communications Ltd. C1835**

**Intro:** 1:8 fully Redundant L band up and down converter system; L band output MPEG-2 Encoder DVB-S modulator converter; L band signal conditioning units with fiber optic interface.

**Also:** P7000, P7013, L533, RCU200, TLT137, PBU180, PBU137

## **PESA Switching Systems Inc. SU9530**

**Intro:** Premiere, the newest routing switcher in the PESA lineup, is a small expandable system, available in matrix sizes based on 8x4, 12x8, 16x8, and 16x16. Premiere can handle a variety of signal types including composite, Y/C, RGB, RGBHV, and stereo audio (future releases will include SDI, HD-SDI, and AES/EBU). Included in Premiere are RS-232, USB, Ethernet, and PESA PRC connectivity along with PESA Windows set up software and a local control panel. In addition, the system is easily networked with autosensing configuration and can be controlled remotely on an IP network from anywhere in the world; The new Klikcontrol Internet router control system operates over Ethernet via TCP/IP and uses an Internet Explorer browser as the client interface. The Klikcontrol server communicates directly to the 3500PRO or Ocelot control system via RS-232. By simply logging into the assigned URL, Klikcontrol becomes an extension to the PESA Control System from anywhere in the world. Once configured, Klikcontrol can be used just like any remote control panel linked to the system. You can even use Klikcontrol Client to control several different locations around the world. Klikcontrol is perfect for monitoring or postproduction applications on site or at any remote location that takes advantage of networking solutions. Based on the Microsoft Windows platform, Premiere is compatible with the full line of PESA routers and can be used to control crosspoint sizes from 8x2 up to and beyond 1024x1024; PESA's award-winning 1RU protocol translator, in its easy-to-configure package, is now available for the Grass Valley Encore and SMS7000. Units are also available for Ditech, Philips, and Sony routing systems. The UCI-2000 allows the user to set up communications in either master or slave mode, making it one of the most versatile third-party interfaces on the market.

**Also:** Cheetah, MCLite, 3500PRO, Tiger, Jaguar, Cougar, Ocelot, Bobcat, distribution amplifiers and conversion cards

## **Peter Storer & Associates Inc. C10906**

**Intro:** SIMS - Storer Information Management System is a Windows program acquisition, program schedule, program finance system for single or multichannel broadcasters and networks. SIMS interfaces with sales/traffic and automation systems to provide increased productivity and accuracy; The Program Manager System provides comprehensive television program management capabilities for broadcasters and networks; IPS - Instant Program Schedule is a Windows television program scheduling system that allows schedules to be quickly created, shared and distributed.

## **Petroff Matte Boxes C8235**

**Intro:** Matte Boxes ranging from 4x4 to 5x5. Petroff will also feature a new universal MiniDV camera base adapter.

## **Petrol Bags C7115**

**Intro:** Petrol CamWrap protects the camera while shooting and it fits Sony DSR370, DSR390, DSR500, DSR570 and HDW700, HDW750, HDWF900 and DVW700 series; Petrol PHP-1 monitor cage protects a nine-inch monitor when checking in as aircraft cargo or 14-inch monitor carry-on or storage; Petrol updated PBPC-1 Caboose backpack with built-in trolley system for small camcorders like Sony PD150/170, Panasonic DVX 100A, still cameras, or accessories; Eargonizer PEGZ-1 sound bag is compatible with most mixers, including Shure, Wendt, SQN and Sound Devices; PSDMB mixer bag for Sound Devices SD302.

**Also:** Camera bags; sound bags; mini-hood monitor shades; soft producer's bags; flex tents and camera cages.

## **Photoflex C9143**

**Intro:** FlexDrop2 Kits - chroma-key backgrounds, blue and green, for studio or location.

## **Pilat Media C10313**

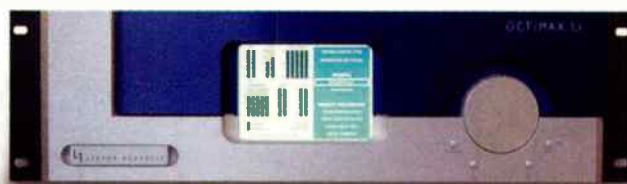
**Intro:** IBMS (Integrated Broadcast Management System) is a comprehensive software system for managing the business of broadcasting. IBMS integrates and streamlines program content, ad sales and traffic management operations to increase business efficiency. It strengthens cross-departmental collaboration, improves client responsiveness and enables more informed business decisions in real time, thus creating strategic advantage and delivering rapid return on investment. IBMS is modular and totally integrated, with each module driving a different element of the broadcast value chain. All modules can be selected to form a total broadcast business system that encompasses sales, operations, pro-

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gramming and finance. Modules include: Sales Force Management; Airtime Pricing; Campaign Planning and Analysis; Proposals and Bookings, Billing and Yield Management; Advertising Inventory/Traffic, Rights Management, Finance, Planning and Scheduling, Media Management, Promotions, Presentation/Log Generation, Digital Services, and Workflow as well as interfacing with a multitude of neighboring systems.

**Pineapple Technology Inc. N4110**  
*Intro:* A line of solid-state transmitters, including the UTX series of UHF TV transmitters with a power rating of 1 kW to 5 kW; broadband UHF production 250 W amplifier for OEM integration of higher-power transmitters.

**Pinnacle Systems Inc. SU10160**  
*Intro:* Streamlined news and graphics with 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; DekoCast "Badging and Branding" is an efficient way to add value quickly through on-air promotion with DekoCast, enabling scheduling of on-air promotion as needed, using fewer operators who can be located locally, centrally or both; Practical HD cost-effective HD solutions for upconversion and 16:9 integration; HD FXDeko has all the power and high-quality 3D effects of industry-leading FXDeko II and now supports all major HD formats; DekoVIA enables journalists to select and use Deko templates directly from their PC desktops for use in a news story; Liquid is now a native Vortex editor and can capture from any Liquid editor directly into Vortex central storage for immediate use on the network Sports Logger provides easy and rapid logging of key events for football, baseball, hockey, soccer and basketball layouts; Liquid Editing for Workgroups is a complete, low-cost networked editing system utilizing Palladium Store 100.

*Also:* Deko; DVExcel; Thunder servers; PDS 9000i & PDS6000i production switchers; Liquid editing systems; CinéWave; MediaStream playout servers; Palladium Store; Palladium Exchange 280 North Bernardo Avenue Mountain View, CA 94043 Phone: 650-526-1600/877-733-5846 FAX: 650-526-1601 E-Mail: sales@pinnaclesys.com Web Site: www.pinnaclesys.com

**Pioneer Electronics (USA) Inc. C9622**  
*Intro:* PRV-LX1 modular DVD video recorder designed for the industrial video market, including real-time video recording capabilities, and easy transfer of video and audio to DVD while offering the ability to customize DVD menus and chapter points.  
*Also:* DVR-A07 DVD drive; DVR-SK12D slim drive; DRM-3000 FlexLibrary

**Pixel Instruments Corp. SU7476**  
*Intro:* The DG-1200 provides a system to the lip sync errors introduced by production switchers with internal DVEs. It interprets preprogrammed GPI and/or tally outputs from the switcher and generates delay control pulses to steer up to five AD-3100 audio synchronizers and automatically eliminate the lip sync errors.  
*Also:* VS-5200 frame synchronizer/TBC, AD-3000 audio synchronizer and lip-sync corrector, UMAT-1200 audio monitor and transcoder

**Pixel Power Ltd. C5442**  
*Intro:* The Clarity character generator

family adds a range of single-channel solutions designed to meet simpler graphics needs, such as basic channel-branding, dynamic information display and smaller-station applications and budgets, featuring upgradability to include multichannel character generation combined with integrated stillstore and clip player for up to four output channels, keyframeable animation, integrated multi-channel video and audio clip player and four live DVE inputs.  
*Also:* Graphite; Collage

**Pixelmetrix Corp. C9146**  
*Intro:* DVScope, a new software-based HD/SD SDI waveform and vector generation, display and analysis tool with error log/profile capability for automatic verification, test, and measurement of audio and video content; Three versions of the QAM Transport Stream Processor and Tuner module are available; Digital Program Insertion Auditor, an analysis application with logging and reporting capabilities which allow operators to monitor and audit the accuracy of digital program insertion (DPI). The DPI Auditor is built on the new ANSI/SCTE 35 2001 standard (formerly known as DVS-253 and also known as ITU-T J.181); DigiCipher II Transport Stream Processor, a DVStation monitoring platform module, offers an all-in-one preventive monitoring system for both direct-to-customer and back-end contribution networks using DigiCipher II-based satellite links. The module performs downconversion, demodulation and a comprehensive suite of RF, modulation, transport stream and content validation tests; DVScope Quality Auditor combines testing, measurement, monitoring and reporting of both SDI base-band parameters and picture quality into a single product. Used during ingest of material, DVScope Quality Auditor provides automatic legality verification of material. In addition to checking SDI technical parameters such as level, gamut, and color space validity, the system also rates program content for overall picture quality.

*Also:* DVStation, DVStation-Pod, DVStation-Remote, DVStation-IP, DVStor, DVShift

**Post Holes SL4911**  
*Intro:* Post Holes is a collection of royalty-free, stock footage clips with the matte channel built in, designed for compositing and editing applications like Adobe After Effects or any NLE application. The collection includes full-motion clips originated on 35mm film and converted to keyable QuickTime clips ready for compositing.

**Potomac Instruments Inc. N2119**  
*On Display:* FIM-71 and FIM-72 A VHF and UHF field-strength meters.

**Primera Technology Inc. C8228**  
*Intro:* Bravo II Disc Publisher is a Windows/Mac-compatible USB 2.0 CD/DVD duplication and printing system with 4,800 DPI print resolution, AccuDisc Technology. The Bravo II burns and prints up to 50 discs per job and will also burn and print "Business Card" CDs. Network software is available. The Bravo II prints directly on the disc; Accent Disc Laminator laminates inkjet printed CDs and DVDs with a clear, glossy film for a waterproof and scratch-proof system. Accent also laminates standard or custom holograms onto the surface of the disc.

**Pristine Systems Inc. N1026**

**Pro-Bel C8123**  
*Intro:* A new automation range, Morpheus Automation can manage anything from a single channel to multichannel environments; TX500 Master Control, a new system with advanced automated and manual audio capabilities; Vutrix display monitors offer plasma and TFT; the Sirius multiformat and flexible routing family has been expanded with more signal types and additional features.  
*Also:* ICON, Axis, Freeway, Halo, Eclipse, Sirius, Aurora, MAPP

**ProConsultant Informatique SL1259**  
*Intro:* Louise is an integrated information management and programming system for broadcasters. It is modular, flexible, intuitive and rich in features responding to the needs of all types of television channels (generalist, themed, PPV, NVDOS). Louise offers functionalities capable of dealing with the range of information relating to broadcasting, from rights and contracts management to the generation of the playlists, through library management, amortisation and the scheduling grid; Cindy is a powerful and professional Air Time Sales system, offering a dynamic link between an air time sales system and an integrated scheduling traffic system. Cindy is comprehensive, efficient, intuitive and highly user-friendly. The system offers numerous features including a high-performance automatic placement function, the long-term planning and reservation of promotional campaigns, as well as the management of revenues, "master con-

tracts," commercial blocks, and multiple spot versions. It allows in-depth financial analysis at sales level, for advertisers, agencies and vendors, and offers several billings methods; Mogador allows information to be input and searched for via the Web, as well as the automatic and dynamic displaying of information from Louise or Cindy on the Internet; Louise Bee/Cindy Bee is a system allowing the globalization of functions between the databases of a group of Louise or a group of Cindy systems; Delis is a system dedicated to digital television channels, dynamically generating the EPG synchronized together with the transmission play-out, and enabling the use of all interactive applications linked to the programming.

**Production Intercom Inc. C10307**  
*Intro:* WBS4000 is a half-duplex wireless system using portable transceivers that can be interfaced with a cabled system. Unlimited numbers of remote transceivers can be added. Users can monitor all wireless or cabled stations. TR-1 IFB is a small package that accepts both 1/4-inch and 3.5mm plugs, has a rotary volume control can be adjusted to low volume if needed, green LED indicating "on," red LED indicating "traffic." It can be choose between one and two-channel operation, hard-wired or separate cable with 3-pin mini XLR for connection to system; The new BP15 Belt Pack has all the functions of a standard BP-1 belt pack, but all its buttons are shaped differently for ease of use in a dark environ-

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ment. A four-pin XLR is mounted on the back for connection to a standard headset, and a mini three-pin XLR with a separate or hardwired cable for connection to the system. It is compatible with other three-wire systems; The DMH9000 broadcast-quality headset has a symmetrical hypercardioid microphone for close-field use with excellent noise-reduction capabilities. The mic swivels for right or left ear use and incorporates a mute switch in the up position. The headphones are highly sensitive with optimum noise reduction; EconoCom systems are for small, cabled communications between cameras, etc. and incorporate our standard headsets and belt packs for an economical intercom system for up to 10 stations. Your choice of headsets and/or belt packs. A variety of headsets also available for connection to common cameras and/or CCU's. All with our standard three-year warranty.

**Also:** IFB, broadcast headsets, power supplies, belt packs, master stations, Blazon strobes, headset stations, loudspeaker stations

**Professional Sound Corp. N3916**  
Intro: PSC AlphaMix portable ENG audio

mixer offers built-in NP-1 battery compartment, power distribution for wireless systems, LED meters on each input channel, boom pole-mounted remote control and easy two camera support using two Hirose 10-pin connectors; PSC DV ProMix 3 portable audio mixer is designed specifically for the DV camera industry. Each of its three inputs are equipped with independently switchable 48-volt phantom power, line or microphone input levels, two-position low-cut filters and channel assignment switches. The DV ProMix 3 is also equipped with sunlight-readable LED meters and tape confidence monitoring function. A sturdy field bag and shoulder strap are included; PSC DV ProMix 1 portable field audio accessory features a high-quality microphone preamp with variable gain, monitor amp with variable gain, headphone amp, line driver, LED meters, 12-volt T power and 48-volt phantom power and more. It can be used for field remotes, single-channel amplification, line driving, and many more applications; PSC RF MultiMax! UHF Wide Band Antenna Splitter features two 1x4 passive wide-band antenna splitter/combiners and four 1x8 active wideband splitters that can be used either separately or together to form a very flexible antenna splitter. Bandwidth is from 450 MHz to 900 MHz. The unit can be powered from 9-18-volt DC or 100-240-volt AC for ease of use in the field.

**Also:** Adapters, equipment carts, distribution amps, cables, mixers, microphone, mic power supplies, DC power supplies, press mult boxes, audio equipment

**Profound Effects Inc. SL5833**  
Intro: CameraPOV creates ready-to-use simulations of eight different types of camera POVs. Like looking through the lens of a working camera, a range of film, digital, and video cameras covering consumer to professional are simulated. Compatible with most effects and editing platforms including Adobe After Effects, Discreet Combustion and Apple Final Cut Pro; Useful Assistants Vers. 1.2 is a workflow and productivity booster for After Effects. Vers. 1.2 brings the number of time-saving assistants up to more than 70. Vers. 1.6 of the broadcast designer's program, Useful Things has just been released, offering many hundreds of broadcast design and other effects and is compatible with Adobe After Effects and other platforms; Elastic Gasket, the adapter that lets Avid editing systems use many third-party After Effects plugins has a new version. Now available for Avid DS 7, Elastic.

**ProMax SL4218**  
Intro: ProMax ProMedia Converter is a standalone media converter for uncompressed 8/10-bit video, 16/20/24-bit audio, compressed (DV) over 1394, composite, S-Video and component video. It features reference-in or internal sync generation, SDI I/O (SMPTE 259M-C) with embedded audio (SMPTE 272M-A), four-channel balanced analog audio, four-channel AES/EBU audio, two 400-Mbps 1394 FireWire ports, Web-based control, diagnostics and upgrades, LCD panel, frame synchronizer and time base corrector, video and audio test pattern generation, Closed Caption support, image overlay/bug stamp, NTSC and PAL-compatible, rackmountable; ProMax External SATA Array up to 1 TB include up to four removable drives that can be striped as RAID 0 to serve DV, DVCAM and SD. The SATA drives fit well with the new Apple G5s, allowing the FireWire bandwidth to be used exclusively for uncompressed video source such as from a ProMax

ProMedia Converter or AJA Io; ProMax QuickStart Final Cut Pro 4.0 Training CD is a DVD-ROM disc featuring 10 lessons (over 100 minutes of training). Designed and created by Frank Rohmer, a certified Apple Final Cut Pro instructor, QuickStart is designed to get anyone quickly trained on the basics of Final Cut Pro 4.

**Promedia USA SL880**  
Intro: 8x blank recordable DVD+R, 4x blank recordable DVD-R, 4x blank recordable DVD+R, 52x blank recordable CD-R, CD/DVD jewel cases, slim jewel cases, CD/DVD cake boxes, 160, 208, 320 CD/DVD wallets.

**Propagation Systems Inc. (PSI) C1335**  
Intro: Digital Saver Slot Antennas: low power (3kW digital - 7 kW analog), medium power (10kW digital - 23kW analog). Sizes range from 4, 8 and 12 bay configurations. Standard patterns are Omnidirectional, Wide-Medium-Narrow Cardioid.

**Also:** Panel antennas, slot antennas

**Prophet Systems Innovations N3312**  
**ProPrompter C2345**  
Intro: ProPrompter Pocket PC utilizes a pocket PC with included software and a custom designed lens-mounted teleprompter hood and mirror system. ProPrompter was used by embedded media in Iraq and Afghanistan and by local media and corporate productions for standup use. ProPrompter LCD consists of a 5.6-inch LCD, weighing in at under 3 lbs. It can be used in the field or in the studio. ProPrompter software is available for PC or Mac.

**Proximity SU9600**  
Intro: Artbox, a content management system that allows artists to manage all of their work from one interface, resulting in a more efficient and accurate content production workflow. Artbox integrates format conversion, storage, workflow management, search and retrieval of artwork (video, graphics, script or audio) into a single device. Artbox supports multiple devices and formats and can convert between all major still and video formats, and interfaces with current and legacy equipment from the leading hardware and software manufacturers including Adobe, Avid, Chyron, Discreet, Grass Valley, Leitch, Omneon, Pinnacle, Quantel and Sundance.

**Also:** Xenostore multifunction graphics asset management software, Xenomotion video transcoding software, Xenotrack graphics order management software

**QTV C4736**  
Intro: The portable FDP-7 prompter package includes a seven-inch color LCD screen and weighs 3.5 lbs. Wincue LT-USB is a USB dongle-enabled version of the Wincue prompter software program.

**Also:** FDP-15HB prompter

**Quantel C6406**  
On Display: iQ - digital intermediate, eQ - HD editing and finishing, gQ - HD and close-to-air graphics, sQ server - news and sport applications.

**Quartz Electronics SU9812**  
Intro: New multifunction router for SD and HD video, analog and AES audio, offers advanced control and signal monitoring capabilities and will be fully compatible with the full range of Quartz control systems and control panels; QMC-HD new master control switcher handles all major HD formats and up to four keying layers.

It adds enhanced audio capabilities with support for 16 channels and optional internal Dolby E decoders along with internal logo storage with support for multiple animated logos; New HD, SD, AV and AA models in 16x16 and 32x32 size range for the Topaz family of video and audio routing switchers offer optional redundant power supply and are compatible with the full range of Quartz routers and control systems.

**Also:** QMC master control, Q256 large format routers, SC1000 control system

**QVS C7847**  
Intro: High Definition Multimedia Interface (HDMI) Cable is capable of transmitting both video and audio signals from DVD players, set top boxes and camcorders to television sets, projectors and other video displays; The new UltraThin HD15 VGA cable is a thin-diameter cable that provides flexibility and has a space-saving design unlike regular VGA cables. This premium cable has triple shielding for maximum graphics performance, prevents signal loss, screen ghosting and loss of color. Signals can travel up to 100 feet without a booster. Cables are UL listed, with a PVC jacket and molded ends with reversible mounting screws; VGA Video Share Switch family includes a premium model, a model with an On/Off switch and a matrix model that is both a video share and splitter in one. Choose from two, four, eight, or 16 port models. Provides high resolution up to 1920x1440. Supports analog flat panel, projectors and VGA monitors up to 21 inches.

**RackFrame.com C3842**  
Intro: RackFrame is a modular rack system with over 79,000 possible sizes. Choose any width, depth and height of dual-tapped E.I.A. rack rail from one of 43 sizes in 1 3/4-inch rack unit increments.

**Also:** LAN Station workstation furniture, Shock Protected shipping rack cases, LCD shipping cases

**RackSaver SL4017**  
Intro: The RackSaver DCIN64 digital cinema content server delivers theater-quality audio and video with digital preservation built in.

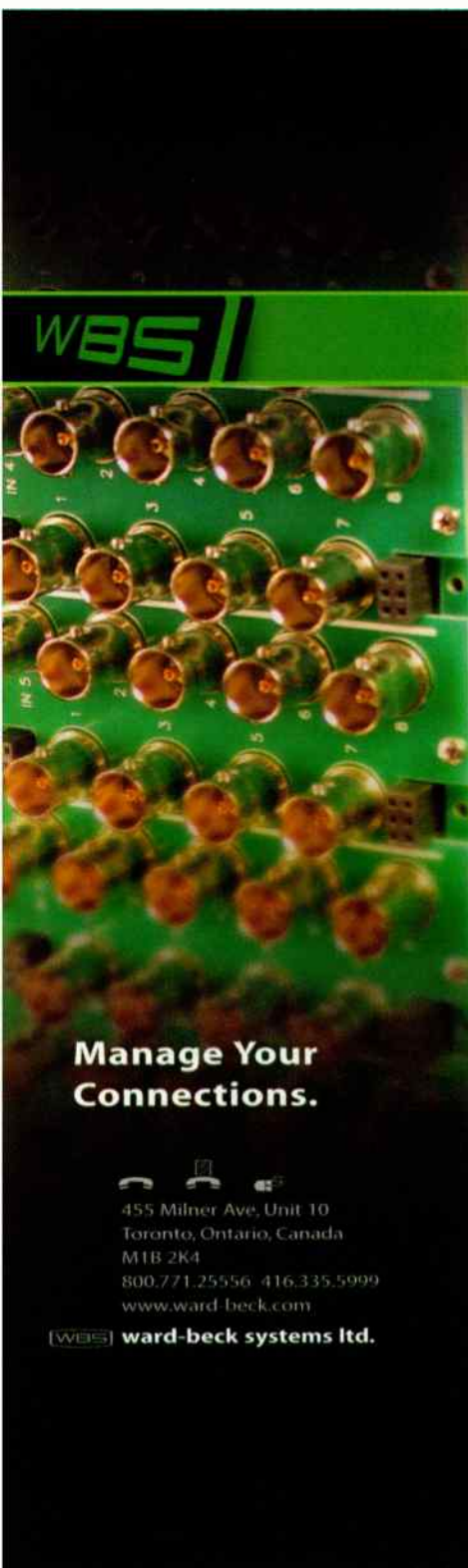
**Radamec (See Vinten/Radamec) SU9643**  
Intro: Enhanced Linux-based touch control panel features a robotic digital keyframe control mode that memorizes the camera's position and orientation as the operator moves it, allowing robotically controlled cameras to achieve creative shots previously only accomplished by manual control.

**Also:** Series 200 controller; ACS-200; BCP and SCP MkII control systems; Scenario XR Virtual Studio System; Predator pan and tilt head; AutoCam SP2000 and RP2A robotic pedestals.

**Radiant Communications C1922**  
On Display: RM1100 broadcast over IP monitoring tool; MPEG-4 over IP, MPEG-2 over IP/T1, video over fiber, fiber-optic interconnect devices.

**Radio Design Labs N2126**  
Intro: The RU-MX4 four-channel mic/line portable audio mixer features a built-in compressor/limiter, metering, switchable phantom power; SAS-RC8 eight-channel in-wall audio monitor system with the new Ultrastyle design; ST-LCR3 logic to pulse converter; TX-J2 unbalanced stereo RCA to mono balanced line level transformer.

**Also:** Mixers, distribution amps, switchers, control, test equipment, line amps,



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#### Radio Frequency Systems C8617

**Intro:** Omni Directional Super-Turnstile antenna is a low profile, fully radomed broadband antenna covering the WHF band.

**Also:** UHF System-Broadband Panel Antenna, combiners, filters, digital patch panel, cavity slot antennas, panel antennas, cables

#### Radio Systems N2416

#### Radyne ComStream SU11300

**Intro:** SE4000 DVB MPEG-2 encoders; THE15A HDTV encoders; HD/SD Flyaway Earth Station.

**Also:** IRDs, HD/SD encoders

#### RapidText C12011

**Intro:** Realtime, 01:02:03 Timecoding, Continuity Scripts, As-Broadcast Scripts, Dialogue Lists, Spotting Lists. Solutions include transcripts-for-sale Web sites, Webcasts; Closed captioning - Realtime, DVD & Offline Captioning. Solutions include Webcasts, event captioning, and sponsorship captioning; Rapidcreation closed captioning software creates closed-caption file and provides editing tools; Encoders.

#### RDL (Radio Design Labs) N2126

**Intro:** The RU-MX4 is a flexible mixer in the compact RDL Rack-Up 1/3 rack-space chassis, featuring four input channels, each with an XLR microphone input and selectable phantom power, and an unbalanced phono jack line input; RU-MX4T shares all of the features of the RU-MX4 and has a transformer balanced output and an optional security cover protects the rear panel settings when the mixer is used in portable applications; ST-LCR3 alternate pulse dual relays Stick-On provides momentary pulses from a single control signal, featuring relay contacts rated at 60 W, 125 VA maximum switching power.

#### RealVision Inc. SL5515

**Intro:** VREngine/HSC10 is an HD/SD SDI two-channel video capture board for broadcast character generators, sports graphics, NLEs and DVEs; VREngine/HD10 is a 3D graphics and high-definition SDI two-channel output board for broadcasting graphics and post-production. HD10 can process and output two channels of 10-bit uncompressed HD video streams via SDI without bypassing system memory. HD10 can also process and output key data such as chroma and alpha; VREngine/SD10 is a 3D graphics and standard-definition SDI two-channel output board for broadcasting graphics and post production. SD10 can process and output two-channels of 10-bit uncompressed SD video stream without bypassing system memory. SD10 can also process and output key data such as chroma and alpha.

#### RF Central MM125

**Intro:** Top-performance digital microwave for hand-held cameras and vehicle-mounted systems; The "Sprinter" video surveillance vehicle features remote-controlled cameras for event coverage and security at major events; Remote-control cameras for traffic and weather, and FM microwave featuring the 12 W Nugget transmitter. Ask about cost-efficient leasing programs.

#### Richardson Electronics C1338

**Intro:** Avcom frequency analyzers and RF generators for broadcast, satellite, cable TV, communications and wireless applica-

tions. The LDU400C LDMOS UHF Pallet Amplifier is a new 400 W UHF LDMOS pallet amplifier featuring double the output power and a higher gain compared to the MRFA2604 device. Designed for analog and digital TV transposers and transmitters, the LDU400C incorporates microstrip technology and push-pull LDMOS configuration (MRF377 or equivalent device) to enhance ruggedness and reliability. It also has the same dimensions as the MRFA2604 meaning no expensive mechanical changes to an OEM's transmitter; The AU Series are LDMOS broadcast power amplifiers, for both analog and digital applications and are compliant to all major international standards.

#### Riedel C11210

**Intro:** Artist-S Matrix is a powerful matrix platform for production intercom applications, as well as routing of analog and AES3 audio and TCP/IP. The system consists of a fiber-based network infrastructure with each 1 RU frame providing 32 intercom ports. The system supports up to 512 ports in total; MAX headset has been designed for use in areas with high ambient-noise levels. Features include a rotating gooseneck, electret condenser or dynamic microphones, and PTT-buttons integrated in connecting lead; Enhanced Control Key Panel is the new version of Riedel's standard Control Key Panel for use as an announcer's console in applications such as on-air sports, commentators and production talent. Features include split-headphone or stereo cue feed and microphone switching, talkback outputs and multiple IFB; Artist Matrix audio transport platform features multiple audio sources, analog and digital, and it can be monitored on a standard Riedel Control Key Panel; Software Enhancements Edit Conference allows members of a conference (party line) to be added and/or deleted from a standard key panel; Audio/Video Router Interface software package monitors two external routing switchers and provides conference based tracking of your Artist intercom.

**Also:** Artist-M matrix; RCP "E" series control key panels

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#### Rohde & Schwarz C2532

**Intro:** The DVM400 is a compact unit for MPEG-2 analysis, recording and replay suitable for mobile use; DVM50 is a cost-efficient alternative that can monitor one or two transport streams in parallel; DVM-K11 option is a databroadcast analysis enhancement software for all DVMs providing a means of testing protocols for transmitting MHP and IP contents in DVB transport streams; SFU Test Transmitter can handle new satellite transmission standard DVB-S2 and provides network operators with considerably more transmission capacity. Features DVB-H for mobile reception in countries with DVB-T standard; UPV Audio Analyzer is a compact instrument for all measurements occurring in the analog and digital audio world. Features include digital audio interfaces up to a 192kHz sampling rate, expanded measurement bandwidths and powerful analysis tools. Can perform several measurement functions simultaneously and presents results in conclusive graphics that can be intuitively operated using Windows; The basics of a DVB-H system will be demon-

strated focusing on the transmission of H.264-coded video streams as IP over DVB-T. System is complemented by a system for updating the firmware of set-top boxes to comply with new SSU standard (R75 SSU Carousel). DVB data services are installed, administered and controlled via modem XML- and SOAP-based software interface (EDS); NA7000 transmitters feature up to 3.6 kW output power. Their liquid cooling system takes up only half the space of conventional air cooling. In addition, it is possible to operate several transmitters of identical type with only one cooling system, which dramatically reduces both costs and maintenance. **Also:** EFA, EFA-NET, DVRG, SFQ, DVM, DVM series

#### Ross Video Ltd. SU11029

**Intro:** Synergy MD and MDX Multidefinition digital production switchers range from the compact and powerful Synergy 100 MD single ME production switcher to the extra large Synergy 4 MD-X 4 ME switcher. Synergy MD and MDX support all popular formats of HD and SD out of the box. Synergy MD and MDX series are full of standard features; OverDrive Production Control System version 1.0 is a powerful production control system that enables touch screen control over devices used in productions such as news, sports or live events. OverDrive integrates with the Synergy SD and MDX series of production switchers, leveraging powerful control interfaces over video servers, VTRs, DDRs, audio mixers, robotic cameras, routers, still stores and more; New Talia Routing products including enhancements to the Kondor line and the all new NK series routers. The NK Series is a new line of compact and cost effective routing switchers. NK routers are available in sizes of 16x16 or 32x32 and in a full range of signal formats including serial digital, analog video, AES/EBU, analog audio and data routing. NK ships with a Web browser-based configuration system; Expanded GearLite product line includes the DAC-9213 multidefinition digital to analog converter and the SRA-9201 multidefinition reclocking DA; ADC-8035 dual analog composite to SDI decoder and ADC-9033 universal analog to SDI decoder accept standard definition composite, component or Y/C analog input and produce a broadcast quality serial digital output.

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#### RTW GmbH and Co. KG N720

**Intro:** SurroundMonitor 10860-VID is a surround sound vectorscope for video system environments with a multichannel peakmeter, surround sound analyzer, dial-norm meter, real-time analyzer, 10-fold phase meter, AES/EBU interface monitor and more. It supports loudness-referenced level setting after calibration to a reference listening level; PortaMonitor 10641-VID is a four-channel audio vectorscope especially for video system environments. It fits into today's video cabinets and has four-channel multistandard peak meters, audio vectorscope, phase meter, real-time spectrum analyzer and an AES/EBU status monitor. Analog and digital signals can be measured simultaneously using the mixed mode.

#### RVR Elettronica N2731

#### Sabre Towers and Accessories N1004

**On Display:** Pre-engineered lightweight guyed towers manufactured in ten-foot sections are available with a 12-inch or 18-inch face and can be used as a guyed, self-supporting or wall-bracketed tower. Built with tubular legs and serpentine bracing they are available in heights up to 400 feet. Custom engineered solid round leg lightweight towers also available.

#### Salzbrenner Stageteck Mediagroup N2034

**Intro:** DELEC Audio und Videotechnik, part of the Salzbrenner Stageteck Mediagroup, will exhibit the digital intercom system IC48 MK II. New highlights are the FOC Router to expand the system to 2048 members/subscribers, the PC subscriber unit, the telephone extension and new control functions.

#### Sanyo Fisher Co. SL3524

**Intro:** LCD networking projectors; PLV-HD10 high-definition projector; PLV-WF10 wide screen large venue projector

#### ScheduALL SU11611

**Intro:** ScheduLINK with BandPlan software manages satellite and terrestrial networks. Customers using ScheduLINK

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The SDI-900A adds Xintekvideo's VIP (Video Improvement Processor). VIP can provide over 9 dBs of random noise reduction in both luminance and the color difference signals. Independent, manual or automatic noise reduction of Y and/or U/V permits optimization for different types of noise to optimize and maximize compression efficiency. The SDI-900M, in addition to the VIP engine, also features non-volatile, user re-writable memory, for seven or more video correction pre-sets of all front panel functions. List prices \$1350, \$1995, \$2150.

Other SDI products from Xintekvideo include: the SDI-1 SDI to NTSC Converter (\$295), the SDI-10 Noise Reducer (\$1595), the SDI-110 Professional SDI to Analog Converter (\$895), the SDI-310 NTSC to SDI Converter (\$995), the SDI-330 Components to SDI Converter (\$995), the VP3000 Pre-Compression Processor with SDI output. (\$2995).



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## PRODUCTS &amp; SERVICES

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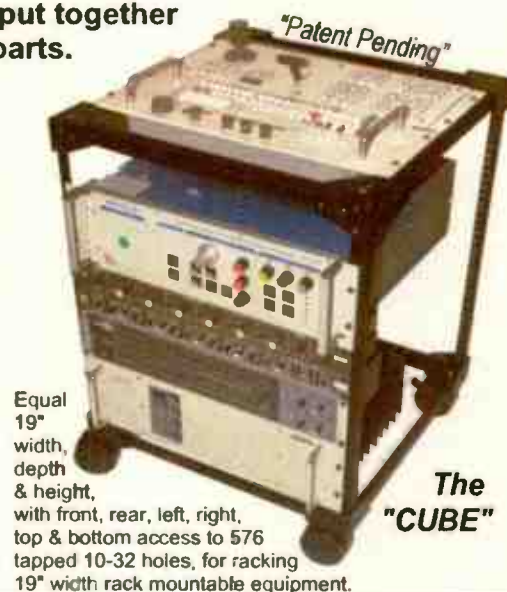
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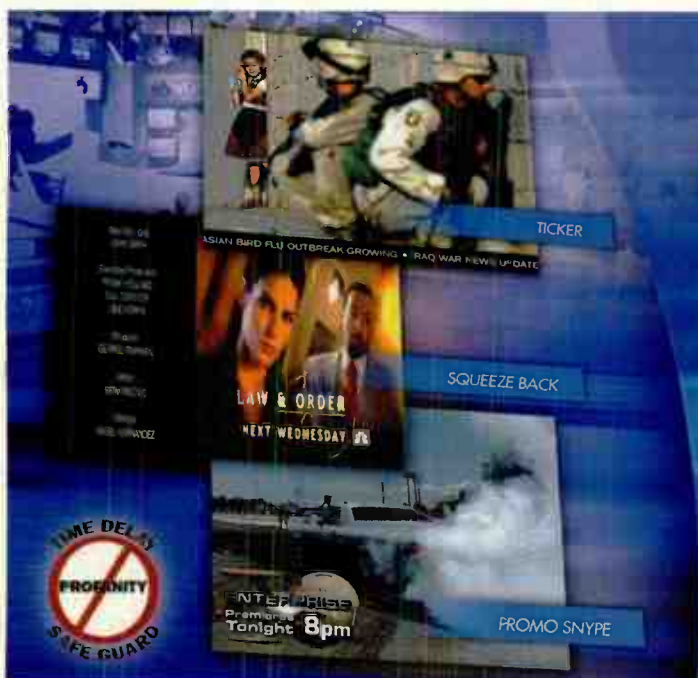
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include broadcasters, cable networks, mobile uplink providers, news organizations and satellite service resellers. ScheduLINK offers bandwidth capacity management of events as well as billing with automated conflict checking and notification. It has reporting for usage, costing and profitability information; NewsPLAN is for assignment-to-air scheduling of story-acquisition, to managing personnel, resources, controlling costs, and generating back office financial reports. It is designed to share data with systems like ENPS, and iNEWS, and bring story management to the next level; EDGE is an integrated entry-level scheduling and resource management software for smaller facilities that manages schedules for personnel, rooms, and equipment and is ideal for boutique post production, production, universities, radio stations, and smaller government teleproduction facilities; ScheduALL 4.42 is a scheduling and resource management software for the broadcast and teleproduction industry. ScheduALL manages, personnel, equipment, facilities, and tracks costs and billing information.

**Schneider Optics SU10615**  
Intro: Digicon Filter is designed for but not limited to electronic cinematography, allowing digital cameras to capture a more dynamic range and increased black levels without loss of resolution. In 6.6-inchx6.6-inch, 4-inchx5.65-inch and 4-inchx4-inch forms; Sunset series and Color Correction Effects in a range of new colors including: Sahara Gold,

Golden Sepia, Chocolate and Tobacco; Plus 10CC Green based on Wratten 10 green filter. In 6.6-inchx6.6-inch, 4-inchx5.65-inch and 4-inchx4-inch forms. Also: Achromat Diopters, Schneider Classic Soft, Black Frost and Warm Black Frost, True-Pol and One Stop Polarizing Filters, LowCon 2000, ND Combo Grads, Solid and Grad Magenta Color Correction filters and Day for Night Filters.

**Scientek Corp. SL3506**  
Intro: MBS Chromamatte keyers real-time blue/green screen compositing equipment. Based on one frame structure, user or system integrator can choose from eight or/and 10 bits, analog or/and SDI, external matte or/and luma, three in/two out to six in/three output and even with frame-delay build-in. Chromamatte uses the Primatte RT algorithm of Photron/Imagica; PR316FS is a 3U rackmountable hot-swappable RAID chassis for 16 SATA or PATA drives with a 64-bit MIPS RAID processor, 400/600MHz, U160 SCSI-3 or 2.0 Gbit SFP FC; PR312 is a 3U rackmountable server chassis with hot-swappable cooling fans, dual AMD OpteronR capability, up to 12 GB DDR ECC memory, dual Ultra320 SCSI channels, dual built-in GbE Ethernet ports, standard 24X CD-ROM drive, 1.44MB 3.5-inch FDD, two hot-swappable disk cradles for server OS (SCSI, SATA, or PATA), 12 hot-swappable disk cradles for RAID data storage (SATA/PATA), SCSI-SATA RAID controller, 64-Bit MIPS 400 MHz RAID processor, RAID 0, 1, 0+1, 3, 4, 5, 30, 50

and Morel Multiple RAID modes.

**Scopus SU11814**  
Intro: Codico E-1800 high-definition encoder provides multiformat 1080i, 720p, and 480p support, with 4:2:2/4:2:0 encoding up to 45 Mbps and performs EIA 708 VANC closed caption extraction. The E-1800 also provides audio multiplexing and MPEG-2 and Dolby Digital (AC-3) encoding for analog and digital audio inputs. The system supports Dolby E multichannel coding in pass-through mode, includes an inverse telecine mode, and is ATSC and DVB compliant; Codico E-9000 UniversalEncoder 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 standard and high-definition MPEG-4 Part 10 (H.264) and WM9 formats. On the same platform, the UniversalEncoder supports both SD and HD with various compression schemes. As a multi-use encoding platform, the UniversalEncoder offers backward-compatible and redundant MPEG-2 support, along with software upgrade paths for compression-standard transitions, when possible; Codico IRD-2900 is the newest edition to its Integrated Receiver Decoder (IRD) product line. With a graphical front-panel display, the IRD-2900 includes a variety of front-end options, such as ASI transport-stream input and output to support high bit rates over 155 Mbps, IP inputs, up to four QPSK L-band inputs, and up to four pairs of balanced outputs. The IRD-2900 will decode up to two video programs in the transport stream. The system also includes genlock, three GPI relay contacts, AGC output, and a 10/100 Base-T Ethernet port for IP data streaming and supporting SNMP.

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Scott Studios Corp. N3007

**Scott Video Corp. C2214**  
Intro: Video Time Shifter delays up to four programs simultaneously; Scott Video LE is for TV automation playback. Also: Scott Video XT.

**Screen Service Italia N4312**  
Intro: The 8-VSB/NTSC or DVB-T/PAL dual-mode transmitters can broadcast analog or digital TV signals. The switch from digital to analog can be performed locally or remotely. Also included are a LAN based remote interface to control and measure performances of TS signals; high-performance SFN adapters for DVB networks, including the new SFN adapter for 7 MHz networks fed by TS for 8 MHz; Network Information Table inserter to locally edit NIT tables to include local services and regenerative digital television transposers for high quality repetition of off-air signals. Also: Digital transmitters, analog transmitters, digital and analog microwave links, mobile microwave links, MPEG-2 encoders, multiplexers, COFDM modulators, 8-VSB modulators, QPSK modulators and demodulators, MPEG-2 decoders, frequency offset systems, MMDS.

**Screen Subtitling Systems SU9509**  
Intro: Protile is a subtitle preparation system that incorporates unicode font operation allowing the seamless preparation of complex scripts; Polistream G5000 is for the production of multi-layer graphics and subtitles on screen. Animated logos, rolls and scrolls, as well as broadcast quality subtitles can now be generated using only one box; The G5000 is ideal for branding localization for major networks and its versatility means it is also the perfect tool for single channel operations; Poliscript LIVE! is a new live subtitling system for news and sports channel environments with multi-user network capabilities.

**SeaChange International SU9661**  
On Display: The SeaChange Broadcast MediaCluster play-to-air system; The online SeaChange Broadcast MediaLibrary with MediaCluster has availability exceeding 99.999 percent and scaling to 24 TB of centralized storage that supports any media file format and devices (editors, VTRs, servers, etc.).

**Selectracks C2247**  
Intro: Selectracks provides custom music services and a catalog of indie artists from around the globe. The current focus of the catalog is advertising and promo music with a special concentration on tracks for major motion picture advertising and high-energy promos. The catalog contains an impressive array of jazz, electronica, acoustic rock and hard edge rock cues. The company offers custom scoring for all production needs to include songs, themes and film or TV scores.

**Sencore Inc. SU11011, C10343**  
Intro: VP 3340 Video Player provides three HDTV outputs including YPbPr/RGB composite NTSC/PAL, supports 1080i, 720p, 480p and 480i formats and can downconvert and upconvert video; SLM 1456 Digital Spectrum Meter measures analog and digital signals, including 8-VSB and QAM and provides full spectral display which includes constellation display and MER measurements to ensure digital quality; measures from -40 dBmV to +60 dBmV; ATSM 1771 Transport Stream Monitor monitors in real time ETR290 priority 1 and 2 tests (ATSC/MPEG-2 standards); MAP 1853 MPEG Analyzing Platform allow creation of streams, monitor, generate and analyze; provides real-time MPEG-2 analysis including TR101290 measurements for PCR, PTS and DTS; TMS 1780 DTV Investigator monitors 8-VSB signals, transport streams and video, decodes all 18 ATSC formats and provides AC-3 output as well as decoded analog audio and has user-configurable MPEG-2 error checking and data logging capabilities. Also: MNA1420 MPEG-2 Network Analyzer, IRD 3384 Receiver/Decoder, DC 3383 Decoder, ATSC 997 Video Player, AT1506 8-VSB Analyzer, TS 1692 Transport Streamer, SAT 1457 Digital Satellite Spectral Meter, SA 1454 Signal Analyzer, ASM 998A Advanced Satellite Modulator.

**Sennheiser Electronic Corp. N2812**  
Intro: Evolution Wireless G2 Series has a broader switching bandwidth (36 MHz), making 1,440 channels available to the user. G2 also offers smaller transmitters, which have been reduced in size by about 30 percent. Additional features include the scan function that automatically searches for free channels, as well as the new, intuitive user menu and large backlit displays. A pilot tone squelch

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ensures that the transmitter microphone can be switched on and off without noise, HD650 headphones are open-air combining an extremely flat frequency response (10Hz-39.5kHz, -10dB) with natural dynamics and high resolution. A gold-plated 1/4-inch connector and 3.5 mm adapter plug are included. Evolution 900 microphone series is comprised of the E 935/E 945 vocal mics and the E 903 for snare/instruments designed to handle the most demanding live performance environments; tapered, black handle and hip gunmetal blue grille.

**SES Americom Inc. C10934**  
Intro: SES Americom's SignalSAT service offers a 3 MHz digital signal, using either C-band or Ku-band.

**Shotoku Camera Support Systems C7943**  
Intro: VR Tracking Jib is a cost-efficient way of gaining a three-dimension positional signal for virtual studio usage, featuring three and four stage heavy-duty pedestals for capacity up to 110 pounds. Also: Pedestal; Heads; Tripods; Dollies.

**Sierra Automated Systems N3705**  
Intro: SAS Connected Digital Network is an integrated audio routing, console control, and networking system for radio, film, television, and entertainment; RIOLink RIOGrande Router/Mixer has been upgraded to add onboard routing and mixing; 32 analog or digital in/32 analog or digital out, plus GPIO and remote control, in one compact 2U frame. Also: SAS 32KD Digital Audio Network

**Sierra Video Systems C7139**  
Intro: Lassen 3232VS is a 32x32 composite video and stereo audio matrix, as well as a built-in front control panel, in a single 3 RU frame. The standard front control system allows for salvo execution and adjustable audio gain and attenuation on each input and output. The Lassen 3232VS can store the assigned names of all I/O destinations for easy reference at the front panel. Rear-panel Phoenix-style connectors simplify cabling, simplifying installation and reconfiguration; Shasta 1602HD-LS is part of the company's line of digital routers and switches for HD video with embedded audio. The "Live Switch" is also available in 4x2 or 8x2 configurations. The 1602HD-LS provides route locking, manual chop, tally and adjustable fade in a 1 RU frame. The product is designed with a front control panel, remote control panel (optional) and GPI and passes all ancillary signal data; Lassen 1602VS routing switcher offers composite analog video and stereo audio routing with optional DC clamping circuits in a compact 2 RU frame. DC clamping eliminates DC shift on video, allowing for real-time switching between video sources without loss of sync. The control system uses a front mounted CPU control module with remote control panels optional. Remote control panels can be ordered in the same operational configuration as the local. Also: Shasta, Tahoe, DigiLinX, Sierra PRO, Yosemite, and Sequoia lines Mike Morgan, VP Sales and Mktg.

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**Sigma Electronics SU1043**  
Intro: DV5515 HD/SD frame synchronizer; HD tri-level sync generation added to the TSG470 series of test and reference generators; HD presentation switching systems for routing resolutions up to 1920x1080/30p.

**SignaSys SU7055**

**Silicon Graphics (SGI) SL4755**  
Intro: The SGI InfiniteStorage replicates a postproduction workflow incorporating leading applications from companies such as Alias, Apple, Discreet, mental images and Quantel. With SGI CXFS, multiple content creation seats on any operating system can now share SD, HD and 2K files in a truly heterogeneous client SAN architecture. Simultaneous support for Mac OS X, IRIX, Windows XP, 32 and 64-bit Linux clients will be featured; Mac OS X client on CXFS shared file system, and the new Guaranteed Rate I/O (GRIO V.2) feature enables the scheduling of dedicated bandwidth on a SAN for applications that require guaranteed real-time performance, such as film scanners, color grading and editing and compositing applications; Silicon Graphics quad-processor Tezro visual workstation runs the latest Discreet smoke 6 and offers unparalleled performance and the image quality of an Onyx system on the desktop. When combined with exciting features of the new smoke release, Tezro is the ideal platform for the multiresolution demands of short-form and long-form editorial and effects, providing two HD streams or 2K play out; The SGI MediaServer broadcast system has enhanced MXF capabilities along with incorporating CXFS, MassTech for low-res browse, proxy and archive, Pinnacle Liquid Blue for collaborative MPEG-2 editing, and playout using multiple SGI Media Server for broadcast servers under the control of Harris automation. The SGI system features tight integration between ingest, edit, play out, distribution, and archive and allows for many times faster than real-time file sharing between workstations of different operating systems throughout the broadcast operation. Also: Silicon Graphics Onyx visualization systems, SGI TP9300 storage, CXFS shared file system, SGI Data Migration Facility

**SintecMedia C10913**  
Intro: OnAir, an all-in-one system for management of broadcast operations that accommodates multiple concurrent users at different locations, OnAir manages content acquisition, broadcast rights, long-term and detailed schedule planning, airtime sales, traffic, promotion planning, media management and process control.

**SKB Corp. SL5618**  
Intro: Line of multi-functional military standard transport cases molded of impenetrable, lightweight LLDPE plastic with stainless steel hardware for impact resistance, UV- and solvent resistance. Available in four sizes with pull handle and wheels, with options for empty, foam-filled or padded dividers on two sizes; 24-inch Roto-Molded Shockmounts, meet most all ATA and military standards, with redesigned

frame with threaded steel rails and aluminum cross components forming an "H"-shaped rigid configuration, "plug" style lid sealing system, patent-pending compound hinge that allows the lids to swing out 270 degrees (or lids can be removed and reinstalled in seconds). Standard rack depth is 24-inches, each lid 4-inches deep, and stacks securely with wheels on or off, and also allows front and rear lid opening while stacked; New 3SKB-R910U and 3SKB-R916U Industrial Shock Racks, with eight HM-245 elastomeric, high-damping, wide temperature range shock mounts with a shear spring rate of 50 lbs/inch (additional or stiffer shock mounts may be ordered); New Roto Shock Rack Series meet ATA and mil spec, feature roto-molded tough shell with 20-inch depth and integrally molded valance that eliminates the metal valance on outside of the case, coupled with a rubber gasket on both front and rear doors, integrated molded valance, ergonomic handles, recessed bumper, new elastomeric shock technology.

**Skylink C11047**  
Intro: A second Skylink PC-12, a video relay service that is the result of collaboration between three European Companies: QinetiQ (UK), Lions Air and GlobalLink (both of Switzerland), multiple uplinks are relayed via a single fixed wing aircraft at 30,000 feet, instead of multiple helicopters at 5,000 feet, virtually guaranteeing service in all weathers and terrains. Because the aircraft's receiving antennas are a long way from the transmitters, each uplink needs gain—the phased array antenna supplies sufficient gain to all of the uplinks without compromising the aircraft's aerodynamics. The antenna is fitted to a PILATUS PC-12, capable of flying for up to 7.5 hours before refueling, and able to maintain slow cruising speed for tight geographical positioning. Downlink uses conventional antennas that provide an operating range of 200km; also, a new transportable system for unpressurized platforms.

**Skymicro SL3713**  
Intro: Merlin2004 Capture codec board, compatible with previous Merlin models, but using the latest FPGA technology, which allows additional features such as alpha blending of live video with decoded video streams and further enhances the Merlin's flexibility and field upgrade capabilities; I/O expansion panels compatible with the Merlin Capture codec; Merlin supports MPEG-2, DV25/DV50 and IMX, among many other features. Mark Dolar, Sales & Business Dev. 2060D Ave. Los Arboles PMB344 Thousand Oaks, CA 91362-1361 Phone: 805-491-8995 FAX: 805-491-8935 E-Mail: [sales@skymicro.com](mailto:sales@skymicro.com) Web Site: [www.skymicro.com](http://www.skymicro.com)

**Smart Technologies Inc. SL1765**  
Intro: 40-Inch SMART Board for flat-panel display interactive overlays, the PN340 and PC340, now available for large-area LCD panels. Both support NEC-Mitsubishi LCD4000 and Clarity Bobcat II LCD panels, respectively, and feature DViT (Digital Vision Touch) technology, invented by SMART. Interactive overlays powered by SMART Board software, adding touch control and annotation capabilities, transforming plasma display and LCD panels into presentation and collaboration tools; SMART Board software Vers. 8.11 for use with SMART Board interactive whiteboards and

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**Symposium interactive lecterns, SMART Board software Vers. 8.1.1** for Microsoft Windows OS and Mac OS X features the Gallery, an image-management system that groups templates to be used as screen backgrounds with associated images. The Gallery can be customized to organize users' own templates and images, regardless of the source, into a single location; Symposium ID250 Interactive Pen Display, features five function buttons to provide quick access to Notebook software and features such as the on-screen keyboard and floating tools. The studio's projector connects to the ID250 and displays the presentation onto a larger screen, so the audience can easily follow along while the anchor remains seated at the desk.  
*Also:* Rear Projection SMART Board 3000i interactive whiteboard.

**SmartSound Software SL5867**  
*Intro:* Sonicfire Pro 3.2 soundtrack creation product lets anyone create a royalty-free soundtrack for their video, film or other visual projects in minutes, with no musical experience needed, and includes enhanced support for high-end video editors.

**Snell & Wilcox C6421**  
*Intro:* IQ Modular line has significant expansion with 17 new products, including converters, synchronizers, distribution amplifiers, routers and audio modules, all capable of operating in either SD or HD resolutions; IQMUX 40 HD/SDI remultiplexer; IQSDA0 HD-SDI/SD-SDI distribution amplifier; IQSYN20 HD/SDI frame synchronizer; IQSRT00 HD/SDI 5x2 router; IQSRT10 HD/SD-SDI 8x2 routing switcher; IQMDA00 HD-SDI monitoring distribution amplifier; IQSYN00 SD-SDI frame synchronizer; IQMUX00 digital audio embedder with synchronizer; IQDMX00 AES/EBU de-embedder/demultiplexer with synchronizer; Enhancements to the RollCall intelligent control and monitoring system with the addition of SNMP management, network mapping and topology control architecture; New range of high-performance, low-cost HD up, down and cross converters; Prefix CPP1000 HDTV compression pre-processor; Niagra, a grain management system for virtual telecine applications.

**SoftNI Corp. SU9671, SL5260B**  
*Intro:* SoftNI Dubbing Suite provides scalable audio dubbing package; SoftNI Subtitler Suite Group for NLEs, modules to equip Avid, Leitch-DPS Velocity, Pinnacle Liquid and others; Live Subtitling Suite to prepare and broadcast closed captions and/or multi-language subtitles, live, in real-time, on television, and for cable/satellite transmissions.  
*Also:* CaSat Suite; Subtitler Suite

**Solid State Logic N2412**  
*Intro:* C100, V1.5 digital broadcast console for on-air and live to-tape production; C200 - V2, with a dedicated knob-per-function control surface; XLogic Multichannel Compressor for 5.1 HDTV; XLogic SuperAnalogue Mic Amp provides four XL 9000 K Series microphone pre-amplifiers in a 1U rack-mounting unit with optional remote control; XLogic Channel with XL 9000 K Series SuperAnalogue channel processing in 1 RU.  
*Also:* XLogic Multichannel Compressor; XLogic Mic Amp; XLogic Channel

**Sonifex Ltd. C5236**  
*Intro:* S2, a small format, modular digital I/O analog radio broadcast mixer, offers

digital audio quality with analog reliability in a modular format. S2 has both digital and analog input channels, together with simultaneous analog and digital outputs; RB-DSS10, 10-way digital source select unit, a 24-bit 96 kHz capable 1U rack-mount that produces an AES/EBU and S/PDIF level digital audio output from 10 selectable AES/EBU or S/PDIF digital input signals; RB-SS10 10-way analog source select/mixer unit, similar to the RB-DSS10, but with analog audio inputs and outputs, can also mix the inputs to the output as well as route them; RB-DDA6W six-way world-clock distribution amplifier, used to distribute a master BNC TTL world clock source to up to six BNC world-clock pieces of equipment that need to be synchronized from the master; RB-LC3 three-way power/light controller, designed for radio and TV studio light signaling.  
*Also:* Redbox range of audio interfaces; HY-03 telephone hybrids

**Sony SL2769K, SU11051**  
*Intro:* DSR-PD170 DVCAM compact camcorder providing high quality acquisition in the DVCAM component digital format, as well as in DV, allowing up to 40 minutes recording on one tape Mini DVCAM tape, or 60 minutes on the same tape in the DV mode; XPRI Mobile editing software application that runs on most Windows laptops; XPRI, Vers. 7.0, featuring advanced color correction, multitrack editing and integration with Sony's XDCAM system; DigitalMaster DVCAM, featuring a dual active magnetic layer to reduce dropout and error rates; Vers. 5.0 of Vegas NLE software, with advanced real-time A/V production across unlimited tracks, offering powerful audio mixing, video compositing, color correction, titling, streaming media creation, surround sound production and additional professional features; Vegas+DVD Production Suite, which includes Vegas 5, a Dolby Laboratory-certified multichannel AC-3 encoder, and an upgraded version of its DVD Architect authoring and production software.

**Sound Devices LLC N3726**  
*Intro:* 744T Audio Recorder Sound Devices, a four-track portable production recorder, at home in film, HD or SD production.  
*Also:* 302 field mixer; 442 field mixer

**Sound Ideas C1651**  
*Intro:* Ear Candy 8, 300 new imaging elements on one CD, including IDs and logos, hits, attacks, transitions, drones, alarms, whooshes, rewinds, special effects and more; Series 14,000, Comedy & Cartoon Series, with character voices, one-liners, vocal effects, props and musical effects; Underwater Series, three CDs and 500 effects featuring underwater recording: engines, paddles, explosions, spear guns, hits, screams, scuba gear, submarines, oceans, waterfalls and rivers; Sports Music & Elements, 274 tracks on one CD, including U.S. and Canadian national anthems, organ chants, fanfares, trumpet calls; and Sound Effects, with arena announcements, crowd reactions, horns, hits, explosions and more.  
*Also:* Sound Ideas complete collection of Sound Effects; Mix Broadcast Music Library

**Soundcraft USA N900**

**SpectSoft LLC SL1057**  
*Intro:* 10-bit uncompressed DDR with asset management and editing features, RGB color correction, 2:3 pulldown, and

RS-422 control, the standard file system stores individual frames as well as clips in various formats—SD, HD and Dual Link systems available.  
*Also:* RaveHD for Linux

**SpeedSix Software SL5970**  
*Intro:* The Monsters range of visual effects plug-ins in two new versions: Smoke on Linux and Avid DS Nitris, which take advantage of the latest API features in these high-end post-production systems.  
*Also:* Monsters for Avid DS6, Discreet Flint, Flame, Inferno, Smoke, Fire, and Eyeon's Digital Fusion

**Spencer Technologies Inc. C9123**  
*Intro:* Newstore-Max, a four-channel still and clip store with 3D-DVE and touchscreen GUI. One channel produces over-the-shoulder graphics with transparent looping background and wipe transitions that include page curl, dual DVE for live "boxes" over a moving background, "Tease" squeeze backs, real-time CG for news ticker crawls, up to 50 hours storage of news packages, opens, stingers, backgrounds, with built-in editor, VDCP, Odetics & Sony protocols, camera robotic control, VTR control; Branding Iron is designed to enhance station channel branding using DVE credits, squeeze backs, playing promo clips and keying "fly in" snypes over the program. Branding Iron is a multi-channel server, each with dual DVEs for program squeeze backs and picture-in-picture live video, multi-level linear keyers, real-time CG, up to 50 hours storage of audio-video clips, VOs, animations and stills with linear key channels; Video Hostler empowers hosts of live talk shows with the ability to select clips and stills from a purpose-built touchscreen; Newscaster, an expanded version of Newstore, controls external devices from the touchscreen time line, external devices include robotic cameras, VTRs and routing switchers; Clipper "station in a box, using same hardware as Newstore and Branding Iron, includes built-in automation that controls all external equipment needed to run 24-hour station operation, including satellite ingest, VTRs and spot insertion.

*Also:* Newstore; Sports Clipper; M-C Clipper.  
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**Spider Support Systems C10036**  
*Intro:* Spider Pod V. 2.0 elevates a tripod and camera two feet in height: riser and platform section are separate units, so movement from videographer will not cause camera shake, and 30-second setup time will not slow down production. Unit made of lightweight aluminum and features 3-inch (7.6cm) channel, which can accommodate virtually every make of tripod spreader or feet; Scorpion Pod, a one-piece portable tripod riser and standing platform that elevates a camera tripod and operator 23 inches, designed for professional videographers and news crews who need to raise their camera's viewpoint with speed and stability; Expansion Web provides a wider, yet stable standing platform area when used in tandem with the Spider Pod's tripod riser: modular 2-by-2-foot squares can be configured to surround the Spider Pod, and allows a chair or stool to be placed on the plat-

form, while ensuring same shake-free operation found with the Spider Pod.

**Standard Communications Corp. C12017**  
*On Display:* Digital/analog satellite receivers

**Studer N700**  
*On Display:* Vista 6

**Sundance Digital Inc. SU7470**  
*Intro:* Pathfire Content Manager Sundance interface to the Pathfire delivery system, interfaces with Pathfire's Automation Connect gateway to manage transfer of new media from Pathfire's cache server to facility's transmission server. Program also updates Sundance media database with metadata available from Pathfire, including frame accurate segment timings. Also available as an option for Titan, FastBreak Spot Play and FastBreak Automation systems; NewsLink V2.0 adds device drivers for cameras, audio consoles and video switchers to existing line of server, editor and graphic system controls to facilitate automating the live newscast; Manual Rundown Manager now available for facilities without a MOS-complaint newsroom computer system, or to serve as "life boat" in the event of an NRCS crash; Director's On-Air user interface upgraded with operator-feedback based enhancements; Sundance Sentinel, an SNMP monitoring package for Sundance installations, designed to provide a single interface to "back room" software modules, and gives engineering staff the ability to monitor health of various Sundance components within their systems from a single interface; Media Prep V3.0, completely revamped, with user access-level controls and greater flexibility over the display of information, and available for Titan, FastBreak Automation or Spot Play, and for TimeLiner; News Recorder, for Titan and FastBreak Automation systems 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, and auto-segmented clips are immediately accessible for inclusion in playlists for re-broadcast.

*Also:* FastBreak Automation; Titan; SegmentShare; FastBreak Spot Play; Intelli-Sat; MediaCacher; ListSync/TitanSync; Sundance Archive Manager; SalesView /ProgramView; TimeLiner.  
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**Superior Electric N702**  
*Intro:* STABILINE PT1 Series of parallel design transient voltage surge suppressors provide all mode protection against harmful effects of lightning, power grid switching and internally generated transients, and are available in ratings of 25 kA, 50 kA, 80 kA and 100 kA surge current capacities.  
*Also:* STABILINE power quality products; uninterruptible power supplies; transient voltage surge suppressors; power conditioners; automatic voltage regulators

**SWE-DISH Satellite Systems AB MM108**  
*Intro:* SWE-DISH IPT Suitcase compact satellite system, combining benefits of simple, one-person operation with technical performance to allow live, 2 Mbps



broadband transmission with external encoding unit from virtually anywhere in the world, 26-by-18.5-by-11.4 inches, hand carried 86 lbs., with built-in GPS and compass, motorized antenna position; The SWE-DISH DA90K Drive-Away, vehicle-mounted DSNG terminal that can be placed on anything from a car-rack of an ordinary passenger car to a larger van, and can be fully automated with GPS, electronic compass and leveling device.

Also: SWE-DISH FA150K Fly-Away systems

## Switchcraft Inc.

C3322

**Intro:** Z version of the AAA Series XLR connectors, with reduced part count, wider cable range, stronger pull-out force; Line of molded longframe patchcords that are very flexible, low cap cable, AES/EBU digital ready, with rugged nickel-plated plug fingers for increased reliability; MVEZN patchbay, which combines 16 midsize video jacks rated to 3.0 GHZ and 24 TTEZN audio jacks with the EZ Norm cam for quick, simple normal re-configuration, suitable for non-linear editing suites that don't require full video or audio patchbays.

Also: MVP Series video patchbays

## Symetrix Inc.

N1610

**Intro:** 6100 Broadcast Audio Delay AirTools product for new and demanding requirements of broadcast and streaming media. Built on design of Symetrix 610 Broadcast Audio Delay, the 6100 offers simple user controls coupled with major enhancements and new features: a 24-bit digital delay unit designed for live broadcast that prevents profanity or unwanted comments from reaching the airwaves by gradually delaying or "stretching out" the program until up to 20 seconds of full-bandwidth stereo audio is stored in memory. After the DUMP PROFANITY button has been pressed, the 6100 automatically begins to stretch (time expand) the program audio again until the full delay is attained.

Also: Symetrix Air Tools 6200 Voice Processor; Symetrix 6100 Broadcast Audio Delay

## Systems Wireless

C2525

**Intro:** HME Pro 850 UHF Wireless Intercom featuring frequency agile, multi-channel operation with ISO, SA and relays; beltpacks feature auto-power sense, channel lock-out, remote beltpack transmit defeat and PDA programmability; PC software included for setup and monitoring functionality; Drake 4000 Series II Digital Matrix Intercom System, with easy-to-view and operate User

Panels including new 24-key, 2 RU 4222RBL and 12-Key, 1 RU 4212RBL LCD display panels, handles telephone, IFB, cameras, T1/E1, ISDN and two-wire systems; Lectrosystems 400 Series hybrid digital wireless microphone combines digital audio with an analog FM radio link to provide extended operating range, it includes the UCR411 compact receiver, UM400 standard belt-pack, MM400A miniature aluminum model, UH400 plug-on model and UT400 hand-held model with several capsule options.

Also: HME; Drake; Lectrosystems; Sennheiser; Clear-Com; Telos; RTS

## Tally Display Corp.

C8736

**Intro:** LED signs, tickers, wireless data: Signs are IP addressable, decode data from the VBI or receive data from anywhere in the world, interface to any news, sports, financial and medical service and insert custom messages; Super DigiText for theater or on-air related titling and captioning applications, Windows-based operating system; RTDS (router & tally display system), interface software for all devices, supports up to 31 routers, unlimited tally inputs, 31 production switchers on one system, a single PC and display network is used to support all display functions, UMDs, routers, switchers, etc., and you can monitor routers, switchers, automation, machine control on one display system, organize displays to multiple tasks and switch between assignments, have ability to organize tallies and name them according to source, send messages and alerts to any location, have multiple control panels via Ethernet, and system is compatible with SQL Server 7.0; Under-monitor displays (UMDs), 2-line display in 1 RU: Chinese, Korean, Hebrew and Arabic characters, 0.7" or 1.2" character heights, no interface (direct RS-232/422/485 connections, 32 stored messages plus real-time updates, stand-alone operation, single or tri-color models, built-in tally closures for other devices, multiple colors, fonts and graphics interface to any equipment.

Also: LED signs; tally systems; router interface software; under-monitor displays; system interfaces

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Web Site: [www.tallydisplay.com](http://www.tallydisplay.com)

## Tandberg Television

SU8755

**Intro:** nCompass 3.0 network monitoring system for monitoring health of

MPEG services across a video network; TT1221 integrated receiver/decoder for MPEG-2

SD systems, replacing TT1220 IRD; option for TT1221 is a GPS module that logs a receiver's location; TT1280 HD receiver for studio contribution, network distribution and digital cinema; E5770 MPEG-2 encoder, an upgradeable extension of the E5710 encoder; Cortex telco system management system enhanced with ScheduALL software, enabling operators to schedule events over contribution/distribution video networks.

Also: EN5920 real-time hardware-encoding platform for Windows Media 9.

## Tascam

N2418

**Intro:** SX-1LE Digital Production Environment, a 40-input, 32x 8digital mixer with 100mm touch-sensitive faders and dynamic automation of all parameters; FW-1884 FireWire Control Surface and Audio/MIDI Interface, mixing, automation, editing and navigation tools for DAWs; GigaPulse Convolution Reverberation and Modeling VST Plug-in for Windows; 2488 24-track, 24-bit, 36-channel Digital Portastudio, with three-band EQ on 24 channels, eight inputs, tone generator and stereo bus with high and low sweepable shelving bands and full parametric midband.

Also: DM-24 digital mixer; MX-2424 24-track hard disk recorder

## TBC Consoles

SU8068

**Intro:** Broadcast, editing and security furniture.

## Techni-Tool

C7206

## Technocrane Ltd.

C9325

**Intro:** Telescopic Cameracrane Techno 15

Also: Telescopic Cameracrane Supertechno 30

## Tektronix

C7128

**Intro:** MTM400 Transport Stream Monitor for operations that need a scalable system to detect signal degradation during transmission and distribution. It also includes new QAM Annex B and C interfaces for the U.S. and Japanese cable markets, in addition to the existing QPSK and QAM Annex A interfaces; New MTM400 RF monitoring capabilities add key measurements including MER, BER and RF constellation displays to the QAM and QPSK interfaces.

Also: WFM700; WVR600; MTM400; TG700; MTX100; VM5000HD

## Telecast Fiber Systems

SU9824

**Intro:** DiamondBack II broadcast-quality analog video multiplexer is a natural extension of the DiamondBack video multiplexer, and features eight channels of broadcast-quality analog video and a ninth BNC for the coaxial output of the company's various Adders on a single fiber; CopperHead Cine, newly redesigned camera-mounted fiber optic transceiver, affectionately dubbed "Skinny Cine," optimized for use in digital cinematography applications, nearly half as wide as the original, improving camera balance without sacrificing functionality. The new transceiver includes all the features of the HD/SDI CopperHead, with four additional return audio channels, for HD and 24p production.

Also: Cobra triax-to-fiber converter; CopperHead camera-mounted ENG/SNG link; CopperHead Cine HD camera interface; DiamondBack utility/video multiplexer; Sidewinder fiber optic ENG/SNG system; Viper video/audio/intercom/data system for broadcast production

## Telemetrics Inc.

C5845

**Intro:** HD-HOU-S2 weatherproof remote camera control system, housings with HD, SDI and fiber interfaces; Camera remote control system newsroom automation interface; CTSO-TRK-H camera track system, "H" or X/Y axis configuration option; Televator elevating pedestal Flex Track option; DS-4 Device Server for Ethernet camera control system connectivity and remote studio applications.

Also: Televator elevating pedestal; CTS camera track system; Coaxlink coax CCU; CPS-ST-S studio camera control system; ECM-PT-S2 extendable camera mount; EWM-PT-S2 elevating wall mount; TM60B triax system; CP-ITV PTZF camera control panel; CP-D-3A; CP-D2A; CP-R.

## Telescript Inc.

C1006

## Teleste Video Networks

SL5240


**Intro:** BLUEbox platform for compressed digital video, audio and data provides a standards-based MPEG-2 video networking solution for customers in education, health care, broadcast, homeland security and other corporate/enterprise campus settings.

Also: EASI IP; EASI ATM.

## Telestream Inc.

SU7183

**Intro:** MAPone wireless IP transmission application that allows journalists to transmit news stories directly from ENG laptops, and, when combined with FlipFactory, provides a single-step trans-



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Also: ClipMail Pro; ClipExpress; ClipView; FlipFactory Pro; FlipFactory Traffic-Manager.

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Television Engineering Corp C1418

Television Systems Ltd. SU8752  
Intro: SLS-1P, a self-powered, rack- or free-standing, 1RU-high quality loudspeaker unit designed for today's broadcasting market.

Also: TallyMan tally and UMD configuration system; AMU audio monitoring solutions

Telex Communications C9106

Intro: RTS Cronus digital DSP intercom seamless sizing to link multiple frames, with greater than 90 dB Dynamic Range, 20-20 kHz, 8-32 ports, modular design supporting analog, AES, VOIP; RTS VOIP line of intercom products, including RVON-8 eight-channel VOIP Card for ADAM; RVON-1 VOIP option for keypanels; RVON-I/O for external audio interfaces; Radiocom BTR-1 secure wireless digital intercom with encryption; RTS virtual intercom system that has a Windows-based panel to work with any RTS intercom matrix from the past 20 years; Intercom User station connected via LAN/WAN/VPN/Internet requiring no hardware beyond your PC.

Also: RTS ADAM; ZEUS matrix intercoms; Telex Radiocom professional wireless intercoms (including BTR800); Telex Broadcast Headsets; RTS TW Beltpack Systems

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Telos Systems N1416

On Display: ISDN, coded audio and telephone interface products for talk shows, teleconferencing, audio production, remote broadcasts and intercom applications, including TWO x 12 talk show systems and Toolvox microphone processor.

Tentel C3942

Intro: DVCPro mechanical tool kit and A/D board; training programs for professional maintenance of DVCPro, Digital Betacam and Betacam SP; camera classes also available.

Also: Tentelometer tape tension gauge; dial torque gauges; head protrusion and eccentricity gauge; reel table height gauges; accessories for mechanical maintenance of all tape transports.

Teracom Components C2538

Intro: Quicksite, a broadband broadcast system in an environmentally-controlled enclosure, complete with transmitter and antenna; system options for UHF digital and analog TV, FM, satellite downlinks, receivers, re-broadcast modulators and amplifiers; UHF 15-30 kW low loss bandpass filter; UHF 1-4 kW low loss bandpass filter; RF Power Monitor, a measurement instrument available for delivery together with combiner systems: forward power, reflected power and VSWR are all measured by the digital RF power meter which operates in RMS, Average and Peak Sync modes.

Also: Antennas; UHF analog and DVB filters; UHF Stretchline combiner; UHF analog and DVB combiners; monitoring system; RF components; couplers; patch panels; connectors; cable; and engineering software

TFT Inc. N2707

On Display: Modulation monitors.

Thales Angenieux C5412

Thales Broadcast & Multimedia Inc. C4709

Intro: DCX Paragon MSDC-IOT UHF digital transmitter, available in oil- and liquid-cooled versions for both NTSC and DTV operation, combining Soft Arc Technology (SATM) and MSDC tubes; Enhanced test and monitoring products, including the Mercury high-end analyzer and Granite Sentinel Cross Layer MPEG-2 transport stream monitor for monitoring and analysis of MPEG over IP, IP over MPEG and OCAP/MHP over MPEG-2; DPI Monitor, a multichannel MPEG cue tone probe dedicated to analyze the in-band signals allowing ad insertion, according to the SCTE35 standard; Enhanced VHF Optimum, with an integrated cabinet that houses the entire transmitting system and its cooling devices, can house an analog, digital, air-cooled or liquid-cooled transmitter, and its architecture allows upgrade from NTSC to DTV.

Also: DCX Paragon; Affinity UHF; VHF Optimum; IOX; Amber Remultiplexer;

Amber cable translator; Pearl PSIP generator; Opal IP Encapsulator; OpenStream multicast delivery system; Granite Sentinel MPEG-2 monitor; Mercury MPEG analyzer

Thales Components Corp. C5406

The Tape Guys.Com SU7558A

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Thermo Bond Buildings N1428

Intro: Pre-built and prewired transmitter shelters with lights, outlets, air conditioning, ventilation and ground. Available sizes include 8' x 10', 10' x 12', 10' x 24', 20' x 28' and larger.

Thomson Broadcast & Media Solutions SU8076

Intro: Grass Valley Kayak HD digital production switcher switches between HD and SD formats including 1080i and 720p HD and 525-line and 625-line SD and features digital 10-bit, 4:2:2 inputs, outputs and video processing in a 3 RU frame. Includes 16 inputs, four fixed outputs, low power consumption, 10 timed auxiliary buses; Grass Valley Maestro line of master control systems to combine embedded branding and full-featured master control capability with traditional signal processing in the same frame. Maestro supports SD, HD, AES, embedded audio, analog audio, and Dolby-E formats and offers 2-channel, 10-bit digital effects, independent control of up to four audio overs. It supports up to eight audio channels and offers second program output with independent key selection, order, and mix point; Grass Valley modular signal-processing products; Kameleon features SD, HD, fiber-optic additions; 16 new HD modules for 1080i and 720p processing, high-quality up/down conversion. New for Gecko: high-density frame sync, 40 frame syncs in 2 RU.

Also: TV Station in a Kit Series, MSeries iVDR Intelligent Video Digital Recorder, Profile XP Media Platform systems, Viper FilmStream, LDK 6000 mk II WorldCam, LDK 5000, LDK 23HS mk II, Digital Wireless Camera system, LDK 500, LDK 300, Specter FS, Specter Virt

Tieline Technology N3034

On Display: ProSolutions, with over 40 products for audio, audio/video and video solutions.

Total Training SL5526

Tower Engineering Corp. C1210

Transvideo International C9134

Intro: The new five-inch Rainbow II professional LCD monitor accepts NTSC, and PAL. With an outstanding wider viewing angle and optimized performance in full sun, it operates just like the original 5-inch Rainbow. Images can be displayed in full, underscan 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. It offers a processed video out: if the monitor is set in 16:9 the output will also be 16:9. This processed signal can be fed to other monitors, recorders or transmitters. A traditional straight video output (unprocessed signal) is also available. The five-inch Rainbow II is easily

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manual potentiometers. Electronic menus accessed via the digital keypad organize all the functions based upon how often they are used. The setup menu encompasses the functions that rarely change within a shoot. The User menu groups the functions that might be changed between takes. Freeze frame, recall and superimpose (for frame matching) are accessible at any time, without entering the electronic menus. With its new digital processing the six-inch CineMonitor III displays a

very crisp image to focus from. Designed to assist you anywhere on location, protected by tempered glass, it is highly shock resistant. The 6-inch Cinemonitor III is the ideal monitor to shoot film and video. Main features: color, green screen and black & white modes. NTSC, PAL & SECAM. Composite I/O and YC. Switchable ratios: 4:3, 16:9 and anamorphic. Also, 16:9 with 14:9 marker, 4:3 with 16:9 extract. Move function to reframe. Zoom in all ratios to enlarge the center of the image. Freeze frame,

Recall and Superimpose for still frame reviewing and matching. Auto-flip (when turning the monitor upside down, the image follows). Comprehensive voltage monitoring; full sun viewable and wide viewing angle for off-axis use.

**Also:** 5.8-inch and 6.5-inch 16:9 Rainbow monitors, six-inch Modular Monitors, 8.4-inch and 10.4-inch High-Brightness monitors, 19-inch racks of LCD, LCD prompter systems, UHF/VHF wireless portable tuners, Frameline Generator, Format Converter  
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**Trenton Technology Inc.** SL5252  
*Intro:* CP16 CompactPCI single board computer uses the Intel Pentium M processor and Enhanced Intel SpeedStep technology.  
**Also:** Single Board Computers, Backplanes

**TRF Production Music Libraries** C2925  
*Intro:* Collection of production music featuring more than 50,000 selections.

**Triveni Digital** SU11936  
*Intro:* The SkyScraper Application Constructor Toolkit for data broadcasting; StreamScope MT-30 Transport Stream Monitor and Analyzer compliant with MPEG-2, ATSC and SCTE. Available rackmountable and portable; GuideBuilder Family of PSIP and DVB-SI Generation Systems collect, translate, manage and generate metadata compliant with the ATSC/A65 PSIP or DVB-SI. The systems are compatible with all leading MPEG-2 encoders and multiplexers.  
**Also:** GuideBuilder, SkyScraper, StreamScope, StreamBridge

**Trompeter** SU10621  
*Intro:* PL130SC three-piece F-connector for high-end consumer appliances delivers "carrier-class" performance for high-frequency applications like HDTV, DTV and Internet connection; 250 Series miniature BNC connector allows 40 percent greater connector density.  
**Also:** J314W patchjack; J314mini WECO patchjack; UPL2000 digital BNC series; MBNC miniature BNC series; monitor and looping plugs; high-performance connectors for home electronics/theatre usage.

**TSL - Television Systems Ltd.** SU8752  
*Intro:* SLS-1P high output level for broadcast audio monitoring including racks, satellite, radio and outside broadcast. 15 W RMS per channel output, separate HF and LF drive units, XLR input connections; TallyMan is TSL's new generation of tally and UMD control system that runs on our dedicated hardware platform or a PC; AMU1 BA and BD is a bargraph metering unit with analog, AES and SDI inputs with full range of scales available. PPM, VU, DIN, Nordic dual high-resolution 106 segment tri-color bargraph displays.  
**Also:** Audio monitoring range for analogue, AES and SDI with high specification

**T-Systems International GmbH** C9613  
*Intro:* Satellite services include Broadcast Contribution DAMA Service (BCDS); ATM: Asynchronous Transfer Mode Broadcast-Services (ATM-BS) with international/worldwide access.

# Inter BEE 2004

## International Broadcast Equipment Exhibition 2004

November 17-19, 2004 Nippon Convention Center (Makuhari Messe)



### The Big Picture of Broadcasting

What does the future hold for broadcast communications? Professionals in broadcast, video, and audio technology can encounter the latest trends at this year's International Broadcast Equipment Exhibition (Inter BEE 2004).

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#### Japan Electronics Show Association

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#### Exhibition Categories

- Audio Equipment ● Cameras and Related Equipment
- Recording Equipment
- Editing and Production Equipment
- Electronic Displays ● System Conversion Equipment
- Output Systems ● Relay Systems
- Transmission Systems ● Lighting Equipment
- Measuring Equipment ● Transmission Cables
- Electric Power Units ● HDTV Systems
- Satellite Broadcasting Systems ● Virtual Systems
- CG Production Systems ● DVD Systems
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## Tut Systems

**SU6562**  
Intro: M2-400 Video Edge Device is MPEG-2 4:2:2 and 4:2:0 compatible and offers protocol support for IP, IP/ATM. ATM Network Interfaces include GigE, OC3, DS3/E3 and T1. Low latency, constant bit rate, Web-based graphic user interface (GUI).

Also: M2-400, Astria content processor, iViewTV middleware, M2-10E

## TV One Broadcast Sales Corp.

**SL5536**  
Intro: C2-775-IP, a universal video processor with a built-in Webserver for network or Internet control that performs the functions of a frame synchronizer, chromakeyer, standards converter, etc.; LM-1042R is a dual 10.4-inch LCD monitor in a 19-inch rackmount case; DV-1394Pro SDI is a bi-directional DV-SDI-Analog video/audio converter; Playbox Software Suite for file management and scheduled playback-to-air of MPEG-2 or DV files. Also: C2-770 Universal Video Processor, IM400 Matrix Routing Switchers, LM Series LCD Displays, MPEG-2@Disk DVR, CORIOscan Series Scan Converters, SC Series Video Scalers, 1T Series Video/Audio Distribution Amplifiers

## TWR Lighting Inc.

**N2018**  
Intro: High-intensity lighting systems for broadcast towers; LED lighting systems for broadcast towers.

Also: High-intensity LED lighting systems

## Ulead

**SL1752**  
Intro: Ulead DVD Workshop 2 is professional, design-centric DVD authoring software that allows you to be creative

with your menus and precise with your authoring without having to rely on additional programs. Capture and encode any video to MPEG, create playlists and add multiple subtitle and audio tracks, complete with Dolby AC-3 audio. Using still and moving images in a variety of formats, compose dynamic DVD motion menus. Preview menus, archive data files on the disc and output to DLT or DVD-9 with MacroVision or CSS encryption.

## Ultimate Corp.

**SL4749**  
Intro: iSkia hardware device interfaces between the host computer and projector, and puts the presenter back into the presentation. It allows the image to be projected on the screen but not on the presenter or in the presenter's eyes, creating a new experience for both the presenter and the audience. The elimination of dangerously blinding light and distracting projected graphics on the presenter creates a presentation that feels completely natural to both the presenter and the audience. iSkia requires no special software on the presenter's computer, works with any projector, and is interactive.

Also: Ultimate HD, Ultimate 10, Ultimate 9, Ultimate 400. & AdvantEdge plug-ins for Adobe, Apple, Avid, and Discreet users

## United States Broadcast

**C5446**  
On Display: Used equipment and mobile trucks.

## Utah Scientific

**C5912**  
Intro: Utah-400 digital routing switcher,

64 x 64, with an AES router in a 4 RU frame, has an analog audio and video I/O option; SqueezeMAX video effects/graphics unit for master control. Also: Routers; master control switchers; control systems

## Utility Tower Co.

**2422**

## Valcom Limited

**N1002**

## VBrick Systems

**SL5852**  
Intro: EtherneTV is an MPEG-based media distribution system for delivering DVD-quality live or on-demand video and audio to PCs, MACs, and TVs. It can be used for distance learning, event broadcasts, news distribution, training or surveillance; VBXcast is an award-winning MPEG-4 encoder for streaming and Webcasting live events over LANs or the Internet. Ideal for schools, government, broadcasters, or corporations, it is a low-cost, reliable video appliance that can be set up by anyone in a few minutes; EtherneTV-NXG is a video-on-demand system for distributing MPEG-1, -2, or -4 stored video to PCs, MACs, or set-top boxes connected to TVs. It is ideal for distance learning and training applications. Both computer and TV users receive the same intuitive user interface; EtherneTV-STB is a low-cost set-top-box for decoding MPEG-1, -2, or -4 video and audio. It comes with an Ethernet/IP interface for easy installation. Users can watch live or stored programs by navigating the simple StreamOne program guide.

Also: VBSTAR, StreamPlayer

Joe Chordas, Dir. of Sales

12 Beaumont Rd.

Wallingford, CT 06492

Phone: 203-265-0044

FAX: 203-265-6750

E-Mail: info@vbrick.com

Web Site: www.VBrick.com

## VCI (Video Communications Inc.)

**C10606**  
Intro: Orion features user-friendly software, third-party interface/integration capabilities, and customizable reporting; Analytical Toolkit is business intelligence software that is a component of VCI's product.

Also: STARS II+, Orion

## VCom Inc.

**SU10610**  
Intro: The MA3000 modulator system contains fully agile analog commercial video MA3020 modulators designed for CATV use. Advanced design allows a single MA3020 card to cover a frequency band from 55.25 to 856.25 MHz. High-level mixing and multiple levels of filtering achieve remarkably low out-of-band noise performance. Each 4U chassis can contain up to 10 independent modulators, each capable of BTSC and SAP operation. Each card is available with or without BTSC and SAP, or with BTSC only. This modulator offers high performance and space efficiency.

Also: UCM4540 Digital QAM Modulator/Upconverter, TM2020 QPSK to QAM Transmodulator, HD4040 Digital Upconverter

## VDS

**C6748**  
Intro: Twister PaintStation, a paint and graphics creation system for broadcast that runs standalone or as a plug-in for industry-leading content creation systems; Synapse for Quantel generationQ allows the Quantel generationQ range operator direct interactive use of After Effects plug-ins from within the iQ, gQ, eQ, QPaintbox, and QEffects environments; reQuest for Quantel generationQ provides the Quantel

generationQ range operator with a file transfer utility; the Titling and Branding Suite, operating with Harris Automation, provides television broadcasters with the ability to automatically generate and control video clip titles, promos and bugs; Station in a Box is software that acts as a repository for incoming data and allows broadcast operations personnel to create playlists from that data for broadcast to air.

Also: HotBoards, HotBugs, AirPlot, GameTrak, AutoClips, NewsTicker, Station in a Box, Elections Suite, AIC, Gecko, Email to Air, Text to Air, ISM, GDM, Chat to Air, Liberty V8, Liberty Reality Studio, Twister PaintStation, Twister PI, Synapse, reQuest

## Vela

**SL1780**  
Intro: The CineView HD LE decoder supports all ATSC HD standards, enabling frame-accurate playback of 4:2:0 in both SD and HD profiles and supporting data rates up to 80 Mbps. This one-half length form factor board, with audio support for AAC, AC-3, MPEG and Dolby digital, runs on Microsoft Windows and Linux, and includes Vela's GUI interface with the PlayAdvantage module of the MediaAdvantage Lite software; The CineView Quad is Vela's next generation PCI-based encoder supporting four independent channels of MPEG audio and video, allowing users to scale up to four decoders within a single PC. Software development tool kits (SDKs) are available.

Also: MediaAdvantage System, Argus MX Encoder, CineView Pro XLE Decoder, Argus Spectrum System, Rapid Access Video Server

## VertigoXmedia

**SL5836**  
Intro: Xmedia Election Graphics System with templates and pre-built graphics that can be re-purposed for other news; Xmedia MultiChannel Control System With Xpanel for managing graphics at central and remote sites. The system is MOS-compliant and integrates with existing newsroom computer systems such as ENPS and iNEWS. It can be controlled by automation systems using industry-standard protocols or manual operation. The system will work with standard character generators as well as Vertigo's own VertigoCG.

Also: Producer Xmedia, Product X, Xpresenter

## VFGadgets.com

**C3950**  
Intro: AvalonRF TX630 wireless A/V 2.4 GHz transmitter with optional two-way talk-back or SMPTE time stamp; AvalonRF DX 604 Receiver with four antenna true diversity; HD and SD Camera Viewfinder Extension Arm with Sony HDV-F-C30W Color Viewfinder Mount; Warrendolly; Shooter Scooter; improved Block Power Battery Pack. Also: QT-256 wireless broadcast audio transmitter

## Viaccess S.A.

**SU7079**  
Intro: Viaccess On-line Right Manager conditional access system for satellite, cable, and broadcast; Viaccess-VOD, an extension of the Viaccess conditional access system. Also: Viaccess CAS; Viaccess PC2.5 smart card new generation, Viaccess On-Line Right Manager, Viaccess-VOD, Viaccess purple-DRM

## Video Equipment Rentals (VER)

**SL4011**  
On Display: Sales and rental of professional television and audio equipment

## VideoBank

**SL981**  
Intro: VideoBank Multi-Channel Encode

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# DVStation

## 8VSB RF PSIP Compliance

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Automatic content validation ensures that programming and services reach the target audience. The comprehensive log file clearly shows problems in RF performance, transmission errors, and even ad insertion or program splicing.

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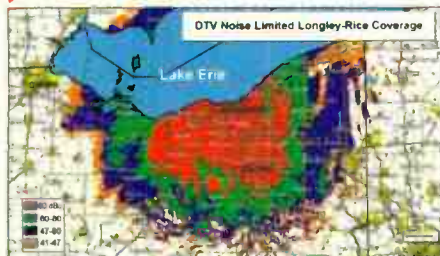
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# PRODUCTS & SERVICES SHOWCASE

## VSoft Broadcast Engineering Propagation Software



Professional software packages for FCC applications and predicting coverage.

- Create stunning "real-world" coverage maps and interference studies using Longley-Rice, PTP, Okumura and others with Probe II.
- Use Probe II to handle the FCC's complicated OET 69 DTV interference rules.
- Search for TV, DTV, and LPTV channels with SearchTV's instant mapping capabilities.
- Plot STL paths over 3D terrain with Terrain-3D.

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or call us at (800) 743-3684

## Go Wide.

The new MB-350 wide angle mattebox from Vocas features two *independently* rotating filter trays and one non-rotatable horizontal tray. It can accept an additional 4x5.6" filter in the hood for a total of four stages! This fourth stage can also be used with a variety 4:3 or 16:9 mattes.

For lenses wider than 5.0mm the mattebox can use a 4.5x4.5" rotatable filter or one 4x4 non-rotatable filter and two



horizontal filters. The patented internal eyebrow system allows the user to adjust the matte or mask to the zoom position of the lens. The MB-350 can be used as a clip-on mattebox or may require the MBS-100 support and bars adapter for use with standard 15mm rails.

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| Passband Ripple       | <0.25               | <0.20  | dB    |
| Group Delay Ripple    | <±7                 | <±1.5  | nsec  |
| >6 dB at              | 18.562              |        | MHz   |
| >12 dB at             |                     | 37.125 | MHz   |
| >40dB at              | 22.275              | 43.500 | MHz   |
| Sin(x)/x Compensation | Yes                 | Yes    |       |
| Impedance             | 75                  | 75     | Ω     |

- Sin(x)/x Compensation
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## Three "NEW Generation" Products

**LINK ELECTRONICS, INC.**

### FRAME SYNCHRONIZER, PFS-875

The model PFS-875 is a 12 Bit Frame Synchronizer featuring infinite timing with inputs and outputs of DV, SDI, Composite, Component and Y/C. The unit is housed in a 1 RU chassis with a plug-in card version for the 1000 system to follow shortly after delivery of the PFS-875. The plug-in model is 1168/1068.

### HD TEST GENERATOR, HDG-820

The model HDG-820 is a High Definition Generator that meets the 1080i, 1080p, 1035i & 720p specifications. There are approximately 30 test signals housed in a 1 RU chassis. Simultaneous digital and analog outputs, AES output & embed.

### MULTI-MODULE FRAME SYSTEM, MODEL 2000

The model 2000 Multi-Flex System will house up to four modules of approximately 14 items. The first available modules are analog black and SMPTE color bars. Each module has four outputs and each output can be independently timed. A 7 inch LCD displays the operational functions, and a 1.8 TFT screen shows the video image.

See us at NAB, Booth Number C2541, April 19 thru 22nd

LINK Electronics, Inc. \* 2137 Rust Ave. \* Cape Girardeau, MO 63703 \* Ph: 573-334-4433 \* Fax: 573-334-9255

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System desktop browser control for MPEG encoding of single to multiple video feeds; Touch Screen Logger for live sporting events; Video-Vault Web Core for storing and accessing streaming media; Video-Vault Core manages and stores broadcast quality video and metadata; VideoBank Playlist Producer, for playing out material and playlists from the archive to VTRs and NLEs.

## **Videoframe Inc. SU8648**

**Intro:** Three new Interface Series VNodes for the VTECS control panel system: GVG TEN-XL VNode, Snell & Wilcox RollNet VNode, and Snell & Wilcox SwitchPak VNode; VNode Signal Monitoring Products include 2x2 Transfer Switch VNode. A passive video bypass switch that can be controlled by GPI, Ethernet, or SNMP; VTECS Control Panels; VTECS 5 Control Panel is a 1 RU knob-per-function for on-air control of proc amp and frame sync equipment; CP16 Control Panel is a 16 button general purpose 1 RU panel. Both panels can control equipment from many different vendors.

## **Videomagnetics Inc. SU11040**

**Intro:** Complete scanner assemblies for the Sony Digital Betacam DVW-A510, DVW-510/DVW-522; parts for the Digital Betacam; Inner drums for Sony Digital Betacam DVW-A500, DVW-500, DVW-A510, DVW-510/DVW-522; Full service specialists in Betacam cameras, recorders and studio decks, Betacam SP, Digital Betacam, DVCAM  
**Also:** Video heads and scanners and parts for all Betacam SP, 1-inch video heads and scanners for Ampex, Sony and Hitachi, 3/4 U-Matic upper drums, 2-inch quad video heads for all Ampex and RCA.

## **Videopart, Inc. C7623**

**Intro:** M-PLATE, designed for Sony VCT-14 plate and WING-PLATE, designed for the Ikegami T-791, have basic interfaces to connect ratchet tie down/safe belt and cameras. Connected with safe belt offers good stability and safety for camera operation. The connector for side box/cable management/monitor support when linked with Cross; SIDE BOX allows free camera operation without front box dismantle, and offers impact-resistant plastic and dust/water resistant latch design. Attention, Cable Management, provides for the maximization of 14 integrated lines and reduces possible obstacles for camera operation. Multi Angle, for monitor support, offers mutual control on camera and monitor. Three-axis design offers adjustability and tightness to fit multiple angles needed  
**Also:** M-Plate, Wing-Plate, Sidebox, Cross, Attention, Cable Management

## **Videotek Research Ltd. C2523**

**Intro:** The AM-4 Audio Monitor Panel for monitoring two stereo analog, two stereo AES3 stereo digital, and two SDI embedded stereo signal sources; the RS-44SDI, a 4x4 digital video routing switcher supporting the SDI video format; the MDA-8 Modular A/V Distribution System offers digital 1x8 modules in addition to the previously available analog modules; the S-31ASD Descriptive Audio Auto-Router continuously monitors the descriptive audio input for signal presence, and automatically switches to Secondary Audio Program (SAP) in the event of signal absence.  
**Also:** VSD-2 Video Sync Detector, MDX-1 SDI Audio Multiplexer/Demultiplexer, S-201V 20x1 Video Routing Switcher, VDA Video Distribution Amplifiers

## **Videotek Inc. C4717**

**Intro:** VTM-440HD/SD, an HD/SD

SDI/Analog multiformat monitor; VTM-300G, a serial digital/analog multiformat on-screen monitor, both with Waveform/Vector/Audio/Alarms/Picture simultaneously on XGA display SpyderWeb software; DDM-800, a 1 RU 8-VSB frequency agile demodulator; DL-850HD is an HD serial digital legalizer; The VSX-11D, a 1 RU multiformat sync changeover that switches Serial Digital Video HD/SD SDI, NTSC/PAL Blackburst, Tri-level Sync, AES/EBU.  
**Also:** VTM-440HD/SD, VTM-300G, DDM-800, DL-850HD, VSX-11D

## **Videssence LLC C8625**

**Intro:** V168-442TT V-Beam, a compact fluorescent, 168 W unit; The 84 W "BABY BASE," with intense light output from a lightweight housing; The miniature "BABY BASEKIT" provides lighting in a small package. Each 84 W "BABY BASE" fixture is provided with Barn Doors, folding stand, mounting spud, power cord and lamps. An adjustable mounting yoke allows rotation for ease of focus and may be locked into place.  
**Also:** Power Key, Softwash, Softkey, Baselite, Koldlite, Modular, Setlite, Softlite, Shadowcaster, Modkits, Koldkits

## **ViewCast Corp. SL3621**

**Intro:** The Osprey-300, a digital video (DV) capture card with DV control capability and combines analog and DV capture; Osprey-230 and Osprey-560 Video Capture Cards are now being bundled with Accordant Technologies' PresenterPlus presentation authoring software; Niagara family of streaming video encoders is now available with MPEG-4 capability and bundled with the encoding and transcoding software "mpegable Broadcaster" from Dicas; Niagara SCX V3.3 allows any Osprey-based streaming video encoder system to be monitored and controlled remotely across a network; Niagara video servers now offer an optional scheduling capability that allows users to schedule and manage day and time playout of multiple streaming sessions remotely via Niagara SCX.  
**Also:** Osprey-230 High-Performance Video Capture Card, Osprey-560 High-Performance Video Capture Card, Niagara PowerStream, NiagaraMAX Portable Streaming System

## **Vinten/Radamec SU9643**

**Intro:** Vector 900 features increased robustness and tilt range in a smaller package; Protouch Main features lightweight camera support packages accommodate minimal budgets and maximum expectations; New Pro-6 and Pro-10 pan and tilt heads combined with the new Pozi-loc tripod offer functionality and stability for professional DV camera use; Quattro S Main features small base studio pedestal for multi-camera studio use.  
**Also:** Series 200 controller, TCPi Linux-based, ACS-200, BCP and SCP MkII control systems, Scenario XR Virtual Studio System, Predator pan and tilt head, AutoCam SP2000 and RP2A robotic pedestals.

## **vista systems SL1270**

**Intro:** A new line of small, lower-cost products based on the company's Montage technology.  
**Also:** Montage

## **vizrt SL3424, 3436**

**Intro:** viz|trio, a real-time 3D graphics, standalone or an integrated character generation system; viz|artist 3.0 includes a new design interface and real-time object database and is designed to make real-time 2D and 3D animated graphics

as SDI video; viz|content pilot asset management software; viz|ticker, a 3D ticker system; viz|weather with the 3D real-time capabilities of the viz|engine.  
**Also:** viz|media sequencer, viz|finTicker, viz|conductor

## **V-Soft Communications N1306**

**Intro:** Probe 3 propagation prediction software includes the same features as Probe II, such as Longley-Rice, PTP, Okamura/Hata and coverage and interference studies for FM and TV, along with many enhancements and new tools, including a polygon creation tool, an enhanced mapping engine and MIF import capabilities. The interface has undergone modifications to improve the overall usage of the program, including a new look with an upgrade to XP themes. Pattern Workshop has the ability to expertly build composite patterns from individual antennas aimed at various azimuths. Patterns can be edited by entering relative field, dBk, kW or dB, or simply click on the screen and drag an azimuth point. Pattern Workshop calculates RMS, checks dB ratios per degree azimuth and front-to-back ratios. The program comes packaged with a large antenna pattern library.  
**Also:** Probe 3, SearchTV, Pattern Workshop, Contour, PlotPath, RFHazy, InterDLG, Duopoly

## **Ward-Beck Systems Ltd. C1914**

**Intro:** RLM24 24 stereo loudness meters (48 audio channels) with silence sensor and alarm, dual redundant power supplies in 2 RU space; POD27 SDI/AES Muxer, compact standalone half-rack-unit package; POD28 1 x 6 HD/SDI/ASI reclocking distribution amplifier, compact standalone half-RU package; POD30 1 x 4 HD/SDI/ASI switcher, compact standalone half-RU package; POD31 HD demuxer, compact standalone half-RU package.  
**Also:** Serialboxx, PODs, AMS4, XTM4, VMS44, 8200 Series, IMP Impedance Converters, MP Meter Panels  
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Toronto, ON M1B 2K4  
Canada  
**Phone:** 416-335-5999/800-771-2556  
**FAX:** 416-335-5202  
**E-Mail:** michael@ward-beck.com  
**Web Site:** www.ward-beck.com

## **WCIInteractive C9617**

**On Display:** ScreenWriter interactive broadcast presentation system helps connect with viewers, enhance talent credibility, and simplify complex stories with interactive graphics and animations.

## **Weather Central Inc. C9617**

**Intro:** Products to help TV stations win in weather by extending their brand across broadcast, on-line and print media. Weather Central, MyWeather and WCIInteractive use patented, interactive storytelling tools to attract and connect with viewers through local forecasts and severe weather coverage. Solutions for broadcast, online and print industries.  
**Also:** Live, StormSentinel DV, WxWarn2, A.D.O.N.I.S. MicroCast, Genesis

## **Weather Metrics C8925**

**Intro:** 24x7 WeatherNet is a 24-hour-a-day continuous weather display created by integrating content from six separate screen areas/windows. Data from different sources (live video, data, radar, etc.) converges into one graphic display. The content is automatically formatted and outputs a NTSC signal to a station's digital channel or local cable system. Both methods generate station revenue while extending the station's brand.

WeatherCam.Net displays an "on-air"-quality, Webcam image from neighborhoods throughout the local DMA of a television station.  
**Also:** City WeatherNet, Mobile Weather, Internet Weather

## **Western Media Systems C2938**

**Intro:** Blank video media including Betacam SP, Digital Betacam, DVCAM, DVCPRO, HDCAM, Mini/Standard DV, MPEG IMX, bulk VHS tapes; blank audio and disc media including digital audio tape, CD-R/RW, DVD-R/RW, DVD-R/RW, DVD-RAM; blank data storage media including HIC, QIC, 4mm/DD5, 8mm/Travan, magnetic optical discs, DLT, LTO, SLR/MLR; packaging/accessories including VHS packaging and labels, disc packaging and labels, data storage transporters, cleaner tapes and cartridges, storage cabinets; video duplication and packaging including VHS duplication, video duplication (non-VHS), CD replication, DVD replication, custom packaging.  
**Also:** Betacam, Mini DV, DVCPRO, DVCAM, HDCAM, VHS, Umatic, DVD, CD

## **Wheatstone Corp. N2802**

**Intro:** The D-9TV Digital Television Console can direct any source to any fader and is equipped with integral dynamics/EQ functions along with full event recall. Equipped with multiple mix-minus clean feeds, individual channel Bus-Minus outputs, and full 5.1 digital surround sound. Powered by the Wheatstone Bridge Engine, the D-9 accesses and sends unlimited sources and feeds throughout an entire infrastructure of control surfaces.  
**Also:** SP-8 Modular Analog Live TV Production console, D-5.1 Digital TV console, studio furniture and Pre-wiring

## **Whirlwind C7819**

**Intro:** E Beam incorporates laser technology resulting in an affordable solution for Ethernet and CobraNet wireless transmission.

## **WhisperRoom Inc. SL2172**

**Will-Burt Co. C6441**  
**On Display:** Pneumatic telescoping masts, D-TEC

## **Winsted Corp. SU10640**

**Intro:** LCD/3 Rack Mount Series features a low 39-inch profile while offering 21 inches of rack space; stamped rack rails on rack-mount products for easy assembly; Slim-Line Uplite Consoles, upscale console furniture for large editing suites; Pro Series II has added nine sizes to its line of vertical equipment racks, and the entire line has been granted UL approval; Multi-tiered Slim-Line Prestige Consoles are modular for linear expansion.  
**Also:** Digital Desk, High-Capacity Media Storage Cabinets, Mini Edit Console, Super Density Cabinets

## **WireCAD C7211**

**Intro:** Building on its suite of affordable documentation tools, WireCAD Vers. 3 provides improvements in the user interface including sticky wires, dynamic move, searchable equipment library and mechanical layouts. Plug-ins are available to help with the early design phases including a facility layout tool, a system rats-nest function that allows the designer to create equipment connections in a list-based format and generate a drawing from the list, a patch-bay layout and designation strip tool. WireCAD Enterprise Admin Tools allow multiple users to work together sharing global and



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**Wohler Technologies Inc. C6742**  
*Intro:* The AMP2-S8MDA multi-channel audio monitor and converter provides two SDI inputs on BNCs that can accept a HD-SDI or an SD-SDI input. AES and analog auxiliary inputs are provided and it features eight tri-color LED bargraphs providing professional-level metering, front-panel group and channel selection with AMP series in-rack self-powered speaker system. Occupying 2U, it also provides demuxing capabilities with eight channels of analog and AES audio out demuxed from the HD/SD-SDI inputs; Panoramadt, the video division of Wohler Technologies, has a new LCD video monitoring product white LED backlights. MON8-1 contains eight 1.8-inch LCD screens, each with a composite video input, loop-through output and termination switches, in 1U. MON8-1 doesn't use fluorescent backlights but, instead, uses white LEDs that have a lifespan of more than 100,000 hours. Suitable for confidence video monitoring of multiple video signals any application involving multiple video signals.

*Also:* AMP series of rack-mounted audio monitors, LM series of audio level meters, ALM series of audio alarms, MON series of LCD video monitors, VAMP series of combined audio/video monitors, PEN-PAL-sdi test signal generator

World Tower Co.

C2916

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*Intro:* DPA-1200HS Standard Streaming Media Kit consists of DPA-1200 accelerator and Helix streaming media server, supports 100 Mbps bandwidth and distributes 1,500 unique, concurrent streams; DPA-1200HU Unlimited Streaming Media Kit consists of DPA-1200 accelerator and Turbo Helix streaming media application server; DPA-1200HU2 Dual Accelerator Unlimited Streaming Media Kit consists of two DPA-1200 accelerators and the Turbo Helix streaming media application server; DPA-1400 iSCSI Accelerator is an iSCSI Initiator/Target Accelerator that

processes TCP/IP and iSCSI and in hardware for reliable and secure data transfer across IP SAN. Evaluation Kit includes DPA-1200i accelerator, with Windows and Linux software drivers to configure a system as an iSCSI initiator (e.g. application server) or iSCSI target (e.g. storage system).

*Also:* DirectPath Accelerators for content delivery and IP storage

**Xytech Systems Corp. C9739**

*Intro:* Enterprise Vers. 6.5 is the sixth major release of the Xytech Enterprise Workflow and Media Asset Management System; Enterprise Transmission Management System is a software package designed to manage the scheduling, billing, job costing and capacity planning operations for a satellite and/or fiber transmission facility; Enterprise Web View.NET-powered tool allows Web-based access to the Enterprise database; DAX is a digital asset management system integrated with Xytech's MetaVault library system.

Yamaha Corp. America

N2734

**YEM International Inc. SU7684**

*Intro:* SRC1080: HDTV Scan Rate Converter (PCI Board) converts a DVI signal into an HD-SDI signal and is mounted on a PCI bus of the personal computer; HDTV Capture Board CAP-1080 allows personal computer to input HD signals in real time without depending on software; CVS2000 HDTV Scan Converter can convert analog RGB signals from computers of horizontal frequency 15 kHz - 130 kHz to SD and HD video signals.

*Also:* D/A Converter & Para/Seri, Seri/Para Converter

**Z Technology C6840**

*Intro:* The R-507 Programmable Field Strength Meter displays directly in dBuV/m when used with a calibrated antenna and may be operated from the front panel or a new Windows Spectrum Display application running on an attached PC; DSS5800 DTV Coverage Measurement/Mapping System features an improved version 17 DriveTest application that includes a capability of time-plotting measured parameters. Real-time maps now include street names; DM1010W ATSC Demodulator features Z Technology-designed RF measurement front end with auto-ranged attenuators, and a new WinDM Measurement and Data Recording application for transmitter and studio monitoring locations.

*Also:* R-507 Programmable Field-Strength Meter, DSS5800 RF Coverage

Measurement/Mapping System, DM1010W Measurement 8-VSB Demodulator, RM507 Spectrum Monitor

**Zandar Technologies plc SU9915**

*Intro:* Fusion Series, offering 2 to 26 scalable windows, programmable output up to SXGA, NTSC/PAL or SDI inputs in 4:3 or 16:9, HD-SDI inputs, computer (RGBHV) inputs, in-picture audio metering, dynamic UMD and tally display, redundant power supplies (3RU), external graphics background, editing software (Z-Editor), network control and editing software (Z-Manager), remote panel for single-touch operation; StudioPro offers multi-format display and monitoring—NTSC/PAL, SDI, HD-SDI, RGBHV, up to 26 simultaneous windows, pristine image quality to SXGA, analog, digital and SDI embedded audio monitoring, redundant architecture minimizes points of failure, display of source idents, tally status, clocks, fault detection and alarms, customization of display with graphics and logos, layout editor for creation, store, recall and switch of display layouts, multiple displays represented as a "Virtual Monitor Wall," LAN control; DX Series, digital and analog, compact 19-inch 1RU enclosure, 4, 8, 12 or 16 SDI or composite video inputs, auto detect of digital or analog inputs, auto detect of NTSC or PAL inputs, video outputs are composite and Y-C or YUV, SDI x 2, VGA output (line doubled), selection of pre-set displays, full-screen display of any input, built-in character generator for source identification, two font size choice, real-time clock and date, individual border colors for tally/alarm status, tally lamps, front-panel controls/menus for configuration, RS-232/422 control, GPIO/alarm triggers for layout and full-screen recall, loss-of-sync detection, black-picture detection, frozen-picture detection, SNMP software module; MX Series, Analog, compact 19-inch 1RU enclosure, 4, 8, 12 or 16 composite video inputs, NTSC/PAL input combinations, by 4, analog video outputs are composite and Y-C or YUV, VGA output (line doubled), selection of pre-set displays, full screen display of any input via front-panel GPI or RS-232, built-in character generator for source identification, real-time clock and date, individual border colors for tally/alarm status, front-panel controls/menus for configuration, RS-232 control, GPIO/alarm triggers, loss of sync detection; OmniVideo Series, PCI cards, 2-, 6- or 16-channel PCI cards, real-time asynchronous PAL or NTSC inputs, NTSC/PAL video output, time-base correction on all inputs, resize and move,

half tone video for captions overlay, framegrab of multi-image display to VGA, logo insertion, background and foreground graphics, additional independent Genlock input, simultaneous real-time recording to tape, MS Windows GUI, "OmniVideo App."

*Also:* FusionPro 3RU, FusionPro 1RU, ZAM-32  
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**Zaxcom Inc. C7410**

*Intro:* Zaxcom Digital ENG, wireless transmission of two full-bandwidth audio channels with one receiver and one transmitter using one 200 kHz RF channel; Deva IV and V hard-disk recorders, available in eight- and 10-track models, are designed for multi-track, high-bit-rate uses.

*Also:* Cameo II

**Zhongli Broadcast Technology Co. Ltd. C10440**

*Intro:* Digital TV transmitter.

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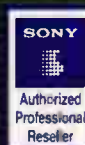
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Fostex synchronizers, 4035 cntrlr, 8710 interface, 8700 TC gen, (2) 8750 interface cables, \$399; Calaway CE110 editor, complete 16 port system w/monitor, cables, pix @ [www.bibbtek.com](http://www.bibbtek.com), \$325. T Barbarese, 856-222-0636.

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Sony BE 600 w/BKE 621 component board, \$1500; Yamaha 12 input XLR + 1/4 inch 2 output XLR + 1/4 inch, \$400. 617-823-9722.

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Lowel Soft Light 2, stand, lamps, hard case, diffusion, side doors, \$175; Alt Man, Lemo, 4 internal doors, 750 watts, Gobo holder stand mount, vgc, \$125; Chimera Video Pro Plus w/3 diffusion screens, small, B&M baby w/EGT-100, speed ring, new cond, \$475. S Harris, 423-477-2924.

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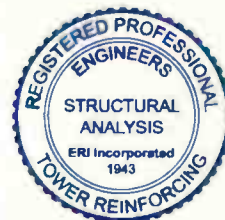


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| 136  | Laird Telemedia                 | www.lairdtelemedia.com         | 162    | Wohler Technologies                     | www.wohler.com              |
| 129  | Leader Instruments              | www.leaderusa.com              | 146    | Xintekvideo                             | www.intelvideo.com          |
| 58   | Leightronix                     | www.leightronix.com            | 150    | Z Technology                            | www.ztechnology.com         |
| 41   | Leitch                          | www.leitch.com                 | 157    | Zaxcom Video                            | www.zaxcom.com              |
| 99   | Leitch                          | www.leitch.com                 |        |                                         |                             |

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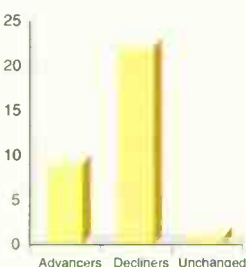
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# TV TECH STOCK INDEX

## WIN-LOSE RATIO



To have your company listed, contact Deborah McAdams at [dmcadams@imaspub.com](mailto:dmcadams@imaspub.com).

### TOP ADVANCERS BROADCAST STOCKS (FEBRUARY 6 - FEBRUARY 20)

EW Scripps +7.04%  
Nexstar +4.77%

### TOP DECLINERS BROADCAST STOCKS (FEBRUARY 6 - FEBRUARY 20)

Entravision -6.05%  
Paxon -4.60%

### TOP ADVANCERS TV STOCKS (FEBRUARY 6 - FEBRUARY 20)

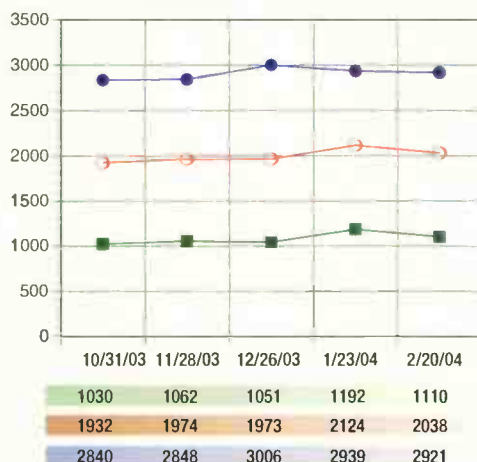
Harmonic +5.36%

### TOP DECLINERS TV STOCKS (FEBRUARY 6 - FEBRUARY 20)

Media 100 -13.33%  
Avid -9.29%

## TV TECH TREND

TV TECH AVG. NASDAQ COMPOSITE BROADCAST AVG.



TV Tech STOCKS as of Feb. 20

| Company Name | 52-Week Range | Feb. 6 | Feb. 20 | % Change |
|--------------|---------------|--------|---------|----------|
| Avid         | 16.76 - 59.77 | 44.11  | 40.01   | -9.29%   |
| Belden       | 10.50 - 22.87 | 20.3   | 19.45   | -4.19%   |
| Ciprico      | 4.00 - 6.81   | 5.34   | 5.09    | -4.68%   |
| Harmonic     | 2.75 - 10.00  | 11.2   | 11.8    | 5.36%    |
| Harris       | 25.35 - 49.76 | 48.7   | 47.7    | -2.05%   |
| Leitch       | N/A           | 3.89   | 3.89    | 0.00%    |
| LSI Logic    | 3.78 - 12.90  | 10.68  | 10.42   | -2.43%   |
| Media 100    | 0.40 - 1.54   | 0.6    | 0.52    | -13.33%  |
| ParkerVision | 4.08 - 12.30  | 6.95   | 6.7     | -3.60%   |
| Pinnacle     | 6.60 - 13.81  | 7.75   | 7.59    | -2.06%   |
| S-A          | 10.99 - 38.59 | 33.85  | 32.31   | -4.55%   |
| SeaChange    | 6.15 - 19.94  | 19.6   | 18.04   | -7.96%   |
| Storage Tech | 19.50 - 31.12 | 29.38  | 29.01   | -1.26%   |
| Tektronix    | 15.65 - 32.90 | 32.87  | 32.75   | -0.37%   |

Broadcast STOCKS as of Feb. 20

| Company Name  | 52-Week Range | Feb. 6 | Feb. 20 | % Change |
|---------------|---------------|--------|---------|----------|
| Acme          | 6.20 - 9.55   | 9.92   | 9.86    | -0.60%   |
| Belo          | 18.72 - 28.79 | 26.7   | 27.5    | 3.00%    |
| Emmis         | 14.84 - 28.65 | 25.11  | 25.14   | 0.12%    |
| Entravision   | 5.20 - 11.88  | 10.75  | 10.1    | -6.05%   |
| Fisher        | 39.50 - 54.29 | 49.66  | 50.36   | 1.41%    |
| Granite       | 1.33 - 3.70   | 1.85   | 1.77    | -4.32%   |
| Gray          | 8.62 - 16.22  | 14.66  | 14.64   | -0.14%   |
| Hearst Argyle | 19.50 - 29.25 | 27.12  | 26.64   | -1.77%   |
| Nexstar       | 12.08 - 14.50 | 12.79  | 13.4    | 4.77%    |
| Lin TV        | 19.45 - 27.49 | 23.35  | 22.65   | -3.00%   |
| Paxon         | 1.91 - 6.99   | 4.13   | 3.94    | -4.60%   |
| Sinclair      | 7.68 - 15.43  | 13.22  | 13.09   | -0.98%   |
| Liberty       | 37.85 - 47.99 | 48.5   | 49.13   | 1.30%    |
| Univision     | 21.83 - 40.05 | 35.65  | 35.1    | -1.54%   |
| Young         | 10.27 - 25.54 | 20.95  | 20.4    | -2.63%   |
| Tribune       | 41.60 - 51.94 | 50.5   | 50.95   | 0.89%    |
| Meredith      | 36.91 - 50.70 | 50.87  | 51.35   | 0.94%    |
| EW Scripps    | 73.90 - 96.26 | 93.21  | 99.77   | 7.04%    |

## COMPANY FOCUS

### Thomson Snags PVTV

Thomson last month bought the video division of ParkerVision for \$14 million in a cash deal expected to close in the first half of this year. It was ParkerVision that introduced the automated TV control room in a box, the PVTV. Thomson followed last year with the "TV Station in a Kit," which will be folded in with PVTV, according to Marc Valentin, Thomson Broadcast & Media Solutions president.

"The ParkerVision system is exactly what is needed for TV Station in a Kit," he said. "It's one of the main interests of the acquisition."

ParkerVision's inventory of PVTV systems is not large, said chairman and CEO Jeffrey Parker. Thomson's purchase encompasses research and marketing. PVTV systems will henceforth be built with Thomson Grass Valley products, including the Kalypso, which has already been integrated into some systems. The Thomson-built PVTV systems will retain the ParkerVision name as a sub-brand,

similar to the Grass Valley name.

With PVTV, a single person could run a control room. The broadcast industry started embracing such automation when the upcurve of digital reliability intersected the downcurve of the economy. In 2002, ParkerVision doubled PVTV deployments to a total of 40 systems, installed in schools, business, production centers and TV stations. According to ParkerVision, broadcasters alone now account for 40 PVTVs in the market.

McGraw-Hill, Clear Channel, LIN Television and Gray Television; ABC Network, Media General and Cablevision's News 12 stations are among adopters. The CBC bought a PVTV system last year for its Windsor, Ontario affiliate, where the system was integrated with Avid iNEWS systems. Thomson's Valentin said such legacy systems, supplied and integrated with equipment from other vendors, would continue to be supported.

—Deborah D. McAdams

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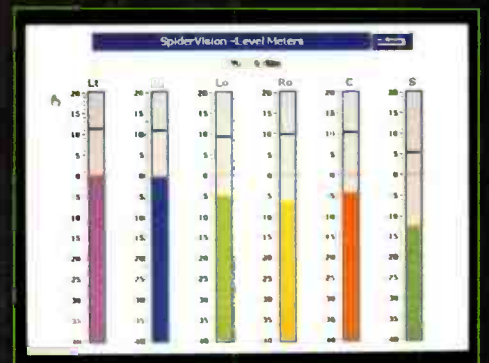
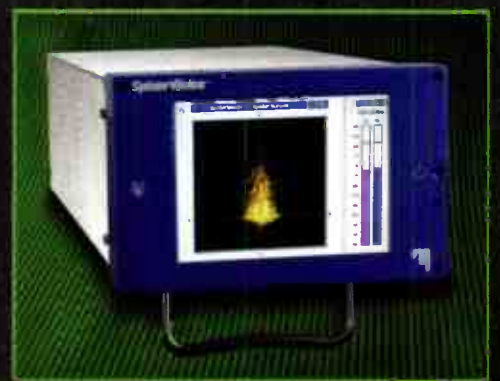
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**SpiderVision™** is a system dedicated to visualizing surround sound compatibility. Whether your audience listens with Dolby Pro Logic®<sup>1</sup>, Circle Surround®<sup>2</sup>, Logic 7™<sup>3</sup>, or discrete 5.1, **SpiderVision** provides you with the complete picture to insure compatibility in all transmission modes – mono, stereo, two channel encoded surround and discrete 5.1 — for all surround decoders.

There are more than 33 million home surround systems in use today, while the remaining 150 million or so TV's are stereo or mono. The only way to ensure that your audio is compatible with all of them is to listen in each format prior to transmission or distribution, or simply analyze it, at-a-glance, with **SpiderVision**.

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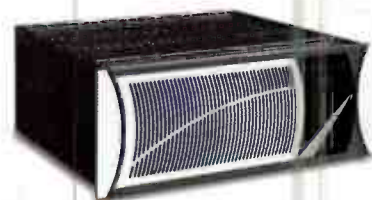
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# The Bridge

The Bridge Router can hold all the electronics you'll need for a small console: I/O cards, mix engines, and DSP processors. Naturally it can also have automatic fail-over DSP and CPU cards to keep you on-air. You can expand the system with a simple cage-to-cage interconnect.



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