



<http://www.Tech-Notes.tv>

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**Tech-Note #110**

HTML Edition

Established May 18, 1997

Underwritten by: Bloomfield & Associates

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Our purpose, mission statement, this current edition, archived editions and other relative information is posted on our website. As of this edition, we've had over 24,600 different visitors since we started the website on July 1st, 2000.

**Thanks to our regulars and welcome to the new folks.**  
This is **YOUR** forum!

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**Editor's comments**

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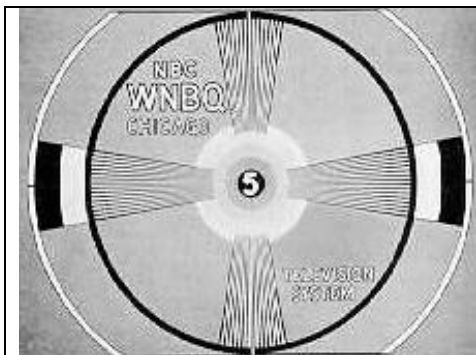
Please let us know what you think about all this. If you have any questions or problems, send an e-mail to: [webmaster@tech-notes.TV](mailto:webmaster@tech-notes.TV) with your issue. Thanks.

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**This edition's featured television station - keeping history alive!**

**W9XAP – WMAQ Chicago**

Edited by: Larry Bloomfield



Television first started in Chicago in August 1930 with an experimental transmitter, [W9XAP](#). The wavering 45-line picture featured such established radio stars as Sportscaster Hal Totten and Irene Wicker. In the late 1940s, part of Chicago's WMAQ's radio studios was converted for television. Originally, the station's call letters were WNBQ, but they were changed to WNBQ in 1948. The first telecast aired (October 8, 1948) on WNBQ was the World Series, and the first commercial programs aired on January 7, 1949. It was not until August 1964 that the call letters were changed to those presently used, WMAQ.



In 1968, WMAQ-TV, Channel 5, said they were the World's first all Color Television Station. What a contrast in Chicago, when it comes to today's digital transition.

Rich Samuels has some interesting things about the history of both WMAQ radio and television on his site at: <http://www.richsamuels.com/nbcm/wmaq/contents.html>. You can also see other interesting events in WMAQ-TV's history at: <http://www.chicagotelevision.com/>. Not surprising, WMAQ-TV's home page doesn't really celebrate their history.



Subject: **TV Tower To Be Built In Times Square**  
By Larry Bloomfield

According to a News cable service based in New York City, a new television tower could soon be built in Times Square as a backup for station that lost their antennas in the 9/11 terrorist attacks.

According to NY1, the Durst Organization is planning to build a 358-foot tower on top of the Conde Nast building at 4 Times Square. The tower will primarily serve as a backup for television stations whose main antenna atop the World Trade Center were destroyed.

For more information and a video, visit:

<http://www.ny1.com/ny/TopStories/SubTopic/index.html?topicintid=1&subtopicintid=1&contentintid=25543>

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Subject: **Panasonic Wins Technical Emmy for Vericam HD Cinema Camera**

From: Jeff Samuels, Panasonic [samuelsj@panasonic.com](mailto:samuelsj@panasonic.com)



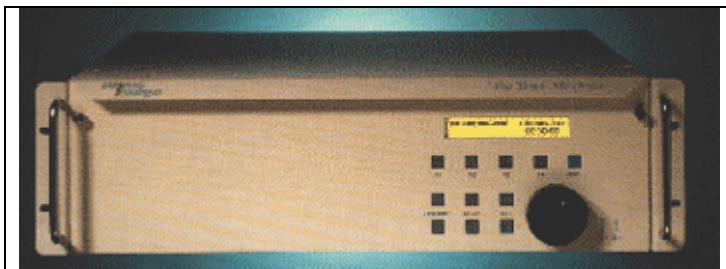
The National Academy of Television Arts and Sciences (NATAS) has presented Matsushita Electric Industrial Co., Ltd (Panasonic) with a Technical Emmy Award for its development of the AJ-HDC27 VariCam HD Cinema Camera. The variable-frame rate progressive-scan video camera emulates film's under- and over-cranking techniques, producing film-like images but with the convenience and cost of digital video. VariCam is used extensively in the production of independent movies, television programming, documentaries, commercials and corporate projects.

For more information, visit: <http://www.panasonic.com/PBDS>

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Subject: **NBC Upset Over Compression of Programs**

From: A story that ran in Broadcasting & Cable with comments by Larry Bloomfield



Use of Prime Image Inc.'s "Time Machine" can imperceptibly control the speed of programming and allow a station or network to add commercials.

Compression is one thing in digital television, but when it is done to programs to squeeze an extra 30 seconds or so of commercial time in, it's not considered kosher! NBC recently said that it was in talks with Meredith Corp. about resolving charges that Meredith's WSMV-TV Nashville, Tenn., used compression technology to add extra commercial spots during network prime time, in violation of its affiliation agreement.

This might come as a wakeup call, but this kind of thing is happening far more regularly than they might think. During the Taste of NAB Road Show, I actually saw the equipment in a number of stations that do this kind of thing. This all came to light when NBC executive vice president for affiliate relations John Damiano announced that the station had added a 30-second spot to the Oct. 2 West Wing.

The whistle blower in this story is Nashville journalist Jeremy Heidt, who had informally probed the station's practices. Prior to the resolution talks, NBC had planned to investigate other recent network airings over WSMV-TV through monitoring services. Heidt supplied Damiano with videotapes that nailed WSMV-TV's actions.

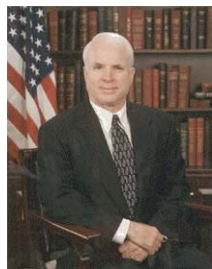
Meredith group president Kevin O'Brien -- denied or pleaded ignorance to use of programming compression in Nashville or at other stations. O'Brien made clear his intent to use the compression machines to add commercial spots for revenue gain, despite resistance from station management. Sources confirmed that at least some machines were purchased by the group and delivered to stations, but that did not necessarily mean the machines had been used.

Ah come on now folks; what's wrong with forcing your audience to sit through just one or two more spots; especially the political ones. We don't get to see enough of them and they're so informative. There's even a move afoot to have the best political ads run though out the year. Wouldn't that be nice? Yuck! Pass the Maalox.



Subject: **McCain Introduces New Legislation For Political Advertising**

By: Jim Mendrala



Senator McCain has introduced a bill requiring broadcasters to provide free airtime for candidates in federal elections. The proposed legislation requires broadcasters to provide a minimum of two hours of airtime per week during the six weeks preceding a federal election for candidate centered issues. The bill would impose a spectrum tax on broadcasters to fund political candidates and parties wishing to air political ads on broadcast stations. The McCain bill is similar to the Torricelli amendment proposed for the campaign finance reform law enacted earlier this year. Congress rejected the Torricelli amendment. It is unlikely that

Congress will consider this bill given that this Congress must adjourn by year's end.



Subject: **Super High Definition Digital Video over Internet2**

By Fred Lawrence

Contact: Richard Weinberg [weinberg@usc.edu](mailto:weinberg@usc.edu)



According to recent press release, NTT Network Innovation Laboratories has demonstrated a super high definition digital video bit stream originating from an NTT server at the Electronic Visualization Lab (EVL) at the University of Illinois at Chicago, is being transmitted via StarLight, through Internet2's Abilene backbone network and projected at the Zemeckis Center at the University of Southern California's School of Cinema—Television on a large-venue LCD projector, utilizing MRV Communications OptiSwitch 1000 series switches. Each frame contains 8 megapixels, and at 24 frames per second, an average of 300 megabits per second is required for the compressed transmission format. By using Internet2 high-performance networks, it is hoped to demonstrate the potential for super high-performance imaging and visualization applications over very high-speed networks.

For additional information, visit: <http://www.onlab.ntt.co.jp/en/mn/index.html>

**(EdNote:** *Isn't this neat! We can't even get digital television off the ground here and they're coming up with super HD. Perhaps film makers should take note and stop trying to say HDTV is good enough.*)



Subject: **Robert Hammett**

Courtesy of CGC Communicator

It is with deepest regrets that we pass on the information of Robert L. Hammett, P.E., founder of Hammett & Edison, Inc., Consulting Engineers' passing. He died peacefully on October 11 at age 82. Bob is remembered for his sharp mind, quiet wit, high ethics, and gracious manner. He will be missed by many.

Visit: <http://www.bext.com/CGC/> Click on "Additional Postings" Click on story: "Robert Hammett Passes Away at the Age of 82"



Subject: **John Klecker**

From: Dielectric

Dielectric regrets to announce that John Klecker passed away on October 19, 2002 in Phoenix, Arizona following the SBE National show. John joined the sales staff of Dielectric in 1997.... [and] was a familiar face in the broadcast industry, having spent over 25 years in sales positions in the top broadcast companies

in the U.S.

For those interested in receiving details when they become available, please e-mail Sally Rich at [sally.rich@dielectric.spx.com](mailto:sally.rich@dielectric.spx.com)



Subject: **Fluke Digital Multimeter Recall**  
From: Fluke Corp.



In cooperation with the U.S. Consumer Product Safety Commission, Fluke Corp. is recalling about 40,000 digital multimeters, 17,200 of which were sold in the U.S. The recalled units take longer than normal, up to 18 seconds, to display readings of AC voltages above 500 volts. Users can misinterpret the delayed reading to mean that high voltage is not present. Some meters with model numbers 175, 177 and 179 are affected.

See the following website for specific information:  
[http://www.fluke.com/rma/170\\_notice.asp?locale=usen&region=r4](http://www.fluke.com/rma/170_notice.asp?locale=usen&region=r4)



Subject: **FCC Adopts IBOC Standard for Terrestrial Radio**  
By: Jim Mendrala

The FCC has selected iBiquity IBOC's system as the standard for digital technology for AM and FM broadcasters and authorized immediate interim FM and daytime AM IBOC operation. The FCC believes that IBOC will offer better audio quality and minimal impact on the present broadcast service. The FCC deferred authorizing nighttime use of AM IBOC until further testing is completed, because of uncertainty about interference to adjacent AM radio stations under nighttime conditions. Broadcasters may commence IBOC operation immediately, first through the FCC granting a request for special temporary authority, and then later by a streamlined notification process. IBOC permits the use of digital quality sound in the present frequency band use for AM and FM broadcasters.

For more information, go to: [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/FCC-02-286A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-02-286A1.pdf)



Subject: **Intertainer Ceases Operations**  
By Fred Lawrence

Intertainer, the dominant player in the Internet video-on-demand ("VOD") arena, has ceased operations. Intertainer claims the company is no longer able to operate because of alleged price fixing and unfair competition by the major studios. Last month, Intertainer filed a lawsuit against AOL Time Warner, Sony, Vivendi Universal and Movielink, the online VOD joint venture the three companies plan to launch with

MGM and Paramount, alleging unfair practices. Intertainer claims that it has ceased operations only temporarily, until its lawsuit against the studios is resolved. It is unlikely that Intertainer will resume operations, however, as the studios will be reluctant to provide content to a company that filed a lawsuit against them. Intertainer claims to have signed 147,000 subscribers.

For more information, go to: <http://www.intertainer.com/>

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Subject: **Music Royalty Payments Due**

By: Jim Mendrala

Sunday, October 20, 2002 marked the deadline for webcasters to make copyright royalty payments for streaming music over the Internet. Royalty payments are now due for any copyrighted music streamed over the Internet since 1998 by webcasters, when Congress passed a law requiring webcasters to pay such royalties. Congress failed last week to pass the Small Webcaster Amendments Act of 2002, which would have reduced music licensing fees for small webcasters. The proposed legislation would permit smaller webcasters to calculate payments based upon how much the webcasters earn or spend instead of on the number of persons listening to the webcast, which could represent a significant reduction in annual copyright payments for small webcasters. In the interim, the recording industry and performance artists have granted smaller webcasters an extension on copyright royalty payments. Under the extension, smaller webcasters who would qualify under the Small Webcasters Amendments Act can avoid the per-performance fee and instead may pay a \$500 annual fee, starting October 21, for each year or part of a year they have been steaming music since 1998. The minimum payment would be \$2,500 per webcaster. The payment of this annual fee does not exempt small webcasters from higher royalty payments in the event the Small Webcasters Amendments Act is not passed by Congress.

For more information, go to: <http://thomas.loc.gov/cgi-bin/query/C?c107:./temp/~c107aBWakT>

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Subject: **Powell: DTV Transition On Track**

From: Skyreport



Federal Communications Commission Chairman Michael Powell pondered the question whether the digital TV transition is better off today than it was a year ago, and he recently concluded that "the answer is a resounding yes."

Powell, who has been aggressively pushing the DTV transition this year, made that statement at the Association for Maximum Television's DTV Update Conference. While saying the DTV transition is back on track, he admitted that it will take time before digital TV's impact is fully felt by viewers.

"Consumers, too, are beginning to embrace the digital television," Powell said. "I have no doubt that we have a major consumer education effort in front of us. But I also think that when the pieces of a transition come together – as they are now doing – that can happen quickly."

Powell gave kudos to cable and satellite TV for their digital TV efforts, and pointed out that the largest cable operators are using their digital technology to provide high-definition television.

However, Powell said TV manufacturers must retool for digital. "It's both a major challenge and a huge opportunity for the CE industry," he said. "Given the highly competitive nature of the industry, I have every confidence that they will be successful."

He said the final link in the DTV transition chain will be the retail business. "Retailers must train their staffs and redesign their space to sell digital," Powell said. "And they must find a way to get HD content onto the sets on the display floor. If a consumer is shopping for a high-definition set, he should be able to see high-definition content.

"DVDs are good, but they're not HD."



**Subject: Berman To Reintroduce And Modify P2P Bill In Next Congress**

By: Jim Mendrala

Staff counsel for Congressman Howard Berman has announced that the



Congressman plans to redraft and reintroduce a bill to permit copyright holders to engage in self-help measures to stop unlawful peer-to-peer ("P2P") file sharing. Introduced in July, H.R. 5211 (the "P2P Piracy Prevention Act") would give giving copyright holders immunity from liability under the anti-hacking laws for interfering with transmission of copyrighted material over P2P networks. The revisions would include narrowing the definition of "P2P network," providing safeguards for corporate networks, and protecting e-mail access. The bill would be introduced in the 108th Congress, which convenes early next year.

For information about the current bill (H.R. 5211), see:

<http://rs9.loc.gov/cgi-bin/bdquery/z?d107:h.r.05211>:



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Subject: **Oak Technology Completes Acquisition of TeraLogic, Inc.**

By: Larry Bloomfield



Oak Technology, Inc., recently announced that the company has completed the acquisition of privately held TeraLogic, Inc., a leading developer of video/audio processing hardware and software for digital home entertainment platforms. The operations of TeraLogic will be merged with Oak's existing operations to form Oak's TeraLogic Group, focused on consumer entertainment.

For more information on this, visit: <http://www.oaktech.com/>

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Subject: **Tauzin's DTV deadline bill still has life**

By: Larry Bloomfield



An on again/off again bill that proposes to force broadcasters to switch to digital TV at the end of 2006, whether consumers are ready for it or not isn't dead- despite the assurances to the contrary from broadcast industry lobbyists.

That was the word from a top aide to Rep. Billy Tauzin, R-La., the author of the measure.

"Billy has not made any final decisions about what will be included in the bill yet," said Ken Johnson, the lawmaker's spokesman.

But to the dismay of broadcasters, Rep. Tauzin recently unveiled legislation that would set a firm 2006 deadline for the spectrum's return.

The consensus among top industry lobbyists, however, is that in the wake of the broadcast industry's lobbying initiative on the issue Rep. Tauzin lacks the votes needed to make the provision a reality.

According to one industry source, "If broadcasters get their back up about something, they can make a lot of things happen in this town," one industry source said.



Subject: **Typical GM Compensation: \$252,000**

By Fred Lawrence



The average general manager in commercial radio received a quarter-million dollars in compensation in 2001, according to the NAB's annual salary survey. The average base salary for GMs was \$186,783. With bonuses and incentives included, the average was \$252,191.

Some other notable job categories: Chief engineers averaged \$67,842 in compensation; general sales managers averaged about \$157,000; program directors averaged about \$102,000; news directors averaged \$53,434; typical promotions assistants got \$28,460.

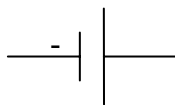
Salaries varied widely by region and market size; and in some cases the median average differs widely. For instance, the highest-paid morning talent in the survey made \$1.5 million, substantially contributing to the average of \$120,136 for that time slot. The median morning talent package, however, was only \$65,000; an equal number of people had compensation above and below that point.

The report "Radio Station Salaries: 2002" provides averages for major job categories and breaks down the data by market size, station revenue and formats. The report can be purchased by calling (800) 368-5644.



Subject: **New material charges up lithium-ion battery**

From: Jessica Gorman



A metal-spiced mineral may lead to cheaper batteries for cellular phones and laptop computers. The new material, which researchers would use to make lithium-ion batteries' positive electrodes, should also be safe enough for building large, lightweight batteries for power-hungry hybrid electric vehicles and power tools.

Lithium-ion batteries, first introduced by Sony over a decade ago, are now widely used as convenient,

lightweight, and rechargeable power sources for cell phones, laptops, and some other gadgets. But the batteries' positive electrode, or cathode, is typically made of lithium cobalt oxide, which is expensive and requires electronic circuitry to keep devices from overheating when charged (SN: 12/16/00, p. 399). This risk also limits the size of the batteries.

In 1997, researchers at the University of Texas in Austin proposed a new cathode material, lithium iron phosphate, which is cheaper and safer than lithium cobalt oxide. Yet lithium iron phosphate has had one big problem: low electronic conductivity.

Now, Yet-Ming Chiang and his coworkers at the Massachusetts Institute of Technology have spiced lithium iron phosphate with small amounts of metal ions—such as aluminum, niobium, and zirconium—in a process called doping. The doped materials' electronic conductivity is 10 million times that of unaltered lithium iron phosphate, putting them on par with conventional cathode materials, says Chiang. He and his colleagues report their findings in the October *Nature Materials*.

"The conductivity increase that they see is remarkable," comments Linda F. Nazar of the University of Waterloo in Ontario. "There's no other word for it."

When Chiang recently presented the work to other scientists working on lithium-ion batteries, "it was, you know, 'Wow,'" reports Ralph Brodd of Broddarp of Nevada, a battery-consulting company in Henderson, Nev. Cathodes made of the new material could drop the price of small lithium-ion batteries, says electrochemist George Blomgren of Blomgren Consulting Services in Lakewood, Ohio.

Moreover, the development of a safer cathode material may solve problems that researchers have encountered while working to manufacture large lithium-ion batteries, Blomgren says. These would replace the heavier nickel-metal hydride ones typically used in hybrid electric vehicles.

The performance and safety of the new cathode material are "the kinds of things you need to make a good, low-cost battery," adds Brodd.

The material now needs some technical fine-tuning before it can be incorporated into batteries for testing. But if further development goes well, batteries using the new cathode material could become available within 2 to 3 years, says Chiang.



Subject: **Congressman seeks to impede DTV transition**

By: Larry Bloomfield

There's little question in broadcaster's minds that the success of over the air digital television lays in one of several moves necessary for its success: Tuners in TV sets to receive the signal, to name just one. The FCC mandate requiring set manufacturers to include a digital tuner in new TV sets is viewed by some as a "Tuner Tax." In an effort to cut the FCC off at the pass, Rep. F. James Sensenbrenner (R-WI) has introduced legislation that seeks to overturn the FCC's August DTV tuner mandate



The bill, H.R. 5685, also known as the "TV Consumer Choice Act" was introduced just prior to the end of the Congressional session, but Sensenbrenner says he will continue to pursue his quest to end what he calls a TV "tax" if re-elected.

The FCC's reasoning for the DTV tuner mandate is so TV receivers will be compatible for the 2007 migration. However, according to the Consumer Electronics Association (CEA), the mandate - which requires digital tuners in TV sets 36-inches or larger by July 2004 (and in all sizes larger than 13 inches in the ensuing years) will increase the cost of the average TV by \$250.

Sensenbrenner says: "The result of the FCC's mandate is comparable to requiring viewers to purchase an expensive antenna when they already have cable." Believing the CEA propaganda, Sensenbrenner continued, "When you consider the \$250 added cost to future TVs, along with the projection that less than 13 percent of consumers will use this device, the FCC mandate is unacceptable."

Like speaking out of both sides of his mouth, Sensenbrenner explains that he supports the switch to digital, but feels the tuners should not be forced upon the public and that \$250 can go a long way in his home state of Wisconsin and says he can think of better ways to spend it than on a piece of equipment that most of us are unlikely to use.

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Subject: **ENG Safety**

From: R.E. Goldy, Brigadier - Order of the Iron Test Pattern

Recently several questions were posed to a number of broadcast engineers in the Huston, TX area about feeling more or less safe when doing transmitter work, especially at night? Is your GM sensitive to the issues involved? Does he give you grief about money to clear the tower site, or is landscaping a place where they prefer to cut the budget? Some of the responses were not what we had expected.

An ENG operator at KRIV said that he had recently been accosted and robbed on a site after a night shoot.

Three guys shoved him around and stole a Sony monitor. He started to chase them, but thought better of it. He did not indicate what part of town he was in, and I am not sure that makes a whole lot of difference in the possibility of this type of thing happening.

The stuff in that truck belongs to the company, not to you. If someone wants it bad enough to steal it, give it to them. You are a trained observer. Observe, remember: survive. No Sony monitor or camera or ENG

truck is worth getting hurt for. On the other side, where was the rest of the crew?  
How come he had been left alone to tear down?

Think about it. Your security and safety are paramount factors even when you are trying to get “the story.” We all must try to watch out for each other when we are out there. Check on the guy in the next truck before you just drive away. It won't hurt to sit there an extra minute or so while he finishes packing up.

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Subject; **New CC&R Bill Cosponsors Continue To Step Forward**  
From: ARRL

Despite the fact that action on the CC&R bill, HR 4720, is highly unlikely as the current session of Congress winds down, additional cosponsors continue to register their support for the measure. The latest--representatives



raise the total cosponsor count to 34.

The recent spurt in cosponsors may have resulted from an eleventh-hour initiative in late September, when the bill's sponsor,



, and the only two amateurs in the US House of Representatives



appealed by letter to their colleagues who had not already done so to agree to cosponsor the measure.

HR 4720 is aimed at providing relief to amateurs faced with private deed covenants, conditions and restrictions--CC&Rs--in erecting antennas. No more votes will occur until a post-election "lame duck" session that begins November 12 to complete several appropriations, homeland security and other high-profile bills. Another lame duck session in December also is possible.

With further progress on the bill unlikely this year, the effort to secure a congressional solution to the CC&R issue will start all over again after the new Congress convenes in January. The current list of HR 4720 cosponsors and more information are available on the HR 4720, The Amateur Radio Emergency Communications Consistency Act of 2002 page of the ARRL Web site <http://www.arrl.org/govrelations/hr4720> .

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Subject: **It's all over but the wound-licking for EchoStar**  
 By: Larry Bloomfield



With what must have seemed like the whole of Washington, DC mustering forces against them, EchoStar/Dish and Hughes/DirecTV have folded up their tent with respect to the merger issue.

In response to the announcement by U.S. Department of Justice and State Attorneys General, EchoStar Chairman and CEO, Charles Ergen, issued the following statement:

"I would like to personally thank all those, including our customers, consumers, legislators, employees and numerous others, who during the past year have supported this historic merger proposal. We also thank the regulatory officials at the Department of Justice, FCC and the states who worked diligently to analyze this

complex merger and gave us the opportunity to express our views. We continue to believe passionately that the merger of EchoStar and Hughes is the best chance to stop rising cable prices and to bring enhanced services to all Americans, especially those consumers living in rural America.

We are obviously disappointed that at this time we have not been able to convince regulatory officials to share our vision. EchoStar will continue to explore all possible means to be allowed to compete against the cable giants and for more choice for all consumers.”

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**Subject: Powell Discusses Future Of Spectrum Policy.**  
**From: Skyreport**



At a recent conference at the University of Colorado at Boulder, FCC Chairman Michael Powell previewed the upcoming Spectrum Policy Task Force Report, which will be the guideline for the reform of the FCC's spectrum policy. Powell's comments reflect a shift to a more market-oriented approach to spectrum policy and his desire to have "scarcity no longer be the lodestar by which we guide the spectrum ship of state." Powell pointed out that the FCC's rules have historically paid little heed to receiver standards. Based on the ability of emerging receiver technology to sense and compensate to reduce interference, standards governing receivers will become more important over time. Powell also confirmed that the FCC is shifting to a more market-oriented approach to spectrum policy. For example, Powell stressed the need to give licensees flexibility in their own use of spectrum and to create a secondary market for underutilized spectrum. Powell signaled that the FCC intends to make more spectrum available for licensed and unlicensed use.

For more information go to:

[http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-227944A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-227944A1.pdf)

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Letters to the Editor

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From: Robert N. Vendeland [RNVendeland@cox.net](mailto:RNVendeland@cox.net) (Founding father of the Order of the Iron Test Pattern)  
RE: Tech-Notes

This is a letter to the editor of Tech Notes, HTML Division

The opinions expressed in this letter to the editor are entirely my own and are not to be construed.

Your new Tech-Notes are great in appearance and even in content, especially the part about checking out the OITP web site at <http://www.oitp.org/>.

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From: **Rick at RAF Consulting**

RE: Tech-Notes website (<http://www.tech-notes.tv/>)

Great looking web site. One of the best I have seen.

. Hope everything is going well

. Have a great week

Thanks Rick

<http://www.raf-consulting.com/>

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From: **Gene Batey, SMPTE Ohio Sec./Treas.**

RE: Taste of NAB Road Show.

Some of the photos you took(and sent me on CD)at the Cleveland, Ohio SMPTE/SBE meeting last June 11th, have been published in "Section Meetings" on page 430, of the current SMPTE Journal.(October 2002) Under Ohio, The fifth sentence of the first paragraph has a copy error, which has been reported to the SMPTE Headquarters editor. They have that sentence beginning with Rickly's name instead of yours, so that correction hopefully will appear in the next edition of the Journal. As you will see, the photos came out good. Thanks for your efforts on this meeting! I've received a lot of very favorable comments on it.

Our plans for future SMPTE Ohio section meetings will include topics related to the overall DTV transition, possibly with a guest speaker from the A.T.S.C. reviewing the many ancillary features offered in their DTV signal standards such as, Multi-casting, Directed Channel Change(DCC), Data casting, etc.

Thanks, and please let me know when you'll be in this area for another presentation.

Gene Batey, SMPTE Ohio Sec./Treas.

*(EdNote: The Taste of NAB 2003 Road Show is a possibility. We learned a considerable amount on what and how to do this kind of thing during our 31 venue 14,000 mile jaunt across this great land of ours. As the result of encouragement from letters like these and a number of telephone calls, it just might happen again. We've already gotten commitments for next year from several of this year's sponsors. These are the folks who made it all possible. If we can interest the local SBE and SMPTE folks in the areas we'd like to cover, standby – we'll be seeing you again.)*





From: **Dave Knight, Assoc. Dir. Technology Development**

I thoroughly enjoyed the article by Robert W. Lucky! He was bang-on. But, it's interesting that an engineering guy can write in as "deep" a manner as this...usually they are not so "artsy".

Good work!

### Features



Subject: **Some of My Observations**

By: Burt I. Weiner [biwa@earthlink.net](mailto:biwa@earthlink.net)

Recently I wrote about TV audio levels that appeared to be all over the place. Since that time I have gotten the feeling that the TV's are out to get even with me. I have noticed that the situation seems to have gotten even worse. So I have to ask myself: "Is this for real or is it my hearing?".

I have the ability right here in my little laboratory to look at what is happening. I have a tunable modulation monitoring device with which I can look at absolute modulation deviation. Considering only the main channel modulation of +/- 25 KHz deviation I used that for my reference. At the same time I watched an audio phase scope just to be sure that I wasn't being misled by the teeter-totter effect of the L+R to L-R. All of my observations were during "straight line" mono. Pre-emphasis was also taken into consideration by looking at the audio after de-emphasis.

So I picked one of the networks and watched for a while. On one program I consistently saw a conversation between two individuals where one was deviating the transmitter about 4 KHz peak and the other one was about 22 KHz Peak. This went back and forth for a while. There was another point where two people were talking softly to one another and the deviation was about 2 KHz for almost a minute. From these two that were talking softly they went to a commercial that deviated right up to +/- 25 KHz. This seems to be happening on all stations to some degree.

Some years ago when I was working (a horrible thought) for one of the local TV stations we installed new audio processing in place of an old device that really had died and not been noticed. With the new equipment we were able to keep the modulation up to a comfortable consistency. We were not over processing and we certainly were not into a loudness war. We were after "comfortable" listening. We believed that we accomplished that. However, one of the nighttime audio people complained that it had taken away his "artistic magic". He now had to run the audio at -10 on the board so that he could control the dynamics in the news!

Now, I'm a believer in audio being as important as the sound and dynamics playing an important part of a dramatic situation. I also know that controlling audio levels is difficult. At the same time I know that it is possible to process in such a way as to make it not apparent. But again, I have to ask the question: Is anyone in control paying attention? And, does the average TV viewing environment support a wide dynamic audio range"

Maybe what we need is someone sitting in an average room with a volume control that is actually between the studio output and the transmitter and let them turn it up and down. Not an artsy craftsmy type person but a real person that just wants to watch TV and hear the dialog without missing big chunks and then being blown away by a commercial.

How many people do you know that turn the audio off and just watch the picture? How many people do you know that listen to the audio while doing other stuff? The actual off-air audio needs to get more attention from the sending end than it seems to be getting.

Burt Weiner



Subject: About Digital Television Pictures

By: Frank Eory [Frank.Eory@motorola.com](mailto:Frank.Eory@motorola.com)

Apparently most consumers find SDTV to be just a slightly better version of S-Video NTSC. SDTV monitors compete directly with NTSC sets/monitors and cannot command much of a price delta.

EDTV (480p) commands a more substantial price delta over NTSC, but the general perception of 480p in the market is somewhere between "really good NTSC" and "poor man's HDTV." 480p displays are a niche that has not been properly marketed, IMHO.

Personally, I find the difference to be quite striking when the 480p monitor is displaying a progressive DVD source or properly decimated 1080i or 720p HD material.

It's not about actual video quality; it's about the numbers game. At the retail level, DTV = HDTV, and there really is no such thing as digital SDTV or EDTV – at least they are not being marketed that way. Something that only displays 480 lines is close to the (NTSC) low-end of the price spectrum. If it displays 1080 lines, well, that's the biggest number and can truly be labeled "HDTV" -- even if it has a huge dot pitch and an effective resolution no better than a good 480p display. The numbers game means that a 1080i display can be margined up quite a bit compared to its smaller-number siblings. The numbers game doesn't bode well for 720p either, since it costs more than 1080i and is, after all, a smaller number. Higher cost, less "big number" appeal, lower margins and thus, less retailer interest.

We once believed that affordable EDTV sets in the 27" to sub-40" range could really take off. If consumers saw side-by-side comparisons of an NTSC set, a 480p set displaying decimated HD material and a 1080i HD set displaying the same material, it would be a no-brainer. The 480p set would have a modest price adder relative to the NTSC set, whereas the HD set would be dramatically more expensive. And in those screen sizes, most consumers would say of the 480p set, "it looks like HDTV to me." But consumers never got to see that side-by-side comparison, and my guess is that they never will. -- Frank



(This is a very old picture)

Subject: **Digital Cinema Update**

By: Jim Mendrala

## A NEW DIGITAL CINEMA CAMERA IS IN THE WORKS

Digital Cinema in the future will be the future of moviemaking. Today the electronic cameras being touted as digital cinema cameras are basically only HDTV cameras running at 24 progressive frames per second. But most digital cinema presentations, so far, are films scanned at less than HDTV and scaled to HDTV resolution. Some presentations are "down rezed" from computer files consequently most film makers have been quoted as saying "As good as digital cinema is today it is not good enough". What some cinematographers want is an electronic camera that is an alternative to a traditional film camera. This should not come as a surprise as the motion picture industry has been designing and refining cinematography cameras for over 100 years. All that work though has been concentrated mainly on film cameras.

In the past 10 years some companies such as Sony, Panasonic and Thompson (formerly Philips) and others have tried to build an electronic camera for use in not only HDTV but in digital cinema applications. These cameras have been based on the assumption that HDTV is "good enough" for digital cinema. Only Thompson has tried to go beyond the 1920 x 1080 by designing their "Viper" camera which down rezes the vertical from 4320 lines to 1080 or 720 vertical lines to get rid of aliasing or interline twitter. These images though are only one quarter or less than of the resolution of a standard 35 mm frame.

In order to satisfy today's digital cinema requirements a camera with at least 4K x 2K needs to be developed. Why 8 Mega pixels? Because that is what it will take to just equal the quality of a 35 mm standard academy film negative.

Well a company up in Waterloo, Ontario, Canada is designing such a camera from the ground up. The company is DALSA. Working with a number of distinguished cinematographers and directors of photography the company has designed a digital camera system from the ground up.

The cameras design is free of "videocam baggage" i.e. cameras based on yesterday's broadcast technology with 2/3" format lenses, tiny sensors, inadequate resolutions, problematic depth of field and inaccurate electronic viewfinders. It uses standard cinematography lenses allowing cinematographers to create the depth of field and focus effects that they want.

Unlike HD electronic "digital cinema" cameras, which output images instantly to a small electronic viewfinder with reduced resolution. The camera has an optical viewing system so the camera operator can actually see the full resolution of the image and keep the focus where he wants it. This optical viewfinder has been designed in cooperation with one of the industry's most respected cine equipment manufacturers to give the camera operator the clarity and precision vital to good shots. Electronic viewing is fine for broadcast. But for serious cinematography, cinematographers demand the clarity of an optical system.

The main feature of the camera is the use of a huge, by HDTV standards, film size sensors that offers four times the resolution of a "Hi-Def" camera. One sensor each for the red, green and blue images. The sensors have a resolution of 4,046 x 2,048 pixels. The sensors are actually just slightly larger than a 35 mm full aperture frame. This means that standard film lenses and depth of field tables can be used with similar results.

Not only does the sensor have 35 mm resolution, it also has support circuitry that give it a very high signal to noise ratio. The camera has a very high dynamic range and digitizes the images from the sensors utilizing full 14 bits of image data in each color, resulting in no crushed blacks or washed out highlights. The cinematographer can now concentrate on the art of cinematography and focus and stop worrying about technological limitations.

All this and variable frame rate too. The camera is not limited to a fixed frame rate. If you need a higher frame rate to shoot slow motion or other effects with a slower frame rate the camera can operate from 0 to 60 frames per second, at full resolution and full image quality.

DALSA received a \$1.7 Million investment from Technology Partnerships Canada (TPC). The funds will be used to supplement DALSA's own research investments in the technology and market development for the emerging Digital Cinema industry. DALSA is currently developing the high performance digital camera for image capture of motion pictures, as well as a film digitizer that will convert existing film into a digital format at very high speed using the company's proven sensor technology

DALSA has over 20 years experience in designing, what they consider, the world' best image sensors. They have their own wafer manufacturing facilities and now own the former Philips CCD Image Sensor business.

"Our Digital Cinema initiative will result in the development of several key enabling technologies, the expansion of the technical core competencies of the company as well as the emergence of unique digital imaging products that will lead the transformation of the motion picture industry from film to the digital age." Dr. Savvas Chamberlain, DALSA CEO, continued "The words "Captured in DALSA-Vision" displayed on-

screen in the credits of major motion pictures is our dream." DALSA's Digital Cinema team has progressed well, both technically and in the establishment of a solid business model. DALSA plans on showing this revolutionary "Digital Cinema" camera at the National Association of Broadcasters show in Las Vegas, NV, April 5-10th, 2003.

This camera and their Film Digitizer, along with some of the newer RGB compression systems and XYZ colorimetry algorithms will enable Hollywood Studios to start experimenting digitally and start deliver to the theater movies that will exceed the capabilities of most digital cinema projectors of today. But face it, a downsized 8 Mega pixel image will look much better to those who have to sit closer to the screen than what is now being projected from essentially an HDTV D-5 compressed tape movie. Ideally if the projector manufacturers could match the DALSA chips with their own 8 Mega pixel chips then we would have a one-on-one situation and resolution would not be an issue. All motion picture aspect ratios in use today from 1.66:1, 1.85:1 on up through 2.39:1 would be able to utilize the motion picture screen in most theaters most efficiently and effectively. Motion picture theaters require higher resolution for those who are sitting as close as 1.5 screen heights from the movie screen. HDTV's, 1920 x 1080 is based on the homes viewing distance of 3 screen heights. Most theaters today are projecting only 1280 x 1024 images with their "Black Chip" Digital Cinema projectors. This leaves a good percentage of the audience with less than a good film print quality image in most theaters.

For more information go to: <http://www.dalsa.com/dc/dc.asp>



Subject: **Broadcast / DTV / Pro Video Research News**

From: Des Chaskelson, Research Director, SCRI [des\\_chas@scri.com](mailto:des_chas@scri.com) (<http://www.scri.com/>)

The new [Digital Cinema Survey](http://domino-5.prominic.com/A558AC/dcs.nsf/dc) is now online on Digital Cinema Magazine and related United Entertainment Media websites or can be accessed directly from: <http://domino-5.prominic.com/A558AC/dcs.nsf/dc>. The survey is open to cinematographers, post houses, distributors and exhibitors of digital cinema engaged in one or more of the following phases of the digital cinema process: Acquisition; Postproduction; Distribution; Exhibition. Eligible respondents receive one of the following 100 page+ technology reports -- Digital Cinema; HDTV, MPEG-4, Pro DVD -- \$125 value!

SCRI's [2002-2004 Broadcast/Pro Video Trends Survey](http://domino-5.prominic.com/A558AC/ts.nsf/surv) is now online at: <http://domino-5.prominic.com/A558AC/ts.nsf/surv>. Survey is open to all broadcast and pro video facilities -- respondents receive free access to SCRI's weekly online Insider Reports.

SCRI's 2002-2004 Pro Audio Trends goes online next weeks. The Pro Audio Trends Survey is being conducted in conjunction with DigitalProSound.com and related DigitalMediaNet websites. To review the

questionnaire, contact [des\\_chas@scri.com](mailto:des_chas@scri.com) asap.

SCRI's [2002-2004 Streaming Media Trends Report](#) has been completed and is now available.

SCRI has several other [2002 Reports](#) available ([http://www.scri.com/sc\\_reprt.html](http://www.scri.com/sc_reprt.html) ), including:

- [2002 Pro DVD Usage Trends and Brand Share Report](#)
- [H/DTV Migration 2002-2007 - TV/Cable](#)
- [H/DTV Migration 2002-2007 - Production/Post](#)
- [2002 Digital Media Facility Report](#)
- [2002 Broadcast/Pro Video Product Reports](#)
- [2002 Brand Awareness & Ratings Report](#)

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### Parting Short

By Larry Bloomfield

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Well now! According to a press release from Toshiba RF, one of the funniest things I've seen in a while was when they, in their original release said: "ATSC tuners must be capable of tuning the entire VHF (30MHz to 300MHz) and UHF (300MHz to 3GHz) bands" as well as the "Internet Relay Chat (IRC) and HRC bands." Check it out at <http://www.prnewswire.com/cgi-bin/stories.pl?ACCT=104&STORY=/www/story/10-14-2002/0001818440&EDATE=>

IRC (integrally related carriers) and HRC (harmonically related carriers) are simply channel-shifting plans used in some cable systems to reduce the visibility of interference. In HRC, for example, all picture carriers are multiples of 6 MHz, so beats are also multiples of 6 MHz and fall where a carrier is likely to overwhelm them.

According to our frequent story contributor, Craig Birkmaier, it was bad enough that many publications ran the press release as is, but Electronic Engineering Times went even further: "New-generation tuners must also support Internet relay chat (IRC) and HRC bands. The frequency bandwidth remains the same but the components must have higher sensitivity to capture the QAM-64 signal overlaid on the analog signal" Check it out at: <http://www.eet.com/semi/news/OEG20021018S0029>

As Craig says, "Is it any wonder that consumers are confused?"

NAB, who seems to have better track of these kinds of things than anyone else, tell us that there are now 535 Stations in 154 Markets with over the air DTV signals. This includes nearly 92% of TV Homes who, if they had a DTV set, could possibly receive the new services digital television has to offer. In addition, 46%

of U.S. TV households are in markets where broadcasters are delivering four or more DTV signals.

According the FCC, who doesn't always have the most up to date figures; there are 1712 full power TV stations on the air. Do the math! That's not even a third of the TV stations here in the US, and the clock is ticking. All the head-shaking and teeth-sucking isn't going to make it happen.

Despite all this, I can't help but wonder about the tree falling in the forest: If there is no one there to hear it, does it make a sound. Well if there aren't digitally capable TV sets out there, will it make a difference? It's been a long time since Krell, the guy in the Denver, CO area bought the very first digital TV set.

If all the good citizens of the USA who want to watch TV really listened to the cry from Washington that we need to have the big bucks broadcasters are going to cough up for the returned spectrum, will they run down to their local Montgomery-Wards and buy one? (I know they're out of business, but I don't want to give any retail chain a plug, but you get the picture.)

The transition to digital TV is quite simple: Broadcasters and viewers are both getting screwed by the folks we sent to Washington, DC! There is no question that the digital technology is far better than what we have, but until the American public feels they need to make the change, the transition will continue like a car stuck in the mud.

Once upon a time, as all good bedtime stories should start, our society sat around the Silvertone, Emmerson, Atwater-Kent, etc. and listened to their favorite radio programs. Those were the days when families actually sat at a dinning table and discussed life in general. As we moved forward (notice I didn't say progressed), our broadcast industry gave us television. The dining room table shrunk to the size of a TV try and sisters, brothers, moms and dads began to loose contact with one another. Today it is difficult to find even a TV try.

When color first came out, you had to go to an appliance store if you wanted to see what it was all about. You could stand on the sidewalk and watch your favorite show make the transition form shades of gray to "living color." Today most of the appliance store windows are boarded up for fear of someone doing a crash and dash with the products on display. None the less, few TV homes are without color.

It amazes me the transition that takes place on the aircraft that transport our first term representatives from their homes to Washington, DC. It must be something in the air. Their touch with reality seems to be one of the things that gets left behind; like an uncheck bag. They seem to forget: you can not force anything on an American, be he or she an immigrant, second generation or eighth generation, like myself. We'll adopt DTV in our own time and when the demand is there, broadcasters will shove everything else out of the way to build the infrastructure in their plants to give it to us.

Well that's it for this time, let's go to press!

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