



**HD2 on a Budget**

In eastern North Carolina, Beasley HD2 programmers get creative.

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**Stifling Innovation**

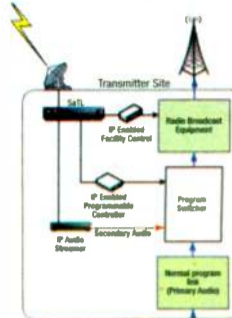
Dave Wilson says the public needs to understand how copy-right law hurts everyone.

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**Safety Net**

Clear Channel's Steve Davis talks about the company's national VSAT 'safety net.'

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# Radio World

\$2.50

The Newspaper for Radio Managers and Engineers

April 8, 2009

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▼ Who will buy the Google Radio Automation business?

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**ENGINEERING**

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▼ Next-gen metadata: Skip Pizzi on the Electronic Program Guide.

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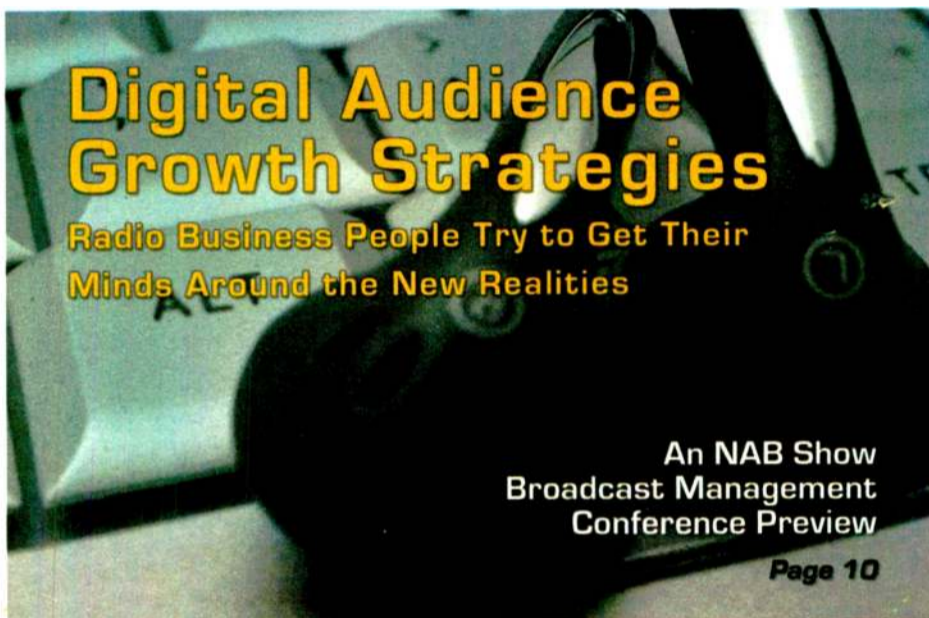
**BUYER'S GUIDE**

▼ USB microphones proliferate.

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NewBay Media



## Television and the Mystique of Channel 6

*Its Appeal to FM Radio Listeners Has Some TV Operators Thinking That It Has a Lot of Life Left*

by James E. O'Neal

In television's rush to digital, one of the tuner positions that's being vacated in droves is Channel 6 (82 to 88 MHz). But for their audiences that have, in the past,

accessed the channel via FM receivers, some broadcasters are taking steps to remain on the radio dial after the transition.

FCC records indicate only a handful of post-transition Channel 6 broadcasters

See CH. 6, page 30 ►

**NEWS ANALYSIS**

## Impact of Google's Exit Is Minimized

*Broadcaster Mistrust, Economic Downturn Hampered the Audio Ads Network Project*

by Randy J. Stine

**MOUNTAIN VIEW, Calif.** Google's announcement that it is exiting the radio ad placement business might have sent nervous chills down the backs of a few radio station executives worried about lost revenue, but industry analysts say the overall impact to radio stations likely will be minimal.

Google's efforts to sell remnant radio inventory dated to its purchase of dMarc Broadcasting, including the latter company's ad insertion and radio automation systems, in 2006.

Analysts said Google unquestionably was hampered by the economic climate for advertising sales but that there were

See GOOGLE, page 5 ►

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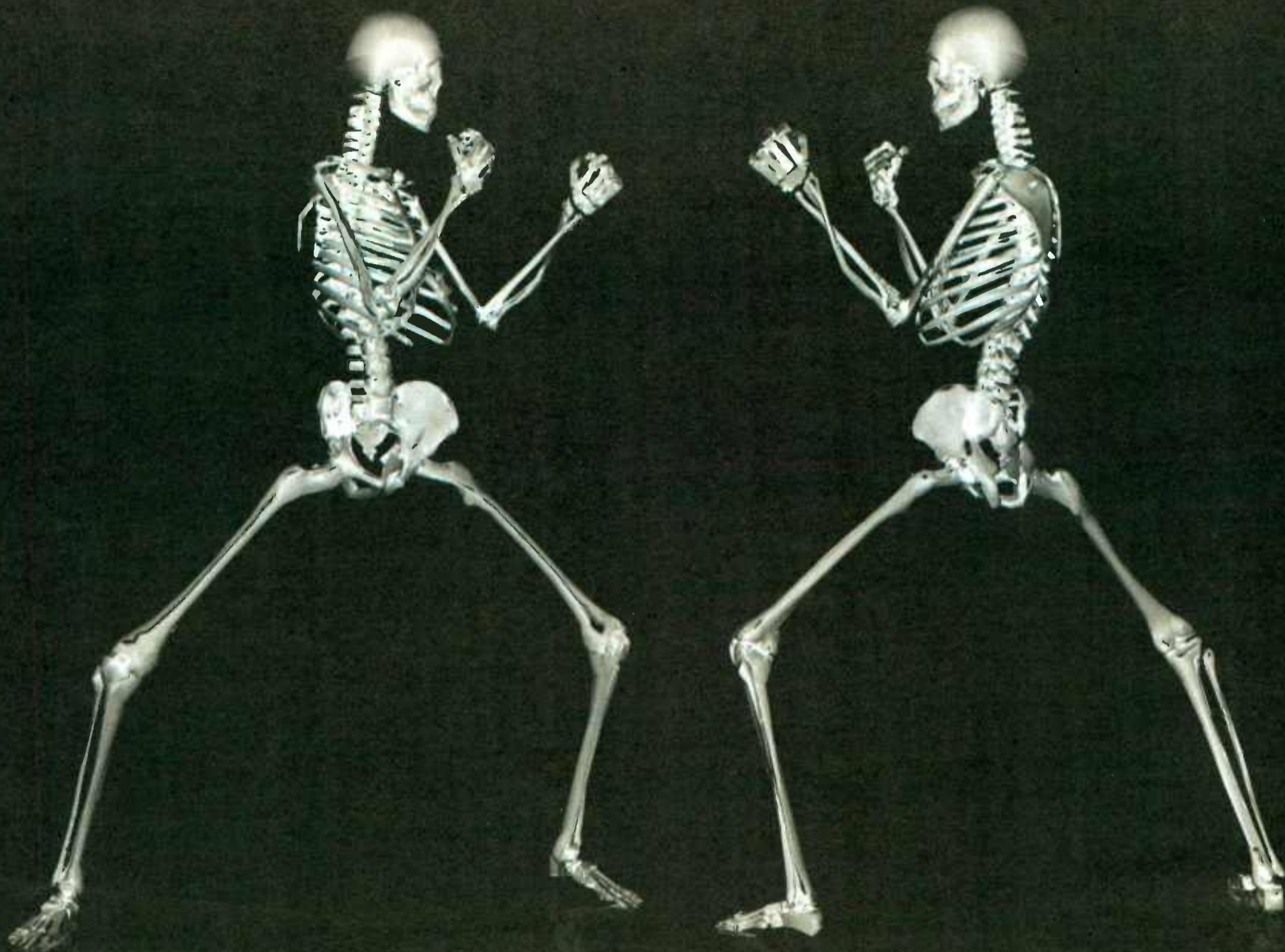
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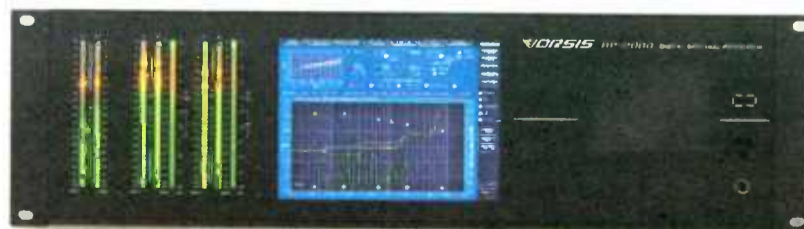
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# 'Practicality' Is Theme for PREC 2009

*Up for Discussion: Moving Digital Audio, Challenges of Increased IBOC Power*

by Leslie Stimson

**LAS VEGAS** This is the first year the Association of Public Radio Engineers is taking the lead role in planning and executing the Public Radio Engineering Conference, after three years of executing those duties jointly with NPR Labs.

The transition was planned to coincide with APRE becoming incorporated as a non-profit organization; it did so last fall. APRE's purpose is education and outreach for non-commercial radio engineers.

PREC sessions will occupy only one day this year, Friday, April 17, to help

make the conference more affordable to non-com stations, many of which have had travel budgets reduced. The event will be held in the Las Vegas Convention Center in Room N232 of the North Hall.

Discounted registration for the full 2009 NAB Show, including the Broadcast Engineering Conference and other conference sessions, was available with PREC registration until March 10. After that date, applications were to be accepted on a space-available basis for an increased fee. Discounted registration for the standalone PREC (including April 18 SBE/Ennes sessions) closed on April 3.

After that date applications would be accepted on a space-available basis at an increased fee.

The SBE/Ennes sessions are on Saturday, April 18, ahead of the NAB show.

Although details of sessions were still being worked out in March, subject areas in the draft agenda included sessions about getting audio to the station and to the transmitter with representatives from APT and Telos/Axia; the consequences of using transmission methods for audio with DTS/Neural Audio; and moving digital audio around the plant with speakers from Wheatstone, Logitek Systems and Telos/Axia.

### Weekend plans

Several updates on HD Radio also are planned.

APRE Vice Chair Dan Mansergh, who is director of engineering of San Francisco's KQED(FM) and a Radio World contributor, said the program includes a transmission session Friday to complement Saturday's Ennes Workshop discussions about an IBOC FM power increase (see RW, March 25). APRE's focus will be on practical, long-term planning issues.

"In particular, the implications of the manufacturers' findings that the two most viable methods of achieving higher digital power with reasonable operating costs are

See PREC, page 5 ▶



Photo by Leslie Stimson

At PREC 2008, panelists discussed proposed elevated FM IBOC power levels; from left, Geoff Mendhall of Harris; Gary Leibisch of Nautel; David Layer of NAB and Ted Lantz of Broadcast Electronics.

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FROM THE EDITOR

# Clear Channel Packs Its Own Chute

Steve Davis Talks About the Company's National VSAT 'Safety Net' for Radio

by Paul J. McLane

Steve Davis, the senior vice president of engineering for Clear Channel Radio, will present a paper during the NAB Show's Broadcast Engineering Conference on the company's new "National VSAT Safety Net." I asked him for details in an e-mail exchange.

*What is a national VSAT safety net?*

This is a satellite-based backup system that connects our studios and tower sites via VSAT (Very Small Aperture Terminal) Ku band uplinks and downlinks, configured so we can send data and audio.

*What prompted this project at Clear Channel and who led the work to implement it?*

The project was prompted primarily by Hurricane Katrina. We had to assemble an "ad hoc" system to get our audio programming out to our tower sites with STL towers and dishes knocked down, and at times needed a backup to our WAN data connection. I led the rollout project, but John Hogan, our CEO, directed us to do something to improve our disaster readiness. Allan Brace and Mike Sanchez were instrumental partners in rolling this out.

*You talk in the session summary about how this was prompted by problems of loss of WAN connectivity, loss of audio and loss of site control. Do such problems happen often? Under what circumstances?*

Just today (March 13) we lost our STL in Ft. Myers, Fla. We were able to stay on the air by using this system.

We lose our land lines (WAN connectivity) from time to time due to "backhoe fade" as well as storms and other larger problems. The cause can be interference, a bad STL transmitter or receiver, a fallen dish or dish blown off aim, loss of power to a switch or CO (in the case of T1s and other land lines), etc.

In our widespread operation we find ourselves falling back on this about once every other week somewhere, for a few hours to a week or more.

*Is this infrastructure layer specifically for backup purposes only? Or does it now provide a new way for the compa-*

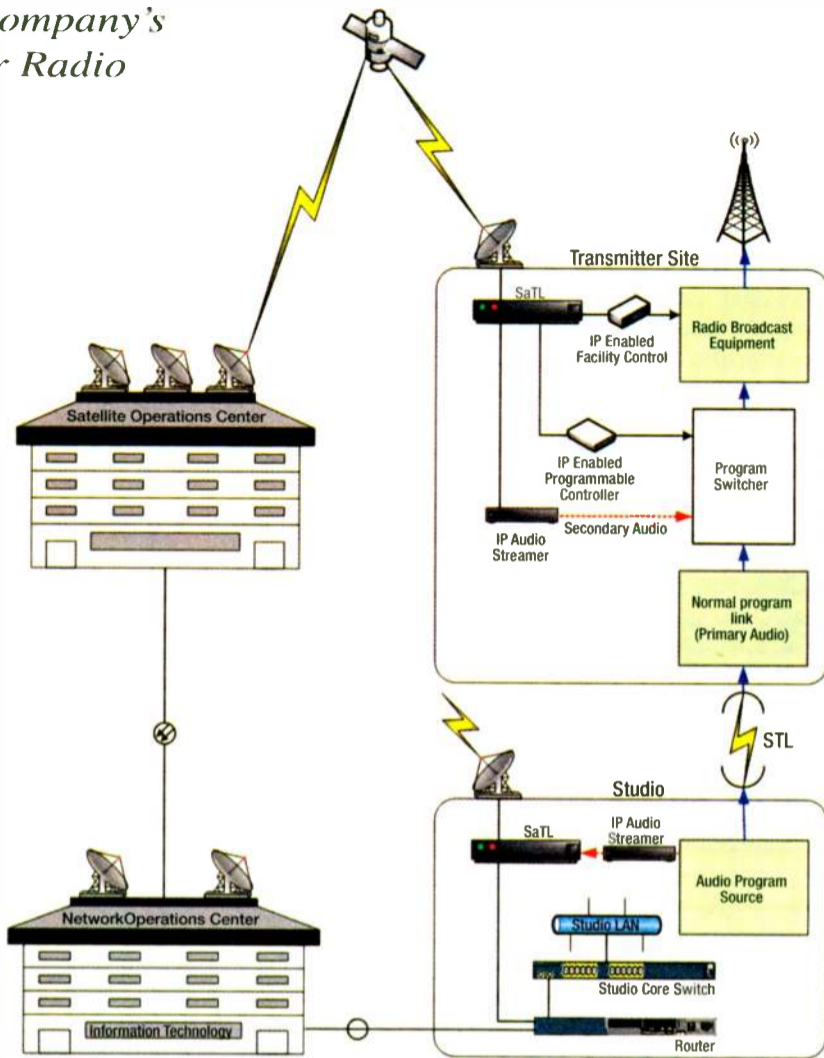


Diagram of the SaTL connection. Steve Davis said, "In our widespread operation we find ourselves falling back on this about once every other week somewhere, for a few hours to a week or more."

*ny to transit data regularly?*

It is for backup/disaster readiness purposes only. The existing land lines and STL systems are usually more efficient in terms of cost for the bandwidth.

*Technically, what was involved in setting this up?*

Setting up the network from the market side consists of mounting and locating a small dish and connecting it to a Satellite Information Terminal, or SIT. On the studio end, this is connected to an encoder so audio can be fed into the system as data; at the transmitter end, the SIT output is con-

nected to a decoder to convert the data back to audio. There is a remote-controllable switcher at each transmitter site that can be commanded over to this backup audio source in lieu of the traditional or even backup delivery channel. The dish is aimed using a Birdog device.

On the national side, we did a study of power and dish size needed for reliability across the U.S. We determined that to get the transmit bandwidth needed for studio WAN connectivity for multiple stations, we'd need a 6 watt BUC (transmitter). At the transmitter sites that are primarily down linking data, only a 2W BUC was needed. Studies showed that a .98 meter dish would work in most of the U.S., with a 1.5 meter dish being needed in certain latitudes. We designed our own switch box controlled by an IP-addressable controller. The studio units are connected to the facility's core switch.

*What did it cost?*

The cost is about \$3,200 per site, depending on specific options.

*If an engineering manager wants to do something similar, any tips or pitfalls to avoid?*

The pitfalls are basically the same as with any satellite installation: You need an unobstructed view of the satellite and a reliable, sturdy mount. More details will be presented in the session.

*What lesson should radio managers take from this experience?*

We haven't learned many lessons from installation of this network per se. Rather, lessons learned from many hurricanes, floods, blackouts, power outages and just plain equipment failures showed us the necessity of having a completely separate, alternate delivery path to maintain connectivity in today's environment, where connectivity is so essential.

Some of our stations rely on land lines, such as T1s, to convey audio to tower sites. It is a terrible feeling to be sitting helpless while the station is off the air! This gives us one way to take control of that situation. In essence we are "packing our own chute."

Davis will speak Wednesday morning, April 22, as part of the "Disaster Preparedness & Public Alerting" presentations.

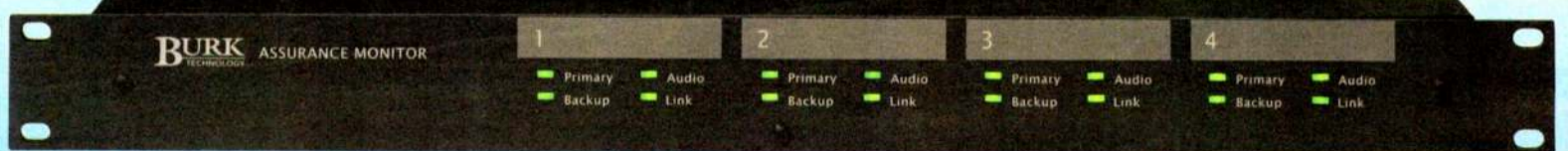
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# Google

► Continued from page 1  
other obstacles.

The company acknowledged it hadn't achieved its goals: "While we've devoted substantial resources to developing these products and learned a lot along the way, we haven't had the impact we hoped for," stated Susan Wojcicki, Google vice president of product management. "We have decided to exit the broadcast radio business and focus our efforts on online streaming. We will phase out the existing Google Audio Ads and AdSense for Audio products."

A Google spokesman further described the move as a "discontinuation of Audio Ads."

The February announcement came just weeks after Google scrapped its newspaper ad program AdWords. The company will trim some 40 jobs from the radio business. It said more than 1,600 radio stations were part of its Audio Ads network at its peak.

Radio stations used the Google Audio Ads platform in most cases to fill remnant inventory, ad time that would have otherwise been left unsold. It's unclear exactly what the revenue split was between Google and broadcasters. Several other companies offer similar third-party ad placement services.

Google will also depart the radio automation business (see page 8).

Google purchased dMarc Broadcasting from founders Ryan and Chad Steelberg during much better economic times. The big company's entry into radio sales made headlines three years ago and was viewed positively by some who thought Google would inject a new revenue stream for broadcasters. Others worried about the impact of a new buying model on ad rates.

The Steelbergs made a lot of money in the sale of their company and stood to make much more if Audio Ads was successful, observers said. In addition to

paying \$102 million in cash for dMarc's assets, Google was obligated to make additional contingent cash payments if certain targets were met through 2009. Potential contingent payments could have totaled \$1.136 billion over that period. It's unclear if any additional payments were ever made.

### Not real inroads

The departure of the Steelbergs less than a year after the Google acquisition

er made tremendous inroads into winning guaranteed inventory from broadcast groups because radio stations feared loss of control over ad rates.

A 2007 agreement with Clear Channel was the biggest announced deal. On 675 of its radio stations, Clear Channel agreed to carry a guaranteed portion of 30-second advertising from Google Audio Ads, or up to about 5 percent of Clear Channel's inventory.

"We understand that, like all compa-

ably about \$100 in January (2009)," said the spokesman.

Greater Media also experimented with dMarc at one of its stations in Detroit but it saw "no value in a long-term commitment," a radio group spokesperson said in March.

### Google re-focuses

Several other Google Audio Ads participants confirmed that earnings from running the Google radio spots had dropped dramatically in the last 12 months. Industry analysts said this coincides with the radio industry's ad sales performance during that period.

Many radio owners struggled with the concept of Google selling more than just remnant inventory and worried the company would turn the radio advertising business into a commodity. Therefore, analysts said, Google never struck enough deals to sell sufficient advertising time over and above remnant inventory.

"Radio operators were never comfortable getting in bed with Google. After three years Google was unable to attract a serious number of radio stations as clients," said Mark Fratrick, vice president, BIA Advisory Services.

Google, which said it will remain in the online streaming advertising business, is refocusing efforts on digital IP radio advertising, meaning the company may still work with traditional radio companies in that forum.

"We still have radio station Web sites in our network and we are exploring

See GOOGLE, page 6 ►

**We're disappointed (Google) is ending the program, but this was only one of the sales innovations we are pursuing.**

— Clear Channel statement

# Google Audio Ads

was viewed as troubling by some analysts at the time. The Steelbergs "stood to gain a significantly greater sum of money had they stayed," said Marci Ryvicker, analyst with Wachovia Capital Markets, in an interview with Radio World when they left in early 2007. "I believe this signals that there are some unexpected difficulties" with Audio Ads.

Chad Steelberg, now chief technical officer with Brand Affinity Technologies, a technology company that offers advertising and media solutions, said, "Despite our departure from Google, Ryan and I are disappointed in Google's announcement of its decision to shut down the audio broadcast division." The Steelbergs declined further comment.

Google said at the time that it would focus on bringing advertisers who traditionally preferred online advertising into radio. But radio analysts say Google nev-

vice president of integrated technologies, will update attendees on the BTC rollout, using RDS and HD Radio to deliver traffic information. He will talk about the value of station participation to encourage attendees to be included in the deployment. Public radio stations are seen to be critical to meeting the BTC's coverage objective as it begins to roll out to mid-size and small markets, according to Mansergh.

Steve Johnston, director of engineering and operations for Wisconsin Public Radio, will discuss how his station handled opposition from environmentalists when it went to replace an aging tower for its flagship station, WHA(AM), Madison, located in a wetland in a nature preserve.

"This dual-use of the property has gone very well for many years so I never expected environmental opposition to the project. But that's what we got — lots of it. My presentation will be about that experience," said Johnston.

The annual engineering dinner takes place Saturday evening. For more information, go to: [www.nprlabs.org/apre](http://www.nprlabs.org/apre).

# PREC

► Continued from page 3

low-level and space combining will be of interest to the large number of stations that are operating high-level or split-level combined systems, and the requirements for isolation for space-combined systems, including a discussion of circulators, will be covered," Mansergh said.

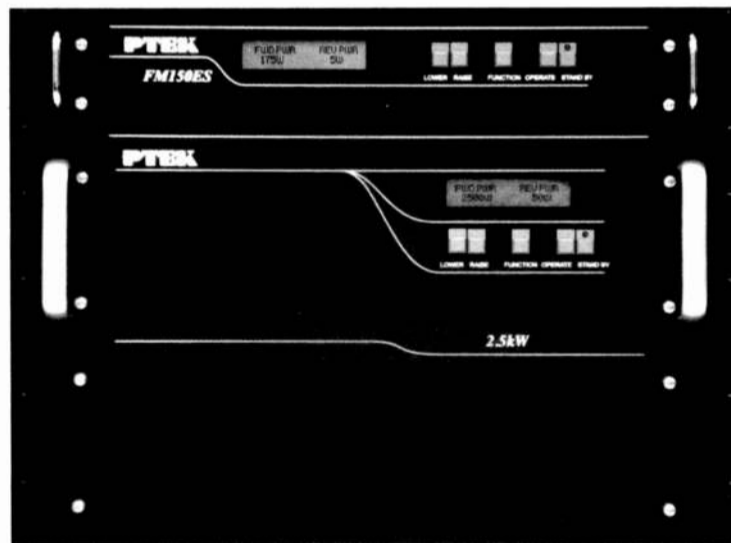
Representatives from Dielectric, Shively, Myat and ERI will take part in the FM IBOC power increase discussion.

Overall, conference planners say they are striving for a focus on practicality this year — how to actually get IP-based digital broadcasting and transport integrated into facilities, how to reduce distribution costs for a station group by delivering HD Radio over satellite, how to avoid problems with multiple audio codecs in the production and air chains, and how to make smart investments in the RF plant given what is now known about IBOC broadcasting.

Paul Brenner, president of the Broadcast Traffic Consortium and Emmis

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# Google

► Continued from page 5  
online audio adds as well," a company spokesman said.

"Remaining in online radio advertising sales while exiting over-the-air radio sales is a tremendous market indicator of where radio broadcasting is moving," Fratrik said.

Another analyst stated, "If the Google whiz-kids can't figure this out, no one could. It's clear radio never embraced third-party selling."

John Sanders, an analyst with Bond & Pecaro, said, "It appears that Google's efforts evolved from being very challenged to catastrophic as the national economy began to sink.

"Actually, given the weakness of the local ad markets, it would seem that stations would have had more remnant advertising inventory to share with Google, so (the failure) probably has more to do with the acceptance of the concept by Google's advertising base."

Sanders doubts many radio broadcasters counted on Google Audio Ads as their

salvation. In fact, he believes more viewed the venture with suspicion.

"Movie theaters do not sell empty seats at the last minute at a cut rate under the theory that the empty seats are for-gone inventory; otherwise full-paying customers would just wait to buy at a discount."

In the end, Sanders said Google's decision to exit radio sales speaks to the severe challenge facing all ad-supported businesses.

"It again emphasizes that the future of the radio industry rests in building market clusters, enhancing localism and utilizing multiple revenue platforms. Those are efforts that could truly build and fortify a revenue base. Certainly more so than just selling remnants at a reduced rate."

At least one radio analyst believes Google's pullout will have minimal impact on most of its radio station clients.

"It will have very little negative impact on most stations, who looked at what little revenue Google generated for them as bonus cash anyway," said Mike Henry, chief executive officer of Paragon Media Strategies. "Google never circumvented the national way companies purchase air time." ●

## Bid4Spots: We're Poised for Growth

**ENCINO, Calif.** Bid4Spots CEO Dave Newmark said the business of selling radio remnant inventory is still a viable business model, despite the struggles of Google with Audio Ads and its decision to leave radio broadcast radio sales this spring.

"I believe Google overreached by trying to move from last-minute inventory to also going after scheduled buys. The result was that stations were reluctant to work with Google. We only deal with last-minute inventory, so stations know they have nothing to fear."

Bid4Spots, founded in 2005, is doing well, according to Newmark, who said the increase in total ad revenue for its station partners in 2008 relies on a "reverse auction" bidding process between stations and advertisers.

"Google's departure doesn't affect us in a big way, because Google never really got much traction in the radio space. For us, it's further validation that we have the business model right. If advertisers are looking for an online mechanism for buying offline media, we're now it."

Newmark described Google's "forward action" model as unappealing to radio broadcasters hoping to hold desirable inventory at higher prices. Instead, Bid4Spots uses a reverse auction that happens every Thursday in a live online bidding session for spots to air the following week.

The bid rates are sealed so stations are not competing against their own rate cards, he said.

"The rates are confidential so it doesn't degrade the value of their inventory. They can bid as low as they wish and it won't hurt them."

Bid4Spots, which has 20 employees working out of its headquarters in Encino, Calif., said in a report last year that in 2008 the weekly auctions were grossing between \$100,000 to \$200,000. Sales are up so far for 2009, Newmark said.



He said another problem Google faced was the demand it put on radio stations to adopt the Google Radio Automation platform in order to participate in Audio Ads.

"I believe stations felt a loss of control and didn't want to adopt the platform. The key is automating what can be automated and leaving the rest alone. The radio industry wants to maintain control of the sales process," Newmark said. "There are certain things a computer can do very well, like allocating last-minute inventory based on specific pricing and audience demographic requirements."

Not all radio broadcast companies were forced to switch to Google Radio Automation in order to participate in Google's Audio Ads. Clear Channel officials said they continued to use RCS, which controls the Prophet Systems radio automation system, while running Google Audio Ads. A Google spokesman said Audio Ads "worked with several different" radio automation systems.

Media Commerce Systems is another firm using an online portal to buy and sell remnant media inventory. The company's StandBuyMedia is an "easy-to-use Web-based application designed to sell unsold inventory without disrupting or compromising current radio stations sales processes," according to the firm's Web site. And *RegionalHelpWanted.com* posted ads in trade publications making reference to Google's departure and reminding readers of its unsold media inventory offerings.

— by Randy J. Stine

## NEWSWATCH

### BMW: Tests Validate HD-R's Big Data Pipe

**WOODCLIFF LAKE, N.J.** BMW said test results show gains in the speed and volume of data delivery, using digital algorithms paired with HD Radio.

Testers equipped a BMW 5 Series with custom hardware and software including an HD Radio data tuner and custom visualization and logging software; they drove throughout the Philadelphia metro. They transmitted traffic information during rush hour to the test vehicle in 14 seconds using 52 messages.

A new protocol used in the test supports real-time, high-speed broadcast of traffic information and will enable future vehicles to view current and predicted traffic patterns, speeds, and flows almost instantaneously, said those involved in the demo.

Clear Channel's Total Traffic Network was part of the exercise; the company said the increased performance would help the broadcaster expand its traffic services in the future. CCTTN delivers data to approximately 500,000 users in four countries and 125 metros.

### Arbitron Talks PPM With Copps

**WASHINGTON** In a meeting with interim FCC Chairman Michael Copps, Arbitron representatives pledged to continue to seek Portable People Meter accreditation from the Media Rating Council where the service is used now and where it will be commercialized in the future, as well as work with broadcasters and their advertisers to improve PPM service and keep the chairman aware of those developments.

That's according to a filing from attorney Paul Hastings, of Hastings, Janofsky and Walker, which said that he and new Arbitron President/CEO Michal Skarzynski, EVP/Chief Legal Officer Timothy Smith and Senior Attorney Michelle Levister met with Copps and his senior staff.

The meeting concerned a pending petition from minority groups that the commission review the PPM and possibly halt the rollout until grievances are satisfied. Their concern is that PPM undercounts minorities.

Granting the petition, Arbitron said, would likely retard progress in PPM because staff would have to divert resources, time and energy to litigation-related tasks.

### News Roundup

**RADIOLICIOUS:** ABC Radio Networks and Radiolicious signed a sales and marketing agreement that lets stations link their music and advertising with smart phone users. The free Radiolicious application is available for the Apple iPhone and iTouch; it also lets the user interact with the station and advertisers through texting or

direct e-mail. ABC will support affiliation efforts and sell station inventory for the application that will be used on the station's Radiolicious link and on the air. The network and local stations will share geo-target sensitive banner ad space on the application.

**PERFORMANCE RIGHTS:** In a hearing before the House Judiciary Committee in March, proponents and detractors debated a bill to require stations to pay royalties to artists for music that stations play. The bill has been reintroduced in Congress. NAB Radio Board Chairman Steve Newberry, also president and chief executive officer, Commonwealth Broadcasting, said the economic downturn has intensified his concerns about this bill and the impact it will have on stations. Larry Patrick, managing partner of media brokerage firm Patrick Communications and owner of 14 stations, also testified against the bill, stating that in his 40-year radio career, "I have never seen what the radio industry is currently experiencing." Passage of H.R. 848 would financially "devastate" stations, he said. Smashing Pumpkins leader Billy Corgan testified for the bill, but said he is a fan of radio, which helped his career.

**WORLDSPACE TO SAMARA:** The U.S. Bankruptcy Court in Delaware approved the sale of the satellite radio assets of WorldSpace Inc. and its U.S. subsidiaries, WorldSpace Systems Corp. and AfriSpace Inc. to Yenura Pte. Ltd., a company controlled by WorldSpace founder, chairman and CEO Noah A. Samara. It is buying the assets for \$28 million cash and assumption of certain liabilities, following an auction. The acquisition still needs regulatory approvals. According to earlier accounts, assets involved in this proceeding include WorldSpace satellites, patents and ground control facilities, as well as subsidiaries not involved in their own bankruptcy proceedings. WorldSpace Europe, WorldSpace UK and WorldSpace Europe Holdings are in separate bankruptcy actions, according to RapidTV News.

**NRSC:** The Digital Radio Broadcast Subcommittee of the National Radio Systems Committee is tweaking a 50+ page document on IBOC measurement. The idea is to have all stations transmitting in HD Radio measure their digital signal in the same manner. There are no uniform IBOC measurement procedures, according to NRSC Chairman Milford Smith. The group is targeting its meeting at the 2009 NAB Show for completing the document.

**SBE MEMBERSHIP:** As part of its annual membership drive, the Society of Broadcast Engineers is dangling a chance to win some prizes to help encourage signups. The grand prize is a Sony HDTV and a trip to the national meeting in Verona, N.Y., in the fall. Other prizes include a Panasonic Blu-Ray Player, Eton E1XM AM/FM/Shortwave/XM Ready Radios, pocket size external hard drive, books, shirts and tweaking tools from various sponsors. Members also receive a \$5 discount on a 2010 membership renewal for each new member he or she recruits, up to five.

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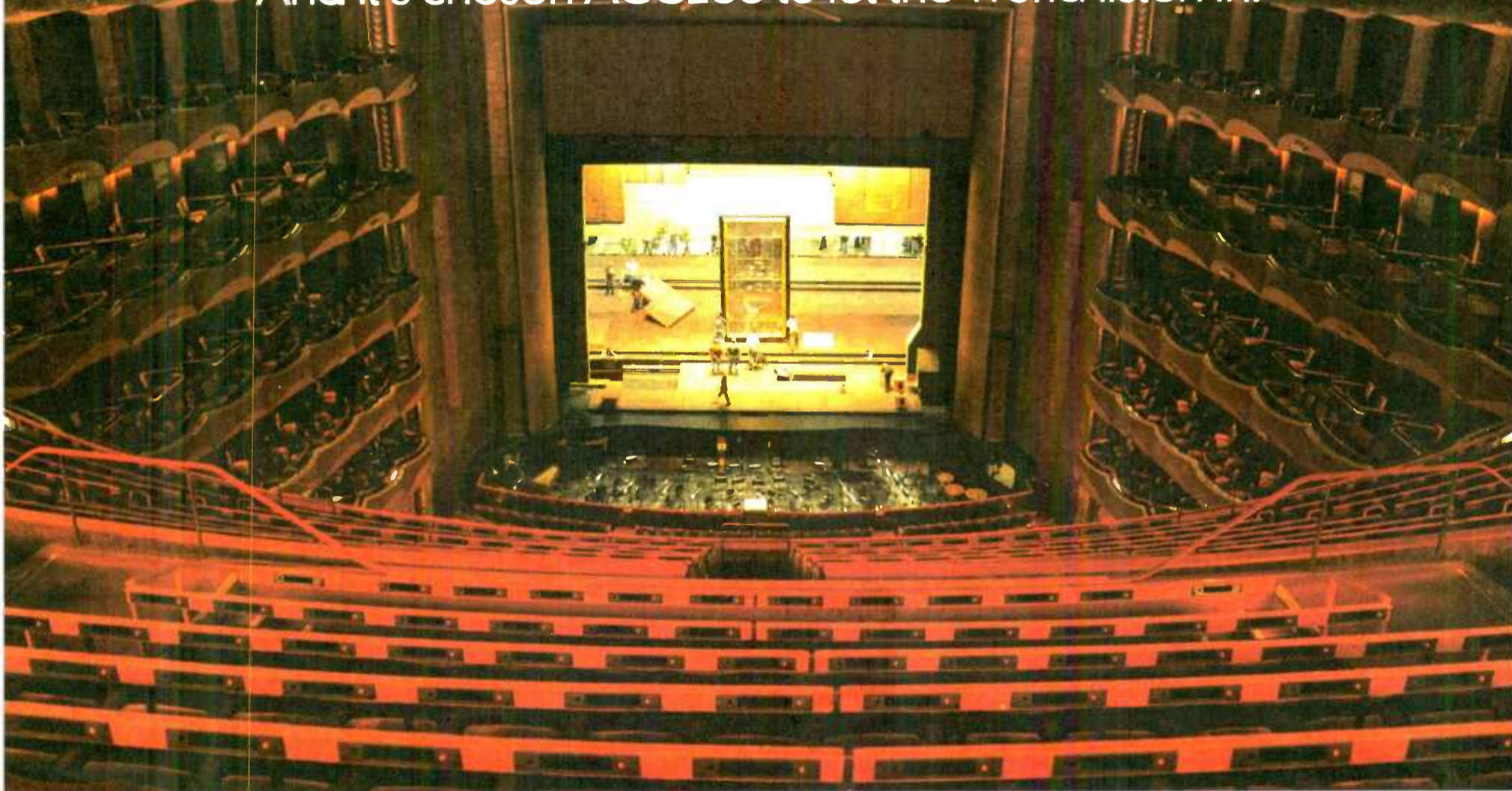


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# For Sale: Google Radio Automation

Decision Creates Opportunities for Competing Automation Vendors

by Randy J. Stine

**COPPELL, Texas** When Google put its Google Radio Automation up for sale, industry observers began speculating who might be a suitor while broadcasters wondered how a sale might affect service agreements.

Google assured clients that service would not be affected. Meanwhile, radio observers don't expect a bidding war for the company's radio automation system, saying business for automation companies is soft in the current advertising market. Most agree that Google Radio Automation will not fetch anything near the \$102 million in cash Google paid for dMarc's assets in 2006.

Yet some also said the radio automation marketplace remains strong despite the recession and that radio stations might be cutting personnel to trim costs but are investing in technology to keep stations running.

Google spokesman Brandon McCormick declined to give details about the impending sale of Google Radio Automation for this story.

Questions for some observers lingered. Will Google sell the latest versions of its automation or will it look to sell older software, including that for the former Scott

Studios SS32 and Computer Concepts Maestro digital automation systems?

"Are they selling the old software, the original software as it stood from dMarc, or are they going to sell the new automation product? The (new automation product) is a bit more unproven, but they may want to hang onto it because of the Internet radio applications," said Ron Paley, founder and chief technology officer for OMT Technologies, which makes the iMediaTouch Radio Automation System.

All this is playing out while competitors — who were startled when new media giant Google entered their market three years ago — now position themselves to take advantage of the company's latest unexpected move.

## Potential buyers?

Google aimed to reassure automation customers that it is committed to maintaining support and normal business operations until a sale is completed.

"We are committed to making this a seamless transition for you," it wrote customers. "Your automation system will continue to operate, and you will be able to access our sales, support and business operations teams as before."

Google acquired the automation technology from dMarc Broadcasting in 2006

to accompany its efforts to launch the Audio Ads platform of radio ad placement. Several industry watchers said they believe about 30 percent of existing radio automation systems in the field in the United States are Google or former Scott Studios SS32 or Computer Concepts Maestro digital automation systems.

Who might be interested in buying the automation business?

"We can't speculate on a buyer, but we think there are companies in the industry for whom this product would make sense," Google spokesman McCormick said.

Google is likely to screen any buyers carefully, said Dave Scott, an observer with more than a passing interest. He founded Scott Studios and later sold his company to dMarc Broadcasting in 2004.

"Radio stations are likely to get adequate service from any buyer that would pass muster with Google," Scott said. "The difference might be in the corporate culture."

Scott himself is interested in re-entering the radio automation business if "price, terms and conditions" could be worked out with Google. In March, he said he was considered an official bidder for the service.

Another option for Scott would be going into the aftermarket business of supporting various automation systems — continued or discontinued — now that the radio industry has reached a "saturation point" with automation systems.

"The radio automation business is now merely replacements and upgrades rather than groups purchasing full automation systems," Scott said.

Other automation suppliers said they expect there will be opportunities opening for them as Google sheds radio automation.

"It does open the door for all automation makers to talk with Google clients. More so now than ever, broadcasters need dependable technology. We believe that's what we have," said OMT Technologies' Paley.

## Vendors watch closely

Jim Roberts, product manager of data-cast systems for Broadcast Electronics Inc., which makes the AudioVault digital automation system, said, "Google tried to enter the radio advertising business market by leveraging an automation system. It's the equivalent of buying an airline to capitalize on advertisements in the in-flight magazine. The message we received was that Google really wasn't putting forth the effort to support the automation side."

Google spent much of the fourth quarter of 2008 trying to give away its software, Roberts said, citing a specific ad that ran in radio trade publications, including Radio World, which stated "Trade up to Google Radio Automation from any competing automation system before Dec. 21, 2008 and we'll give you our software absolutely free — saving you up to \$10,000 per station."

Roberts said, "We are hearing from customers that they effectively de-valued the SS32 brand, leaving many stations looking for new and better solutions."

When contacted, several other radio automation providers declined to comment specifically on Google's plans or who might pursue the company's automation assets.

"It's just a shame that as many as 40 people are losing their jobs at this difficult time in the industry," said Don Backus, vice president of sales and marketing for ENCO Systems.

Google has said it is eliminating 40 jobs from its radio operations. It's unclear how many jobs are being cut from its Google Radio Automation facility near Dallas. Also unclear is the fate of Jim Woods, Google's director of product management, audio. A Google spokesman declined to discuss specific personnel.

One radio analyst theorizes it might make sense for a large radio group operator to step up and purchase at least an interest in Google Radio Automation.

"If you are a broadcaster with a lot of stations tied to this automation, it might make sense to buy it and prop it up as a way to keep it in business and maintain service," said Mike Henry, chief executive officer of Paragon Media Strategies.

Clear Channel has an automation provider; it owns RCS, which controls the Prophet Systems radio automation used by many Clear Channel stations (RCS declined to comment on the business dealings of a competitor for this story). Similarly, Cumulus owns Broadcast Software International.

Dave Scott said the economy does deserve some blame for Google's failure to execute its Audio Ads platform, and therefore the automation system, successfully.

"The general economy and radio's current slump go hand-in-hand," he said. "Just because radio and Google weren't the fit Google once thought they were doesn't make radio any the lesser."

Scott said he "knew when to sell" to dMarc Broadcasting in 2004. Many industry observers agree he might be ready to buy again if the price is right. ●

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## NEWS WATCH

### FEMA Adds Industry Outreach to IPAWS Web Site

**WASHINGTON** The Federal Emergency Management Agency is trying to get the word out to emergency alert stakeholders about its efforts to bring emergency alerting into the digital age.



To that end, FEMA has updated the Integrated Public Alert and Warning System Web site, [www.fema.gov/emergency/ipaws](http://www.fema.gov/emergency/ipaws); IPAWS is the next-gen warning system that brings alerts from radio and TV to other devices.

"This will be the one-stop shop for information on IPAWS," said Wade Witmer, acting deputy director of the IPAWS Division within FEMA. Partnering with FEMA on updating emergency alerts are the National Weather Service, FCC, the Control and Interoperability Division in the Science & Technology section of the Department of Homeland Security, and the Emergency Interoperability Consortium.

The site also features new program materials, including an IPAWS fact sheet, updated information about IPAWS projects and partners, and recent program success stories.





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# Radio Fights Recession at 2009 NAB

*Management Conference Explores 'Digital' Growth Strategies and the New Regulatory Environment*

by James Careless

Judging at least by the attitude of participants at this year's National Association of Broadcasters Broadcast Management Conference, radio managers are not cowed or terrified by the recession. Call them concerned.

Certainly they appear to be girding themselves to face whatever the future has to bring, be it further declining revenues, increased competition from new media or the mischief-making meddlings of well-intentioned FCC newbies.

Here's a sampling of sessions of interest to radio managers. RW previewed technical sessions in the previous issue.

Note that the NAB has combined three former conferences — Radio Management, Television Management and Broadcast Regulatory and Legislative — into one this year: the Broadcast Management Conference.

"We've streamlined the conference program by expanding the focus of sessions where there is cross-over appeal to both radio and television," an NAB official told RW. "We will continue to offer sessions within this conference targeted specifically to either radio or television."

### Who calls the shots?

Who really has the last word on what goes on air these days; radio broadcasters or the FCC? This thorny topic will be discussed during *"Regulating Broadcast Programming — Is Content King or Will Government Reign?"* on Monday morning April 20.

"Our panel will focus on how the incoming FCC chairman and the new administration will tackle the myriad of regulatory content issues that face broadcasters, including localism, sponsorship identification/payola, promoting local artists and indecency," said moderator Jane E. Mago, NAB's executive vice pres-

ident and general counsel.

"We anticipate that a Democratic-majority administration will be looking closely at how broadcasters are serving the public interest. We will be talking about what that means to broadcasters going forward and how developments such as HD Radio can enhance that position."



Jane Mago. 'We anticipate that a Democratic-majority administration will be looking closely at how broadcasters are serving the public interest.'

She noted that broadcasters are speculating about what to expect as the new FCC turns its attention to the radio side of broadcasting, "once the commissioners are seated and we are through the DTV transition."

Participants are expected from several prominent law firms.

### Meet the new boss ...

Continuing with the spotlight on Washington, wary delegates will be given a road map to *"Navigating My Radio*



Philippe Patrice. 'You want your listeners not just to tune to your station via the Web at work, but to have a video window up, keeping an eye on what's happening.'



Daniel Anstandig. 'What are you going to give the audience in exchange for their valuable time?'

*Station Through the New FCC"* on Monday afternoon, courtesy of moderator Dawn Sciarrino of Sciarrino & Shubert.

"The new FCC is an energetic agency that will ensure that radio broadcasters are indeed both technologically efficient and serving the public interest," Sciarrino told Radio World.

"We anticipate that the Democratic-led majority will have a keen focus on the future of our industry and technology; and while the new FCC may be supportive of HD Radio, it will likely press for additional public interest requirements from local broadcasters."

That's not all delegates should expect from the Obama FCC. Under the new regime, "stations need to be able to juggle serving and growing their local audiences while ensuring full compliance with FCC rules, including EEO, EAS, public file and potentially new enhanced disclosure rules," she says.

The FCC's Roy Stewart, senior deputy chief of the Media Bureau, is an invited participant of that panel.

*"Reality Radio: Producing Videos for Your Web Site"* is a Monday afternoon session that answers the question, "What can radio guys do in video"?

Hosted by executives from StreamTheWorld — which says it has provided turnkey streaming for 1,000 radio stations — this session will tackle not just how to shoot Web video but what to shoot, including in-studio deejays, live guests and performances and events held away from station property.

"Producing videos for your radio Web site is all about 'stickiness,'" said Philippe Patrice, the company's product manager. "You want your listeners not just to tune to your station via the Web at work, but to have a video window up, keeping an eye on what's happening. In this way, you bring them closer to the station and get them more attached to you — and you get a venue for airing commercials at the same time."

StreamTheWorld will also offer advice on dealing with deejays who feel that they "only have faces for radio," comfortable behind the microphone but not on camera.

See MANAGERS, page 12 ▶

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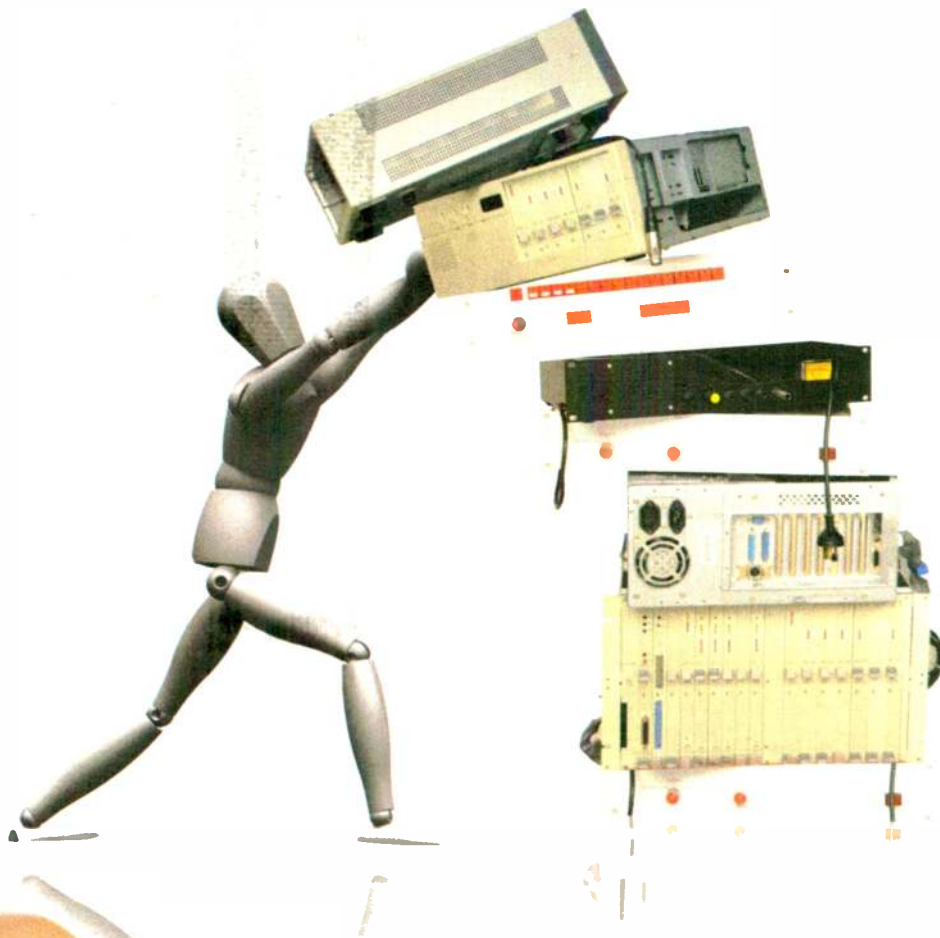


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# Managers

► Continued from page 10

Love them or hate them, broadcast towers are an essential part of any radio broadcaster's operation. But what many still do not realize is that towers are valuable pieces of "vertical real estate" that can generate significant revenues, said Erwin Krasnow, owner of Garvey Schubert Barer.

Krasnow is moderating the Tuesday morning session "*Vertical Real Estate: Tall Towers Mean Tall Dollars.*"

"In some cases, a radio broadcaster's tower may be of greater value than the underlying station," Krasnow said.

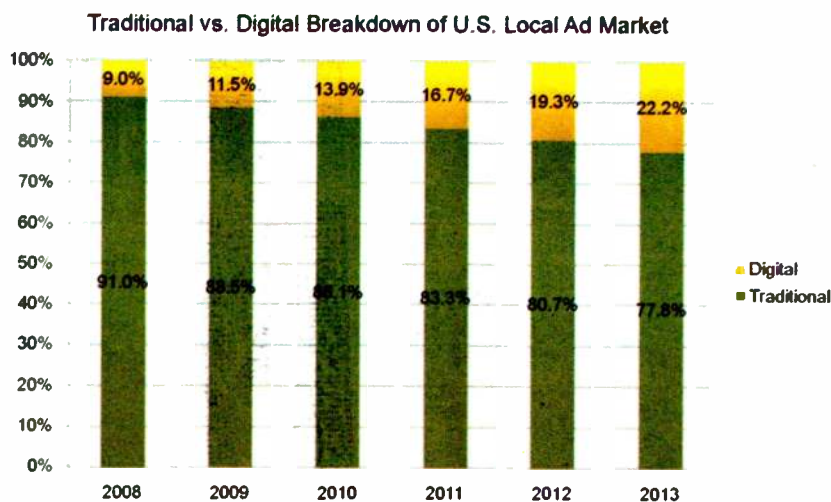
"However, many radio broadcasters look at their sites as necessary evils. That is a mistake. Tower leasing is a way to capitalize on a constant stream from wireless communications, one of the nation's fastest-growing sectors of the telecom industry, without interfering or affecting the tower's original purposes."

Today, cellular carriers and other wireless service providers are paying \$1,000 to \$4,000 per month to rent space on broadcast towers, he said.

"The leases, including renewals, are for periods of 25 to 30 years and provide a significant source of continuing and escalating revenue ... Leasing space offers several very attractive aspects: Predictable and recurring long-term leasing revenues; low churn rate; high operating margins; continuing demand for towers due to zoning restrictions and environmental regulations; and minimal capital reinvestment requirements."

Cash-strapped broadcasters can sell their towers for cash, then lease back the space they need from the new owners; however, this money made (and maintenance costs avoided) is offset by the regular cost of leasing this space.

## Steady Shift Toward Digital Media



K



Source: The NAB Group, 2009

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Rick Ducey of BIA will discuss the increasing importance of 'digital' platforms in the ad mix.

"Most radio broadcasters regard themselves as only being in the radio business," Krasnow said. "But if they own towers and the ground beneath them, they are also in the real estate business. The session will show radio broadcasters how to turn the 'steel' they own into 'gold.'"

### Local market squeeze

Also on Tuesday morning, delegates will focus on making money during "*Transforming Radio's Business Model With Multiple Revenue Streams.*"

Moderated by Rick Ducey, chief strategy officer with BIA Advisory Services, the session aims to help broadcasters cope with flat ad revenues by staking turf in multiple media.

"Local ad spend will be decreasing overall through 2013 but growth will

occur with digital platforms," Ducey said. "So radio operators looking for significant growth need to develop strategies for digital platforms and execute on these strategies successfully to grow their businesses."

The 2008 U.S. local media and advertising market was worth \$155.3 billion, an amount Ducey expects to decline. Besides radio, this market includes TV, newspapers, direct mail, Yellow Pages (print), cable TV, magazines and other advertising.

### 'Digital' audiences

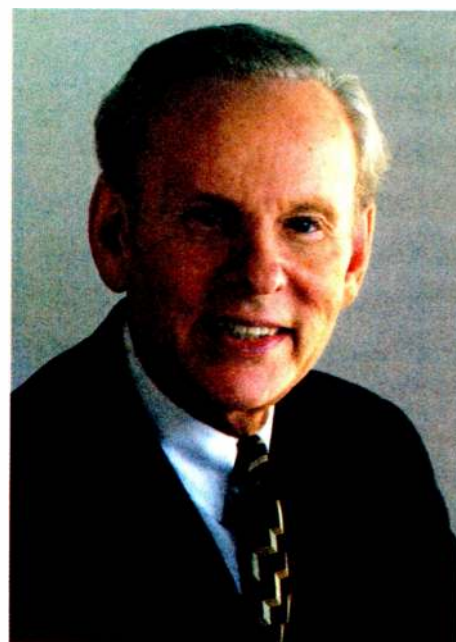
On Tuesday afternoon following the Radio Luncheon, McVay New Media President Daniel Anstandig will tackle "*Digital Audience Growth Strategies*" and how radio stations can make money from this sector.

The topic here is not digital transmission; these are the people who spend time interacting with you via your Web site and

specialists, developing marketing plans for their clients that include on-air, online and on-the-go (mobile) components."

So how does one attract a digital audience? The same way one attracts conventional listeners: through unique and compelling content.

"Without unique content, you have just another radiostation.com or televisionstation.com," Anstandig says. "What are you going to give the audience in exchange for



Erwin Krasnow. 'Many radio broadcasters look at their [tower] sites as necessary evils. That is a mistake.'

their valuable time? Your answer to that question determines your value online as well as your ability to translate your interactive efforts into new revenue."

In formulating an answer, the key is to factor social networking and mobile marketing into the mix. Both are good ways to make direct contact with your digital audience, he says, and to collect listener information that can be "databased" for future sales and promotional campaigns.

"Digital audience is critical in developing future prosperity in radio," Anstandig said.

**In 2009, the difference between hitting your budget and not hitting your budget will be interactive advertising.**

— Daniel Anstandig

mobile phone. "This is the audience that regularly accesses your brand beyond your AM or FM signal."

Broadcasters dismiss this "digital" audience at their peril, Anstandig warns.

"In 2009, the difference between hitting your budget and not hitting your budget will be interactive advertising. This year, \$25.7 billion will be spent across the USA in online advertising."

Those stations who understand the importance of this market are adjusting their sales bonus structures to include interactive audience and revenue benchmarks, and made sure that their programming and promotions include both on-air and online elements.

The change doesn't end here. In this brave new world of broadcasting, "Program directors have been transformed into brand managers," he says. "Sellers have been transformed into client solutions

"2007 was the first year that more advertising dollars were spent on digital media than radio. By 2011, every dollar spent on radio advertising will be equivalent to two dollars spent on online advertising."

Moreover, "The ad spend projections that are favorable for radio only show minimal growth, while the ad spend projections that are unfavorable for interactive still show 5 percent-plus compound annual growth rate for the industry.

"People are increasingly growing as consumers of digital media."

Other session topics in the conference include how to build an effective strategic plan; a small-market radio idea swap; and developing your next generation of sales managers.

More information about Broadcast Management Conference sessions can be found at [www.nabshow.com/2009/education/bmc.asp](http://www.nabshow.com/2009/education/bmc.asp).

### SURE BETS

## Pinball Wizards Unite: Reclaim Your Crown

Where can you have fun in Vegas for a quarter without playing the slots? Tim Arnold's Pinball Hall of Fame Museum. The 4,500 square foot shrine to the beloved arcade game touts the antithesis of the casino environment: windows, clocks and fun for the whole family.

If you can't remember the last time you played Bally's Carnival (1963) or Four Million B.C. (1970) but can vividly remember your highest score, the Pinball Hall of Fame is for you.

Arnold says the museum is an attempt on the part of the Las Vegas Pinball Collectors Club to display the world's largest collection of machines, including old-school electro-mechanical models like "woodrails" (wooden side rails hold up the top glass) and "wedgeheads" (named for the wedge shape of the scorebox) from the '50s and '60s; multi-player EM models from the '70s; and solid-state designs from 1977 on. (The last of the EM machines were made in 1979.)

Other classic games housed at the PHoF include Gottleib's Ace High (1957) and Bowling Queen (1964); and more recent characters like Indiana Jones (1993, Williams) and Freddy-Nightmare on Elm Street (Gottleib, 1993) for the kids. And you can feel good about running through a huge pile of quarters: The Pinball Hall of Fame is non-profit so excess revenues go to non-denominational charities.

Admission is free. Hours are 11 a.m. to 11 p.m. Sunday to Thursday, and until midnight Friday and Saturday. It's located about three miles from the Strip, about a \$20 taxi ride.

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— Kelly Brooks



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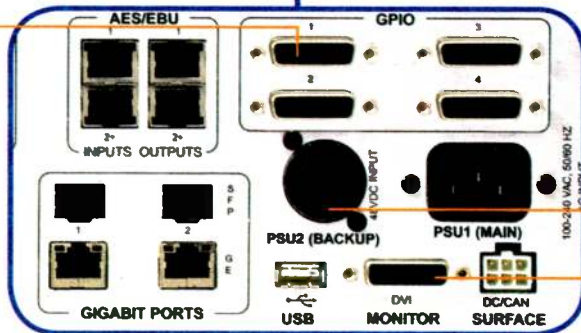
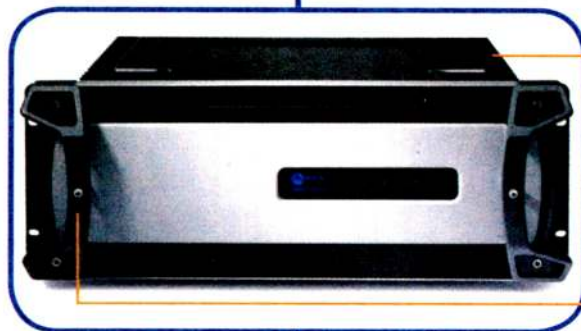
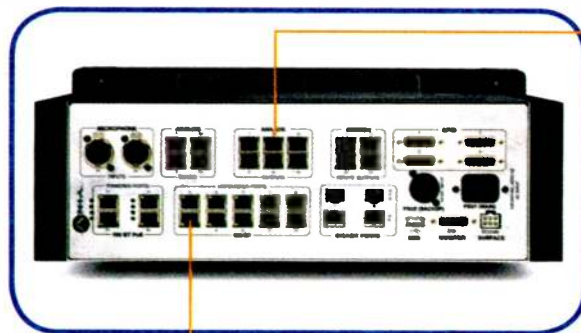
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**All stops removed** • Twenty years from now, you'll have forgotten this ad. But you'll still have your PowerStation, the full-featured one-box IP-Audio console/router system hardened with **industrial-grade components** and redundant power capabilities. Tough enough to take a football to the groin and keep on going. PowerStation **minimizes setup** and **maximizes "bang for the buck."** Engineered without compromise for broadcasting without interruption.

**Easy as  $\pi$**  • PowerStation combines a console DSP engine with audio and logic and a network switch, **all in one box**. As its name implies, there's a whole lot o' muscle inside that burly frame, but that doesn't mean it's complicated. In fact, setting up PowerStation **couldn't be easier**: connect your studio gear with standard CAT-5 cables, connect your console with just one cable, name your sources and set preferences with a browser, and you're ready to rock. PowerStation makes building studios about 3.14 times easier than ever.

**GPI Oh!** • **GPIO ports are built in** to PowerStation — no breakout boxes or add-on converters needed. One day, you might not even *need* logic ports: more and more products from companies like 2S-Seven Systems, Audio Science, ENCO, Google Radio Automation, International Datacasting, Omnia Audio, Radio Systems and Telos (to name just a few) use the Livewire™ standard to send their audio and logic control directly to Axia networks over a **single CAT-5 connection**.

**Everything's included** • Yeah, we said *everything*: PowerStation combines half-a-dozen essential tools into one compact unit. No hidden extras to buy, no "gotchas" after purchase. Inside that muscular chassis you'll find a **bulletproof mixing engine** capable of handling consoles up to 40 faders, a beefy power supply (with optional **redundant power**), machine control ports, and **audio I/O**, all in one box. And of course, since it's from Axia, the IP-Audio experts, a studio built with PowerStation can stand alone — or it can become a part of a large network quite easily. Thanks to **PowerStation Simple Networking**, you can daisy-chain up to 4 PowerStations directly for easy multi-studio installation without the need for a separate core switch. Just another way Axia makes IP-Audio easy.



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**Fan free** • PowerStation is **silent and fanless**. Because studios today are already full of PCs, laptops and playout servers clicking, whirring and generating heat — who needs more of that? Not only is there no in-studio noise with PowerStation, those **big extruded heat sinks** are just plain cool. No pun intended (or maybe it was. We're like that, you know).

**Built like a tank** • Remember when consoles were built to last? We do. At Axia, we're all about the long haul. **There are no compromises**: PowerStation uses only best-of-the-best components. Like studio-grade Mic preamps and A/D converters. A rigid, steel-framed, EM-tight chassis that shrugs off RF like Walter Payton brushing off tackles. An industrial CPU designed for high reliability in harsh environments. Beefy extruded heat sinks. Big, brawny handles to make rack-mounting easy. (And it looks cool, too.)

**Redundant power redundancy** • The power supply is the heart of any broadcast equipment, right? That's why PowerStation is **hardened against failure** with a **super duty power supply** that sports enough amps to power an arc welder. And for those of you who like to wear a belt *and* suspenders, there's even a connection for **redundant auxiliary backup power** — with automatic switchover, naturally — that kicks in if it's ever needed.

**Screen play** • Yep, that's a DVI connector. **Your favorite monitor** — standard or widescreen — plugs in to present the console operator with Axia's "so easy an overnight jock could do it" **info-center display**. Meters, timers, fader assignments, mix-minus settings and more, all on-screen, on-demand.

**You're covered** • Axia has the most comprehensive warranty in the industry — **5 years parts and service**. And (not that you'll need it), **free 24/7 technical support**, 365-days-a-year. We've got your back, my friend.

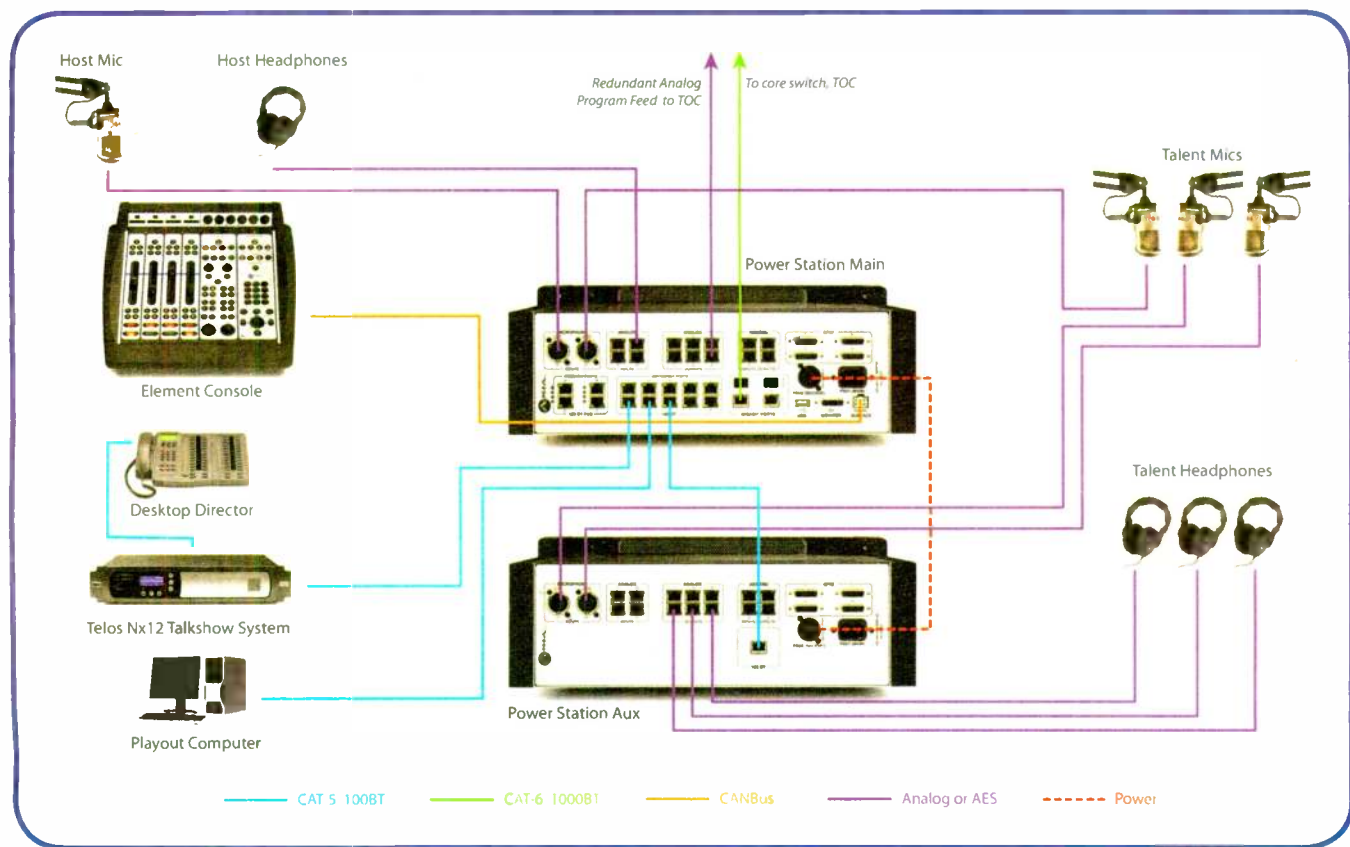




**Element 2.0** • With more than 1,000 consoles already on the air, Element is a huge hit. And now, thanks to suggestions from our clients, it's better than ever. Element 2.0 has cool features like Omnia™ **headphone processing** presets to give talent that "air sound"; **super-accurate metering** with both peak and average displays, **one-touch phone recording** with automatic split-channel feed, **automatic mix-minus** for every fader, an eight-channel **Virtual Mixer** that lets you combine multiple audio streams and control them with a single fader, and metallic bronze or silver module overlays. And we haven't even begun to tell you about Element's **Show Profiles** that instantly recall talent's favorite settings, its **built-in Telco controls**, fully-integrated **talkback/IFB** and **Mic processing** by Omnia. And durable? Element is nearly indestructible, ready to take whatever pounding ham-fisted jocks dish out and keep going. You want examples? Element's **avionics-grade switches** are rated for more than two million operations. What look like ordinary rotary controls are, in reality, **bullet-proof optical encoders** — no wipers to wear out or get noisy. The silky-smooth **conductive-plastic faders** actuate from the side, not the top, so dirt and grunge stay out. The **high impact Lexan** module overlays have their color and printing applied on the back, where it **can't wear or chip off**. The frame is made from **thick aluminum extrusions** that are stronger than truck-stop coffee. To find out even more about Element, visit [AxiaAudio.com/Element/](http://AxiaAudio.com/Element/). Grab some coffee and prep for a good, long read — remember, our marketers get paid by the word.

**Come together, right now** • Now that you know what you can do with PowerStation, let's build a studio. The diagram below shows how a typical Talk Studio might look. Mics and headphone feeds plug into the built-in Mic inputs and Analog outputs... your playout PC, using the **Axia IP-Audio Driver** for Windows®, connects to a built-in Ethernet port... and so does the Telos Nx12 Talkshow System (which sends 12 lines of caller audio, mix-minus and take/drop/next commands over **one skinny CAT-5 cable**). Send a **backup audio feed** to your TOC for extra peace of mind. And after all that, there's still plenty of I/O left to plug in the turntables for the Saturday night Oldies show.

**The standalone network** • You want your console to be more than just reliable — you want it **built like a battleship**. You want the absolute peace of mind that comes from knowing your gear will **never let you down**. And if you take one studio down for maintenance, you want the rest to be completely unaffected. So we designed PowerStation to be the world's **first networked broadcast console that doesn't need a network**. It's completely self-contained: sure, it plays nice with others, but unplug its network cable and it keeps right on truckin'. Build just one studio, or a dozen, at any pace you choose — your PowerStation network is ready to expand when you are.



[AxiaAudio.com](http://AxiaAudio.com)

## RADIO Q&amp;A

## What's on Managers' Minds

Radio World Asked Several Radio Executives To Discuss Issues on Their Minds as NAB Show Season Rolls Around



**Amador S. Bustos**  
President/CEO  
Bustos Media LLC

**'If they impose an additional royalty, then broadcasters should also be free to charge for promoting artists and their recordings; like any other product.'**

**Q: What's the biggest challenge facing you as a radio manager in 2009?**

The severe decline in national sales and the larger regional retail accounts.

**Q: How will your business overcome the economic climate in general and the tough time for radio revenue specifically?**

Increasing attention and service to the local direct clients who are trying to survive as much as we are.

**Q: What business initiatives has your organization explored in your efforts to grow?**

We launched a company-wide campaign called "United for Prosperity," where we designed a high-frequency advertising schedule to run Sunday through Wednesday.

**Q: What is your assessment of digital radio at this juncture?**

We have not implemented HD Radio due to cost of installation and the lack of receivers in our audience segment. The Hispanic market is usually a later-adopter, compounded by the fact that it is not being addressed directly on this

technical radio innovation.

**Q: Does radio need to embrace online and mobile platforms further? How much does the future of the industry lie in these applications?**

I think radio does need to embrace these platforms but they will only be complements to radio advertising; not its savior.

**Q: How will the change in the presidential administration affect you, and the industry?**

I see no significant benefit, despite its advocacy of greater minority participation in broadcasting, but I do not see any harmful effects either.

**Q: Should lawmakers allow the adoption of royalties to artists, what NAB is calling a "performance tax"?**

Absolutely not! But if the legislators are so inclined, then they need to open up the market at both ends. If they impose an additional royalty, then broadcasters should also be free to charge for promoting artists and their recordings; like any other product.



**Mary Beth Garber**  
President  
Southern California Broadcasters Association

**'Use the listener loyalty programs, the texting, Internet and other platforms to generate revenue for both the stations and the clients.'**

**Q: What's the biggest challenge facing you as a manager in 2009?**

Getting my people to maintain confidence in themselves and radio's ability to sell for clients.

**Q: How will your business overcome the economic climate and the tough time for radio revenue?**

Perhaps we should ask for earmarks for all our retail advertisers.

Seriously, we are encouraging the managers and sales people to embrace, and help their clients embrace, the multiple facets of their radio brands. Use the listener loyalty programs, the texting, Internet and other platforms to generate revenue for both the stations and the clients. To combine advertisers together who have common targets and tangential marketing goals. And provide the sellers with material to demonstrate that advertising, especially on radio, helps build businesses

now, throughout a recession and into dominance and prosperity at the other end of this cycle.

There is no other medium like radio. It is the only mass medium left that delivers virtually all of its reach in real time with live listening. As long as 235 million people need us and use us every week, radio will be a viable, valuable part of the communications industry. Now if we could just fix the advertising and retail industries ...

**Q: What business initiatives has your organization explored?**

We are working on programs in conjunction with Arbitron, the local Advertising Club (thinkLA), and the Media & Marketing Research Council of LA to expose advertisers and agencies to ways to use the new media side of radio, and new ways to make the "old" radio work like new.

We've developed working relations



**Bill Stakelin**  
President and CEO  
Regent Communications

**'The current Congress and administration reminds me of the early '80s when liberal thinking nearly destroyed free over-the-air broadcasting.'**

**Q: What's your biggest challenge this year?**

Revenue generation. With the deep recession the country is experiencing, advertising expenditures are being greatly impacted.

**Q: How will your business overcome the economic climate and the tough time for radio revenue specifically?**

Regent will manage through the current downturn by aggressively pursuing local revenues in our markets with large, well trained and motivated sales staff offering value added proposals for the advertisers. This [strategy] combined with cost controls in every area have worked for us in the past during severe downturns and we anticipate their success again.

**Q: What initiatives have you explored in your efforts to grow?**

Our Internet initiative is bearing very good growth to complement our strong platform of traditional over-the-air radio stations. Multiple platform performance for our product combined with aggressive event marketing is offering a very good return for the company.

**Q: What notable capital improvement projects do you have on the calendar?**

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**John Lynch**  
Chairman/CEO  
The Broadcast Company of the Americas

**'Locality is the essence to successful radio. We are producing local products while the giant companies are going national.'**

**Q: What's the biggest challenge facing you in 2009?**

Generating enough revenue to pay the bills.

**Q: How will your business overcome the economic climate in general and the tough time for radio revenue specifically?**

Locality is the essence to successful radio. We are producing local products while the giant companies are going national. We also are working with our clients to be sure their campaigns work, adding inventory when necessary.

**Q: What business initiatives has your org-**

**anization explored in your efforts to grow?**  
We did the Advantage program, generating 30 new small business clients for 2009.

**Q: What notable capital improvement projects do you have on the calendar for this year?**  
None.

**Q: What do you think regarding mutterings about the Fairness Doctrine? Do you think we'll see an effort to restore it?**

It's like raising taxes during a recession: a business killer. If socialism is what Obama wants to spread, then the Fairness Doctrine being introduced will be another sign of this socialistic agenda of Obama.

**Q: Where are you on digital radio?**

We will implement when it begins to generate revenue.

**Q: Does radio need to embrace online and mobile platforms further? How much does the future of the industry lie in these applications?**

[It is] essential to be a part of new delivery systems.

**Q: What would you like to see from the FCC that you haven't in the past?**

A more pro-business agenda.

**Q: How well is the NAB as an organization doing its job?**

I believe the NAB is doing its best to represent the interests of broadcasting and broadcasters.

with several outside companies — BIGresearch, Genergraphics and others — to develop different material to demonstrate the superior strengths of radio in influencing purchasing decisions.

**Q: Does radio need to embrace online and mobile platforms further?**

The Internet and wireless are the future of this business. And they should be a much greater part of the "now" of this business.

**Q: What would you like to see from the FCC that you haven't in the past?**

More people like Bobby Baker, who understand business, fairness and common sense. [Baker is assistant chief of the Policy Division of the Media Bureau.]

expenditure project going forward is our continuing conversion to HD Radio.

We have been on board for HD since the beginning and continue to believe that it is essential to radio's future capabilities to compete and drive revenues.

Frustration [over] too much emphasis on creating sub-channel stations is the only negative we have experienced, but [we] continue to believe that other data opportunities connected to digital radio will be monetized in the future.

**Q: What would you like to see from the FCC that you haven't in the past?**

We would always like to see matters handled in a timely fashion. But as far as the agency policy area [is concerned], we think that more media consolidation is going to be essential in the future, and they should take a positive stance on cross-ownership, especially considering the negative position of local newspapers.

**Q: How well is the NAB as an organization doing its job?**

We are impressed with the intelligent, aggressive job done by the NAB, and hope that the industry continues to support those efforts, especially since the current Congress and administration reminds me of the early '80s when liberal thinking nearly destroyed free over-the-air broadcasting.

America has the system that the world seeks to duplicate, yet our representatives in Washington seem, at times, to be on a path to destroy this great free over-the-air asset, [which is] so important to all Americans.

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## More Highlights of NAB Show 2009

### SUNDAY APRIL 19

**9 a.m.:** NAB Broadcast Engineering Conference Opening. Keynote: Gary Arlen, a communications and futures analyst, on breakthrough technologies in key sectors.

**3 p.m.:** "Keeping Your Team Engaged and Motivated in Challenging Times." Dr. Robert Bies of Georgetown University talks about the leadership skills needed to thrive in an age of instability. Part of the Broadcast Management Conference.



Gary Arlen

### TUESDAY APRIL 21

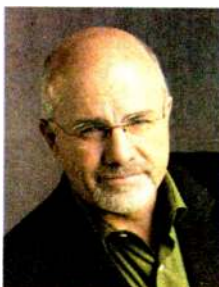
**7:30 a.m.:** Joint NAB/RTNDA Open Breakfast: "Change.Gov — The Insider's Look at Washington"

**7:45 a.m.:** "NAB Tower Leasing Program Overview." TowerSource, an online exchange for "vertical assets," will provide an overview of a new NAB Tower Leasing service available to NAB members. It is aimed at broadcasters that own towers as well as service providers looking to lease.



Vin Scully

**12:30 p.m.:** Radio Luncheon. Sportscaster Vin Scully is honored with induction into the NAB Broadcasting Hall of Fame. Crystal Radio Awards are announced. Dave Ramsey keynotes.



Dave Ramsey

**4:30 p.m.:** "Mobile Video — Entertainment to Go," Super Session. Revenue opportunities and "who will invest in and control mobile networks: broadcast companies, wireless operators, cable companies, satellite operators or newcomers such as Qualcomm or ICO."



Bob Newhart

### WEDNESDAY APRIL 22

**9 a.m.:** "A Conversation with Malcolm Gladwell." The journalist and author talks about new ideas in the social sciences.

**10 a.m.:** "U.S. China Broadcasting Forum."



Photo by Bob Kovacs

An overview of China's electronic media landscape: Chinese broadcast executives "will attend to discuss trade opportunities with U.S. broadcast equipment manufacturers."

**11:45 a.m.:** "Generations — Media Consumption Habits and Preferences," Super Session. "Learn how different generations are consuming media and what their future media preferences are likely to be."

**Noon:** Technology Luncheon. Keynote by Mimi Ito, a cultural anthropologist who studies children and youth's new media use. NAB Engineering Achievement Awards to Jack Sellmeyer (Radio) and Sterling Davis (Television); NAB Technology Innovation Awards



Mimi Ito



Jack Sellmeyer



Sterling Davis

### MONDAY APRIL 20



Mary Tyler Moore

**9 a.m.:** State of the Industry address by David Rehr; NAB Distinguished Service Award given to Mary Tyler Moore; presentation of the NAB International Broadcasting Awards; keynote by author Richard Florida.

**12:30 p.m.:** Television Luncheon. Bob Newhart inducted into the NAB Broadcasting Hall of Fame.

**1 p.m.:** "Money-Making HD Radio Opportunities," a Broadcast Management Conference session moderated by Lynn Anderson of the Radio Advertising Bureau, with speakers from iBiquity Digital, WorldBand Media and ESPN Radio

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## SiPort Releases Single-Chip Solution

Power-Efficient IC Will Be Designed Into A Pending Generation of MP3 Players

by Leslie Stimson

**SANTA CLARA, Calif.** Four months after a former employee shot and killed three SiPort executives, this Silicon Valley chip designer is working to move forward and beyond the tragedy, at least in its business operations.

Its new HD Radio chip is in mass production at Taiwan Semiconductor Manufacturing Company and shipping to receiver manufacturers and module-makers.

The Silicon Valley company says its SP1010 single-chip solution for HD Radio draws the lowest power of all IBOC chips — 110 milliwatts, roughly equivalent to 15 to 20 hours of battery life on a portable device, spokesman Sunder Velamuri told Radio World.

That compares to a prototype KRI armband MP3 player/HD Radio receiver that iBiquity displayed in its booth at CES, the smallest device that an IBOC chip has been integrated into so far. That device uses 500 milliwatts of power and would last between six to eight hours after one charge, Velamuri estimated.

The SP1010 handles all symbol decoding, synchronization, de-interleaving, error detection and error-correction functions.

The SiPort integrated circuit will be designed into a new generation of MP3 players scheduled for launch by the fourth quarter. The company is looking



for more device makers to partner with.

The company believes many consumers are not setting out to buy a radio, specifically, but that they want their audio entertainment as part of their portable, personal devices — paralleling the emphasis that industry organizations like the NAB have placed on getting radio into such consumer electronics.

That's why SiPort is focused on designing HD Radio chips for portables, according to Velamuri, who noted that there is an established base of some 100 million iPods sold to date in the United States.

Even with the economic downturn, he noted that Apple sold about 22 million iPods in the fourth quarter of 2008. Placing HD Radio onto the cell phone platform would be "the Holy Grail," Velamuri said; it would allow more people to sample radio and invite more teens and young adults into the radio listening demo.

The single-chip HD Radio IC is small — 9 x 9 millimeters, or about one-third of an inch square — and draws 110 milliwatts of power, several times less than competitors, SiPort says. Device makers

don't want HD Radio "to make their design fatter, bigger or have less battery life," he said.

Samsung, NXP Semiconductor and Texas Instruments also make HD Radio chips, with the latter two focusing on the automotive market.

### Moving on

Company officials had been mute publicly since Nov. 14, when a former test engineer for SiPort shot and killed three executives, including former CEO Sid Agrawal.

It has now moved to another location. All 38 of its staff stayed with SiPort. "After the tragedy the company is coming together," Velamuri said in his first interview with radio trade press since the fall shootings.

Co-founder Aiman Kabakibo has resumed the title of CEO and remains vice president of engineering. The company is searching for a new CEO, Velamuri confirmed.

The venture-backed semiconductor company was formed in 2004. It develops mixed signal RF and digital baseband wireless receiver chips supporting multiple digital broadcast standards. Investors include Lightspeed Venture Partners, Morgenthaler, New Venture Partners and Intel Capital.

iBiquity Digital certified LG Innotek's HD Radio modules in October 2008; those were the first certified HD Radio modules designed with SiPort's SP1010.

### DIGITAL NEWS

## WTMD Morphs HD2 AAA to Charm City Music

WTMD(FM) in the Baltimore suburb of Towson, Md., has fine-tuned the format of its HD2 channel. It's still programming a AAA format, but now airs music from Baltimore-based musicians 24/7.

"Baltimore is one of the most important music scenes in America today and it



Volunteers at the phones for the pledge drive for WTMD(FM), Towson, Md., celebrate Mardis Gras.

only seemed natural to make sure that the musicians who play their hearts out here also have a radio station where they can be heard at any time," said General Manager Stephen Yasko.

Licensed to Towson University, WTMD FM/HD, "Radio for Music People," is a 10,000 watt non-com serving Baltimore and central Maryland.

Listeners can hear "The Baltimore Channel," on WTMD 89.7-2 or stream the station live in several audio formats at [www.wtmd.org](http://www.wtmd.org). In addition to the stream, WTMD hosts a video archive of Baltimore-based band performances on its site and other news about the region's music scene.

iBiquity Digital President/CEO Bob Struble congratulated WTMD on the revamped all-local multicast channel "right in our own backyard," noting that iBiquity is based in Columbia, Md. "Providing the community with sounds of local artists is an excellent use of HD Radio technology." He tunes into the station on his way to work.

The Baltimore metro area has 14 HD Radio stations plus nine multicast channels, according to iBiquity's Web site.

Several Baltimore bands were in the station in late February to take part in WTMD's pledge drive. Baltimore musicians solicited station memberships on air with WTMD DJs and answered pledge phones. During the drive, the Web site for the Towson University licensee was airing a live stream which GM Steve Yasko enthusiastically called "Pledge TV for radio."

— Leslie Stimson

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## Radio World's HD Radio™ Scoreboard

The HD Radio Scoreboard is compiled by Radio World using information supplied by iBiquity Digital Corp., the HD Digital Radio Alliance, BIA Financial Network and other sources. Data reflect best information as of mid March. This page is sponsored by Broadcast Electronics. HD Radio is a trademark of iBiquity Digital Corp.

### HD Radio on a Shoestring

*'At This Point, Promotion of the Signal Is Really More About Educating the Listener'*

Beasley Broadcast Group's Soft Rock V103.3 WMGV(FM) and Classic Rock 106.5 WSFL(FM), both in the Greenville-New Bern-Jacksonville market, are covering eastern North Carolina with HD Radio. Both stations also are broadcasting uniquely programmed HD2 channels, Echo 103.3 on WMGV HD2 and The Trip 106.5 on WSFL HD2. They've been on-air since summer 2008.

"We actually put our HD2 signal on the air with no budget for programming or promotion. And that forces you to get creative," says Colleen Jackson, program director for WMGV and Echo 103.3 HD2.

"We worked with music we had in-house, in my own music library and in the other DJs' personal CD collections. Luckily, many years in radio have resulted in all of us having expansive collections, and we were able to piece together the perfect format to compliment our AC station. Echo 103.3 is a mix of '80s and '90s pop rock; a lot of tunes that may be familiar, but haven't been heard on traditional radio in many years."

"Yep, we also did it all by ourselves," says Cindy Miller, program director for WSFL and The Trip 106.5 HD2.

"Since we already have an alternative/new rock station in our cluster, we decided to take it to the harder side of classic rock by filling The Trip with '80s and early '90s-based bands like Skid Row, Trixter, Poison, Kingdom Come, the Crue, RATT and Warrant. Then we threw in metal like Megadeth, Iron Maiden, Motorhead and Metallica; heck, we even play Spinal Tap just for fun! That's what The Trip is about: fun."

Beasley is spending an equivalent amount of money to promote Echo 103.3 and The Trip 106.5; that is to say, none to speak of. So how does the company get the word out about its HD2 channels?

"We promote our HD2 signal on our traditional FM band," says Jackson. In doing so, the company is trying to boost awareness of the medium as well as the HD2 radio channels.

"At this point, promotion of the signal is really more about educating the listener: 'HD Radio is the wave of the future ... buy HD Radios at XYZ ... HD Radios are coming to a car near you,'" she said. To drive home the message, "We've given away HD Radios at on-street promotions and, of course, have the HD Radio link on our Web site where you can sample the format."

This "get to air no matter what" reflects Beasley's determination to

grow HD Radio in eastern North Carolina, recession notwithstanding. To date, the company has switched two FMs and one AM in the area to HD Radio and put two HD2 signals on the air.

"Unfortunately, these tough economic times are calling for budget cuts in every aspect of day-to-day radio life," Jackson says, "so monetary resources for our HD2 signals just don't exist. Extra hands to help with the stations are also nonexistent. Both Cindy and I program our HD2 signals and there is no 'voice talent' on the stations; imaging was

pieced together and produced in-house. At this point, the HD2 signals are really about the music."

To date, HD Radio's ROI to Beasley matches the resources the company has put into it. On the positive side, "I've received calls from listeners telling me they really love the station because it's stuff they don't normally get to hear," says Miller. "In fact, one guy offered some suggestions about bands and tunes he'd like to hear. That's when you know the station has fans."

On the negative side, HD Radio is "still brand new in Eastern North Carolina. The technology hasn't really caught on at this point," says Jackson. "We just do not know what our audience size is, but we love when someone calls with a question, or has found Echo and really likes it."

— James Careless



Colleen Jackson



Cindy Miller



### The HD Radio Bottom Line



## DIGITAL NEWS

## Industry Showers Gibbs With HD Radios

New White House Press Secretary Robert Gibbs now has a plethora of HD Radios and other consumer electronic devices that include a radio thanks to a comment he made to the Washington press corps in March. He said he didn't listen to radio nor did he own one. "I wish I had a radio," Gibbs said in response to a question about Rush Limbaugh.

Several reporters gave him radios soon after, including Ann Compton; she gave him a desk model from ABC News Radio Vice President Steve Jones, emblazoned

with the ABC logo and tuned to ABC News on its pre-set station.

Clear Channel and the HD Digital Radio Alliance also sent radios, as did Bonneville's WTOP (AM); that one had to be returned because it exceeded gift restrictions.

The alliance sent a Sony XDR-S10HDiP receiver with iTunes Tagging capability and an iPod dock. Both the alliance and Jones included notes reminding the White House that 235 million people listen to radio every week.

In her note to Gibbs, alliance President Diane Warren said, "Radio's digital future



'Kane,' WITH(FM),  
Clear Channel,  
Washington,

was made possible by a collaboration of policymakers, broadcasters, the FCC and the consumer electronics industry. We're delighted to welcome the White House to this important digital upgrade."

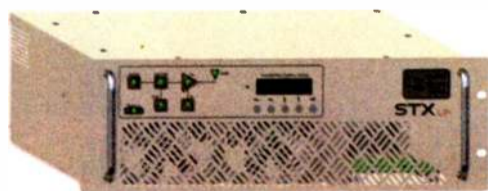
Clear Channel held a press event in its Rockville, Md., cluster and then gathered "the full range of consumer electronics that receive radio." It sent air talent Kane from "The Kane Show" on WITH(FM) to "motorcade" them to the White House in the station van.

Clear Channel delivered a portable receiver; desktop, clock and in-dash models; an HD Radio with iTunes tagging; and an FM adapter for Gibbs' iPod.

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## Chip Firms Integrating NDS Conditional Access

NDS is working with chip manufacturers like Texas Instruments, Samsung, SiPort, NXP and others to work the Radio Guard intellectual property into HD Radio chipsets in this calendar year.

Radio Guard is the name of the NDS conditional access capability for HD Radio. It's in the Dice iTR-100A, a digital radio reading service receiver that uses voice prompts and audible feedback to simplify tuning.

The serialization and integration process is underway, according to NDS Vice President of New Media Todd Narwid, who oversees Radio Guard. Tom Rucktenwald, familiar to the radio industry as a spokesman for the product, is no longer with the company.

The Dice unit is the first to have the NDS conditional access properties; however, "We expect eventually all HD Radio chips will have NDS Radio Guard in them," Narwid said.

NDS also is talking to stations about managing entitlement and access control and delivering the right content to the right radio. The NDS Protector sits next to the HD Radio importer in the air chain. The Initiator is a management tool to allow a network of stations to manage multiple head-ends.

NDS is looking ahead to when stations will want to use the technology for premium services, for example to deliver a pay-to-listen, one-time event or special advertising-free content over their multicast channels, and generate revenue.

Given the economy, is the pace of HD Radio adoption happening fast enough to get to these uses?

"We would have liked to see more stations and more HD Radios in the field" by now, Narwid acknowledged, but he found it significant that receiver prices are dropping. NDS still sees conditional access as a business opportunity for radio, he said.

## Engineer Updates Time-Alignment Software

IBiquity Digital advises stations to pay attention to the time alignment between the analog and digital signals when transmitting in HD Radio.

An engineer with an interest in HD Radio has updated his cross-correlation program to measure the analog/digital time and level alignment of an analog FM and HD Radio signal.

Using a few seconds of audio, the program calculates the delay between the transmitted analog and digital signal so they can be adjusted. The program also calculates the Root Mean Square level difference between the analog and digital signals so any level error can be corrected as well.

Brian Beezley, a retired software and circuit designer, says this is a DOS utility that needs to be run from the command line: [ham-radio.com/k6stilcc.exe](http://ham-radio.com/k6stilcc.exe)

He said you can use the utility with any HD Radio receiver, such as a Sangean HDT-IX tuner, that provides split-audio mode. He says the updated program uses a more robust method for quickly calculating cross-correlation than the previous program.

— Leslie Stimson

# Workbench

Radio World, April 8, 2009

Past columns are archived at [radioworld.com](http://radioworld.com)

## A Paint Stick Guards Against Shock

*Safety Doesn't Have to Be Expensive*

by John Bisset

Consulting engineer and RW colleague Buc Fitch wrote in about our recent discussions of "suicide installations." This is where AC above class 1 (24 volts) runs willy-nilly, unprotected and unmarked, around the plant and very apt, considering the horror stories we've all encountered.

It doesn't take much in the way of effort to prevent or minimize these hazards. Buc reminds us of a tip we've mentioned previously: Cover exposed terminal strip 120 volt AC connections with caulk or Glypt insulating varnish, as pictured in Fig. 1.

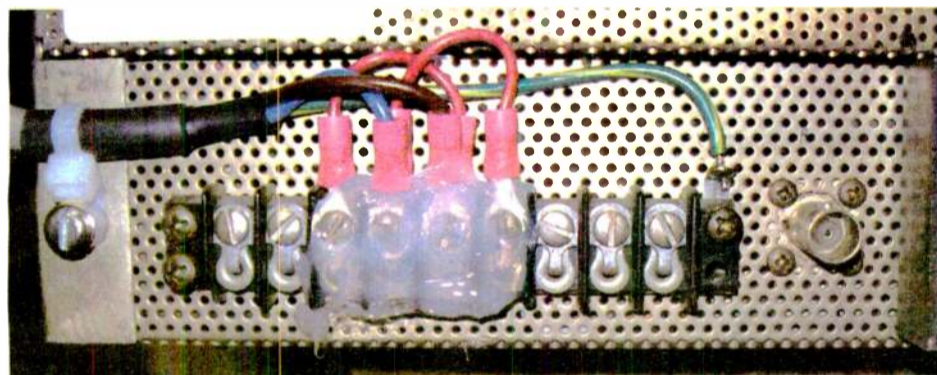


Fig. 1: Something as simple as RTV or caulk can be used to guard against terminal board shocks.

Buc takes the safety a step further and includes a photo of a soft-start time delay controller he built, seen in Fig. 2. Here, you can see the most elemental of protection methods against accidental contact or shock. This controller interfaced an entire AM plant's "classic" transmitter (all 120 VAC control) to bring it online with just a single squelch relay closure. Nearly all of the terminal board connections were 120 VAC.

Yes, that is a paint stick, at upper right, cut down to make a cover for the AC connections on the terminal board. Who says safety has to be expensive?

Buc Fitch can be reached at [fitchpe@comcast.net](mailto:fitchpe@comcast.net).

\*\*\*

In our Feb. 1 column, AM engineer Bob Meister wrote about issues he was having marrying up UPS systems to generators, especially at an AM site.

You'll recall he was able to stabilize the problem by using a Liebert GXT2 UPS. Bob reports back that his UPS systems are running fine, but this winter

brought another problem: hard-drive failure due to very cold transmitter site temperatures.

Bob's AM site experienced three separate hard-drive failures due to below-freezing temperatures. The building is unheated except for the self-generated heat of the equipment. The building is also poorly insulated. Because of the failures, Bob and his team started doing research into the operating temperature

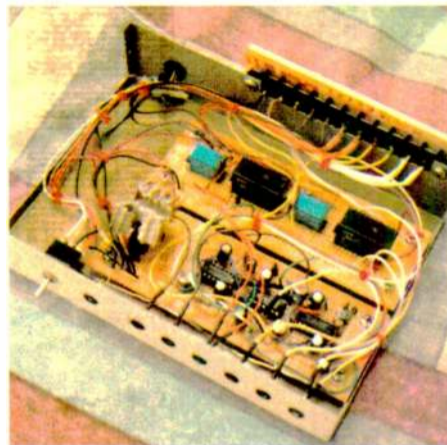


Fig. 2: Shock prevention doesn't have to be costly. Here, Fitch uses a piece of wooden paint stick, on edge at upper right, as a shock guard.

**Hard-drive manufacturers are inconsistent in what they spec as the acceptable lower limit temperature.**

range of some broadcast equipment.

The Burk ARC-16 remote control unit is spec'd to 0 degrees C. The Moseley 950 MHz digital STL is good down to -20 C, while its companion StarLink frequency-hopping spread-spectrum network unit is good down to -30 C.

The Harris DAX-1 transmitter and DEX-Star digital exciter are only rated to 0 C. The exciter runs Linux and has a hard

drive in it. After the first one failed and was replaced, the new drive also failed and took the digital signal off-the-air.

Bob's research indicates that hard-drive manufacturers are inconsistent in what they spec as the acceptable lower limit temperature.

The Audemat-Aztec GoldenEagle HD monitor also runs Linux with a hard drive in it; and Bob suspects it, too, has a 0 C or 5 C low limit; it would not reboot. A personal computer transmitter went through a whole bunch of required updates, and then failed to reboot.

It's not only station engineers who want to be comfortable at the transmitter site! Bob's warning is to check the temperature if you start having transmitter site hard-drive failures, especially if there is little insulation or no building heat.

I remember one engineer's solution to an AM antenna monitor that didn't respond well to the cold. He mounted a 60 W light bulb on a panel under the monitor. Apparently, the bulb provided just enough heat to keep things happy, and provided a bonus of lighting up the interior of the equipment rack.

Bob Meister can be reached at [walmik@comcast.net](mailto:walmik@comcast.net).

\*\*\*

Fig. 3 shows CyberResearch's Dual-Rail FoldAway monitor with 17 inch LCD and 8-Port KVM.

Since rack rooms often are short on comfortable working space for engineers, the company offers a line of FoldAway keyboard-monitors that provide separate rails for each component in a compact arrangement that occupies 1 RU when closed. Leave the monitor up to see remote PCs. Slide the keyboard out, as needed, to type commands, then slide it back in for breathing room.

Because it comes with separate rail See FOLDAWAY, page 25 ▶

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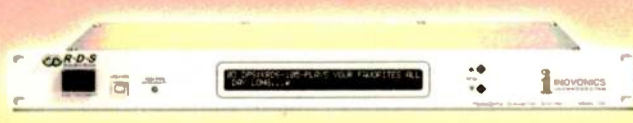
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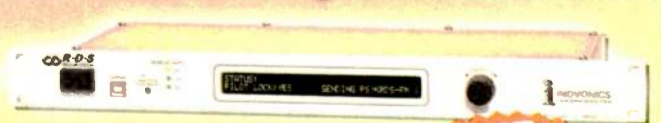
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RADIO IT MANAGEMENT

# GNU/Linux Revisited: OpenSUSE 11.1

*If You Haven't Tried OpenSUSE Yet, You Don't Know What You're Missing*

by Stephen M. Poole

My colleague Ed Dulaney introduced me to Linux years ago with the Mandrake (now Mandriva) distribution. I liked it, but in time, I moved over to SUSE 9.0 and fell in love.

SUSE is now up to the 11.1 release (with 11.2 in beta) and the improvements continue. Ironically, this time I had trouble with my home desktop computer — more on this in a moment — but my com-

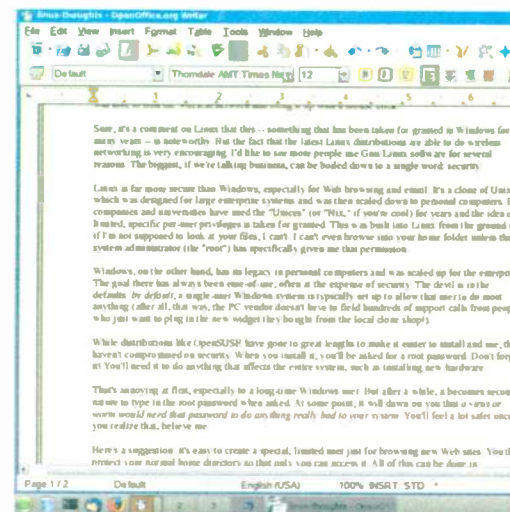
pany laptop upgraded easily and with flying colors.

Given that laptops have long been Linux's bane, I was impressed and pleased. The OpenSUSE installer found and configured my hardware with only one minor hitch: I had to select a different printer driver to get network printing to function. But most impressive was the fact that wireless networking now works perfectly under SUSE!

Sure, it's a comment on Linux that this

— something that has been taken for granted in Windows for many years — is noteworthy. But the fact that the latest distributions are able to do wireless networking is encouraging. I'd like to see more people use GNU/Linux software for several reasons. The biggest, if we're talking business, can be boiled down to a single word: security.

Linux is far more secure than Windows, especially for Web browsing and e-mail. It's a clone of Unix, which was designed for large enterprise systems and was then scaled down to personal computers. Big companies and universities have used the "Unices" (or



Switchable desktops: one with and the other with th

"Nix," if you're cool) for years and the idea of limited, specific per-user privileges is taken for granted. This was built into Linux from the ground up: If I'm not supposed to look at your files, I can't. I can't even browse into your home folder unless the system administrator (the "root") has specifically given me that permission.

Windows, on the other hand, has its legacy in personal computers and was scaled up for the enterprise. The goal there has always been ease of use, often at the expense of security. The devil is in the defaults: *by default*, a single-user Windows system is typically set up to allow that user to do most anything (after all, that way, the PC vendor doesn't have to field hundreds of support calls from people who just want to plug in the new widget they bought from the local clone shop!).

While OpenSUSE has gone to great lengths to make Linux easier to install and use, they haven't compromised on security. When you install it, you'll be asked for a root password. Don't forget it! You'll need it to do anything that affects the entire system, such as installing new hardware.

That's annoying at first, especially to a long-time Windows user. But after a while, it becomes second nature to type in the root password when asked. At some point, it will dawn on you that *a virus or worm would also need that password to do anything really bad to your system*. You'll feel a lot safer once you realize that, believe me.

Here's a suggestion and all of this can be done with OpenSUSE using an intuitive, point-and-click interface: Create a special, limited user just for browsing new Web sites. You then protect your normal home directory so that only you can access it. When you want to browse a potentially unsafe Web site, you simply start a new session as that limited user. If you happen onto a malicious Web page, it will be limited to trashing that one directory (which can easily be deleted and recreated). Once you know that a Web site can be trusted, you log back in under your normal user name and add it to your bookmarks there.

Unfortunately, the OpenSUSE installation didn't go so well on my home computer, which has a 64-bit AMD processor with NVidia graphics. It seemed OK at first, but as soon as SUSE updated itself with the latest security patches, the video stopped working. The issue is apparently the proprietary drivers supplied by NVidia and to be fair, these types of problems aren't limited to Linux. Windows

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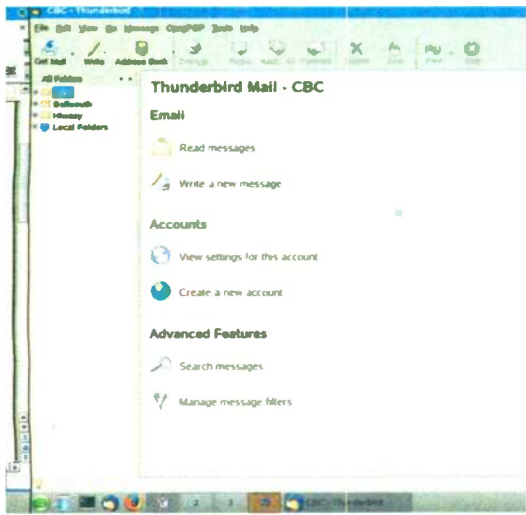
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can dual-boot. When you restart your machine, a little menu will ask whether to start Windows or Linux.

You have been warned: Yes, there's a learning curve, but once you've used it for a while, don't be surprised to discover that you love SUSE.

I actually prefer their KDE desktop to Windows. It's much more cleanly laid out, with features that even Windows Vista has yet to incorporate — such as multiple desktops, which is one of those things that you can't live without once you've gotten used to it.

The attached image shows two different desktops, each running at the same time, one with Thunderbird, my mail program, and the other with OpenOffice, which I'm using to edit this article. I can alternate between the two with a simple mouse click.

The behavior of the desktop is superior to that of Microsoft's product, too. If you've ever switched on a Windows machine, in a hurry, trying to get to an important file, you know how frustrating it is to play "whack a mole" with the half-dozen "please update" and "you have unused icons" boxes that will pop up.

Plus, speaking of updates, SUSE handles all of this for you in an orderly manner. You don't have different programs popping up windows at random while you're trying to get work done. You almost never have to restart after updating, either (the exception is if you upgrade the kernel — the core operating system — itself).

If you haven't tried OpenSUSE yet,

you don't know what you're missing. I do have one recommendation: KDE 4 has bugs. I strongly recommend that you check "KDE 3.5" during installation; stay away from the latest version of KDE. But best of all, it's free! You can download the complete operating environment with desktop software from [www.opensuse.org](http://www.opensuse.org). If you don't have a high-speed Internet

connection, you can also order DVDs in a boxed kit from that same Web site. Either way, you need to try it.

*Stephen M. Poole, CBRE-AMD, CBNT, is market chief engineer for Crawford Broadcasting in Birmingham, Ala. This article is expanded and updated from one that appeared in the company's Local Oscillator newsletter.*

## FoldAway

► Continued from page 23

sets for keyboard and monitor, you can slide these elements in or out separately. When you slide both of them in, a key-lock prevents unauthorized use.

Connect remote PCs via pushbuttons, AutoScan, hot keys or the OSD menu using the KVM Switch. The GFC 1708DA FoldAway configuration retails at \$2,095; explore other configurations on the Web site. Info: [www.cyberresearch.com](http://www.cyberresearch.com).

To request a free copy of the PC Systems "Handbook for Scientists and Engineers," call (800) 341-2525 or e-mail [handbook@cyberresearch.com](mailto:handbook@cyberresearch.com) (let them know you saw them in *Workbench*).

*John Bisset has worked as a chief engineer and contract engineer for 39 years. He was the SBE's Educator of the Year for 2006. Reach him at [johnbisset@myfairpoint.net](mailto:johnbisset@myfairpoint.net). Faxed submissions can be sent to (603) 472-4944.*

*Submissions for this column are encouraged and qualify for SBE recertification credit.*

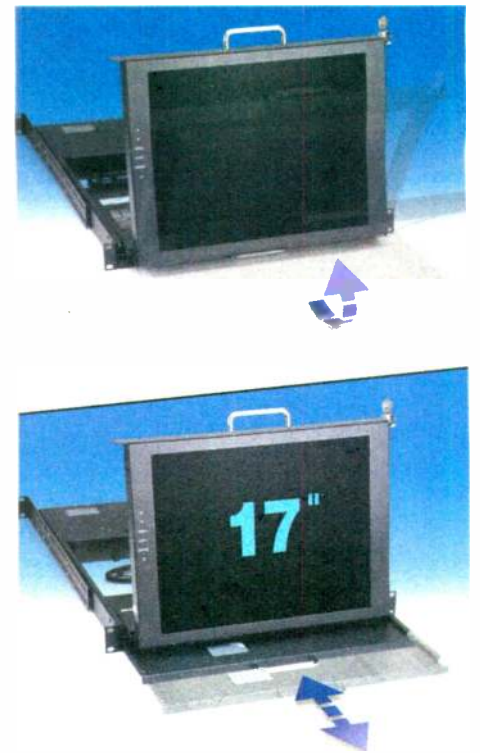


Fig. 3: A computer screen, keyboard and KVM switch all in one RU.

users are sometimes perplexed when trying to get 64-bit and 32-bit software to play nicely together as well. I've backed off to Suse 10.3 at home.

### He's sold

All in all, I am still 100 percent sold on OpenSUSE. Everything I need or want to do, with a few specific exceptions (such as income tax software), I can do under Linux now.

For those rare occasions when I need a Windows-only program, I can either try to run it under OpenSUSE with the Windows emulator Wine, or I can log into Windows. Like most modern Linux distributions, OpenSUSE can install itself onto an existing Windows systems so that you

# IP AUDIO

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## FIRST PERSON

# Don't Be Blind to the Possibilities

*An Owner/Operator Talks About Life and Work With a Limiting Handicap*

by Jim Withers

Years ago, while sifting through résumés looking for a qualified video engineer, I came across an applicant who stated that he was color blind.

As the NBC peacock was painting across the screen of my office TV and the announcer intoned "The following program is being brought to you in Living Color, on NBC," I remember (and the memory makes me squirm, even now) being slightly amused.

That someone who could not readily

identify different hues of color would apply for a job as a video engineer at a color television station seemed, well, a bit odd.

How could he "ride the video"? (This was way before computer camera controls.) Would we end up with green people and purple hair? Rather than give any serious thought to these questions, I set the résumé aside in the "Do Not Consider" stack and went about the task of finding the person I *would* consider.

Had I not ended up in a wheelchair some years later, I doubtless would not

even remember that episode and my cavalier way of dealing with it.

Owning and operating a radio station from my 24 volt ride, though, has convinced me that I could have, and should have, done better, for myself, my company and for the applicant. Had I given even a small amount of thought to accommodating that person's slightly different needs, I might have ended up with an excellent employee. As it happens, I never found out.

What I *have* found out, in an up-close-and-personal way, is that disabled people

can Rube Goldberg their way around almost any obstacle.

Those of you who are owner/operators know that our daily task list never ends. We sell, voice track, screw in light bulbs, take meter readings, clean up, work the crowd at the Chamber meetings, sell some more, manage the staff, cut the checks ... well, you get the idea.

## Getting it done

So how is this done when all that stands between me and immobility is a bad gel cell? With patience and perseverance, obviously, but also (and amazingly, to some people), with quite a bit of success.

Selling and I have a love/hate relationship. That is to say, I sometimes hate that I love to sell, and vice versa. Selling to a client, though, when you are eye level with that person's third shirt button (or worse, second blouse button) is a special challenge.

I approach it with cautious optimism. I always explain over the phone my situation and ask about the layout of the client's office. Handicap parking? Steps? The list is fairly short. If there is hesitation, I quickly check the balance on the company card and offer to buy lunch at a familiar place. I also always get there first (but that's just good salesmanship, anyway).

Even transmitter duty is not off-limits to me (although my wife cringes when I call her from the site). It is true that I am long past the point of standing up and swapping out a 4CX15000, or coupling up a 3 inch coax line, but I am still pretty valuable to have around when something deep inside the Cabinet O' Death (my wife's term) goes Snap, Crackle and Pop in the middle of the night.

Ninety percent of working at the trans-

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mitter site is knowledge-based. Given a schematic and a helper to hold the scope probes, most problems are solved with the brain, not the back.

Of course, once a problem is diagnosed, it has to be repaired, and I have found that a digital camera (a picture of the inside of a fried ATU truly is worth a thousand words) and the aforementioned able-bodied assistant are the two indispensable requirements to getting that done.

**What I have found out, in an up-close-and-personal way, is that disabled people can Rube Goldberg their way around almost any obstacle.**

Since the average transmitter site is very short on accessibility, I try to arrange my own. At my site, this is as simple as a sheet of 3/4 inch plywood, kept there against the possibility of rain-soaked ground.

As for personal conveniences, there is one wild tree that has grown up in back of the building. It is on my personal "No Cut" list.

**Unfazed**

Computers, of course, have made everyone's life easier, and this is doubly (or triply) true for disabled folks.

Checking FCC rules and regulations, keeping up with rulemakings and filings, paying all sorts of regulatory and IRS fees; I accomplish all of these tasks from my office, or sometimes (if I'm particularly ambitious or have just forgotten until the last moment) in my pajamas from my home computer.

Likewise, I have often monitored the station, listened to aircheck "tapes," tracked and produced spots; all sitting just 15 feet from the coffee pot on the kitchen counter.

People I know fairly well and who know I am absolutely unfazed by my circumstances occasionally ask how I am doing. Do I have a problem doing this thing or that?

The answer is that, like most disabled people I know, I do pretty well at most things and perfectly well at others. When I need help, I ask for it. I try to give my best, every day. I try to make my station sound good and keep my clients and my listeners happy. In short, I'm a lot like any other owner/operator, or good employee.

I suspect that there aren't 10 people reading this who have any sort of limiting handicap, so, if you've plowed this far along in this piece, you might be asking, "What am I reading this for?" My answer: You're reading it because sometime down the road you might have occasion to interview someone who just happens to be color blind.

Comment on this or any article. Write to radioworld@nbmedia.com.

**TRT Radio Engineers Visit Nautel**

Nautel recently won a multimillion dollar contract for 133 FM transmitters that will be deployed by Turkish Radio-Television Corp.

President/CEO Peter Conlon said the Canadian-based company won the bid in the face of "extensive" competition.

Public service broadcaster TRT is based in Ankara; it provides a local, eight regional and four national radio services. Voice of Turkey provides programming in 27 languages including Turkish on short-wave. TRT radio is heard via Internet, satellite and cable as well as terrestrial services,

Nautel said.

The boxes range in size from 1 kW to 20 kW. Remote management will allow TRT to manage all sites from a central operations center in Ankara.

Conlon, shown center with visiting TRT engineers at the Nova Scotia factory, said the job "confirms Nautel's position as one of the world's largest suppliers of radio broadcast transmitters."

Nautel earlier won the business to supply multiple 300 kW transmitters to be used to modernize the country's medium-wave broadcast capability.



**Installing a new STL System?**

**10 Reasons why APT's WorldNet Oslo should be considered for your next STL**



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**3) Proven IP Technology**

With several major project installations throughout the networks of companies such as Clear Channel, Citadel, the BBC, ABC and the European Broadcast Union, the WorldNet Oslo has become the professional IP audio codec of choice worldwide.

**4) Flexible, Scalable Solutions**

Providing a tailored fit for your audio requirements, APT offer a range of stereo codec solutions such as the WorldNet Rio (T1) or the WorldCast series (IP) for use in stereo drop-off locations.

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**6) PSU Redundancy & Range of Back-Up Options**

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**7) High Quality, Low Delay Audio**

With pure linear audio and high quality Enhanced apt-X coding supplied as standard on all duplex audio cards, the WorldNet Oslo will make your station sound simply outstanding!

**8) New & Innovative Technology**

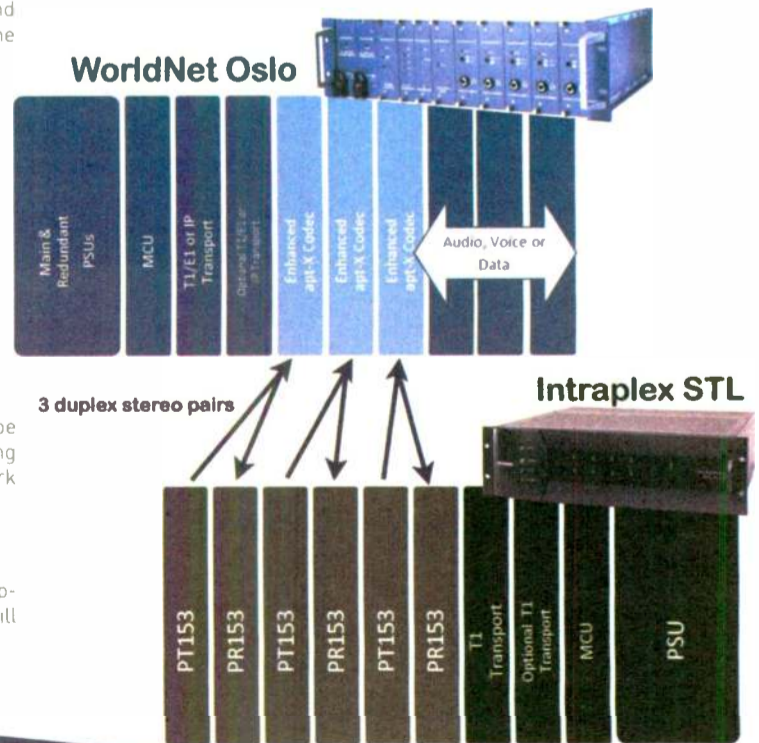
The WorldNet Oslo is APT's flagship product and new features and modules are regularly added to ensure that the unit continues to meet the changing needs of broadcasters.

**9) Integrated Control & Management**

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# Next-Gen Radio Metadata: EPG

*An Electronic Program Guide Soon Could Be Coming to a Radio Near You*

When comparing media offerings today, one place in which radio falls comparatively short is how well it answers the question of "What's on?" (or "What's going to be on?").

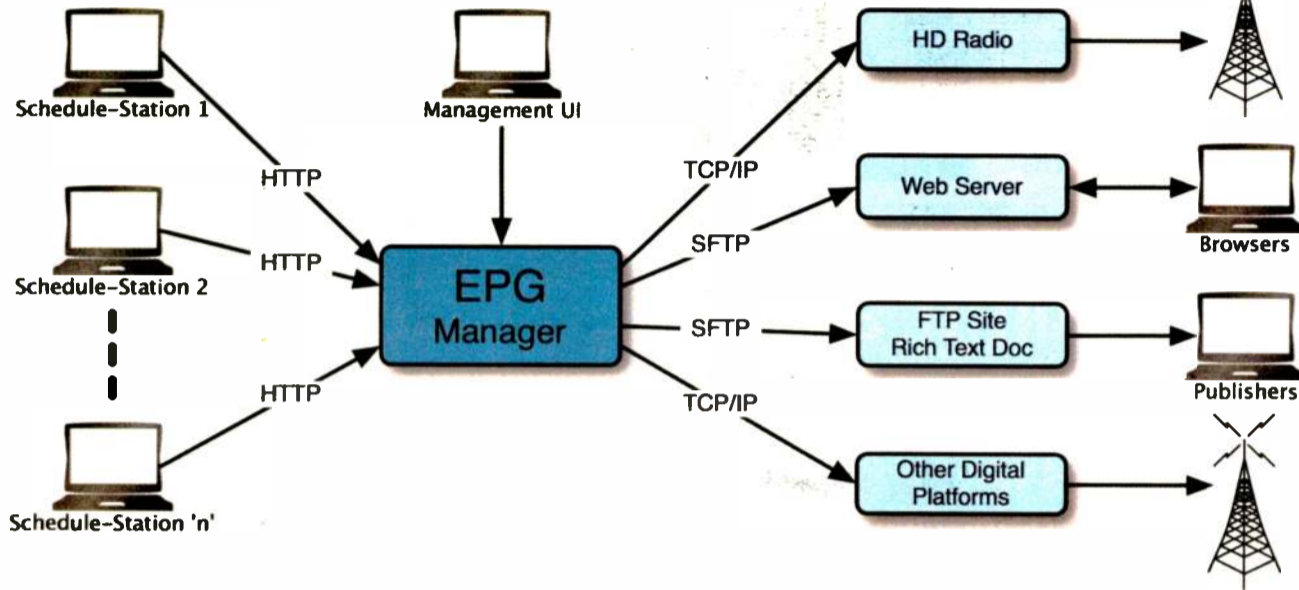
Recent developments in RBDS and IBOC PSD have added "now playing"

data to radio transmissions, which is a great step forward, of course. But there could be — and some might add, *must* be — more.

Among the latter proponents is NAB FASTROAD, the technology advocacy program of NAB, which is funding the

development of a proposed Electronic Program Guide (EPG) ecosystem for U.S. radio broadcasting.

The development team assembled by NAB FASTROAD for this purpose includes two well-known U.S.



Conceptual diagram of program data flows for a radio EPG system. The centralized 'EPG Manager' function that collects and distributes data can be provided by a single station in a market, by a station group's headquarters or local flagship, or by one or more third-party service bureau(s).

## The Big Picture



Photo: Gary Hayes, BBC

by Skip Pizzi

gent choices in personalizing their content consumption from such services. An EPG could also make the radio medium "stickier," in that it could maintain or increase audience by telling listeners what was coming up — a kind of always-on, graphical form of forward promotion.

Further, a fully populated EPG could make terrestrial radio appear like a "coordinated service" in any given market, increasing its competitiveness with other multichannel media services, while also enhancing the visibility of its broad range of content.

The latter could be particularly helpful as a method of displaying stations' localism, which is often lost or invisible to the typical listener. Browsing a well-stocked guide would almost certainly provide opportunity for fresh discovery of content that had long been aired regularly on a local market's stations but that had



**Broadcast Structures**

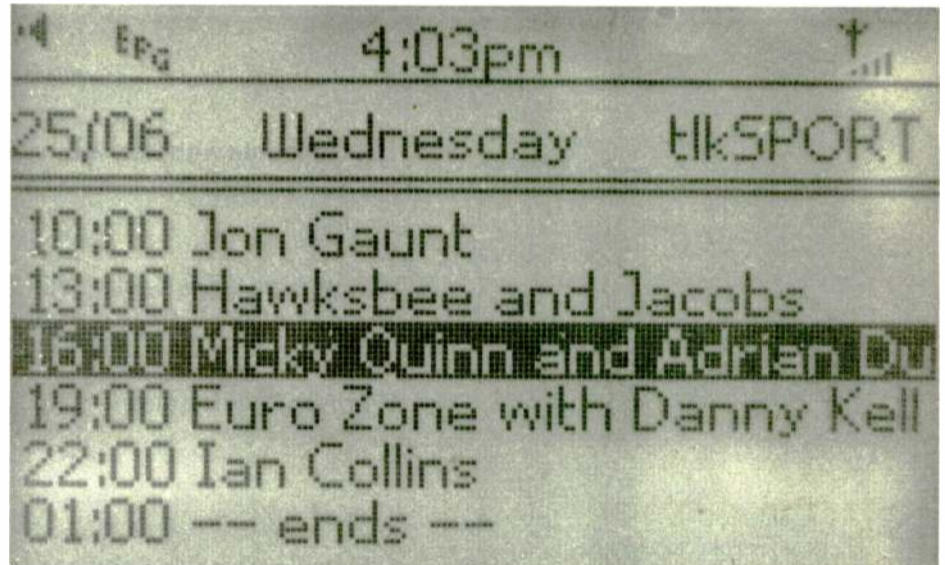
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One view of actual EPG data from a DAB receiver (PURE Evoke-3, a tabletop model) receiving signal off-air in London.

radio-industry firms, BIA Advisory Services and Broadcast Signal Lab, along with Unique Interactive, a U.K.-based company that has been highly instrumental in developing the EPG system used by Eureka DAB, which is already in operation in a number of European radio markets. (Full disclosure: I am a consultant to this project.)

The two-phase development project is now in its second phase, which will culminate in an on-air/online trial of radio EPG services in the Boston and Providence, R.I., area later this year.

Meanwhile, a guidance document developed in Phase 1 of the project is available for free download at [www.nabfastroad.org/NAB\\_FASTROAD\\_EPG\\_Final.pdf](http://www.nabfastroad.org/NAB_FASTROAD_EPG_Final.pdf).

### Value proposition

Providing an EPG would help put local radio at parity with other digital media services, which today inherently provide substantial metadata for their audiences.

This data enables users to make intelli-

gone unnoticed even by the most frequent radio listeners there.

And of course, any future that envisions a radio with recording capability would be difficult to contemplate without the empowerment of such functionality (e.g., time-shifting) that an EPG provides.

### Harder than it looks

All that said, the provision of a viable EPG for radio isn't an easy task.

But why, you might ask, given that it's an already well established process in the U.S. television industry? Like other radio/TV comparisons, shouldn't it be even easier for radio? Well, actually, no — and here's why:

First, consider that there is no tradition of comprehensive collection of U.S. radio programming data like there has been for television.

In the TV world, several companies have been doing this for decades, initially for publication in the printed guides found in newspapers and magazines.

See EPG, page 29 ▶

# EPG

► Continued from page 28

These providers have also built a business model around the aggregation and distribution of this data.

When TiVo and others developed consumer electronics devices that needed TV program schedule data, they simply licensed the data from one of these aggregators, and presented it electronically on the TV screen rather than on paper.

Although recently a few new companies (like RadioTime) have begun a similar collection of radio program data, the process and the business model supporting it are far less mature than those of the TV industry. Moreover, the challenge is much larger given that the number of radio stations in the U.S. is more than an order of magnitude greater than the number of TV stations here.

A closer look shows that there are also more radio "markets" than TV markets, and in many markets (particularly larger ones) the coverage of the market's geographic area by its radio stations is less uniform than that of the market's TV stations.

In other words, from a statistical perspective, it is likely that audiences in many markets may find themselves in locations where they can receive all of the market's TV stations, but not all of its radio stations. (This is, of course, due to the different allocation procedures used for licensing TV vs. radio stations.)

Thus any attempt to define a consistent market-based set of content schedule data for radio is elusive. This issue is further complicated by the fact that radio usage is a far more mobile phenomenon than TV viewing — at least today — meaning that the list of radio stations currently available to a mobile receiver traveling in or between market(s) is changing constantly.

Next, also unlike TV, there are no "channel aggregators" in the local radio environment (i.e., no equivalent to cable or satellite TV service providers), whereby a single source of program schedule data can be inserted into a full-market, multichannel service package. This implies that radio EPG data would have to be delivered over the air in a distributed fashion by individual stations.

Finally, the capability of a radio to display any program schedule data visually also is quite variable — from zero to rich. Here again the situation differs greatly from television, where the options for resolution and aspect ratio of a full-screen EPG display are well known and finite.

### Technical considerations

Getting the EPG data to listeners is also a challenge. The amount of data required renders the delivery possible only via the digital platforms used by radio broadcasters today, meaning IBOC and the Internet.

(The NAB FASTROAD initiative has specifically targeted the development of an HD Radio EPG, but in the course of its work, the development team has worked toward a delivery-platform-neutral core system that can be applied to any and all appropriate delivery channels or services. Thus the upcoming trials are planned to include display of EPGs on one or more prototype HD Radio receivers, as well as on PCs and mobile wireless devices.)

The speed of this metadata delivery will be a key factor in determining the quality of user experience, but this is

generally inversely proportional to the delivery-channel bandwidth dedicated to EPG datacasting. So any clever methods of conserving bandwidth and improving EPG throughput are desirable.

Other tradeoffs occur in the area of receiver design, where screen size, memory requirements and power consumption are critical cost drivers for consumer electronics devices. Keeping all of these in check while still providing solid EPG performance for the user will be another challenging design exercise.

Next time we'll look at some of the specific ideas that have been developed to date to provide optimal balance among all the issues raised here and offer a workable EPG system for the U.S. radio industry in the near future.

*Skip Pizzi is contributing editor of Radio World.*

### WHO'S BUYING WHAT?


Harris won a contract in the fall to deliver and install nine Atlas series high-power TV transmitters and four Platinum Z10 FM radio transmitters to the **Bulgarian Telecommunications Co.**, headquartered in Sofia, Bulgaria. The transmitters are part of BTC's program to modernize the TV and radio infrastructure in the country, part of which is a transition of the terrestrial network to DVB-T. The local Harris dealer is **NewTek Ltd.** ...

**Broadcast Electronics** won a contract to supply eight solid-state FM transmitters for U.S. military bases in Italy and Korea. Company officials said in total, approximately 50 BE transmitters are in service in Europe, Korea and the Americas as part

of the U.S. Army organization that manages the **American Forces Network Europe, AFN Korea, AFN Honduras and AFN Kwajalein.** The latest order was for two BE FXi 250W exciters/transmitters, four BE FM 5C and two BE FM 100C solid-state transmitters. ...




**Urban Radio of MS** purchased a pair of WorldNet Oslo Multiplexers from **APT**, to facilitate a new STL over a T1 connection. Urban Radio of MS is a six-station cluster in central Mississippi. Stan Carter is engineer. ...

**Specialty Data Systems** said **MZ Media Inc.** of Toronto picked **SDS Symphony** broadcast management software for its Ontario radio stations **CFMZ(FM)** and **CFZM(AM)** in Toronto and **CFMX(FM)** in Cobourg.




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# Ch. 6

► Continued from page 1

have decided to remain in their old neighborhoods. Prevailing opinion has it that Channel 6 TV (and low-band VHF frequencies in general) isn't really a fit place for television, thanks not only to impulse noise, but also to less than due diligence by the FCC. This is one of the reasons that an old-line Oklahoma Channel 6 broadcaster cites for moving to a UHF slot.

"Tulsa is in the Bible belt — some say it's the buckle — and the FCC's radio division allows non-commercial FM stations to encroach on the aural subcarrier of Channel 6," said Gerald Weaver, director of engineering at Tulsa's KOTV. "Around here these are typically religious stations and we have one radio station sitting very close to our aural carrier. A number of our viewers are hearing them instead of our audio."

Asked about any regrets in leaving the lower six, Weaver said that it would be in shutting down his Harris Platinum VHF transmitter.

"It's roughly 10 years old and still has a lot of life left in it," Weaver said. "It's always been very reliable."

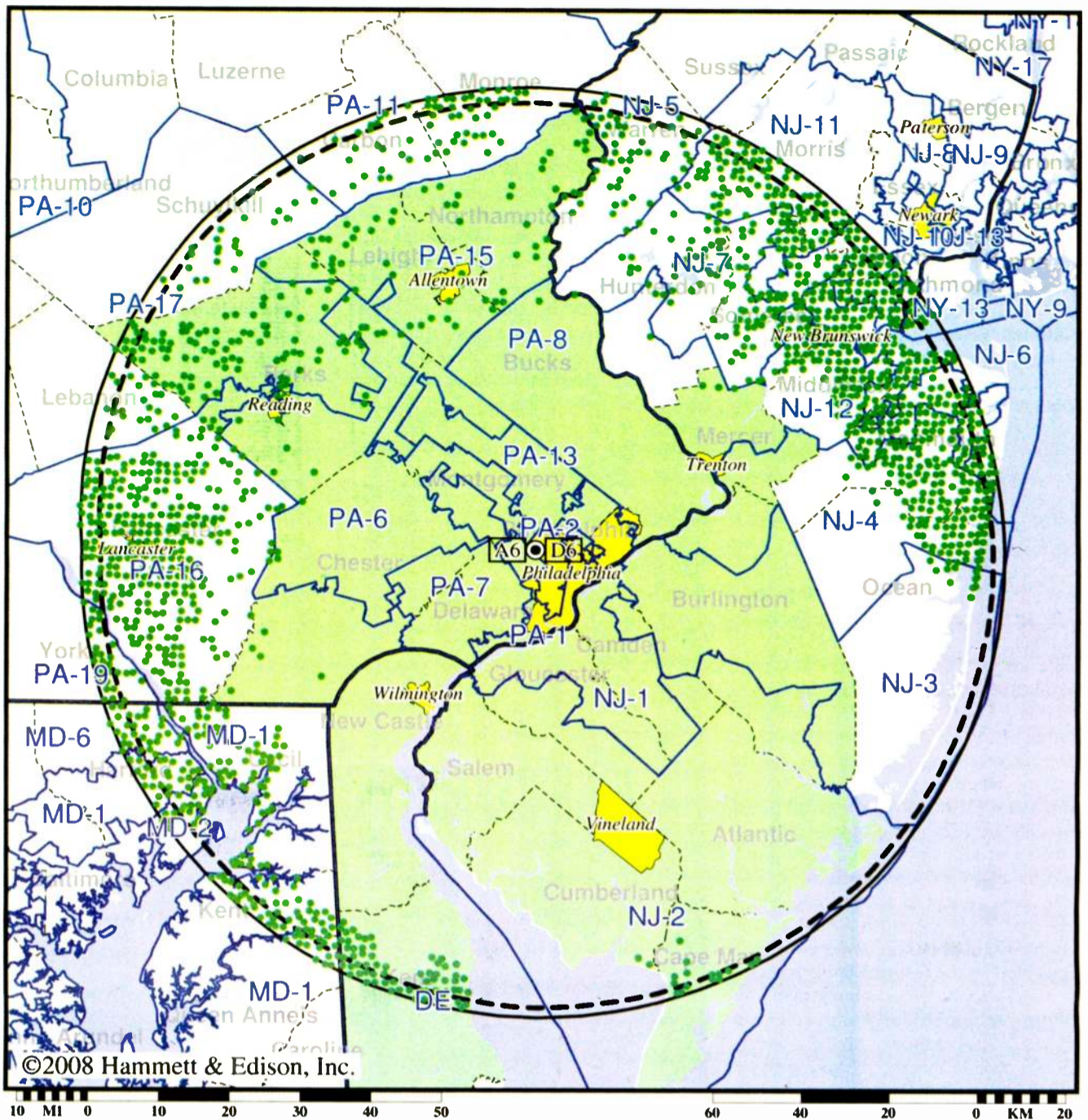
### Hey, not so fast

Other Channel 6 broadcasters, however, feel their TV assignment has a lot of life left in it and could be actually be beach-front property in the post-transition world.

"I'm a believer in low-band television," said Fred Lass, director of engineering at WRGB, a Channel 6 station licensed to Schenectady, N.Y. "We're in an area where there are a lot of mountains and the predictions indicate that we'll get better coverage as a V. Low-band signals tend to bend over the horizon."

Billy Ward, chief engineer at KTVM in Butte, Mont., also feels Channel 6 is a good place to be. KTVM is another of the full-power stations that will keep its Channel 6 allocation.

"The FCC originally offered us Channel 2, but we didn't really want that," Ward said. "Then they gave us Channel 34



● Coverage gained after DTV transition  
 (no symbol) No change in coverage  
 WPVI(TV) Channel 6 analog vs. digital signal coverage. Courtesy Hammett & Edison

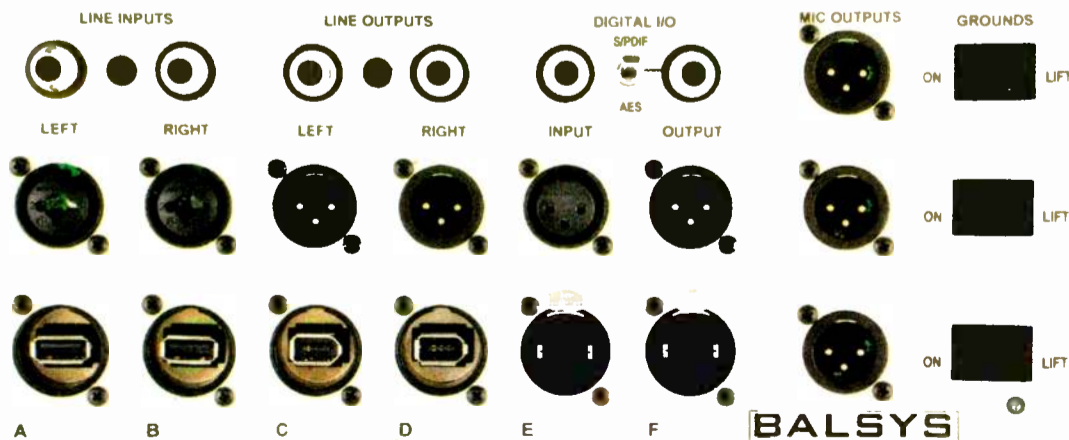
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and we thought that terrain issues would be a factor — there are a lot of mountains here in Montana. Channel branding had a lot to do with it too. Overall, Channel 6 looks like the best choice."

### Electric bill

Coverage in mountainous terrain aside, one very apparent benefit to staying VHF is reduced operating costs. Lass says that WRGB's new Channel 6 digital TV transmitter should be completely paid for in a few years from electrical power saved by not going UHF.

Philadelphia is another DMA where Channel 6 will hang around after the transition. Hank Volpe, vice president and director of engineering at WPVI(TV) there, said that his new Harris 8 kW digital transmitter isn't "breaking a sweat" in providing full DTV service.

"Our original allocation was for 3.81 kW ERP," Volpe said. "We went up as far as we could without causing interference problems — to 7.56 kW ERP. Right now I'm putting a shade under 4 kW from the transmitter into a standby antenna. When we make the switch to the main antenna I'll only need 1.7 kW. I'm not operating a transmitter; I'm running a hair dryer."

Channel 6 interference issues don't seem particularly worrisome to Volpe.

See CH. 6, page 31 ►

# Ch. 6

► Continued from page 30 noting that initial testing at “realistic power levels” indicates that future DTV operations will go smoothly.

“We were a little worried about some of the ridges north and west of here, and manmade interference, but we’ve done some testing at night and have been pretty successful,” he said. “The reception in the counties we serve has been good.”

Channel 6 broadcasters are aware that they have a “shadow” audience, as their 87.8 MHz audio carrier can be heard on FM receivers. While it’s doubtful that Arbitron ever tried to chart this audience, it’s thought to be large.

WRGB’s Lass estimates that the number of Albany/Schenectady Channel 6 radio listeners is probably equal to the station’s off-air viewership.

Hank Volpe agrees that 87.7 is a popular FM dial setting around Philadelphia too.

“I really don’t know what the number of listeners is,” he said. “But it is significant. After ‘why do I need a converter?’ that’s the second most asked question at our DTV help desk. People seem really upset to learn that 87.7 is going away. I admit that I’m going to miss listening to ‘Jeopardy’ while I’m driving.”

It’s not all about entertainment either. That was proven several weeks ago in the aftermath of an ice storm that struck Western Kentucky.

Joey Gill, chief engineer at WSPD(TV) in Paducah, said that with the majority of area radio stations down for the count, his Channel 6 station’s audio was the primary source of news and information on the FM dial. “It’s really a shame that this goes away when we transition to our UHF channel,” Gill said. “We just wish we had some way to keep an FM audio carrier up.”

### Hybrid operation?

WRGB’s Lass may have found a solution.

“We have a plan to continue operating on 87.7 after we go digital,” he said. “We think that it’s possible to operate with a vertically polarized analog FM audio carrier when we go back to Channel 6 for DTV. That signal will be horizontally polarized, of course, and there should be enough cross pol isolation to make it work.”

Lass admits that he really hasn’t tried this yet, but thinks it should work. In theory it’s similar to wrapping an IBOC digital radio signal around an analog FM carrier. This is shown to work, and those signals don’t have the 20 dB or so isolation advantage that antenna cross polarization offers. The overall emission bandwidth would not exceed a licensee’s 6 MHz channel and DTV demods would ignore the analog carrier.

About the only downside would be an

increased “noise floor” under the FM carrier. This might reduce the FM signal availability at the edges of a station’s coverage area.

“We’re really interested in proving this concept and are thinking of applying for an experimental license,” Lass said.

There would be an additional operational benefit too if the remaining Channel 6 stations could keep program audio on 87.7. This would provide latency-free IFB communications for talent in the field without having to set up additional communications paths.

The only downside to post-transition Channel 6 hybrid broadcasting would appear to come from the intellectual property side of the business.

WPVI’s Volpe said he’d looked into keeping an FM carrier up too, but thinks there might be contractual issues result-

**People seem really upset to learn that 87.7 is going away. I admit that I’m going to miss listening to ‘Jeopardy’ while I’m driving.**

— Hank Volpe

ing from limitations placed on programming use. This surfaced when some radio and television stations began streaming program audio.

“The copyright laws could be a problem,” Volpe said. “We’re struggling to find out what can be done. The technology would allow me to keep the audio up, but would we be breaking some copyright laws if we did?”

“When you look at the whole issue of TV and Internet media, this is one of the big issues that has to be resolved. I don’t know how easy it would be to overcome the copyright situation. I’m not a lawyer. However all of us enjoy the fact that when we’re driving we can hear the audio portion of things.”

James O’Neal is technology editor of TV Technology and a frequent contributor to Radio World.



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Radio World

Microphones & Audio Monitors

April 8, 2009

SPECIAL REPORT

## USB Mics: Ready for Prime Time?

*They're Convenient, Cheap and Easy to Use, But Are They Ready for Broadcast Exposure?*

by Brett Moss

Unless you've been under the radio broadcasting rock, you probably are aware that microphones that use a USB (Universal Serial Bus) connector are a hot item from microphone makers these days. Everyone from Audio-Technica and Shure to MXL and Samson are joining the USB bandwagon.

And make no mistake, USB microphones are not a fad. If anything there will be more of them and they are migrating from the lower end towards the higher end.

### 44.1 kHz limitation

At the current time, USB microphones are occupying the lower rung of quality, so to say. The typical "USB audio" chip is a 16-bit/44.1 kHz kitten, not a 24-

bit/96 kHz lion. These chips were developed as a cheap, universal audio input source for use with computers. Laptop "on the road" usage has proven especially popular. Podcasts and similar programming were the content targets, along with users of inexpensive Garage Band-style music production software.

While this USB audio quality is nominally "CD quality," quality was not as important as simply having an audio signal. And the lower bandwidth specs for Internet audio were and still are relatively undemanding.

Michael Goodman, managing director of CEntrance, the maker of the MicPort Pro USB interface, is blunt: "USB mics currently on the market use the quality-limited 16-bit/44.1 kHz chip, designed originally for computer audio headsets.

The audio quality therefore is insufficient for pro audio applications and that's why USB mics have not yet caught on for professional use."

Al Peterson, production director at program syndicator Radio America and RW contributor, said: "USB mics are great when you need to digitize directly to a laptop without a dedicated interface.

**A decent USB mic and a laptop allows a VO artist, podcaster, reporter or field correspondent to produce quality audio anywhere.**

— Steve Savanyu



MXL Microphones 009

But a lot of radio audio producers in the field don't want to jeopardize an expensive computer much less a condenser mic [with a USB adapter] — both relatively fragile items."

But as with all things involving computer technology, things improve quickly (and often the price goes down). Computer chip designers are building commoditized (re: cheap) native 24-bit/96 kHz chips and microphone manufacturers are taking advantage of them.

And now that broadcast ENG operators run around armed with laptops, audio quality has become a rightful concern. USB mics are an especially interesting idea for broadcast ENG users and producers/talent on the road. The USB part of the mic carries the preamp so a separate preamp (or mini mixer or DAC) becomes unnecessary, saving valuable space and weight in the kit.

Also, the USB cable tends to be lighter

than the traditional XLR cable. The downside is that the USB cable is less durable and the connector tends to slide out of the computer far easier than the sometimes locking XLR connector slips out of its mate.

### Plug and play

USB mics also try to be easy to use. Their "plug-and-play" specification means that they should plug into any computer (of relatively recent vintage) and be immediately recognized. Many USB mics ship in "packages." Sometimes these packages include simple or "lite" versions of popular DAW or recording software. Some even include a mic stand. Sometimes these mic stands are more than toy stands and actually function

### USB Microphone/Adapter Manufacturers

Audio-Technica	<a href="http://www.audio-technica.com">www.audio-technica.com</a>	330-686-2600
Blue Mics	<a href="http://www.bluemic.com">www.bluemic.com</a>	818-879-5200
CAD	<a href="http://www.cadmics.com">www.cadmics.com</a>	800-762-9266
CEntrance	<a href="http://www.centrance.com">www.centrance.com</a>	847-581-0500
MXL	<a href="http://www.mxlmicro.com">www.mxlmicro.com</a>	800-800-6608
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properly — a clear indication that mic manufacturers are moving them into the professional market.

Steve Savanyu of Audio-Technica summed it up: "The biggest advantage to a USB mic is plug-and-play simplicity. The user does not require external sound cards, or other gear to get audio into the computer. A decent USB mic and a laptop or field a VO artist, podcaster, reporter or allows a VO artist to produce quality audio anywhere. I know several VO artists who carry an [Audio-Technica] AT2020 USB along with their laptop when they travel."

Still, not all is perfect. Savanyu said: "One of the issues with a USB mic or any A-to-D conversion device is latency. For field acquisition, podcasts and most VO, this is probably not an issue. However I think in a live studio broadcast application it might be a problem due to the need for talent to monitor the audio in real time."

He also pointed out the complexities of a USB future in the studio: "A second issue is dealing with multiple microphones and mixing. Typically a computer can support a single audio interface (in

this case a single USB mic). Most air studios have several mics that need to be controlled and mixed for the broadcast. However, I can see USB mics being used in off-air production studios, VO booths and other production related broadcast applications."

As IP-based audio, another current rage, becomes a more common and familiar practice broadcast studios might start appearing in broadcast studios. But for now no one is planning on the RE20 USB. The USB microphone's immediate future is at the lower and busier end.

That of course doesn't mean that the USB microphones are condemned to drudgery. Recently, MXL Microphones .009 seems to have claimed the title of first 24-bit/96 kHz USB mic on the market. And in researching this piece several microphone makers indicated that they

too have 24/96 USB mics in the wings.

**Adapters**

Also not to be forgotten are USB "plug-on," "plug-in" or "in-line" adapters. These handy widgets, some modeled on wireless microphone plug-on adapters, some mimicking USB thumb drives, allow almost any standard phantom-powered microphone with an XLR connection to be turned into a USB microphone. The USB adapter contains preamp and digital audio conversion circuitry along with its USB tools making for an all-in-one connection to a DAW. And making use of the current, familiar microphone collection is always a money-saving option.

Goodman said of his product: "Our MicPort Pro customers are professional broadcasters, musicians, recording engi-

neers and voice-over artists. They usually have a collection of mics, each unique in its sonic character ... The MicPort Pro features true 48V phantom and adapts easily to any microphone, including condenser and ribbon mics."

Blue and Shure and MXL have USB adapters and Shure is launching one soon.

MXL currently has the largest selection. According to Mike Descher at MXL: "We make not just one, but four different types for specific uses. The MicMate Classic is for condenser microphones. The MicMate Dynamic is for dynamic microphones. The MicMate Line Level is for line-level devices, and the MicMate Pro is for the individual who needs flexibility, infinite gain control and headphone monitoring."

The adapters face the same 44.1 kHz See USB, page 34 ▶



Shure recently launched the PG27 and PG42 as traditional wired mics and USB mics at the same time.



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TECH UPDATES

## AKG C 214 Follows C 414 Footsteps

AKG's C 414 family is found in many recording studios, on stage and in broadcast facilities.

The new C 214 is designed as a cost-effective alternative. This microphone uses the same 1-inch dual-capsule as the C 414 in a single-diaphragm, cardioid-only design that is appropriate for on-air voice. The result is performance close to that of the C414 B-XLS, the company says.

The C 214, built in Austria, has AKG's large-diaphragm sound and is capable of up to a 143 dB dynamic range for uncompressed, life-like transients. The C 214's edge-terminated capsule delivers a detailed, up-front sound that brings out nuances of any voice or instrument. Thanks to a switchable 20 dB pad and a low-cut filter, the C 214 can be used in sound fields as high as 156 dB; it can be used on stage for close-up miking for even very loud applications like drum overheads, guitar amps or high-output brass.

The C 214 features an integrated capsule suspension that reduces mechanical noise and resonances for greater sonic accuracy. The double mesh metal grille protects the capsule and ensures high RF immunity without affecting acoustical performance. The C 214 has a durable construction quality with a modern scratch-resistant finish, a dent-resistant, metal grille and a gold-plated XLR-type output. The C 214 comes with carrying case, windscreen and spider-type shock mount.

For information, contact AKG at (818) 920-3212 or visit [www.akg.com](http://www.akg.com).



## Behringer Adds New Drivers

Behringer B3030A and B3031A active studio monitors update the manufacturer's design with the addition of new transducers.

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Both models use 4th order Linkwitz-Riley active crossover networks and have dual limiters for low- and high-frequency overload protection. Low- and high-frequency adjustment switches and room compensation settings allow for flexible integration into varied monitoring environments. Balanced inputs for XLR and 1/4-inch connectors, input level control and power mode switches round out the rear-panel controls.

For information, contact Behringer at (425) 672-0816 or visit [www.behringer.com](http://www.behringer.com).



## Mojave Looks Back at the Classics



The Mojave Audio MA-201fet is a large-diaphragm, phantom-powered, solid-state condenser microphone with a fixed cardioid pattern. It has its roots in a lineage of microphone designs by David Royer. Mojave says the MA-201fet gives warm, full-bodied reproductions of vocals and instruments without shrillness and high-frequency distortion artifacts often encountered with modern condenser microphones.

It uses a 3-micron gold-sputtered capsule, Jensen audio transformer, military-grade FET and custom low-noise resistors. Mojave markets its performance as reminiscent of some of the best-loved classic condenser microphones. Each MA-201fet microphone is packaged in its protective case with a professional-grade shockmount.

For information, contact Mojave Audio at 818-847-0222 or visit [www.mojaveaudio.com](http://www.mojaveaudio.com).

## USB

▶ Continued from page 33

problem as the mics but that is changing. Goodman points out that: "CEntrance is the only company that offers a 24-bit/96 kHz chip transforming any mic into a professional 24/96 USB recording studio. Our solution takes full advantage of the low noise and full bandwidth of the expensive cartridge inside the mic, without losing quality in the A/D conversion process."

The CEntrance MicPort Pro also has gain and headphone controls. Expect such features to become the norm within the year.

USB microphones have a bright future in many ways. Thinking further along the line, the plug-and-play aspect of the USB mic would allow mobile talent to use a laptop to connect directly to a studio — obviating a

need for a traditional codec (and all the problems with that). Anyone who is watching the proliferation of "IP" codecs can get a whiff of the future fire.

In talking with several veteran Radio World writers, professionals at radio stations, most expressed a skepticism of current USB microphones but, and it's a big but, they were also extremely curious and following development closely — especially for use with ENG reporters and with mobile kits.



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TECH UPDATES

## A-T ATH-M35 Headphones Fold

Audio-Technica ATH-M35 compact folding headphones offer balanced, articulate sound; impressive power-handling and a lightweight, ergonomic design, according to the company. They were recorded to field recording and studio tracking/mixing.



In each ATH-M35 earpiece, a 40-mm rare earth neodymium driver offers high power handling for tracking sessions. Padded circumaural (around-the-ear) cups provide acoustic isolation and comfort for extended listening sessions. The adjustable headband is cushioned for listening comfort. Other components include a single-sided cable constructed of flexible litz wire and a gold-plated stereo 1/8-inch connector with strain-relief spring and a 1/4-inch adapter.

For information, contact Audio-Technica at (330) 686-2600 or visit [www.audio-technica.com](http://www.audio-technica.com).

## Dynaudio BM5A Is Small and Big

Dynaudio Acoustics' BM5A Compact is a small yet surprisingly powerful two-way professional closefield intended for professional film, post-production and broadcast applications.

Starting with a 5.7-inch woofer and 1.1-inch soft dome tweeter, research has made it possible to fit two 50 watt amplifiers into a cabinet that is as small as 6.7 inches x 10.2 inches x 9.3 inches. Remote vans, editing suites, film and post-production facilities will benefit from this monitor,



which provides loads of power in virtually no space. Combined with the BM 9S subwoofer it will make up an excellent multichannel surround system of small dimensions.

For information, contact Dynaudio Acoustics at (818) 665-4900 or visit [www.dynaudioacoustics.com](http://www.dynaudioacoustics.com).

## ADAM Audio A5 Monitor Aim at Multimedia

Built on designs of ADAM Audio's larger professional studio monitors, the A5 is aimed at multimedia listening, mobile recording, broadcast and surround applications. It features a compact size, choice of three finishes and an affordable price point.

The A5 is powered by two 25 W on-board amplifiers. It combines ADAM's ART (Accelerated Ribbon Technology) FOLD (Accelerated Ribbon Technology) folded ribbon tweeter with a 5-inch woofer constructed of a carbon fiber and Rohacell sandwich. The front of the A5 sports dual ports for low-frequency response down to 55 Hz (which can be extended to 31 Hz with the addition of the ADAM Audio Sub7 subwoofer), metal grilles for durability, as well as power and gain controls.

The rear includes balanced XLR jacks, unbalanced RCA jacks and a new development by ADAM called Stereolink.



This technology connects speakers with input and output jacks allowing the user the option to control the overall volume of the system from any one speaker's gain control, making the A5 a flexible desktop audio system.

The A5 comes in a choice of traditional ADAM in black or new glossy "piano" finishes in black or white. Optional wedge-like stands enhance desktop use by allowing the A5 to be positioned at an upward angle. In addition to desktop audio recording applications, the A5 is suited to mobile and broadcast applications, surround setups and multimedia uses such as gaming and home audio.

For information, contact ADAM Audio USA at (818) 991-3800 or visit [www.adam-audio.com](http://www.adam-audio.com).



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## TECH UPDATES

## Wohler AMP2-16-3G Monitors HD Content

The Wohler AMP2-16-3G is an upgrade to the AMP2-16MSDI 16-channel rack-mount audio monitor.

The AMP2-16-3G aids broadcasters' migration to high-bandwidth content by being able to handle higher-capacity 3 Gbps video transport infrastructures.

The new monitor provides simultaneous display for up to 16 channels of embedded audio within a single multirate 3 Gbps signal. Built on a fully digital system architecture featuring multiple high-fidelity Class D amplifiers, the AMP2-16-3G provides unsurpassed close-field monitoring for any mix of stereo and mono sources in a compact 2 RU design, the company promises. The monitor includes de-muxed outputs of eight AES pairs on BNC connectors as well as providing a relocked loop output of the 3 Gbps signal.

The monitor's high-resolution LCD display has 210-segment high-resolution bargraph level meters. Colors and settings for scale and range are user-selectable along with several predefined scales and ballistics including AES, BBC and Nordic. Each displayed meter set indicates the phase for stereo sources prior to output on the speakers.

The AMP2-16-3G audio monitor also addresses key issues in DTV audio delivery, providing measurement of program loudness in adherence with ITU-1770/1771, which is displayed prominently on the unit's LCD status screen.

The AMP2-16-3G is available with AES and Dolby E options.

For information, contact Wohler Technologies at (510) 870-0810 or visit [www.wohler.com](http://www.wohler.com).



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## Sonifex Rackmounts Audio Reference Monitor

The Sonifex RM-4C8 is a 1 RU rackmount monitor offering loudspeaker monitoring and accurate, high-resolution metering of eight audio sources (more with the addition of an optional expansion card).

Sources may be in any mixture of analog and AES/EBU digital formats, with sample rates up to 192 kHz accepted. An onboard five-band parametric EQ can be used to tailor the unit for the room it is mounted in.

Sources are selected via a front-panel rotary encoder, with LED indication of the current selection. A pair of line-level audio outputs, configurable as analog or AES/EBU digital, follow the selected source at either a fixed level or one mirroring the loudspeaker volume.



The level of the chosen source is displayed on a pair of bright, multicolored 53-segment bargraph meters, with a choice of seven accurately modeled scales/responses to suit various applications and local preferences. A separate phase meter indicates channel correlation or phase error conditions. On the rear panel, open-collector alarm outputs provide hardware indication of sustained underlevel, overlevel and phase errors.

Six illuminated pushbuttons provide access to a range of audio "modifiers" — instant dimming of the volume, muting of each audio channel, stereo-to-mono conversion, phase inversion and middle/side transcoding. On the rear panel, logic-level inputs allow direct remote access to the Dim and Mute functions.

The three-way loudspeaker system is fed via a DSP-based active crossover and a trio of Class D amplifiers. According to Sonifex, attention to driver selection, materials and case design, plus active DSP equalization, has ensured a flat response and outstanding reproduction from such a shallow unit. Each unit can be accessed remotely via both USB and RS-232 connections.

For information, contact Sonifex/Independent Audio at (207) 773-2424 or visit [www.independentaudio.com](http://www.independentaudio.com).

## ATC Improves Speaker Design With SCM 16A

Acoustic Transducer Company says its engineers have made advances in driver unit technology, resulting in an increase in performance to its entry-level active close-field monitor, the SCM16A.

The compact SCM16A powered loudspeaker is a monitor designed for the accurate reproduction of stereo and multichannel audio in small to medium-sized studios or in remote locations.

Conventional loudspeaker design recognizes that stiff driver cones generate a desirable extended on-axis frequency response. However, it comes at a price: a poor off-axis frequency response and multiple high-Q resonances that color the sound. The conventional "fix" is to add damping materials to the cone structure, but this makes the loudspeaker dramatically less efficient due to their high mass.

ATC's advance is called Constrained Layer Damping. Two lightweight driver cones sandwich a constrained damping layer. CLD is more efficient than conventional damping because of the way it shears adjacent cone sections when the cone flexes. The shearing causes unwanted vibration energy to dissipate as frictional heat, instead of as acoustic distortion. Thus, ATC's CLD design reduces harmonic distortion between 300 Hz and 3 kHz, creates an extended resonance-free axial frequency response and improves the off-axis frequency response.

In addition to the 6-inch CLD mid/bass driver, the SCM16A features a neodymium 1-inch soft dome tweeter. The SCM16A's upgraded on-board amplifier pack provides 200 watts to the mid/bass driver and 50 watts to the HF driver. Operating in Class A up to two-thirds of output, this low-distortion design is capable of continuous sound pressure levels up to 108 dB. The electronic crossover offers a smooth and even frequency response. User controls include input sensitivity and bass boost.

For information, contact ATC/Las Vegas Pro Audio at (702) 307-2700 or visit [www.lasvegasproaudio.com](http://www.lasvegasproaudio.com).



TECH UPDATES

### Ultrasones's Comfortable Sound

Ultrasones's Edition 8 is an elegant, black and silver, closed-back headphone that employs S-Logic Plus technology that, according to Ultrasones, results in an impartial acoustic feeling that allows the listener even more of a spacious tonal perception.

The Edition 8s feature 40 millimeter titanium-plated drivers that claim a frequency range of 6 Hz-42 kHz with a sound pressure level of 96 dB. Designed with the audio connoisseur in mind, the interior ear cups are covered in Ethiopian sheepskin, which provides the most insulation of any leather, while the outer ear cups are covered in Ruthenium, known for its brilliant metallic sheen and durable properties.

According to Ultrasones, these special-edition headphones contain Mu metal Ultra Low Emission (ULE) shielding technology that reduces the amount of radiation directed to the listener by up to 98 percent, as compared to conventional headphones. Each Edition 8 headphone is stamped individually with its own serial number and comes in a leather bag for storage and transportation.

For information, contact Ultrasones at (951) 678-9091 or visit [www.ultrasones.com](http://www.ultrasones.com).



### Going Small: Sennheiser MKE 1 Lavalier

A lav might not be the first mic you think of for radio, but if your on-camera/online products are growing, you might well need one.

Sennheiser's latest professional clip-on microphone, the MKE 1, features a capsule that's not much bigger than the head of a match. According to Sennheiser, the MKE 1 is designed to achieve a natural, full sound with a clear and present treble. Particular care was taken to ensure the microphone capsule was protected from moisture, so the MKE 1 can hold its own in harsh live conditions longer than standard clip-on microphones.

Despite its tiny size — the microphone measures just 3.3 millimeters across — the MKE 1 offers quality sound, plenty of lower mid-range, and excellent presence with good speech intelligibility. It boasts a user-friendly, omnidirectional pickup pattern. The microphone picks up predominantly direct sound with relatively little ambient noise, which is an advantage for many applications.

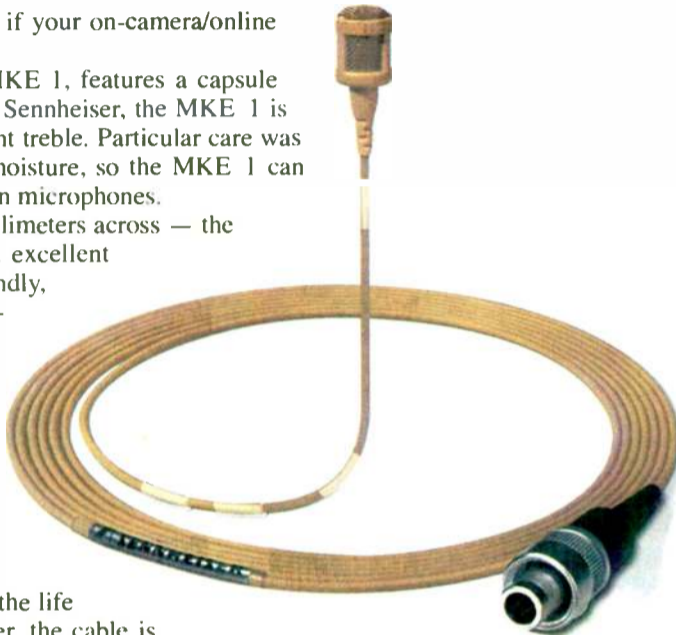
As usual, moisture is the enemy of a clip-on microphone. The MKE-1 was designed with a multipurpose cap that diverts humidity past the microphone and doubles as a windshield. Within the mic, a thin, acoustically open stainless steel membrane protects the capsule. A new mechanical design allows for the contacts to be housed inside the casing or the molded coating making the MKE 1 more reliable.

The anti-kink sleeve has been improved in order to increase the life of the Kevlar-reinforced cable. With a diameter of 1 millimeter, the cable is resistant to handling noise, while a special plastic coating ensures that it tangles less readily.

Also included is a small frequency response cap, which ensures a treble boost of 2.5 dB for applications where the microphone is hidden within the costume or when more brilliance is to be added to a voice.

Three make-up protection caps and several thin plastic tubes for shielding the cable when attaching it with clips or adhesive tape, give the finishing touches to this professional package.

For information, contact Sennheiser USA at (860) 434-9190 or visit [www.sennheiserusa.com](http://www.sennheiserusa.com).



### Blue Launches Bottle Rocket Stage One

The Blue Microphones

Bottle Rocket Stage

One is a Class A discrete solid-state microphone with a foundation for interchangeable capsules, including Blue's Bottle Caps, the same vintage lol-lipop-style capsules used with the original Blue Bottle Microphone. This bayonet-mounted system gives the user flexibility and a variety of tonal characteristics and pickup patterns in one mic.

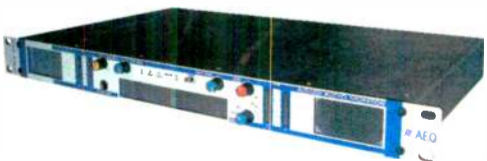
Hand-assembled, the Stage One has a low self-noise specification (< 7.5 dB) and a high output level (+12 dBV), making it an excellent choice for high sample rate/deep word length digital platforms. Instead of integrated circuits (chips), the Stage One employs a transformless Class A discrete amplifier circuit to ensure accurate and noise-free signal, with minimal distortion and coloration. The Stage One is suitable for recording virtually any sound source, the company believes. In addition to the microphone, the Stage One also includes Blue's custom spider shockmount.

For information, contact Blue Microphones at (818) 879-5200 or visit [www.bluemic.com](http://www.bluemic.com).



### New AEQ Rackmounted Monitor

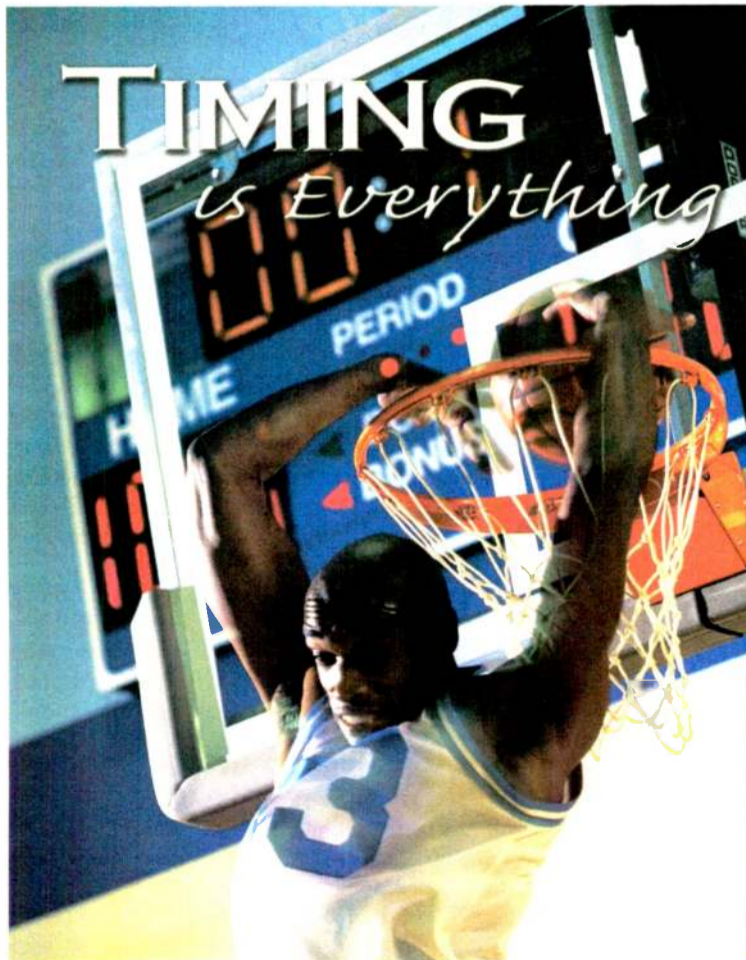
The AEQ AM-04 is a rack-mountable monitor with four analog audio inputs and a pair of AES/EBU digital audio inputs. The AES/EBU that configuration. A video de-embedder allows for monitoring of SDI video audio. Audible level alarms can be programmed for overages and underages.



Other features include a headphone output and phase control.

The tricolor LED meter has standard audio presets but also allows control of the ballistics (six standard types — AES, DIN, BBC, VU, VU Extended, Nordic). Rear connectors are XLR. There is a 1/4-inch front-panel headphone jack. An RS-232 D-sub allows for remote control and alarms.

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## TECH UPDATES

## Shure Shows New USB Adapter



Shure is launching a microphone USB plug-on adapter, the X2u.

Similar to a wireless microphone plug-on, the X2u plugs onto the XLT connector of a standard condenser microphone. The X2u then outputs its signal via a USB connector to a computer. The X2u has onboard digital conversion.

Features include 16-bit/48 kHz performance, 48 V phantom power, a gain control, 1/8-inch headphone jack with volume control and a monitor-mix control.

The X2u is compatible with Windows XP, Vista, 2000 and Mac OSX and includes a USB cable and padded pouch.

For information, contact Shure at 847-600-2000 or visit [www.shure.com](http://www.shure.com).

## Henry's MiniPod Is a Networkable Headphone System

Henry Engineering's MiniPod headphone amplifier is a compact "put it anywhere" headphone listening station that is designed for broadcast studios, voice-over booths and other professional installations.

The MiniPod is a self-contained headphone amp with dual headphone jacks and a volume control. The MiniPod is about the size of a deck of cards,



making it easy to mount on a desktop or under a counter. A feature that sets the MiniPod apart from other headphone amps is that multiple MiniPod units can be connected together to make a multilistener headphone network.

Each MiniPod has two 1/4-inch TRS jacks for a stereo (balanced) audio source. There are also two RJ-45 jacks that permit a series of units to be daisy-chained together using common Cat-5 cable. The user can select what each MiniPod user hears: all the same audio (from a common source); or each user can hear a different audio source; or any combination of these two scenarios. Some MiniPod listeners can hear a common audio source, with others hearing a different source(s).

If a talkback or IFB facility is needed, MiniPods can be used with Henry Engineering's MultiPhones II master unit. The MultiPhones II master adds a three-zone talkback/IFB to a MiniPod headphone network. The master unit allows the MiniPods to be divided into three groups or "Talkback Zones," so that a producer, call screener or board operator can give off-air cues to each group without disturbing the other two groups of listeners. As an example, in a talk format studio, MiniPod listeners could be divided into "host," "cohost" and "guest" groups. The producer or call screener could give cues to any group (or combination of groups) as needed. Each MultiPhones master unit can support up to 12 MiniPods headphone listening stations.

For information, contact Henry Engineering at (626) 355-3656 or visit [www.henryeng.com](http://www.henryeng.com).

## PortaMic Pro Eases Surround Recording

Keeping an eye on the surround side of things, Holophone's PortaMic Pro allows users to capture, from a single point source, a discrete surround recording that provides listeners with a 3D "immersive" experience.

The microphone system comes with a zoom button that increases the forward bias of the mic's pattern. The PortaMic Pro also features a Dolby



Laboratories' Dolby Pro Logic II encoder, which allows the mic's six audio channels to be encoded down to two, so it can be recorded to any broadcast camera or stereo recording device. The mic's surround encoded audio is output to a six-pin balanced mini XLR. The encoder is equipped with a stereo 1/8-inch mini plug output. When used in conjunction with the Holophone's new D-CODE multichannel decoder or a Dolby Pro Logic II decoder, the two-channel encoded recordings of the PortaMic Pro can be decoded to six.

To ensure a quality recording in loud locations, the mic features a unity gain control and a 12 dB pad. The mic and encoder may be powered by the camera's battery, or by a 9V battery.

The mic system is compatible with the installed base of approximately 60 million Dolby Pro Logic II consumer decoders, allowing the PortaMic Pro's recordings to be broadcast in stereo and decoded to surround in viewers' living rooms.

For information, contact Holophone at (416) 362-7790 or visit [www.holophone.com](http://www.holophone.com).

## Sony Electronics' ECM-957PRO Has Two Positions

Sony Electronics' ECM-957PRO electret condenser stereo microphone is designed to provide improved sensitivity and sound quality. It's suitable for broadcasters and journalists, as well as performers, musicians, houses of worship and corporate and educational production professionals. The mic is also compatible with a wide range of portable digital field recorders.

With such features as a "turning capsule" function that allows both vertical and horizontal sound pick-up, the ECM-957PRO is a flexible microphone that can be positioned in a variety of recording situations. Users can set the directive angle between left and right channels at 90 degrees or 120 degrees depending on their needs. The microphone is suited for use as an external option for any portable field recorder, including Sony's PCMD1 and PCMD50 units.

The mic is powered by a single 1.5 V AA battery providing approximately 200 hours of operation. Accessories for the ECM-957PRO include a microphone cable; five-pin XLR connector to L-shaped stereo mini plug, windscreen, microphone holder, microphone stand and a carrying case.

Other key features include frequency response of 50 Hz - 18 kHz, sensitivity of -37 dB; 0 dB = 1V/Pa, 1000 Hz; output impedance of 600 ohm; maximum sound pressure level of 115 dB SPL and a dynamic range over 90 dB.

For information, contact Sony Electronics at (800) 686-7669 or visit [www.sony.com/proaudio](http://www.sony.com/proaudio).



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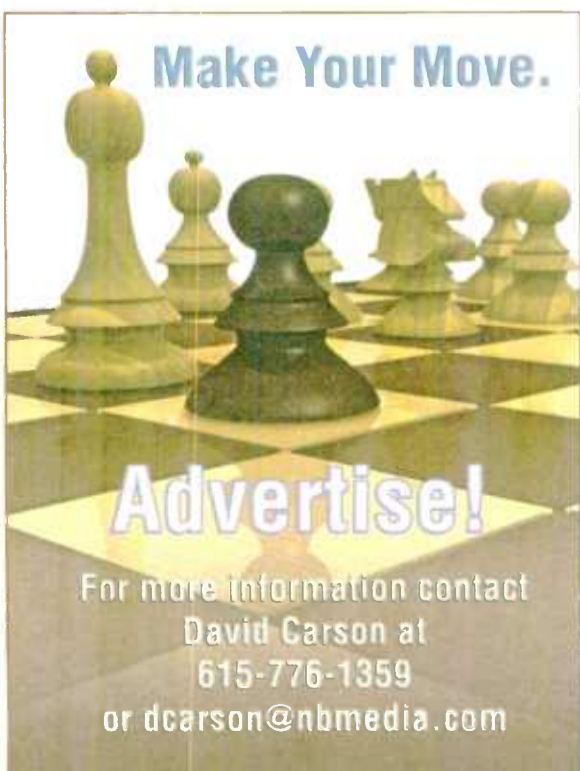
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## TECH UPDATES

## SoundField UPM-1 Surrounds Old Recordings

From the TV side of things, the SoundField UPM-1 is a hardware device aimed at HD broadcasters who use a lot of archived stereo material and wish to generate acceptable 5.1 broadcast mixes from older soundtracks that avoid the sudden collapse of the surround image down to stereo for the duration of the archive material.

Budget limitations often mean that older program material is rarely remixed into surround, even assuming that multitrack recordings exist to allow this, which is rarely the case.



To handle this operation the UPM-1 generates information for the surround channels not by adding reverb or applying phase-shifts to older stereo material, as the company says many existing "unwrap" algorithms do. Instead, it can detect the distinctive repeated patterns and phase-shifts in the frequency content of reverberant material in the stereo signal, can differentiate it from the direct sounds in the mix and separate it out. This reverberant material is then sent to the rear channels to create 5.1-compatible audio. The resulting audio is a 5.1 mix that sounds much more like the original recording, rather than a version swimming in added reverb, according to SoundField. Also, because the processing is based on analysis of the original stereo, the output is program-dependent, and will change depending on the nature of the input.

Users can adjust the processing directly from the UPM-1's front panel, with control offered over a variety of parameters. These include the level of the direct and ambient components in the front and rear channels, and the divergence of the center channel in the generated 5.1 mix, with options from a discrete center channel at one extreme to a phantom center at the other. Output level controls are also offered for each of the channels in the final 5.1 mix.

For information, contact SoundField at 011-44-1924 201089 or visit [www.soundfield.com](http://www.soundfield.com).

## JBL LSR Family Covers All Angles

JBL says its LSR2300 series studio monitors address the demand for cost-effective, high-performance monitoring systems, driven by the proliferation of affordable, computer-based production systems.



The LSR2300 series includes the LSR2328P bi-amplified 8-inch studio monitor with 160 watts of amplification; the LSR2325P bi-amplified 5-inch studio monitor with 90 watts of amplification; the LSR2310SP powered 10-inch studio subwoofer with an integrated 180 W power amplifier; and the MSC1 Monitor System Controller with RMC Room Mode Correction.

In developing the LSR2300 Series, JBL said it applied the same Linear Spatial Reference (LSR) criteria used in the design of its LSR6300 and LSR4300 Series.

According to JBL, most manufacturers take only a single on-axis measurement of a speaker's performance, but its LSR criteria require 70 measurements, yielding more than 1,200 times more data. The data enables JBL to engineer a system that produces greater accuracy at the mix position.

Speakers in the LSR2300 series have large waveguides and elliptical tweeter apertures that work in conjunction with a 1-inch silk-substrate high-frequency transducer to deliver superior imaging and smoother frequency response.

For the LSR2300 series, JBL says it engineered new long-excursion low-frequency transducers with high-flux motors and a custom tuned port that work in concert to produce deep and accurate low-frequency response. The LSR2328P 8-inch model provides low-frequency extension to 37 Hz; the LSR2325P 5 inch model to 43 Hz and the LSR2310SP subwoofer provides deep low-frequency performance below 28 Hz. Attention also is paid to the thermal properties of the system.

The new MSC1 Monitor System Controller integrates JBL's RMC Room Mode Correction technology into a desktop unit that measures and tunes the response of the system, while adding monitor system controls and features. System tuning is accomplished using a supplied calibration microphone and MSC1 Control Center Software. In addition to a large system volume control, the MSC1 provides monitoring of three input sources, connection and switching of two sets of speaker, a dedicated subwoofer output and a headphone output with a separate volume control. A USB port interfaces the MSC1 to a computer for system tuning and adjustment of speaker EQ and subwoofer balance.

For information, contact JBL at (818) 894-8850 or visit [www.jblpro.com](http://www.jblpro.com).

## Smallest Genelec Yet

Finland's Genelec, a leading maker of active monitors, has released its smallest monitor to date, the 6010A. It measures 7.1 inches x 4.75 inches x 4.5 inches; the height with Iso-Pod is 7.75 inches.

The system has been designed for computer sound systems, workstations, edit bays and other close-proximity listening applications

requiring a low-profile monitoring solution. It can also be plugged directly into personal music players for enhanced acoustic enjoyment.

The 6010A two-way active monitoring system incorporates Genelec's acoustic design innovations to minimize all forms of distortion, according to the company.

Designed as an active loudspeaker, the 6010A contains proprietary drivers, a 3-inch bass driver and 0.75 metal dome tweeter. The power amplifiers are matched to the drivers, active crossover filters and protection circuitry. The 6010A has a die-cast all-aluminum Minimum Diffraction Enclosure (MDE), which features large internal volumes, softly curved edges and, according to Genelec, outstanding mechanical strength.

The 6010A also incorporates Genelec's Directivity Control Waveguide (DCW), which provides a smooth on- and off-axis response, while the long, curved reflex port ends in a wide flare for improved bass articulation.

For information, contact Genelec at (508) 652-0900 or visit [www.genelecusa.com](http://www.genelecusa.com).



## K+H O 410 Is Tri-Amplified



With the Klein + Hummel O 410 midrange monitors, the German company says it delivers uncolored, transparent audio reproduction quality.

Designed as a midrange monitor for use in music, broadcast and post-production studios for tracking, mixing and mastering, the O 410 is a tri-amplified three-way loudspeaker, featuring magnetically shielded drivers: 10-inch bass, 3-inch soft dome midrange and 1-inch tweeter. The drivers are powered respectively by 340 W, 160W and 180 W hybrid Class A-B amplifiers. The high-capacity vented enclosure extends bass response down to 34 Hz, even at high output levels. Structural resonances are avoided in the cabinet through the use of LRIM (Low Resonance Integral Molding) material, and a waveguide featuring Mathematically Modeled Dispersion (MMD) reduces negative effects associated with the loudspeaker/room interaction, according to the company.

The most important range of the frequency spectrum is reproduced by a dedicated midrange driver, resulting in low harmonic and intermodulation distortion and therefore clean audio reproduction. Attention to detail in design results in low self-generated noise. The modern design allows rotation of the waveguide to permit usage in vertical or horizontal formats.

Various input options allow the O 410 to be used with any source equipment. An electronically-balanced analog input is fitted as standard. A transformer-balanced input and a 24-bit/192 kHz digital input are available as options. The digital input can accept AES3, AES3ID and S/PDIF signals. XLR and BNC digital inputs and a BNC digital output provide flexible interconnectivity. Extensive protection circuitry ensures long-term reliability and Class H amplification techniques reduce power consumption when signal levels are low.

For information, contact Klein + Hummel at (860) 434-9190 or visit [www.klein-hummel.com](http://www.klein-hummel.com).

## Neumann Debuts Digital Version of TLM 103

Neumann is now shipping the TLM 103 D; this is the next "classic" Neumann mic to enter the digital realm.

When used in conjunction with digital workstations, Neumann says, its Solution-D microphone technology makes life simpler for users. The integrated, fast, peak limiter guarantees optimal recording levels at all times. Likewise, the Neumann A/D converter in the microphone eliminates the necessity of tedious experimentation with external converters and preamps.

This microphone ensures that the Neumann sound is captured unchanged on the recorder's hard disk, with optimal quality. The TLM 103 D is available in nickel and black, with a stand mount. Starter kits are available consisting of the microphone, an elastic suspension and a connection kit for direct connection to an AES/EBU or S/PDIF interface.

For information, contact Neumann USA at (860) 434-9190, or visit [www.neumannusa.com](http://www.neumannusa.com).





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#### WANT TO BUY

Collector wants to buy: old vintage pro gears, compressor/limiter, microphone, mixing consoles, amplifiers, mic preamps, speakers, turntables, EQ working (UTC or West, working transformers (UTC Western Electric), Fairchild, Western Electric, Langevin, RCA, Gates, Urei, Altec, Pultec, Collins. Cash - pick up 773-339-9035

Equipment Wanted: obsolete, or out of service broadcast recording gear, amplifiers, preamps, outboard, radio or mixing consoles, microphones, etc. Large lots acceptable. Pickup or shipping can be discussed. 443-854-0725 or [ajkivi@gmail.com](mailto:ajkivi@gmail.com).

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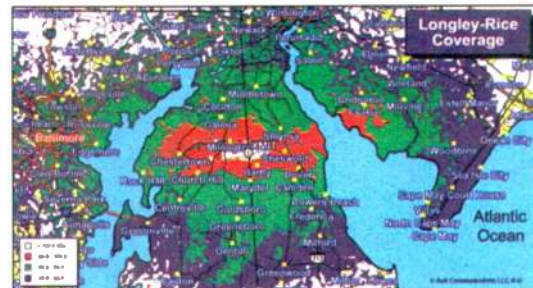
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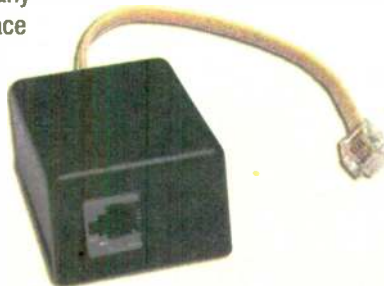
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## ◆ READER'S FORUM ◆

### Expand the Band? Beware

It's interesting to see the responses to the proposal suggesting Channels 5 and 6 be converted to radio use. Wouldn't the unloading of all the AM directionals, day/night power, short-spaced FMs and daytimers be wonderful?

I note that the RW responses so far are all about engineering/modulation/spectrum criteria and nothing about the financial reality of "be careful what you wish for, you may get it"!

With new spectrum available comes new go or no-go engineering limits. "Oh," you say, "there's going to be lots of new spectrum and all can be accommodated." Well, you're probably correct.

Not only can all the AMs that want to move be accommodated but the broadcaster "wannabees" will also be filing applications at the door of the FCC. Too, let's not forget the usual *en masse* religious broadcaster filings. How would you deny a technically correct application?

Yes, new competition right in your own town, cutting rate cards to compete in order to pay their bills. With the new stations in your area comes reduced income. We already see what reduced billing is doing to employment in the broadcast industry: layoffs and downsizing.

As the saying goes, those who forget history are doomed to repeat it. Remember the 80-90 docket that turned loose hundreds of FMs, pre-engineered by the FCC? Drop-ins, I think they were called. Many stations saw a brand-new competitor show up in their market and the gross billing dropped. When the billing drops, so does the quality of the programming you so carefully put together and paid top dollar to your talent to present.

Localism depends on a good cash flow. No cash flow and it's automation. The community is the loser.

Some folks may not be aware that when the FCC dropped the ownership limits, group owners bought up stations to the point that only one owner in a market had virtually all the stations under their wing. Many covertly told advertisers that if you *don't buy* from "him," the lone independent, we'll give you extra spots on our group of stations. Yes, it happened right here in New Jersey, and a very well run, high-billing, locally involved station went nearly broke and had to sell to, you guessed it, a group owner. Today it's automated. Would groups again buy up the demised competition?

But wait. It gets better.

Once the proposal comes before the FCC, if it ever makes it that far, you'll have all the large-group owners at the NAB lobbying against the new band. They're not going to sit back and watch the value of their stations diminish with every new competitor generated by the Channel 5/6 proposal!

The NAB will take the position that everything is fine just the way it is. Short of that, they'll take no position and the large group owners will do their own lobbying.

I think most know and understand that the FM band could easily accommodate newcomers but for the artificial shortage of FM spectrum due to overly restrictive

adjacency/power rules. Not too long ago, discussion over the third-adjacent garnered a lot of negative response but tests showed third adjacent-distance rules to be overly restrictive. The restrictions remain.

Unless you can restrict newcomer applicants from occupying the newly proposed 5/6 spectrum, it'll be a financial disaster for the entire industry, an industry that has finally admitted that the plethora of new media is formidable. There are too many radio stations in some markets and billing is not increasing during these recession days. What happens when more show up?

Finally, if you're aware of station sales, you might want to reflect on the number of stations for sale that aren't selling ... at any price.

The new spectrum would be wonderful, but the devil is in the details.

Larry Tighe  
Owner

WRNJ(AM)  
Hackettstown, N.J.

### Just Be Clear

Paul, regarding Skip's comments that triggered the avalanche of nastygrams ("Journalism We Can Be Proud Of," Jan. 14). I'll put my 3 cents in. (Funny that there's no cent symbol on keyboards anymore!)

I'm only a columnist, not an editor-in-chief; however I do know that good journalism requires that a columnist's opinion and the editor's opinion must be labeled as such. You're right that policy and politics can't be separated from each other. (As a state employee, I sure know that!)

As long as you make it clear who said what and distinguish facts from editorial opinion, you have every right to keep doing what you're doing. This is how I handle my monthly column and my blog. I haven't had a complaint yet.

H. Robert Schroeder, N2HX  
Communications and Warning Officer  
N.J. Office of Emergency Management  
Trenton, N.J.

### What's He Smokin'?

I just read "Tuning for Maximum Smoke" by Skip Pizzi (Jan. 1) and although I try to keep up on all things scientific, I would ask Skip to put a few footnotes as to where he got his research on H<sub>2</sub>S-caused volcanic eruptions.

I and most other thinking voters just endured the most ludicrous application of psycho-babble to win an election and upset our economy with looney global warming alarms. So please show me the research. And Skip, what's in your pipe?

Jan Lipski  
Communications Technician/Consultant  
Lompoc, Calif.

### E-mail RW

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Shown: Heil PR 40 dynamic microphone

DAVE WILSON

# Fix Drugs and Rock & Roll

*The Public Needs to Understand How Our Copyright Law Is Hurting All of Us*

by Dave Wilson

Here's a brief, true story.

Not long ago I began broadcasting on a couple of FM frequencies with programming that is 100 percent locally produced spoken word. No music whatsoever is broadcast on either frequency.

About a month after I began operations I received a bill from the American Society of Composers, Authors and Publishers. ASCAP collects money from broadcasters, bars, Web sites and anyone else who plays music created by the people it represents when the music is played in a commercial enterprise or public forum.

Because I was not and am not using any of the material that ASCAP's members have copyrighted, I disputed this bill. I received another a month later but the matter was resolved rather painlessly soon after that.

This got me thinking. What if the cable industry monitored local real estate transactions and automatically started invoicing all new homeowners?

People would be outraged. There would undoubtedly be allegations of fraud, and complaints filed at the Federal Communications Commission, the Federal Trade Commission and with lawmakers. Yet ASCAP apparently does essentially the same thing and few people seem to care.

Why is this? Well, one reason might be that ASCAP is targeting only a small segment of society and that these people are accustomed to being abused by the music industry. But whatever the reason there's no question that ASCAP, the Recording Industry Association of America and similar organizations have been encouraged to become what they are by our copyright law.

Perhaps it's time for society in general to recognize what some have known for years: Our copyright laws are broken and are badly in need of repair. They are stifling innovation and denying consumers access to products and content in what I believe to be a violation of the U.S. Constitution.

## Unconstitutional

Now that's some statement, so let me explain.

Article I, Section 8 of the U.S. Constitution grants to Congress the power "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

Pay particular attention to the words "limited times" in that passage, for current U.S. law gives the author of a sound recording copyright protection until 70 years after he or she dies. In my opinion that does not fit the definition of limited time.

The framers of the U.S. Constitution knew how to say that something was to last a lifetime, for that's what they did when describing the terms of federal judges. In contrast, they limited the term of the president to four years. While they didn't specify a duration for copyright protection, they very clearly said

that it should be for a limited time. And the very first copyright law enacted by the first Congress in 1790 provides a good indication of what the framers of the constitution were thinking: a 14 year copyright term with a privilege of renewal for one more 14 year term.

One hundred and fifty two years is a farcical interpretation of "limited time," yet today that's how long an 18-year-old copyright owner will have protection if she lives to be 100.

The general public needs to understand how our current copyright law is hurting all of us. People need to know what's wrong and what they can do about it.

## Stifling innovation

In short, what's wrong is that we are being denied the opportunity to have innovative new products that would dramatically improve our lives.

Imagine being able to buy a low-cost portable media player that comes pre-loaded with every song that hit the Billboard charts in the '70s or '80s, and imagine being able to copy and share those songs freely with anyone you choose. If copyright owners had the same protection as patent owners, this is exactly what you'd be able to do.

Imagine if radio receivers could automatically store every song broadcast by a radio station, enabling consumers to play them back whenever they want, wherever they want. The technology to do this is simple today, but it's practically impossible to find it in the marketplace because the greedy music industry likes to sue companies that make it easy for consumers to save what they've recorded off the radio.

Were it not for the music industry's never-ending effort to prevent technological development so that it can continue to reap profits from songs created half a century ago, the services we have today would be so much better.

We would have radios that automatically store, sort and play back content. Imagine if your favorite radio station regularly broadcast different up-to-the-minute traffic reports for each major traffic artery in your community. You could program your receiver to store and play back only the reports for your route, on demand.

Even though such a service would be of great benefit to society and would not involve the use of music at all, the recording industry vociferously fights to block the technology that would enable it because it could also be used to let consumers record songs off the radio.

In 2007 the RIAA published a paper bragging about how the music industry has been able to keep prices high, even as the cost of distributing music has plummeted dramatically. The only reason it's been able to do this is our broken copyright law. If copyrights on songs had the same terms as the patents on recording media, CD players, MP3 players, etc. there would be a strong incentive for the music industry to produce more product at more competitive costs.

If songs with expired copyrights were available at little or no cost, there'd be a

strong incentive to produce new music that would still have copyright protection. And we would undoubtedly have many more modern remakes of popular songs from the past.

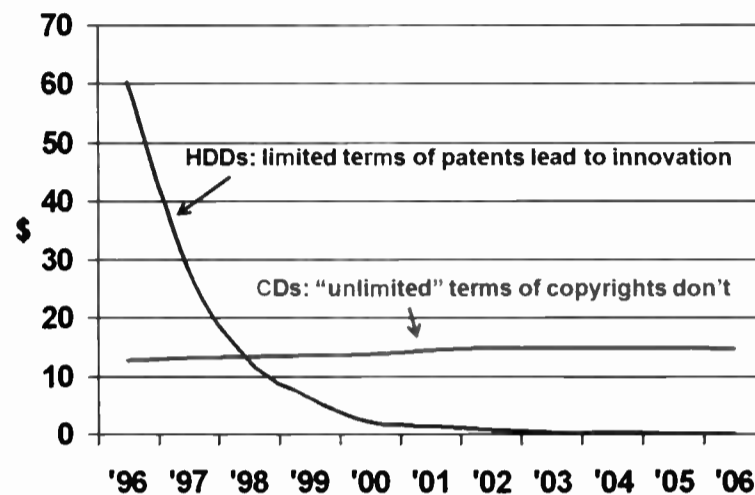
The accompanying graph compares the retail cost of a CD with the cost of the amount of hard disk space needed to store 10 three-minute songs. It clearly

the market. Within a year more generic versions were on the market and the price per capsule had plummeted to \$0.32, with generics taking almost 90 percent of the market.

This is the way our intellectual property rules are supposed to work. This is the way they *did* work for both patents and copyrights, until the recording industry went to work in Washington in the last century and got Congress to legislate lifetime copyright protection that extends 70 years after death.

We should all thank our lucky stars

## Cost of Music CDs vs. HDD Space



Sources: "The CD: A Better Value Than Ever," Recording Industry Association of America, August 2007 and "Historical Notes about the Cost of Hard Drive Storage Space" <http://www.alt.net/ns1625/winchest.html> (2/23/08). Cost of HDD space to hold an album estimated at 31.752 MB/3 minute song x 10 songs/disc x HDD cost/MB.

Cost of Audio CD vs. Cost of Equivalent HDD Space

illustrates how our patent laws have encouraged the consumer electronics industry to bring better and better products to market, providing dramatically more value to society over time. And it illustrates just as clearly how our copyright laws have encouraged the music industry to keep doing the same old thing, providing no added value to society over time.

I own 48 different CDs from one of my favorite artists. Nine of these CDs are two-disc sets, making 57 different discs. On these 57 discs there are 742 songs, but only 315 unique songs. This means that, on average, each disc has only about 5-1/2 new songs, with the rest being songs that I've already purchased.

This is what happens when an industry is granted intellectual property rights for life. Instead of more, innovative, better products society gets the same old song, again and again.

## It's not supposed to be this way

In sharp contrast to our copyright laws, our patent laws encourage innovation. This is true not only in the consumer electronics industry but in many other industries as well.

Take the drug industry, for example. In 2001 the patent on the anti-depressant drug Prozac expired, enabling competitors to begin manufacturing the drug using different, generic brand names without paying royalties to the patent owner. Until that time Eli Lilly, Prozac's manufacturer, had a monopoly on the drug and was able to charge rates that would help offset its research and development costs. When the first generic version hit the market in August 2001, Lilly was charging \$2.17 per capsule. The generic version cost \$1.91 per capsule and immediately captured almost half of

that the greedy people running the music industry aren't running the pharmaceutical industry. A month's supply of aspirin would probably cost us \$100. And if we needed Prozac to deal with the high cost of drugs — and music — we'd probably have to shell out \$200 a month for that, too.

It's time to rein in our out-of-control copyright law. It's time to bring the protection granted to copyright owners back in line with the protection granted to patent owners. It's time to fix drugs and rock & roll.

We need a grass roots movement to create a groundswell of public support to make this happen. Elected officials generally care about two things: raising money for campaigns and votes. The music industry's been busy suing people, taking their money and giving it to lawmakers so Congress will keep the ridiculous copyright laws in place. It's hard for ordinary Americans to compete with the money flowing to lawmakers from the music industry. But we can win with votes.

It's easier than ever for people to make themselves heard in Washington through phone calls, e-mails and letters. And enough voters can trump even the largest campaign contributions. So let's put all of our modern technology to good use and start sharing stories of how copyright law is stifling innovation. Let's share them with each other, and with Congress. And let's keep it up until the law is changed.

Dave Wilson's commentaries are a recurring feature in Radio World. Wilson is owner of WHDX(FM) and WHDZ(FM) on Hatteras Island, N.C. He is also senior director, technology & standards at the Consumer Electronics Association. His views are his own and do not necessarily represent the views of CEA or its member companies. ☺



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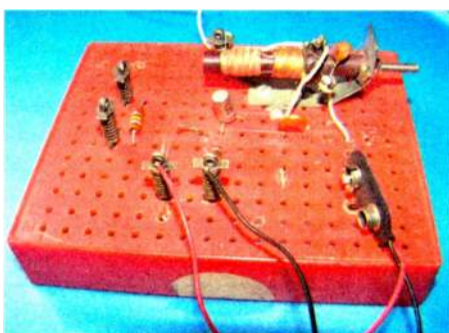


◆ READER'S FORUM ◆

Radio From A Kit

Just wanted to say thank you for Robert Kegerreis' great story about "Bootleg 1610" (RW, Jan. 1).

It brought back many memories about my first AM transmitter. I purchased it about 1971. Our Radio Shack was a small corner of a furniture store that had a few basics. For \$3.95, I picked up P-Box Kit 28-103, a "wireless" AM microphone. Running via a 9V battery, you could get to a few radios in the house. We added an AC-to-9V type of converter and a long wire and managed five or six blocks, playing



the top 40 songs, some commercials we recorded off the TV and our input as DJs. We had a few listeners.

The local stations called the FCC. We never got a visit, but years later I would work for those same stations, WMTE (AM)/WRRK(FM), Manistee, Mich.

My friend from next door had a father taking a mail order electronics program, so he was a bit better on the tech side, while I was more the DJ type.

Now almost 40 years later, I have just celebrated my 30th anniversary in radio. My neighbor friend went on to be a CE and took care of a radio-TV combo. I have the P-Kit still, minus the small crystal type mic, which we removed and went direct from a cassette recorder output. I have enclosed a couple of pictures of it.

I have been a reader of Radio World since about 1981 and still read it cover to cover each time it arrives. Today, I too have been a casualty of downsizing and am on the net awaiting for the next LPFM window or an area station to become available.

Thanks RW and Robert for the great piece. I plan on keeping it next to my P-Kit for a future trip down memory lane.

Mike Shannon  
 Owner

The Oldieschannel.com/  
 "Shannon in the Morning and Deb"  
 Bedford, Ind.

Steeplecasting

What a delight to read Robert R. Kegerreis' first-person account of his teenage introduction to broadcasting.

His story took me back to my own adolescent misadventures of steeple-related shenanigans at my church.

Built in 1838, the First Presbyterian Church of Titusville, N.J., sits high on the banks of the Delaware River.

In the 1970s, the church purchased an electro-mechanical carillon from the Schulmerich Bell Company of

Sellersville, Pa. The system, housed in an equipment rack, consisted of a cart machine tied to a timer. At the appointed times, the cart machine would play secondary tones triggering tiny, piano-like hammers that would strike miniature chimes inside a small chamber mounted above the cart machine. The sound inside the chamber was picked up and amplified into four massive PA horns installed in the steeple.

The sound carried for miles across Mercer County, N.J., and Bucks County, Pa. Every day at noon and 6 p.m., the carillon would fire up and play a couple of popular Christian hymns, depending on what cart happened to be in rotation.

The minister and his family lived in the manse next door to the church. My friend Robbie was one of the minister's sons. As teens, we liked talking about stereo systems of the day, installing FM converters in cars and generally fiddling around with audio equipment.

The carillon system had been up and running for several months when one long summer day we thought it would be clever to explore the irresistible technical prospects of broadcasting something a little more lively than church music.

Geniuses that we thought we were, it didn't take long to figure out all we had to do was substitute the output of the chimes with another audio source and we'd be up and running.

Robbie sneaked his Teac cassette deck out of the house along with a few cables and adapters. In the back of the rack, we found the input to the carillon's power amp, pulled the chime cable out and replaced it with the output of the Teac.

As I recall, we popped in a tape of the Doobie Brothers song "Jesus Is Just Alright With Me," figuring it would be apropos. Respecting the daily routine, we waited until noon for our first broadcast.

At the top of the hour we held our breath while Robbie hit the playback button.

To say it was loud is an understatement. Titusville and the surrounding area was rocking like never before.

Fortunately, no one called the authorities — as was the case in Mr. Kegerreis' story — and most folks were pretty good-humored about the whole thing. Alas, our foray into steeplecasting was great fun but predictably short-lived.

John Grayson  
 Vermillion, S.D.

Career Prep

Thanks for giving space to Robert Kegerreis' great story of his home-grown radio station. It must have resonated with many of your readers of a certain age, who built a little station in their bedrooms before beginning careers in "real" radio.

I built the Knight kit from Allied Radio and ran station WJD (DJ backwards) from my home in a Cleveland suburb for a year in 1956–57. I operated from 4 until 11 p.m. every Monday, offering a variety of programming, which included live joins to a TV newscast and two half-hour dramas, tapped from a table radio and aired in real time. I took

pains to operate realistically, keeping a careful program log.

During the same period I answered phones for an all-night DJ on WERE(AM) on weekends. One day a member of the engineering staff tipped me that the station had an opening for a board operator. I applied, and copies of my log helped persuade the CE that I was for real. A 50-year career in radio followed. (Since my antenna was considerably shorter, I missed out on the visit from the FCC.)

By the way, I believe the correct term for the device was "phono oscillator." My recollection is that they were developed to allow a free-standing phonograph to be played through a nearby radio without a wired connection.

Chuck Crouse  
 Lancaster, Pa.

A Station in Every School

Mark, I just wanted to say what a pleasure it is to read some of the stories in Radio World. I truly enjoyed your *Promo Power* article about the next generation in the Jan. 1 edition.

I think that you will be happy to know that we at Shires Media Partnership are doing our part to help keep the passion of radio in our youngsters. The Vermont Association of Broadcasters recently released their January newsletter and we were delighted to find a small piece about our "Kids Rock Radio" program



that we are conducting at a local elementary school:

"WBTN(AM) GOES TO SCHOOL: Where will our future broadcasters come from? Commercial non-profit community station WBTN(AM) in Bennington is betting on the North Bennington Graded School. The station has installed a low-power Part 15 transmitter at the school and the students are now broadcasting their own show. The 'Kids Rock Radio' show will be re-broadcast on the parent AM each week. Station Coordinator Brian Dempsey says the goal is to have a low-power transmitter at every school in Bennington by late 2009."

We are doing our part and enjoying every minute of it! Just thought you would like to know.

Brian Dempsey  
 Station Coordinator  
 WBTN(AM)  
 Bennington, Vt.

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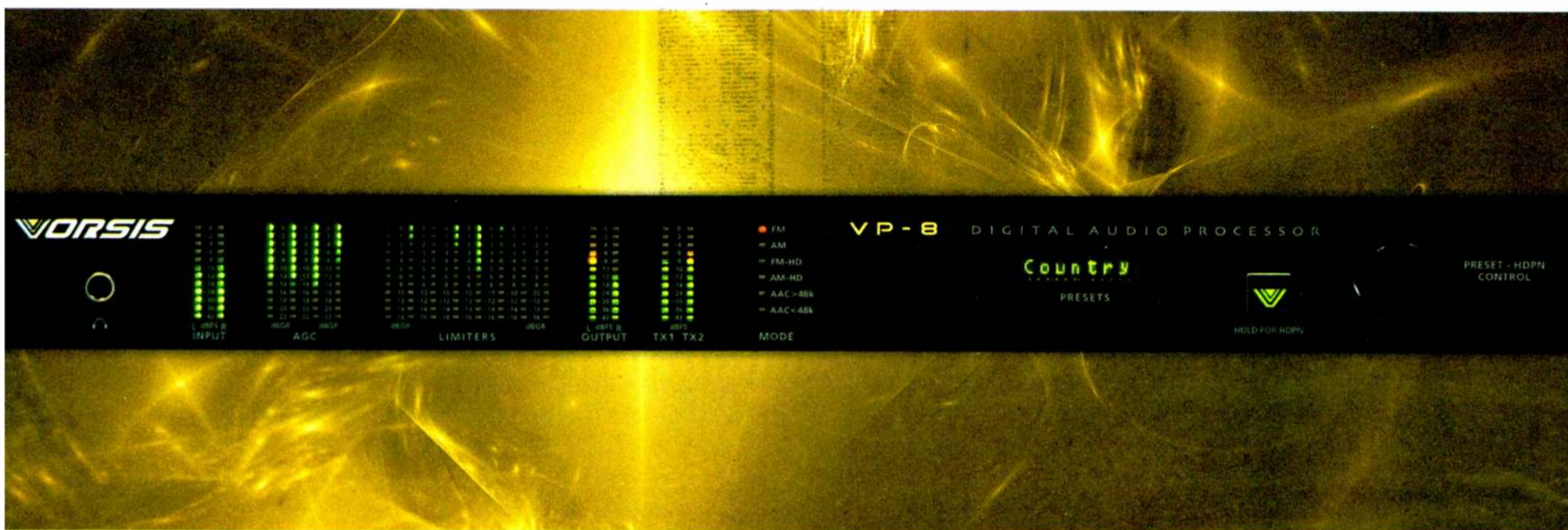
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