



# RADIO WORLD

JANUARY 12, 2011

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1173	Tue	1:11:00	01:30:00		00:15:00
1174	Tue	1:11:00	01:30:00		00:15:00
1175	Tue	1:11:00	01:30:00		00:15:00
1176	Tue	1:11:00	01:30:00		00:15:00
1177	Tue	1:11:00	01:30:00		00:15:00
1178	Tue	1:11:00	01:30:00		00:15:00
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## How Far Can the Wind Take You?

Ten Years Into Its Wind Project, KBSJ Is Still Learning ... And Saving

Contract Engineer Mike Strolberg stands in front of a turbine hub ready to be lifted into place.

Photo courtesy of KBSJ



BY RANDY J. STINE

**CONTACT, NEV.** — For nearly 10 years, this tiny unincorporated town has been home not only to slot machines and blackjack gaming tables, but to the

Station officials believe KBSJ is the only radio station transmitter site to rely on wind power in the country. It recently celebrated the 10th anniversary of the project getting the green light. Radio World wrote about it as construc-

(continued on page 8)

## GREENRADIO

wind-powered radio transmission facility of non-commercial KBSJ(FM).

Contact is 62 miles south of Twin Falls, Idaho. The station's city of license is Jackpot, Nev., about 15 miles north of Contact.

## Report Explores Message Service For Analog AMs

BY LESLIE STIMSON

IBiquity Digital and the National Association of Broadcasters believe there's a low-cost way for analog AM stations to transmit simple text data, much as FM stations can with the Radio Data System.

The service would be compatible with AM HD Radio as well, and its proponents say it would provide broadcasters with an intermediate step toward a full digital IBOC implementation.

A system akin to "RDS for AM" has long been bandied about by engineers, but little came of it. Now the two organizations are exploring interest among stations and receiver makers in the technology to enable analog AMs to transmit data to display as messages on

(continued on page 5)



## Norman Corwin's Remarkable Century

A chat with the great radio dramatist.

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# Convention Features FEMA Workshop

## Next Test Planned For This Month

The Federal Emergency Management Agency wants to know what stations think about efforts to update the Emergency Alert System.

To that end, the Alaska Broadcasters Association 2010 convention in Anchorage featured a FEMA Integrated Public Alert and Warning System EAS test workshop, the first of several such meetings FEMA plans to hold in various states. Manny Centeno, FEMA IPAWS program manager, said IPAWS would schedule the events with EAS participants and federal partners.

At the event in November, Centeno reviewed findings from the Alaska EAS exercise held last winter (see Radio World, Feb. 10, 2010), sharing improvement strategies for the next such test, planned for Jan. 26, 2011.



FEMA IPAWS

Dennis Bookey (in white shirt), the general manager of Morris Media Group and co-chair of Alaska's State Emergency Communications Committee, discusses EAS with an unidentified attendee of the Alaska Broadcasters Association 2010 convention as Bryan Fisher, chief of operations of the Alaska Division of Homeland Security and Emergency Management, listens. At right are Paul Jewusiak, chief engineer of KFQD(AM) in Anchorage, and Manny Centeno (seated), FEMA IPAWS program manager.

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FEMA likes conducting EAS tests in Alaska because so many broadcasters participate in EAS there and because a message can be transmitted without triggering an alert in another state.

At the workshop, Centeno told Radio World, he also conducted a live demonstration of an Emergency Action Notification.

An EAN is a federal-level alert that has no two-minute time limit. If an event is so catastrophic that the president needs to address the nation, he might need more time to convey information. During the EAN test in Alaska in early 2010, audio was aired for 2-1/2 minutes "partly to make sure the devices can handle a longer message," Centeno said.

He also offered a CAP-to-EAS message demonstration using the IPAWS open aggregator to broadcasters, engineers and station operators. The IPAWS alert aggregator will collect and route IPAWS alerts to and from emergency

systems that serve the public. The system will integrate with the various alert dissemination methods of IPAWS. Additionally, its Web services design will allow for the addition of future alert and warning systems, according to Centeno.

Some 50 people attended the presentation, he estimated. ABA members asked questions about what happens if the EAN repeats and how to manage audio levels. "We spoke to many people one-on-one about some of their issues" and explained how to mitigate both of these situations specifically, he said.

In addition to ABA participation, the Alaska Division of Homeland Security and Emergency Management, the FCC and NOAA support FEMA's outreach efforts. Centeno is part of the FEMA IPAWS Program Management Office, headed by Antwane Johnson, division director.

— Leslie Stinson

## NEWS ROUNDUP

**SBE PROCESSING COURSE:** Audio processing is the topic of a new SBE University online course, taught by Stephen Poole, chief engineer of Crawford Broadcasting's cluster in Birmingham, Ala. Poole is also an RW contributor. SBE estimates the course, found at [www.sbe.org](http://www.sbe.org), will take 5 to 8 hours to complete.

**ERI'S WEBSITE:** Electronics Research Inc. has redesigned its website to feature better navigation, smart search and advanced product filtering. The site ([www.eriinc.com](http://www.eriinc.com)) now includes an online catalog with part number specifics and a library containing specs, installation instructions and engineering tables.

# Thumbs Up for Gordon Smith

At Least So Far, His Personality and Style Seem Well Suited to the Task

On the great seal of the United States, the bald eagle holds arrows in one talon, an olive branch in the other, indicating a strong desire for peace but a constant readiness for battle if necessary.

Perhaps the National Association of Broadcasters should adopt similar symbols. They would be fitting for the tenure of President/CEO Gordon Smith to date.

He has demonstrated the wisdom of a strategy that combines conciliatory public postures toward policy opponents while continuing to fight quietly but fiercely on NAB's issues and legislation.

I had an opportunity to spend a little time with him in a small group recently and came away confirmed in my impressions that he is intelligent and nuanced. I also suspect he is a very fast learner. Yet he has no need to strive to understand how levers of influence in Washington work; that knowledge is bred into him by both family and professional history.

## PUBLIC ACCOMMODATION

Blessedly, one thing missing from Smith's leadership persona is end-of-the-world rhetoric. No promises to cut his throat before he'd consider negotiating with performers. No muttering that LPFMs will destroy the FM band or encourage former pirates to run amuck on the air.

He pressures quietly, accommodates loudly and argues reasonably.

A tidbit: When LPFM legislation was approved by the House in December and the compromise bill clearly was on its way

to Senate passage, the association issued a press release that concluded with this: "NAB also announced that after the new year, the group will be extending an invitation to supporters of low-power FM to an event at NAB headquarters heralding passage of the legislation."

I could not have imagined that sentence coming out of NAB two years ago. That's a small example but an instructive one. I believe his apparent instinct to build allies rather than publicly entrenching into an opposing ditch is going to be a hallmark of Smith's presidency. (I predict we'll now see a public push for LPFMs to join the association, which, as I've said, would benefit both.)

**He pressures quietly,  
accommodates loudly  
and argues reasonably.**

Is his attitude "for show"? Do willingness to negotiate and a habit of reaching out constitute public posturing?

Of course they do. Public posture is part of effective strategy in leading large groups. Promising to cut his own throat, in David Rehr's memorable phrase, was public posturing too, and far less effective.

The person who wears the public face of NAB must address two key audiences. He must serve the needs of the associa-

tion's members, foremost. But he also must consider how his actions and statements are perceived among the legislators who are in a position to influence the businesses of those members. Words have consequences.

Loud, confrontational leadership is a choice. It might feel good and generate enthusiastic applause among some broadcasters. But I'm more impressed when I hear quiet statements of firm goals, pursued with smart behind-the-scenes interaction on the Hill and a willingness to interact with policy opponents.

Beyond posture, Smith's actions suggest a practical, realistic executive personality. His pragmatism and capability to comprehend intricacies of issues will help even more now that he's allowed to lobby his former Hill colleagues directly.

## FIGHTING ITS FIGHT

I'm not trying to position the man as some kind of savior for the interests of commercial radio owners. Our industry faces plenty of institutional challenges unrelated to who sits in the NAB president's chair. One is that broadcasting is unlikely ever to enjoy the kind of lobbying heft it did at one time, due to the changed nature of the media landscape itself. So our expectations must be moderate.

Broadcasters do however need to see results. They'll be watching closely in 2011. Much of Smith's reputation as a lobbyist and negotiator, at least for radio, will depend on the outcome of the performance royalty issue, one of his stated top priorities.

FROM THE  
EDITOR



Paul McLane

Lack of final congressional action on the Performance Rights Act is in itself a victory. After the 2008 elections, the political odds that performers could get a favorable vote were high, and the likelihood of some kind of royalty being approved in a flurry of congressional activity at the end of 2010 was real.

From what I hear, NAB board members knew this and put the question to Smith bluntly before they hired him: Can you stop or slow the performance royalty despite the political winds?

NAB has done so to date. But some kind of royalty system is inevitable, through legislation or negotiated settlement. The fight, and the negotiations, are likely to be renewed in 2011; their outcome will be watched as an indication of NAB's strength.

I suspect Smith can wield the arrows as well as the olive branch. Talking to him, I sense a steely determination. He knew last spring how to make legislators' phones ring, how to assure that they would hear from radio listeners at town hall meetings asking "Why do you want to take away my radio?" as a pushback against a picture that had been painted of big, bad corporate radio trying to take advantage of helpless artists.

Smith's subsequent actions on the difficult PRA issue, blessed by the NAB board, have given radio some maneuvering room and challenged the simplistic portrait of radio that opponents had been able to paint. (They've also led to what appears to be a freshly antagonistic relationship with Gary Shapiro and the Consumer Electronics Association; it'll be fascinating to see how that will play out.)

I wrote a year and a half ago that NAB members seemed "hungry for a leader who, while tough, can walk up and down the halls of Congress without getting his elbows stuck too deeply between the ribs of committee chairs ... At its most elemental level, this is a lobbying job." I predicted that NAB would hire a former Eddie Fritts lieutenant, Jim May, as president.

I was wrong on the name but right about this: "Charisma and a determined public persona may be important characteristics for the leader of the industry's lobbying organization," I wrote, "but those alone are not substitutes for a firm understanding of the broadcast business or of the highly personal nature of politics. ...

"It's also my hope that the next leader will be more discreet in his or her toughness. This job also requires subtlety."

Based on the early returns, Gordon Smith's personality and style seem well suited to the task.



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**AM DATA***(continued from page 1)*

analog and HD Radio receivers.

The concept is similar to what analog FMs can provide using RDS subcarriers; but this system uses a small number of IBOC digital subcarriers to provide data capability. If the project proceeds to the next phase, the subcarrier power levels suggested in a new report would be verified in laboratory and field testing.

iBiquity has been working on the concept; NAB's FASTROAD technology development project co-funded the project and recently released iBiquity's report on how it could work and what would be involved for stations and manufacturers. FASTROAD stands for Flexible Advanced Services for Television & Radio on All Devices.

"The AM Digital Data Service is structured to be compatible with HD Radio IBOC broadcasting on AM and defined to be implemented in a cost-effective manner," according to the report.

The technology supports delivery of low-data-rate text — approximately 90 to 1,000 bits per second depending on the number of subcarriers and the type of modulation used — for analog AMs. By comparison, the RDS signal has a bit rate of approximately 1,200 bits per second.

Right now, AMs have no way of transmitting text data such as song title, artist name or sponsor information. This technology could be integrated into future HD Radio and analog receivers, according to the report.

The proposed system uses several building blocks from the AM IBOC standard, though it's not meant to be a full digital system. The ADDS is meant to transmit text data only and not digital audio.

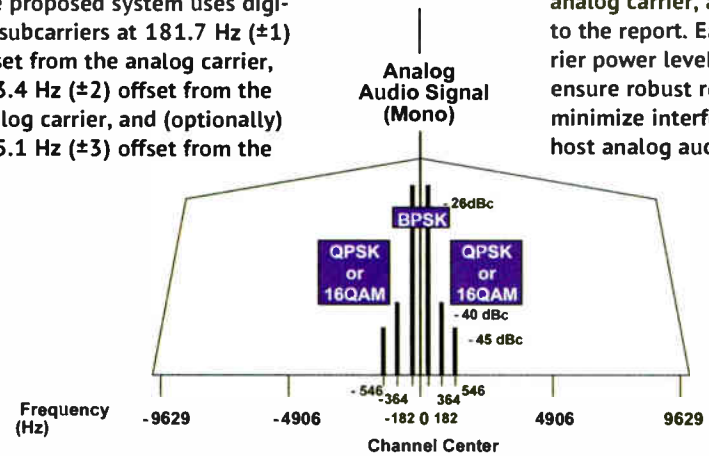
The report, available at [www.nabfastroad.org](http://www.nabfastroad.org), summarizes system design alternatives, possible transport definitions and impact on industry products. Several system components are borrowed from the HD Radio standard in an effort to simplify implementation. "Such a service would provide analog AM broadcasters with a step toward a full digital broadcast," it stated.

The document does not define a full ADDS standard or a commercial implementation. Additional system design work is required to implement and evaluate a commercial AM Digital Data Service, the authors wrote.

The transmission equipment needed at a station hasn't been determined; however, NAB and iBiquity expect that ADDS offers stations a simpler, less expensive way to provide a limited digital data service compared to a full-blown AM IBOC installation, according to NAB Science & Technology Senior Director of Advanced Engineering David Layer.

*(continued on page 6)***NEWS**

The proposed system uses digital subcarriers at 181.7 Hz ( $\pm 1$ ) offset from the analog carrier, 363.4 Hz ( $\pm 2$ ) offset from the analog carrier, and (optionally) 545.1 Hz ( $\pm 3$ ) offset from the



analog carrier, according to the report. Each subcarrier power level is set to ensure robust reception and minimize interference to the host analog audio.

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## AM DATA

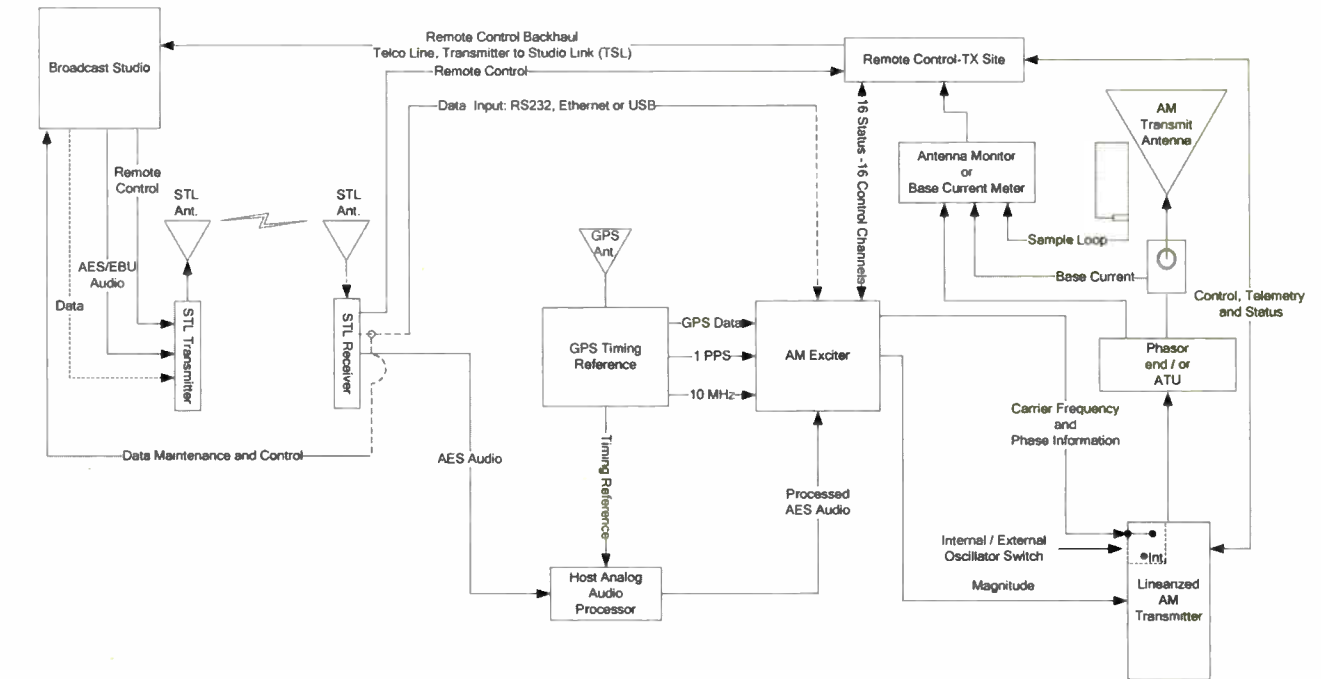
(continued from page 5)

"Also, the requirements on the antenna system for ADDS would be the same as for analog AM and not the more stringent requirements of AM IBOC," said Layer. "This is important because antenna tuning, getting systems from analog AM to HD Radio specs, has been one of the major tasks needed to get AM IBOC functioning."

The report describes methods for digital signaling within an AM analog broadcast signal and options/tradeoffs for application layer implementation. Although other AM digital signaling methods have been proposed worldwide, the method described is intended to be at least partially compatible with an HD Radio signal, using a subset of the modulation techniques designed for AM HD Radio transmission equipment and receivers.

As described in the report, from one to three digital subcarrier pairs would be used to transmit digital data. These subcarriers would reside "underneath" the existing analog AM audio signal, represented in the first illustration (page 5) by the trapezoidal shape that extends symmetrically about the channel center out to approximately  $\pm 10$  kHz.

"The proposed system uses digital



The report showed this generalized AM broadcast configuration, defining the basic functional blocks required. The GPS timing reference and AM exciter would have to support synchronization and modulation of the AM Digital Data Service. Complete specifications and designs of these components would require further study, the authors wrote.

subcarriers at 181.7 Hz ( $\pm 1$ ) offset from the analog carrier, 363.4 Hz ( $\pm 2$ ) offset from the analog carrier, and (optionally) 545.1 Hz ( $\pm 3$ ) offset from the analog carrier. Each subcarrier power level

is set to ensure robust reception and minimize interference to the host analog audio," the text states.

ADDS is designed to support text messaging and data transmission asso-

ciated with audio program content. Proposed "use cases" include station service messages, alert messages and program service messages such as song title and artist, genre and commercials.

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The ADDS may also provide emergency alert text messages or interactive ads.

In the second figure, the report discusses what equipment stations would need to use the technique. The architecture described in the report defines the basic functional blocks required.

The GPS timing reference and AM exciter would have to support synchronization and modulation of the ADDS. Stations would need a simplified version of an HD Radio AM exciter with a data interface to support the text message input.

Stations, according to the findings, should have studio automation equipment that supports HDP PSD SDK V4.7 or later. HDP PSD SDK V4.7 refers to the HD Radio software application protocol for program service data transport into the broadcast equipment.

"The studio should have a data services line to the transmitter to convey the content. A phone link with 9600 baud modem to the transmitter site would be sufficient to support the data required at 300 bps. If available, STL service would provide more robust capacity."

The ADDS technology could be integrated into future IBOC and analog receivers. Line text displays should be appropriate for most use cases; however, receiver specs would need to be developed to guide product designers and manufacturers. Existing IBOC receivers and analog-only receivers would not be able to decode the ADDS signal.



Selected content from Radio World's "The Leslie Report" by News Editor/Washington Bureau Chief Leslie Stimson.

### MOST 'GOIN' MOBILE' PARTICIPANTS USED PPM360 METERS

Not revealed in the Arbitron and Jacobs Media "Goin' Mobile" presentation I sat through at the fall Radio Show was research involving Arbitron's next-gen Portable People Meter, called PPM360.

"Goin' Mobile" is an ethnographic study that looked at how consumers use smartphones.

But during the Arbitron client conference in Baltimore in December, Jacobs Media President Fred Jacobs said the basic design of the new meter, smaller than the current model, went over well among the study participants. Sixteen of the 18 people in the study used the new device.

"We asked what it was like to carry the meter. This may be the first and last time" this information would be discussed publicly, he said, because Arbitron is using the results as part of proprietary research.

Arbitron designed the new meter to enable PPM panelists to send their audience data back to the company wirelessly, rather than needing to dock their

meter each night.

The participants ranged in age from 18 to 49 and were not actual PPM panelists.

Among the general themes that emerged was that many of them forgot they were carrying the new meter.

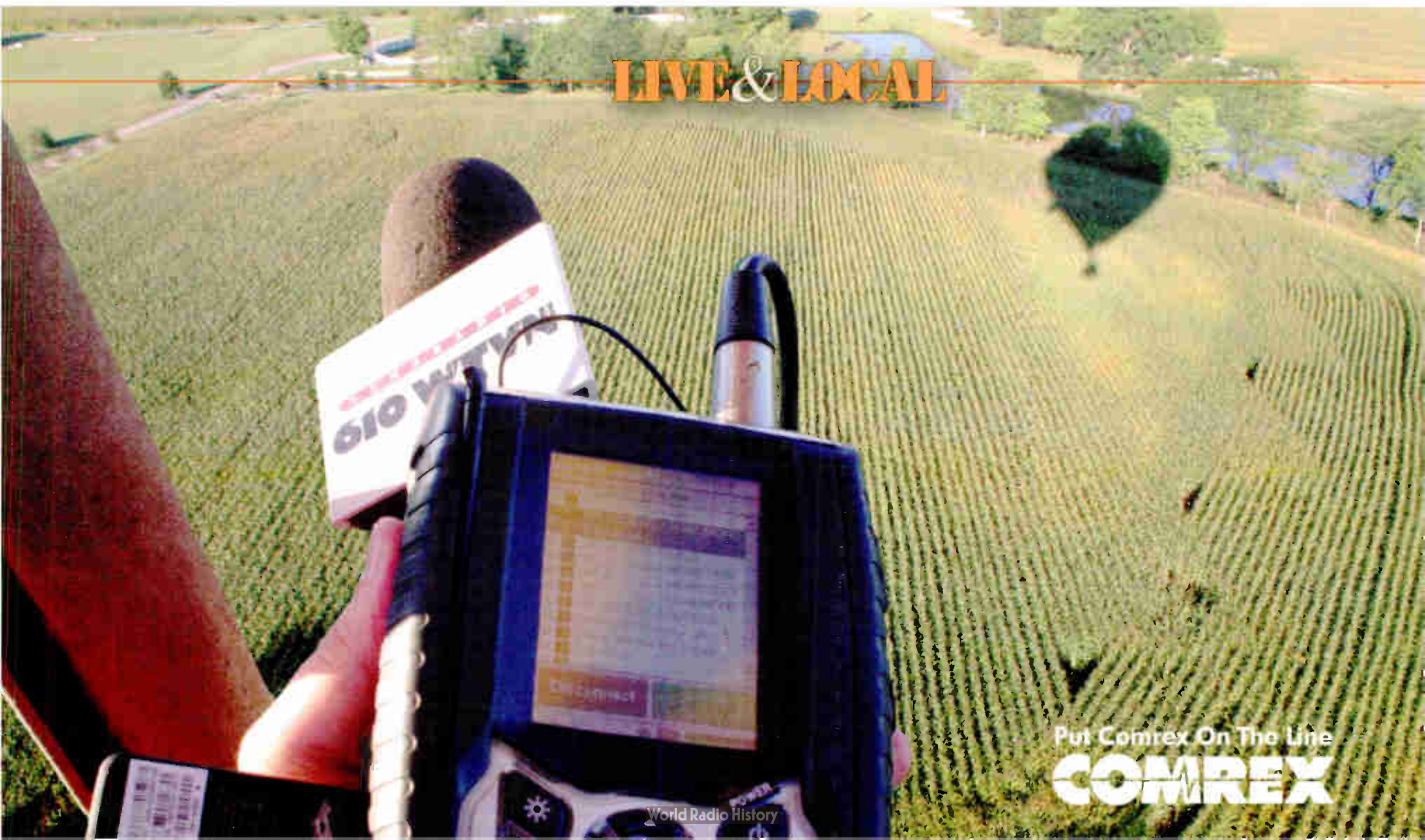
In several video clips, study participants also said the question they heard the most was whether the device was a pager. Some also said that it was so small they worried about dropping it. Many of

the male participants were accustomed to carrying a pager and treated the meter as such, perhaps clipping it to their belt. Women clipped it to their purse or somewhere on their clothing.

Some younger participants wondered if it could be made smaller and "cooler" looking. One young female said a girlfriend asked her: "Seriously? You have a beeper? Seriously?" Then she rolled her eyes, suggesting Arbitron still has some work to do on the design.

Participants also suggested that Arbitron text them to remind them to wear the meter each morning before they leave the house.

We've reported Arbitron has begun beta-testing the new units and hopes to place some in the field in 2011.



## WIND POWER

(continued from page 1)

tion was nearing completion in 2002.

KBSJ, which has the most powerful FM signal in the Boise State Public Radio network of stations and is heard across parts of Nevada, Idaho and Utah, is a Class C FM at 91.3 MHz with an ERP of 4,700 watts. The station receives network programming via microwave from KBSX(FM) in Twin Falls, Idaho. It is licensed to the Idaho State Board of Education and carries a mixture of programming from National Public Radio, Public Radio International and American Public Media.

The facility depends on strong Nevada winds blowing across the 8,700-foot peak of Ellen D Mountain for its main power source. The moving air — reaching 80 to 100 mph or higher — turns three 10 kW turbines that store power in a nearly 14,000-pound storage battery bank inside the transmitter building. The site has a propane-fired generator for backup power.

The station erected four towers at the mountaintop transmitter site — three for the 10 kW wind turbines, a fourth for the radio station's antenna. The wind power and transmitter project cost just over \$600,000 when it was completed in 2002. Boise State Public Radio received a \$251,000 federal Public Telecommunications Facilities Grant for the project, Radio World previously reported.

When Thomas Lowther, chief engineer for Boise State Public Radio, Eastern Region, began designing the transmitter site in 1998, there was no commercial



**Top left:** Static suppression coils on the turbine power cables. **Top right:** The Exeltech inverter. **Bottom left:** The DC source center is the heart of the DC bus in this 48 VDC system. Also visible are the top of the battery bank rack (lower right) and one of the three VCS charge controllers. **Bottom right:** The VCS-10 rectifies the voltage from the turbine and puts the power into the DC bus. One charge controller is needed per turbine.

power grid available in this rugged section of northern Nevada. Boise State Public Radio chose wind power in order to complete the project.

"Certainly had power been available when the project was done in 2001 and 2002, we would have chosen that over the wind system. However, at the time, we had to fulfill our construction permits and grant, so we needed to build," Lowther said.

Commercial power finally arrived at the mountaintop in 2004, but Boise State Public Radio declined to pay the cost to hook up, estimated at \$100,000. The organization recouped its share of the additional cost of installing the wind system within five years through energy savings.

### MOUNTAINTOP CHALLENGES

Through the years, the wind system

er FMs that want to upgrade. That change codifies what had been FCC policy into law. The FCC will need to develop or modify its rules for the new LPFMs and announce an application filing window.

**NAB'S WAR CHEST:** NAB spent \$3.4 million on federal lobbying in the third quarter of 2010, according to its latest report to Congress, compared to \$1.98 million in Q3 2009. In radio, NAB said its third-quarter lobbying issues included the Performance Rights Act, radio receiver chips in mobile phones, possible legislative rewrites of the Telecom Act and the Local Community Radio Act. NAB officials typically lobby legislators as well as officials at the FCC, FEMA, FTC, the National Economic Council and other agencies. The organization's pace of spending on lobbying was ahead of last year's, through nine months.

**VW & HD RADIO:** Volkswagen of America said that with the introduction of model year 2012, customers with the touch-screen Premium VIII radio will get an HD Radio receiver as standard equipment, including program service data and the iTunes Tagging feature. Volkswagen currently offers HD Radio in models equipped with the premium navigation systems RNS-510 and RNS-850. iBiquity Digital planned to include a Volkswagen in its display at the Consumer Electronics Show so visitors could see a Premium VIII with the HD Radio "Artist Experience" feature in which station logos and artist images are displayed.

## NEWSROUNDUP

**PERFORMANCE RIGHTS:** Congress adjourned before the holidays without action on the Performance Rights Act; but both NAB and musicFirst expect it to be a factor in the 112th Congress. Talks continued between the groups in an effort to work out a compromise. Terrestrial broadcasters have been exempt from a royalty for decades, though they pay the holders of music copyrights. NAB and others have fought congressional legislation of such a right and allowing the Copyright Royalty Board to set rates. MusicFirst, which represents record companies and performers, says other forms of radio, like Internet and satellite, pay performance royalties and that terrestrial radio should as well.

**LPFM:** Congress passed a bill directing the FCC to drop third-adjacent minimum distance separation requirements between low-power FMs and full-service FMs, translators and boosters, in order to fit more LPFMs on the dial. The version passed by lawmakers specifies that new LPFMs cannot cause interference to existing full-power stations and, if they do, will have to go off the air until the interference is eliminated. What passed was a compromise version that specifies that LPFMs are a secondary service, with the same priority as FM translators but secondary to full-power FMs, so they'll have to accommodate full-pow-



KBSJ's tower has numerous tenants.

has presented challenges and some dependability issues, Lowther said. It has experienced occasional failures yet has been mostly successful.

A wind system failure as recent as November 2010 caused the transmitter to go down; the problem was related to the power inverter. "That's the core and brain of the wind system," Lowther said.

"We had several inverter failures early in the project. In 2003, we replaced the Xantrex/Trace inverter with one from Exeltech. We have had almost no problems since. The recent problem was caused by a control card failure," Lowther said. "The unit is modular, which means that most failures do not bring the site down. However, this one did."

"We've had several catastrophic wind turbine failures, where a machine self-destructs. We've worked with the manufacturer — Bergey Windpower — to identify the underlying cause for such failures," he continued. "The main problem appears to be blade flutter. Bergey is working on redesigning the blades to mitigate the problem."

Blade flutter is an oscillation condition that can be caused by excessively high winds that stress rotor components and ultimately cause turbine failure, according to the manufacturer.

Lowther is based out of Twin Falls; he went so far as to visit Bergey's manufacturing plant in Norman, Okla., to receive extra training on its wind power system.

"(Bergey's) turbines are installed chiefly in moderate wind energy areas such as the Midwest and Texas. Our site is classified as a high-wind energy area.

(continued on page 10)



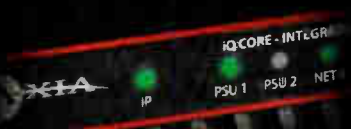
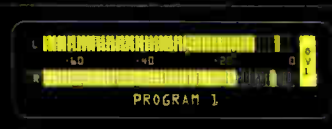
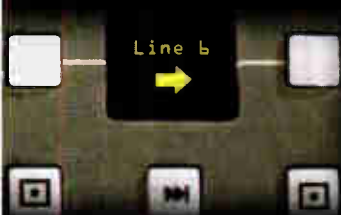


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iQ. It's about time.



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

# Old Cases Protect Fragile Gear

You Can Find Them Cheap at Yard and Garage Sales

As a contract engineer, John Ramsey has to carry around a lot of tools and various pieces of test equipment. Rather than store gear on the back seat or risk it

## WORKBENCH

by John Bisset

Read more Workbench articles online at [radioworld.com](http://radioworld.com)

rolling around in the trunk, he uses old GPS and camera cases, which he buys for next to nothing at tag sales.



Fig. 1: Delicate or small gear can be carried safely in cheap, 'gently used' GPS or camera cases.

They are a great way to store fragile test equipment. The cases are well padded, yet zip or snap open easily.

In Fig. 2, an old GPS case protects a Whirlwind Q-Box analog tester. The well-padded camera case in Fig. 3 neatly holds a Ward-Beck Bit Spitter and Bit Buddy and their associated power supplies.

Small cases like these come in handy for all kinds of things. When I did contract work, a plastic Sennheiser mike case served to hold all my clients' key chains. It snapped shut and fit nicely under the seat of the vehicle.



Fig. 2: This GPS case seems like it could have been made specifically for the Qbox tester.

I love John's idea of picking these cases up at tag or yard sales.

John Ramsey can be reached at [jramsey@marlinbroadcasting.com](mailto:jramsey@marlinbroadcasting.com).

Consulting engineer Robert D. Culver offers thoughts for our discussion about securing signage on tower fences.

To begin with, Bob suggests mounting the signs on the inside of a chain link fence. This way, the sign is viewable through the fence.

Attach the signs with tough plumbing strap and bolts with locking nuts. The bolts can be turned from the outside; but the lock nuts cannot be backed off by someone

(continued on page 14)



Fig. 3: The camera case holds not only instruments but also their power supplies.

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World Radio History

**CORWIN***(continued from page 16)*

the "Words Without Music" series.

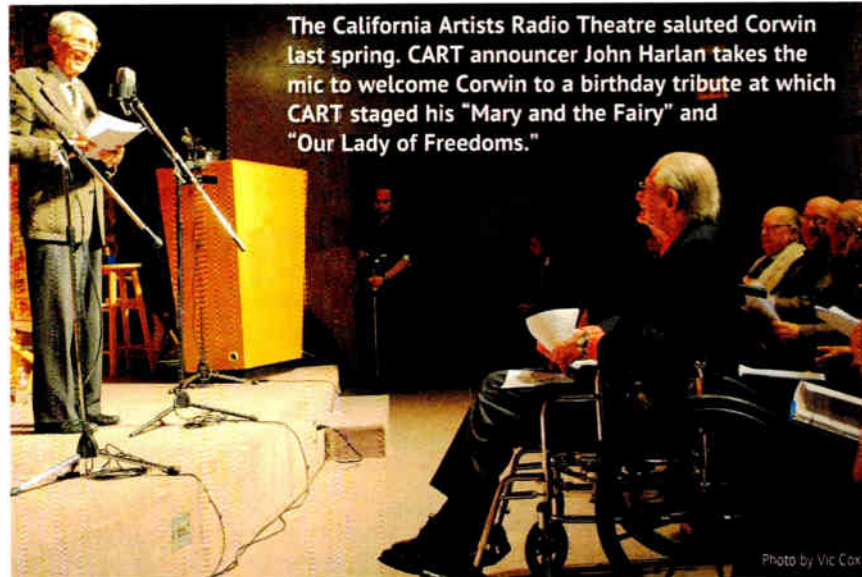
This calmly poetic but critical portrayal of a bomber crew's attitudes toward their helpless victims was received warmly by the public and many critics. A career landmark, "They Fly Through the Air" won the then-highest radio honor for an individual drama in the country, the Ohio State Institute for Education by Radio award. CBS had neither censored his political poetry nor raised major complaints, he recalled, burnishing its reputation for liberalism.

"The network took bows for my work," he said.

One of the first major film stars he employed was Academy Award winner Charles Laughton, who was recruited for a Corwin adaptation of Stephen Vincent Benet's epic prose poem "John Brown's Body." An expert in British drama and poetry, the actor "knew nothing of American poets," said Corwin. "I introduced him to Walt Whitman, Thomas Wolfe and Carl Sandberg, and he was thunderstruck."

They worked together so well that Corwin was invited to stay with Laughton and his wife, actress Elsa Lanchester, whenever he visited Los Angeles.

Laughton, for his part, was so taken



The California Artists Radio Theatre saluted Corwin last spring. CART announcer John Harlan takes the mic to welcome Corwin to a birthday tribute at which CART staged his "Mary and the Fairy" and "Our Lady of Freedoms."

*Photo by Vic Cox*

by Whitman's powerful poetry that when Corwin eventually cast him as the poet in a radio play, the actor came up with an unusual approach to his role: He copied the 36-page typescript in longhand.

When Corwin asked why, Laughton gave a "long, quasi-occult explanation" that this would allow him to embed the emotions subconsciously and better master the poet's language. "I thought it was a lot of trouble to test a theory," Corwin said.

Their friendship was mutually beneficial. During one of his visits, actress

Ruth Gordon was a dinner guest. Her table banter with Lanchester was scintillating; the writer transformed it into a satirical fantasy on consumerism titled "Mary and the Fairy." When produced as part of the CBS series "26 by Corwin," Lanchester and Gordon naturally voiced the lead roles.

The Laughtons' regard smoothed Corwin's access to other film stars for his radio programs, including a live 1941 celebration of the 150th anniversary of the Bill of Rights.

The unprecedented broadcast over

all four networks came eight days after the Japanese attacked Pearl Harbor. "We Hold These Truths" featured James Stewart as the everyman narrator and gave lines to Lionel Barrymore, Walter Huston, Marjorie Main, Edward G. Robinson and Welles, among others. Appended to the drama about protecting freedom were eight minutes on the war by President Franklin D. Roosevelt.

**'HAPPY PRODUCTIONS'**

With America combating powerful enemies across two oceans, Corwin was asked in 1942 to direct and write radio programs on why the country fought and whom its allies were. The realistic "This Is War" series also introduced him to actress Katherine Locke, his future wife.

Sympathy and understanding of American allies were frequent themes during World War II. "An American in England," which Corwin wrote and directed on location, was co-produced by Murrow, who occasionally acted in the CBS series. Another series Corwin directed, "Passport for Adams," featured film actor Robert Young, who would become a television star as Marcus Welby, M.D.

"Mine were happy productions," Corwin recalled. "The actors trusted me, and I treated them as collaborators. Many stars worked for me for scale."

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A stock company formed around Corwin at CBS and included House Jameson, Eric Burroughs, Martin Gabel, Hester Sondergaard and Everett Sloane.

Bernard Herrmann was a prolific and preferred composer of the music undergirding many of Corwin's plays. He composed for 1945's widely hailed masterpiece, "On a Note of Triumph." Martin Gabel narrated the hour-long, cautiously celebratory program broadcast the day the Nazis surrendered in Europe. An estimated 60 million people listened.

Corwin's caution was due, in part, to the fact that war with Japan raged on. He also wanted to provoke questions about what had actually been learned from World War II that could be applied to prevent future wars.

With far less planning, "August 14," a 15-minute program saluting Japan's surrender, used a single voice to probe the future of nuclear weapons. Welles narrated what Corwin had stitched together the night before. Welles had been broadcasting war news for 36 straight hours on another Los Angeles station when he answered Corwin's summons.

Five days later Welles and film actress Olivia de Havilland performed an expanded version of the V-J Day broadcast called "God and Uranium."

In 1946, Corwin was awarded a major prize to circumnavigate the planet to promote peaceful world unity. He wanted it to be a journalistic working trip; CBS agreed.

The four-month, 37,000-mile odyssey took the radio writer and his soundman to 17 countries. Consequently, CBS broadcast a 13-part series of radio documentaries based on Corwin's interviews of prime ministers, artists, laborers and the woman-on-the-street.

Time magazine noted that the first broadcast "at its many high points ... had a sudden, heady power." His expanded journal of the trip was published in 2009 as the book "Norman Corwin's One World Flight."

#### 'RADIO LEFT ME'

Post-war peace brought widespread commercialization to CBS programming, which viewed television, not radio, as its future cash cow.

Corwin heard Chairman William Paley emphasize the need to "broaden the audience" and deduced what that meant for him. When CBS offered a new contract in 1948, its terms were so restrictive Corwin felt "they didn't want me back."

It spelled the end of radio's Golden Age for Norman Corwin, though he took a part-time position directing a unit for United Nations Radio for the next few years while he turned his mind to creating books and films. He was nominated for an Oscar for a movie script about Vincent van Gogh; he wrote and directed

two plays produced on Broadway. The writer-director whose work appealed to the rank and file as well as the rich and famous is no longer heard regularly on radio, though NPR embraced him briefly in the late 1990s.

Once called the "Bard of Broadcasting" by historian Studs Terkel and today still lauded as the Golden Age of Radio's poet laureate, Corwin has taught the writing crafts for 30 years at the University of Southern California. He believes that being in touch with young, inquiring minds has contributed to his long and productive life.

Corwin has repeatedly said, "I didn't leave radio; radio left me." He described the seismic shift in network radio and how it affected his métier as like having a great horse shot out from under him. At age 100 he said he is sad rather than bitter about the virtual extinction of radio drama.

However, his writing has continued through a dozen books and countless columns, essays and other projects. Thanks to the Internet and CDs, his radio plays live on. Radio Spirits recently released a 10-CD set of his early work; samples can be downloaded from a website,

[www.normancorwin.com](http://www.normancorwin.com), sponsored by Anthracite Films.

Norman Corwin still has many devoted fans and friends, as he discovered during celebrations hosted in his honor in the centennial year.

Among them was an event held by the Radio Enthusiasts of Puget Sound. It was the longest trip he has taken in years, and Corwin received standing ovations. "This old lion was properly lionized," he said.

*Vic Cox is a veteran independent magazine writer and author. His website is [www.viccox.com](http://www.viccox.com).*

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Program Director  
WTKK Boston



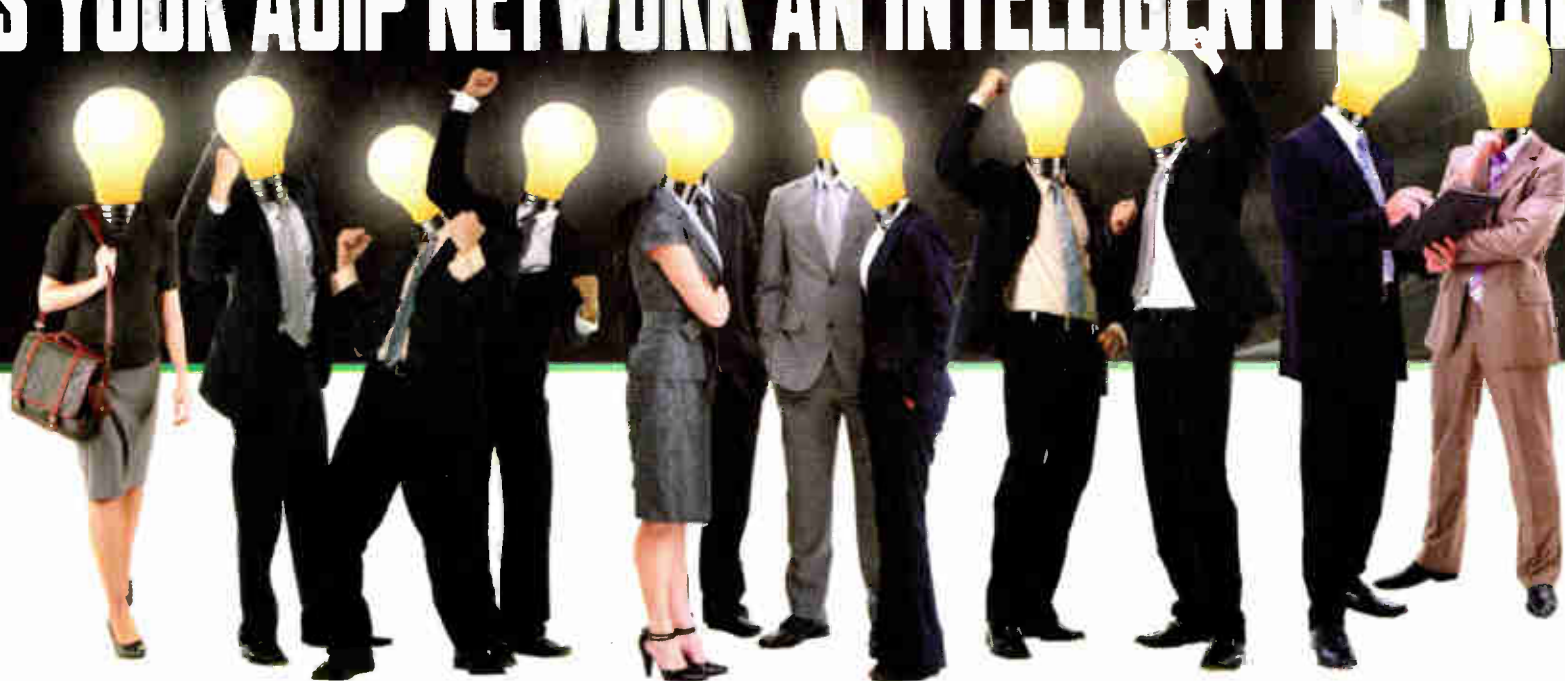
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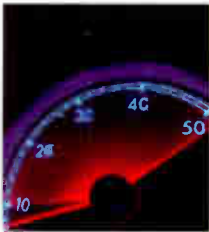
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You may not think you need the speed, but think of it this way... remember when a 10 meg hard drive seemed like it was all you'd ever need? Or when a 56K modem seemed like overkill? Audio needs as much bandwidth as you can throw at it, and WheatNet-IP Intelligent Network gives you 10 times the bandwidth of the other major system. Think of it as money in the bank.

### 4. WheatNet-IP Intelligent Network is NOT more expensive.



It's true. When you add up all the costs for your network, WheatNet-IP comes out to just about the same money as the other guys. No marketing mumbo jumbo about your labor or performance here - we're talking straight hardware comparisons. Go ahead, configure your network and see. Of course we DO out-perform them by up to a factor of ten. And we DO save you great googobs of money by giving you a system that configures, runs and heals itself... Still, do a full-network hardware comparison and check it out for yourself! Operators are standing by...



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**SILENCE:** Need to knock down the noise but don't need fancy, brightly colored, oddly shaped or psychologically disturbing acoustic treatment that's priced "just a bit outside" of your budget (or might catch on fire)?

Auralex's plain Jane Studiofoam Pro might be the ticket. Only available in always-sexy charcoal gray with a choice of 2-by-2 feet or 2-by-4 feet panels, all 1.5 inches thick, Studiofoam Pro provides a noise coefficient of 0.90. Best of all, the edges are beveled. You can't beat beveling.

Added bonus is a Class A fire-rating and it has met UL 94 HF-1 and HF-2 ratings. Auralex promises Studiofoam Pro will not rot or crumble. And there's no melamine either so you're not paying for something you don't want!

Info: [www.auralex.com](http://www.auralex.com)

**SPLITSVILLE:** A microphone splitter is one of those unappreciated audio tools whose mission isn't



recognized until it is needed. And there's never one around when you need it.

Interface maker ARX Systems is trying to change

that. The MSX-12 is a four-in/12-out (all XLR) rack-mounted box designed for smaller splitting jobs than the usual live sound/installation jobs where splitters are more common.

ARX Managing Director Colin Park said: "We developed the MSX-12 in response to requests for a smaller format version of our popular MSX-48 16-channel splitter."

Each input channel is a three-way split. The MSX-12 is passive and transformer-isolated.

Info: [www.arx.com.au](http://www.arx.com.au)

**HOME ON THE RACK:** Though they are practically ubiquitous, iPods and assorted music players have yet to penetrate equipment racks.

Until now.



Rack and studio furniture maker Middle Atlantic has a new part group for its RSH series of custom rack inserts, shelves and faces designed for docks.

The various shelves and faces are customized to handle a variety of commercially available iPod, iPhone, et al docks. They also are designed to not obscure IR remote control receivers or block ports. Rear panels are punctured where USB cables would

trail. Some units feature ventilated shelves.

Naturally the shelves fit the 19-inch rack standard. Faces are available for single, double or even triple docks. Options include rear-mounted shelves for power bricks.

Info: [www.middleatlantic.com](http://www.middleatlantic.com)

**EASY ON THE EARS:** KRK Systems, a boutique monitor specialist, has joined the ever-growing list of audio companies making headphones.

New to the KRK stable are the KNS-6400 and the KNS-8400. Both closed-back, circumaural sets are designed for portability with rotatable earcups. The oxygen-free copper cable is detachable. Ear and head pads are replaceable. Drivers are 40 mm neodymium. Nominal performance is 10 Hz-22 kHz for the KNS-6400 and 5 Hz-23 kHz for the KNS-8400.

KRK CEO Tim Dorwart said: "The goal was to satisfy what customers have been asking for: a headphone that closely replicates the 'studio monitor experience' while honoring our objective to build a product that is lightweight, comfortable and competitively priced."

Price: KNS-6400: \$99; KNS-8400: \$149.

Info: [www.krksys.com](http://www.krksys.com)



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# What's in Your Toolbox?

Here's What I Keep in My Trusty C.H. Ellis Tool Case

## **TECHTIPS**

BY MARK PERSONS

Everyone has his or her own tools and toolbox for the radio broadcast engineering job. My favorite for more than 30 years has been a toolkit like one used by telephone repairmen in years gone by.

The kit is not fancy, it just works. I have worn out three in that time and am glad they are still available because I may need another by the time I go to repair that big transmitter in the sky.

Imagine that: wearing out a tool kit! Well, when you use the kit every day, it makes sense.

### **DURABLE**

The one I have is a C.H. Ellis Telecom Tool Case with high-density polyethylene construction and a padded handle (because it weighs in at 25 pounds with my tools inside). This kit is 12 x 16 x 5.5 inches.

If you want one, look for part number 26-4509. It is \$176 and usually on sale for less at [www.alltimetools.com](http://www.alltimetools.com).

In the big scheme of things, it doesn't matter what the tools and case cost; what matters is that they work for the situation.

This kit does not come with tools. I put in what is needed and leave out the rest. To me, a toolkit is not a large box with tools rattling around inside; it is itself a tool to get the job done.

What I get with this toolbox is organization. It has a hinged pallet that stores tools and separates the bottom of the kit from the top where pouches are. When I go to leave a job site, I can spot what tool is missing just by glancing at the kit. There will be an open pocket where a tool belongs.

What's in the kit? The answer is, not everything, just enough to do 90 percent of the work. The rest of the tools are in the service van (see "The Man in the Van" in the Dec. 1, 2010 issue).

I've stocked the top cover with two 6-inch adjustable wrenches, a paint brush for cleaning, one or two cigarette lighters for heat-shrinking tubing, solder, right-angle ratchet screwdrivers, a 4-inch adjustable wrench for tight spaces, contact burnishing tools, Q-tips, wire cutters and long nose pliers.

The hinged divider has two universal screwdrivers, because inevitably someone wants to help me but has no tools. Also here are incandescent and LED flashlights, a torpedo level so my work can look straight and level with the rest of the world, slip-joint pliers, jeweler's screwdrivers, tie wraps, marker tie wraps and clip leads.

The bottom of the kit contains an Xcelite ratchet crimping tool, a box of assorted fuses, a mirror, a tone generator for tracing audio lines and a beat-up old Beckman digital multi-meter.



The meter looks terrible and clients sometimes eye it skeptically; but that is all I need to diagnose a problem 95 percent of the time. (A much larger RMS reading meter resides in the van.) The bottom also has Caig Labs DeoxIT contact cleaner, solder wick and magic glue.

### **CLEAN AND RESTOCK**

The soldering iron is interesting because it has a 12-foot power cord. Actually, it is a cord that I spliced onto the end of

the existing 4-foot soldering iron cord, which always seemed too short (don't tell UL about this).

A copper tube makes it possible for me to put the soldering iron back in the kit while it is still hot. One client joked that I can use it to make a quick getaway. I joked back, reminding him that my work carries a "tail-light warranty" — the warranty is good as long as he can see my van tail lights.

Also in the bottom of the kit are a box of hex wrenches; assorted crimp terminals; resistors categorized by size; wire nuts; silicone heat-transfer grease; and rack hardware. Also: electrical tape, a punch-down tool, a tape measure, utility knife, stubby screwdrivers



and a few feet of wire. This last item always seems to come in handy for incidental wiring.

Xcelite has some fine tools that I love. The socket set with roll-up pack gets constant use. The yellow-handled Xcelite R184 screwdriver is long, thin and amazingly strong. Its little green cousin, the R3324, is good too.

Maintenance: Once a month I go through the bottom of the toolkit to clean out dirt and to restock the crimp terminal stock.

The tools change as requirements for installation and service evolve. What kind of a special widget will be required in the toolbox for the next industry innovation?

*The author wrote in December about using a van for radio engineering work. For more good ideas, visit [radioworld.com](http://radioworld.com) and click on the Tech Tips tab under News & Technology.*

*Mark Persons, WOMH, is a Certified Professional Broadcast Engineer and has more than 30 years experience. His website is [www.mwpersons.com](http://www.mwpersons.com).*

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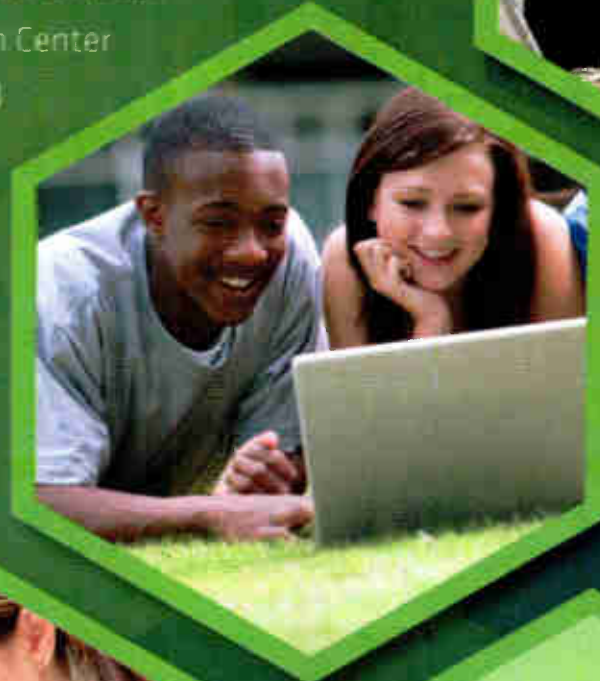
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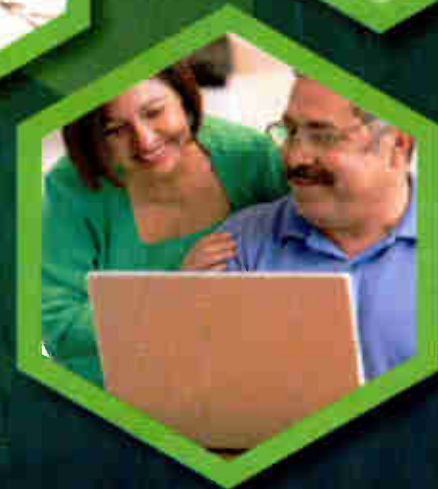


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# Telos ProFiler Lives Up to Its Name

Chi-Town Broadcaster Likes Feature-Rich Logging App

## USERREPORT

BY KENT LEWIN  
Chief Engineer  
WTMX(FM)/WDRV(FM)/WWDV(FM)  
Bonneville Chicago Radio Group

**CHICAGO** — No doubt you have your list of favorite products. One of mine is ProFiler, by Telos Systems.

ProFiler can operate in several modes: continuous recording, skimming and "Smart Skimming." Live audio streaming also is supported. User-configurable recording modes allow you to select bitrates from 16 kbps to 320 kbps, in stereo or mono. Recording is done in the familiar MP3 audio format, with the linear WAV format to be added in a future release. In the Smart Skimming mode you can change recording bitrates automatically, for higher quality recordings, when activated by the remote control.

The program consists of both server and client applications, which can be run on most computers of modest resources.

### AUDIO INTERFACE

At present, a Telos-provided audio card with one stereo (two mono) balanced audio inputs and four hardware-based GPI controls is the default way of

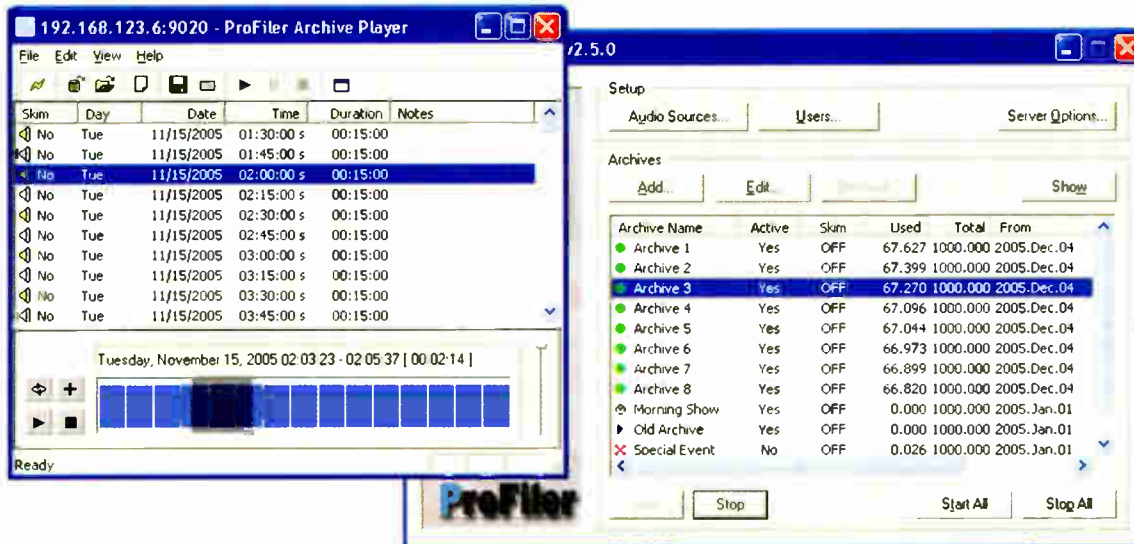
getting audio into the server computer. This is expandable up to four cards per server.

However, according to Telos, plans are to allow user-supplied audio input devices to be used instead. These could be single or multichannel cards. For users

audio playback systems. Archived audio can be uploaded automatically to a different server via FTP, or backup copies saved to different storage locations.

The server application utilizes a continually updated database to maintain a list of your audio files.

Archived audio is auditioned



of the Axia IP audio network, a "sister" program called iProFiler records audio streams directly into the application, without the need for internal computer sound cards.

Recording is initiated by GPI contact closures, calendar schedules or a continual record mode. Recording control can also be via TCP/IP, which can interface with your network-based mixing or

using the ProFiler client software. Client access is set up by creating users and assigning them permissions and passwords on the server. Functions in the user interface are intuitive. Segment selection, auditioning and extraction are performed within this application. A feature lets you directly e-mail saved audio segments from within the client application. This is handy for the sales department sending out commercial air checks to station advertisers. A cue list function lets users assemble files of just the audio segments they wish to save, without the need for third-party editing software. Or audio segments can be exported to external editing programs.

Connection shortcuts can be created to immediately return users to the specific server and archive frequently used settings. This makes quick access for repetitive routines.

Program directors will find the program great for remote playback of air checks right from their desk. Production personnel can use the archived audio to assemble podcasts, station composites or "best of" bits for the Web or station promos.

An upcoming updater routine will update clients automatically, without the need to update each machine manually. This will make updates a quick process, even if you have dozens of

client machines.

An NTP time sync application automatically keeps the server machine's time set correctly and ensures files always have the correct time stamp.

A remote monitoring application lets users keep tabs on the server remotely via the local network. It indicates the presence of audio at the server and monitors the available disk space.

Finally, a handy bitrate vs. storage space application calculates the amount of hard-drive space needed for archiving files at various bit-rates.

With the large-capacity hard drives now available, many years' worth of audio can be archived on a single drive. Settings in the server application let users decide how much to store per archive and whether to delete old files after a set number of days.

We have been using ProFiler consistently for many years. The sales, programming and production departments have found different uses for the program.

In addition to the normal skimming and logging archives, we have special archives set up to record console audio mix-minuses without commercials. This makes extracting audio for promos a breeze for our production staff. They can retrieve audio segments stored on ProFiler servers located across town, into their work. Other archives are triggered to record just incoming feeds from remote broadcasts or capture long form programs. I have been happy with the results we get from ProFiler and look forward to the next set of new features that are incorporated in the program.

For information, contact Telos Systems in Ohio at (216) 241-7225 or visit [www.telos-systems.com](http://www.telos-systems.com).

## ABOUT BUYER'S GUIDE

Radio World publishes User Reports on products in various equipment classes throughout the year to help potential buyers understand why colleagues chose the equipment they did. A User Report is an unpaid testimonial by a user who has already purchased the gear. A Radio World Product Evaluation, by contrast, is a freelance article by a paid reviewer who typically receives a demo loaner. Do you have a story to tell? Write to [bmoss@nbmedia.com](mailto:bmoss@nbmedia.com).

## PRODUCT SPOTLIGHT

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## TECHUPDATES

### REDBOX LINE INCLUDES PROFANITY DELAY

The Sonifex Redbox RB-PD2 is a 1RU 19-inch rack-mount profanity delay that features an automatic audio-stretch algorithm, allowing 2 to 55 seconds of delay to be built up live while on air; at the same time it maintains correct pitch.

It has balanced analog and AES/EBU digital audio inputs and outputs on XLR connectors and provides sample rates up to 48 kHz at 24-bit. It can act as a combined A/D and D/A unit — analog inputs can be output as AES/EBU or vice versa.

The delay can be initiated by press-

ing the Build Delay button on the front. A display shows the amount of delay being built up, to the amount selected. A Cough button allows locally generated sounds being presented at the inputs, such as the presenter coughing or equipment switching noises, to be discarded.

The Dump button has two modes.



The first removes a section of audio that has been buffered, by a preselected amount. The second plays a preselected audio file from a CompactFlash memory card. When the file has finished playing, the delay is then equal

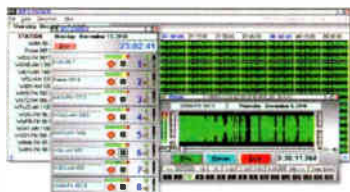
to the duration of the file. The Dump button can be used multiple times to use up the built-up delay and once used, the unit automatically starts to rebuild the original delay time.

The RB-PD2 features a remote port supplying eight inputs and six outputs, all of which are assignable. The inputs can be used to trigger any of the unit's functions such as build delay, activate cough or enter record mode and start a new recording.

For information, contact Sonifex/Independent Audio in Maine at (207) 772-2424 or visit [www.independentaudio.com](http://www.independentaudio.com) or [www.sonifex.co.uk](http://www.sonifex.co.uk).

### PRISTINE LOGGER OFFERS FULL SUITE OF TOOLS

Pristine Systems says its BB Logger digital audio logger, monitor and alert system is a comprehensive radio and television audio logging product designed to meet compliance, proof, audit, programming, management and engineering needs.



Up to 16 stereo (or 32 virtual mono) channels of logging are available. Users can choose from a variety of WAV audio devices, and AM, FM, TV tuner boards. Most popular audio storage formats are supported.

Tools provide the program director or consultant with the information needed for quick review or detailed analysis of the entire market. Time-based and microphone skimmer modes are included.

A "virtual radio"-style player allows switching between multiple stations during playback as though listening to a radio in real-time.

Real-time monitoring of audio level and RF signal strength (when equipped with AudioScience tuner cards) with an alarm system provides quick alerts to help avoid lost air time. Alert e-mail and audio file Web server are included.

For information, contact Pristine Systems in California at (800) 795-7234 or visit [www.pristinesys.com](http://www.pristinesys.com).

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# 25-Seven PDM Is Choice at KKXT

PD Alert Feature for Profanity Delay Is a Particular Selling Point

## USERREPORT

BY ROBERT D. BUTLER, CSTE  
Chief Engineer  
North Texas Public Broadcasting, Inc.

**DALLAS** — KERA (North Texas Public Broadcasting Inc.) is a not-for-profit public broadcasting organization that serves the people of North Texas. KERA TV broadcasts on Channel 13.1 and KERA World on 13.2. KERA FM broadcasts on 90.1 in Dallas/Fort Worth/Denton, 88.3 in Wichita Falls, Texas 100.1 in Tyler, Texas and 99.2 in Sherman, Texas.

On Nov. 9, 2009, KERA's new public radio music station KKXT(FM) joined the family of services provided by North Texas Public Broadcasting Inc. KKXT is a AAA-format public radio station found at 91.7 FM in North Texas and at [www.kxt.org](http://www.kxt.org).

KKXT FM features nine to 11 hours of local programming each weekday, bringing an eclectic variety of artists and genres, including a number of performers from North Texas and elsewhere in the Lone Star State.

### STATION NEEDS

While laying out the new radio station, we needed to find a profanity delay solution that would meet our needs regarding compliance with FCC's obscenity rules. The device had to be easy to install and configure. We chose 25-Seven Systems' Program Delay Manager.

As with any purchase, we had to get as many features as we could with a limited budget. We needed it to provide a Web interface for configuring the device, a GPIO so we could trigger it



**Until we started using it, I did not realize how important PD Alert would become in our operations.**

remotely and XLRs for the audio in/out. The PDM provided those things and a few we did not know we needed, until we got them and started using them.

A feature that impresses me most is PD Alert. Every dump event is logged automatically, and the audio — both what hits air and what was prevented from hitting air — is recorded. We can

adjust the length of the audio clips to suit our needs and the audio clips are time/date-stamped.

The PD Alert feature allows me to set the device to send an e-mail, with or without the audio clips, each time the dump is triggered. These alerts can go to everyone

at the station who "needs to know" what happened. Until we started using it, I did not realize how important PD Alert would become in our operations.

I also appreciate the fact the audio quality allows us to trigger a dump event during a song, for as much as 90 seconds with no change in pitch, and still maintain high-quality audio. A feature missing from PDM that I think would be great to have is to make the PDM compatible with WheatNet.

The delay is set to operate in two stages totaling 10 seconds. The first trigger goes back five seconds and hitting the trigger twice in succession sends it back the full 10 seconds. The on-air jocks use this not only to prevent objectionable material from hitting air, they also use it to cover technical or operational miscues, such as times when a file hangs up on automation or the wrong file is selected.

I'm writing this the same week I'm dealing with a transmitter issue. If not for this article, I wouldn't even be thinking about the PDM because, for the year that we've had it, it just keeps working. As budget manager for my department, I was pleased with the price. We are in the process of upgrading KERA FM to digital and I will be purchasing another PDM.

For information, contact 25-Seven Systems in Massachusetts at (617) 789-4673 or visit [www.25-seven.com](http://www.25-seven.com).

## TECHUPDATE

### AUDIOSCIENCE ADDS PCIe CARD

Audio card maker AudioScience has updated its ASI8921 by creating a PCI Express (PCIe) version of it, the ASI8821.

It is a professional PCIe tuner adapter for AM/FM radio broadcast audio monitoring and auditing, featuring a half-length PCI size, RBDS/RDS metadata monitoring and software-selectable FM de-emphasis using AudioScience's ASIControl application.

The card uses tuner modules, each module containing four tuners. The ASI8821 can hold two modules for up to eight channels of AM or FM signal received and recorded simultaneously from a single F connector antenna input. Additionally, modules can be ordered with MCX external antenna jacks.

A mini 50-pin connector makes available either the mono or stereo audio of each tuner output. Tuner 1 is sourced from a software-controlled MUX using ASIControl and may be programmed to output Tuners 1 through 8.

Additional features include AudioScience's MRX technology, allowing each stream to have an independent sample rate of between 8 kHz and 48 kHz, and recording formats of PCM, MPEG Layer II and MP3. Up to eight adapters can be placed in one system. Windows 7, XP, Server 2003/2008 and Linux drivers are available.

For information, contact AudioScience in Delaware at (302) 324-5333 or visit [www.audioscience.com](http://www.audioscience.com).



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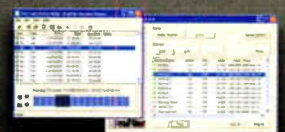
World Radio History

## STREAMING AUDIO



Hardware and software products for processing, encoding and streaming your audio content.

## AUDIO LOGGING



PC Software for archiving and logging all of your stations audio.

## TECHUPDATES

### LOGGER FOR AUDIOVAULT ADDS FEATURES

The Stirlitz Media Logger (SML) for Broadcast Electronics' AudioVault system has added features for broadcasters including automated podcaster, iTunes metadata coding, logging of text-searchable newsroom cue sheets and instant playback on smartphones and iPads.

These are in addition to capture and logging features for recording and archiving multiple audio and video channels.

Formerly marketed under the AVLogger name, SML logger is licensed to BE by Stirlitz Media and is part of the AudioVault digital studio application suite.

Its new optional Podcaster is an automated podcast creator capable of selecting audio based on playout system metadata and console events with flexible starts (per day/hour/minute) and iTunes compatible metadata coding.

The logger's new metadata engine can log artist/title/category information from the station's playout system, cue sheets texts from newsroom automation systems, any available PPM data and audio volume/loudness, signal level, RDS text and DAB/DAB+ metadata from select capture cards. Logged metadata layers can be displayed in the timeline-based SML Player.

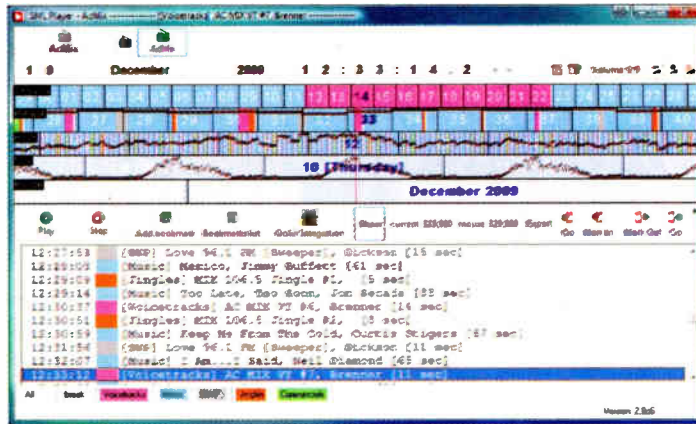
For playback, the SML Player now runs on iPad and smartphones in addition to Windows, OS X and Linux computers.

Overall, BE says the SML logger records at multiple bit rates, has no storage limits and is easy to use.

It has file markers that are used for logging events such as the opening or closing of a microphone and a timeline menu that lets broadcasters access logged audio by sliding the month, day, hour, minute and second bars. Shortcut buttons are available to move between locations without restarting the application. Its bookmark feature and event toggle offer easy navigation and access to archived audio. Users can define personal bookmarks for auditioning audio segments stored on a local hard drive or at multiple station locations, FTP sites or websites. Audio logs can be played back over a network or Internet connection, which is useful for production and aircheck purposes. SML e-mails alarms to multiple e-mail and SMS addresses.

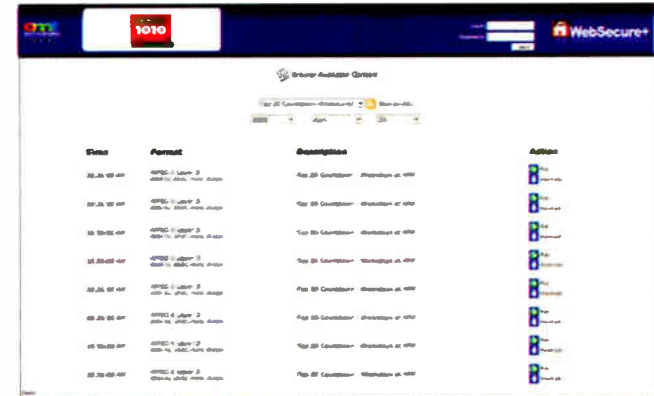
The SML logger is compatible with major automation systems and can be purchased as a standalone application or integrated into the AudioVault digital media system.

For information, contact Broadcast Electronics in Illinois at (217) 224-9600 or visit [www.bdcast.com](http://www.bdcast.com).



### WEBSECURE+ ADDS POWER TO IMEDIALOGGER

When combined with iMediaLogger, the WebSecure+ service provides a secure managed storage and distribution center for automatic ingest of iMediaLogger's audio recordings, according to OMT Technologies.



WebSecure+ adds options to distribute a station's logged audio to stations, staff, advertisers, affiliates or podcast subscribers.

It can handle approximately 200 log-in users at once; thus distributing content is easier and more reliable.

This Web server add-on to OMT's iMediaLogger uses a MySQL database and a Linux OS to provide an efficient software application suitable for Web appliance and server applications. Enhanced administrative options, automatic iTunes tagging and RSS feed publication are among the cited benefits.

For information, contact OMT Technologies in Manitoba at (888) 665-0501 or visit [www.imediatouch.com](http://www.imediatouch.com).

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### SKIMMER PLUS HANDLES MULTIPLE FORMATS

Broadcast Software International's Skimmer Plus features support for multiple professional audio formats, such as PCM, MPEG II and MP3, allowing for easy playback and distribution.

When recording audio, there is an option to retain PCM linear WAV files if recording in MPEG II or MP3 (allows for quality and easy distribution of files). With up to 24 recording decks available, recording air checks and logging on multiple stations are made easy.

Skimmer Plus also has support for a trigger device, which allows for automatic start of recording upon receiving a closure from a satellite or a microphone. Automating your records is simple with event logs for unattended recording by closure or timed events.

Skimmer Plus's disk management feature notifies the user when disk space is low and allows for automatic deletion of old files.

Skimmer Plus Web Server allows for distribution of the audio files that Skimmer Plus records through a friendly Web interface. The Web Server supports user creation to restrict which files each user can access. Users can use the Web interface to download files or e-mail the FTP links to desired e-mail accounts.

For information, contact Broadcast Software International in Oregon at (888) 274-8721 or visit [www.bsiusa.com](http://www.bsiusa.com).





## WHO'S BUYING WHAT

**KGMG(FM)**, a Journal Broadcast Group station serving Tucson, Ariz., recently purchased a **Harris** turnkey transmission and booster system. It features a ZX1000 transmitter for the main facility and a Z-Series Z8HD+ for a new booster site. FlexStar HDx exciter with dual outputs in each transmitter will enable HD Radio broadcasting later. The station added an Intraplex NetXpress Audio over IP platform to act as network-wide STL. Harris Intraplex SynchroCast3 modules for each frame will synchronize on-air signals at the main and booster sites. ...

The **Egyptian Radio and TV Union** placed six orders for **Studer** digital consoles totaling 39 OnAir 3000 boards and a Vista 8, for ERTU headquarters. ...

Spanish state broadcaster **Radio Nacional de España** chose **Dalet Digital Media Systems'** Dalet Radio Suite HD for six radio stations. "The RNE audience size ranks third in the world with a listener base of more than 80 million," the company said. The Dalet installation at RNE covers 65 sites and includes 1,600 systems. ...

Separately, RNE also ordered 15 digital audio routers from **NTP** of Denmark. The deal was negotiated with NTP's Spanish distributor, **Lexon Broadcast**. ...

**Barix** said the University of North Dakota's **Fighting Sioux Radio Network** installed an IP network for distribution of its football and hockey game broadcasts to a dozen affiliates in North Dakota and Minnesota. Included are Barix hardware encoders and protocols along with StreamGuys networking technology and hardware. The flagship station is **KQHT(FM)** in Grand Forks, N.D.

Separately, Barix said approximately 1,000 of its audio over IP devices were used for contribution, distribution and

monitoring of live broadcast audio for the **2010 Commonwealth Games** in Delhi, India, this past fall. Host broadcaster **Prasat Bharathi** produced the official "International Signal" from 12 competition venues. ...

The **Canadian Space Agency** bought a **Sonifex** DHY-03T Digital Telephone Hybrid to use in a large, live, teleconference project. Gregory Viger IS Audio-Visual & Technical Communications Specialist at the agency. ...

**NewCap Radio** in Canada ordered **Axia** Element 2.0 consoles and routing gear for Alberta stations in St. Paul, High Prairie and Westlock. NewCap also is expanding an Axia installation in Brooks, Alberta. The sale was made by distributor **Pippin Technical Service Ltd.** Axia said NewCap has outfitted 15 other clusters with Axia gear in the past five years. ...

The **Pilgrim Radio Network** recently purchased two **BW Broadcast** RBRX1 receivers. The sale was through **SCMS**. The director of engineering for Pilgrim Radio Network is Ian Perry.

**Logitek** reported several orders.

Stanford University's FM station **KZSU** expanded its system with a **Mosaic** control surface. **Wallingford Broadcast/WYCO(FM)** in Richmond, Ky., ordered a **JetStream** console system with two Remora control surfaces. The **United Houma Nation** in Golden Meadow, La., purchased a pair of JetStreams and two Pilot control surfaces. The equipment is for new NCE station **KUHN(FM)**, which will air Native programming.

Send news of notable equipment purchases or sales to [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com), with "Who's Buying What" in the subject line.

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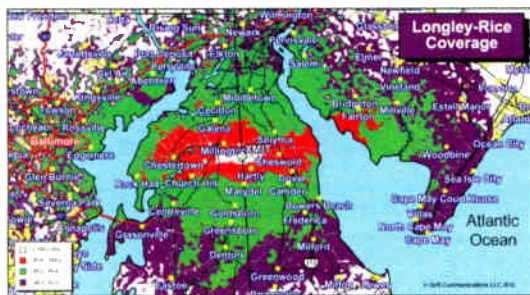
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4-bay Jampro antenna 107.9fm w/deicers, gd cond, \$3500; 3-bay ERI antenna, 107.9fm, \$450. Sherry, 606-287-9924 or sherry@prtncnet.org.

## AUDIO PROCESSING (INCLUDES ON-AIR)

### WANT TO BUY

Teletronix LA-2A's, UREI LA-3A's & LA-4's, Fairchild 660's & 670's, any Pultec EQ's & any other old tube compressor/limiters, call after 3PM CST - 214 738-7873 or sixtiesradio@yahoo.com.

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Linux based radio automation system and now sports a record scheduler (DIY-DJ-RECORDER) which allows you to schedule the recording of a network or any other program for replay later as well as a basic logging system. Beside these additions the system schedules music, does voice tracking (ALWAYS hit the vocal), create a shell, live assist, exact time events, join satellite feeds, automated temperature announce, do unattended remote events and more. Call (406) 679-0527 or email krws@digitaldevelopment.net for a copy today.

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READER'S FORUM

CHASING INTERFERENCE

I've been enjoying the articles in your publication so much this past year that I've stopped passing the magazine on to other guys in the shop so that I can hang on to them. The stories "Armstrong Wasn't the Only One" and "Interference: Define and Conquer" in the Sept. 8 issue are just two examples of archival interest.

I'm sure the latter story by Tom Osenkowsky generated replies. While I was employed as chief operator for KZOZ(FM) in San Luis Obispo, Calif., we received a complaint of interference on one of the control tower frequencies at the county airport. We were also contacted by the local CATV provider, which had an operating plant collocated near our transmitter building. They complained that our signal was getting in and causing visual noise on Channel 3.

First task was to put a dummy load on the transmitter and look for the spur, but we came up empty. The transmitter was clean.

Next we had someone climb the KSBY(TV) tower, where our antenna was located about halfway up, and check for loose hardware. Still nothing.

We contacted the FCC and FAA and requested assistance. The FCC field office dispatched their mobile van, loaded with racks of instruments.

Directional sniffing from a nearby peak confirmed the spur was being generated from the transmitter site. And sniffing around at the site confirmed a stronger spur, but it seemed to be in every direction.

The FCC engineer then had us walk the entire site and put our hand on any exposed metal on the ground or in the air. After several minutes the FCC engineer yelled out, "What did you do? The signal disappeared for a second."

At that point I was on the roof of the CATV building and had steadied my balance by grabbing a length

of pipe where a VHF antenna had been mounted by the CATV operators. A rusty hose clamp was the culprit.

From then on I had newfound respect for the FCC and FAA.

Jan Lipski  
Lompoc, Calif.

Share tales of your own interference-fighting adventures by e-mailing to radioworld@nbmedia.com.

ALONE WITH THE TRANSMITTER IN 1942

I enjoyed John Schneider's article "Workplace for the Radio Gods" (Nov. 17).

What caught my eye was the great picture of that WE transmitter. It was the same model as the one I worked in front of at KFBB in Great Falls, Mont., my second stop on my way to the West Coast, late spring of 1942.

The KFBB layout was straight along the wall like WWJ's, with the door on the right taking you out along a wire fence protecting the high-voltage parts. Next to a door allowing entry into the fenced area was a large switch and its associated key system. To access any door in the system, you had to turn off the big switch and then extract the key you needed.

On Sunday afternoons when I was on duty, during the "Old Fashioned Revival Hour" with Rev. Charles E. Fuller, there would be a lightning strike along the line, usually miles away; the fuse in the small rectifier cabinet would blow. It would take three minutes to shut down the transmitter, extract the key and then go out in front and open the door to the locked rectifier cabinet, replace the fuse and then time-cycle the transmitter

back on again.

This would usually happen two times during the "Old Fashioned Revival Hour." Not before, not after.

At KFBB there was a console in front of the transmitter, along with three big 16-inch turntables. Being water-cooled, it was quiet. My shift normally was Monday to Friday, 6 a.m. to noon. I would stop by the studio in town about 5:30 a.m., pick up a large case of 16-inch and smaller transcriptions and my copy for the morning, and put it in the rumble seat of my Model A, then head for the transmitter about four miles out

of town on the highway to Glacier Park. I would get there about 10 minutes to 6, time to warm up the transmitter for a 6 a.m. sign-on.

All morning we would run some of those great shows: George and Gracie, Burl Ives, Kate Smith and Ted Collins, all 15-minute shows. The soap operas were on the transcriptions I brought out; the episode for the day was on the big disc, with the lead-ins and commercials on a smaller disc. It was my job to make it sound live. In between I would switch to the main studio for local news, farm reports, etc.

As I look back it was a great experience. What fun for an 18-year-old

kid with a brand-new license.

At noon I would head into town and write copy all afternoon under the guidance of a copy editor who had worked at the Star Journal back in Minneapolis. I guess that is where my "learn by doing" philosophy developed.

Thanks again for stirring up my memory bank.

Paul Gregg  
President  
Bauer Transmitters Inc.  
El Paso, Texas

Photo from the Detroit News Archives



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# Copps and the 'Public Value Test'

Excerpts From the Commissioner's Speech  
'Getting Media Right: A Call to Action'

*The following are excerpts from remarks by FCC Commissioner Michael J. Copps at the Columbia University School of Journalism in New York in*

## IN THE NEWS

*December. He offered what he called "a few mostly modest proposals to help media help democracy."*

For traditional media that remains so critical to our news and information: The Federal Communications Commission should conduct a Public Value Test of every broadcast station at relicensing time — which should occur, I believe, every four years in lieu of the slam-dunk, no-questions-asked eight-year renewals we dispense 100 percent of the time now.

If a station passes the Public Value Test, it of course keeps the license it has earned to use the people's airwaves. If not, it goes on probation for a year, renewable for an additional year if it demonstrates measurable progress. If the station fails again, give the license to someone who will use it to serve the public interest.

The FCC's Public Value Test would include the following:

**1** *Meaningful Commitments to News and Public Affairs Programming* — These would be quantifiable and not involve issues of content interference.

Increasing the human and financial resources going into news would be one way to benchmark progress. Producing more local civic affairs programming would be another.

Our current children's programming requirements — the one remnant of public interest requirements still on the books — helped enhance kids' programming. Now it is time to put news and information front-and-center. At election time, there should be heightened expectations for debates and issues-oriented programming. Those stations attaining certain benchmarks of progress could qualify for expedited handling of their license renewals.

This requirement would have, by the way, important spill-over effects in a media environment where many newspapers are owned by broadcast stations — although such cross-ownership is something I hope the commission will put the brakes on.

**2** *Enhanced Disclosure* — Requiring information about what programs

a station airs allows viewers to judge whether their local station should be subsidized with free spectrum privileges. It opens a window on a station's performance.

Right now the information we require on a station's public file is laughable and, believe it or not, the FCC generally does not even look at these files at relicensing time. The public, too, has a right to easy access to this information so that its input counts at relicensing time. And citizens should be able to see the files on the Internet without spending a day tracking down and traipsing to the studio to go through the time-consuming and awkward motions of requesting and reviewing it.

An enhanced disclosure proceeding has been before the commission for two years. It may require some minor reworking but there is no reason not to complete this proceeding in the next 90 days.

**3** *Political Advertising Disclosure* — When the accounting is completed, we will likely find that nearly \$3 billion was spent on media advertising in the recent campaign cycle.

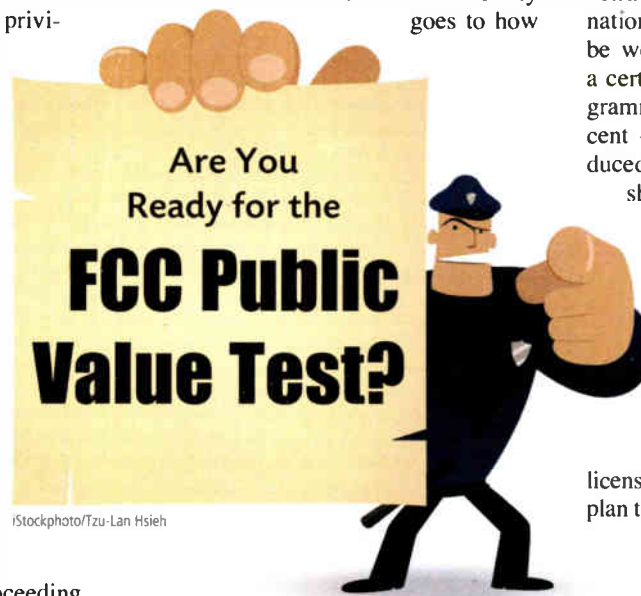
We the people have no idea who really paid for this political carpet-bombing. But we the people have a right to know who is bank-rolling these ads beyond some wholly uninformative and vapidly-named group that appears on the bottom of the screen to mask the special interests it really represents. Both sides of the political spectrum are guilty of undemocratic sin here.

The FCC worries, legitimately, about the dangers of placing a bottle of Coke or a tube of toothpaste on an entertainment program without disclosing who paid for the product's placement. Shouldn't we be even more concerned when unidentified groups with off-the-screen agendas attempt to buy election outcomes?

I propose that the FCC quickly determine the extent of its current authority to compel release of what interests are paying for this flood of anonymous political advertising — and if we lack the tools we need to compel disclosure, let's go ask for them.

**4** *Reflecting Diversity* — This is not the place for a disquisition on how poorly America's minorities, women

and other diversity groups are faring on our broadcast media. The fact that people of color own only about 3.6 percent of full-power commercial television stations pretty much documents the shortfall. Diversity goes to how



iStockphoto/Tzu-Lan Hsieh

groups are depicted in the media — too often stereotyped and caricatured — and to what roles minorities and women have in owning and managing media companies.

The FCC's Diversity Advisory Committee has spent years providing us with specific, targeted recommendations to correct this injustice. How sad it is that most of these recommendations have not been put to a commission vote. It is time to right this awful wrong.

**5** *Community Discovery* — The FCC, back when stations were locally-owned and the license holder walked the town's streets every day, required licensees to meet occasionally with their viewers and listeners to see if the programs being offered reflected the diverse interests and needs of the community.

Nowadays, when stations are so often owned by mega companies and absentee owners hundreds or even thousands of miles away — frequently by private equity firms totally unschooled in public interest media — we no longer ask licensees to take the public pulse. Diversity of programming suffers, minorities are ignored and local self-expression becomes the exception.

Here's some good news: Community discovery would not be difficult to do in this Internet age, when technology can so easily facilitate dialogue.

**6** *Local and Independent Programming* — The goal here is more

localism in our program diet, more local news and information, and a lot less streamed-in homogenization and monotonous nationalized music at the expense of local and regional talent. Homogenized music and entertainment from huge conglomerates constrains creativity, suppresses local talent, and detracts from the great tapestry of our nation's cultural diversity. We should be working toward a solution wherein a certain percentage of prime-time programming — I have suggested 25 percent — is locally or independently-produced. Public service announcements should also be more localized and more of them aired in prime time, too. And PEG channels — public, educational and government programming — deserve first-class treatment if we are to have a first-class media.

**7** *Public Safety* — Every station, as a condition of license, must have a detailed, approved plan to go immediately on-air when disaster — nature-made or man-made — strikes. Stations, like government, have a solemn duty to protect the safety of the people. Preferably a station should be always staffed; if there are times when that is not possible, perhaps there are technology tools now that can fill in the gap and make the coverage instantaneous. ...

In the longer term, the commission and Congress will need to examine rules governing the structure of media ownership and perhaps other parts of our enabling telecommunications statute. ...

Some will say that attempting to repair commercial broadcasting is a fool's errand. "Licensees will never agree," I am told, "so why not just hit them with a spectrum fee and put that money toward public news and media?"

That has its temptations, I admit, but it also requires an act of Congress — and that's not the likeliest of outcomes just now. It further demands that if Congress would ever impose such fees — over strong industry objections, of course — that it must then direct the monies collected to broadcast purposes rather than to, say, reducing the deficit, building an interoperable broadband public safety network, or — even though we're told they are history — earmarking for various and sundry purposes. I would hesitate to predict that outcome!

*Copps went on to suggest steps regarding new media, including a guarantee of "Internet freedom," encouragement of broadband competition and a push for "digital literacy." Read the full text of Copps' remarks in PDF form at <http://tinyurl.com/rwccopps>.*

*Comment on this or any story. E-mail to [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com).*

**READER'S FORUM****NOT READY FOR PRIME TIME**

I just read Gary Shapiro's one-sided, inflammatory and somewhat threatening commentary "Say No to Buggy-Whip Technology Mandates" (Nov. 17).

He calls FM radio "all but obsolete" and claims that 70 percent of cellphone and smartphone owners aren't interested in having FM capability in their phones. Assuming his numbers are accurate, that means almost 30 percent *are* interested; and I'd be willing to bet the number would be significantly higher if those owners were simply asked if they wanted access to more entertainment and information options on their phones for free, which is what FM radio provides.

Shapiro says FM is obsolete. I say his supposedly consumer-driven alternatives aren't ready for prime time.

I live in an affluent, densely populated suburb of Houston and have to rely on a femtocell to make sure my iPhone 4 operates semi-reliably at home. At my gym, a few miles north of home, I am unable to get cellular data with the speed or stability necessary to utilize any form of streaming entertainment.

Wanna know what does work well at my gym? FM radio. I even listen to the talk radio programming I can't get on my signal-hobbled iPhone, via a few HD3 channels on a pocket HD Radio.

Put aside the NAB's public safety argument for FM tuner inclusion. Let's talk basic, live entertainment. My iPhone simply can't deliver it reliably. Well, it can't as of today anyway, because Apple hasn't yet given users access to the FM tuner already embedded in every iPhone.

In October 2009, PCWorld.com, among several sites, reported that Apple was very close to releasing an app that would allow iPhone users to access their FM tuners. Over a year later, it still hasn't happened.

If 30 percent of smartphone users want an FM tuner, why won't Apple release the app? Could it be that Mr. Shapiro and his colleagues are only interested in "consumer demand" when it doesn't tread on CEA member profitability?

*Robbie Green*  
Chief Engineer  
KRBE(FM)/KHJK(FM)/KFNK(FM)  
Houston, Texas

**THIS CALLS FOR AN APOLOGY**

Does the CEA have to pay 8 percent off the top of their gross revenues every year for the privilege of promoting someone else's products? For many decades broadcasters have paid an average of 8 percent of their gross revenues to ASCAP, BMI and SESAC, the owners of the copyrights on music. Many times the performers are also the composers, and often they also have their own publishing houses, so they get revenue every quarter of the year. And they do get some very sizable payments.

Radio, TV, networks, movies, all of us pay royalties every month to ASCAP, BMI and SESAC. And we provide free use of our stations for the general public to hear that music, often for the first time.

Gary Shapiro stated: "Many local radio stations are unmanned, particularly at nights and on weekends, rendering the alleged emergency alert 'benefit' unreliable and raising questions about the wisdom of permitting such unattended operation."

His statements tell me Mr. Shapiro does not really know much about the radio industry.

We are required to have EAS equipment monitoring three separate radio sources, usually a primary FM signal, a secondary FM signal and a NOAA weather signal. This equipment *must* interrupt the program line and transmit any alerts. Just today we had weekly test and a monthly test received from our state emergency operations center; they were each immediately broadcast

over our stations.

We also originated our own weekly test within the required time limits. We are also one of about 70 Florida high-power FMs selected by the state EOC to have the new viaRadio HEARO Emergency Alert System installed. It sends alerts to HEARO radios and also interrupts our RDS display and sends the text message of the alerts.

Earlier this week we had severe thunderstorm and tornado watch alerts going out audibly on our stations and visually over our RDS display. *No one had to touch a single piece of equipment or be here to switch anything for that to happen.*

When an FCC inspector visits a station, the first things they usually ask to see are the EAS equipment and the logs. The broadcasters must purchase expensive EAS equipment; very soon we are going to have to throw away our current-generation EAS controllers and purchase new units to meet the newest standards. And if it is not working when the FCC inspector visits, there is usually a citation and a fine.

Mr. Shapiro, you owe the radio broadcasters a big apology.

*Cal Zethmayr*  
General Sales Manager  
WAAZ(FM)/WJSB(AM)  
Crestview, Fla.

**OFF-AIR RECEPTION IS PROVEN**

I found four flaws in Mr. Shapiro's reasoning for not embedding FM receivers into cellphones.

First, a cellphone *is* a radio, so what's wrong with incorporating an actual FM radio inside?

Second, most cellular subscribers are not tech-savvy, so why would they even care whether the broadcasts are obtained off-air or via digital streaming?

Third, in a disaster (like Katrina), the Internet, and particularly WiFi hot spots, probably will be inoperative. AM and FM broadcast, in contrast, most likely will remain on the air. Thus, receiving anything via the Internet or a cellular network is a bad idea.

Last, what if your favorite FM station does not participate in program streaming? This technology is expensive and has certain copyright issues. A lot of stations do not provide this service.

Mr. Shapiro's characterization that this is "buggy-whipping" may be debatable. The benefits of off-air reception are not.

Better yet, incorporate an EAS monitoring feature into the cellphone so that you can program your local LP1 frequency into the phone and have a built-in EAS decoder to get your attention. (I want the patent on this if it becomes reality!)

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

**THE WIRED BACKBONE IS VULNERABLE**

Gary Shapiro makes his case by saying you can do it all via the cellphone and Internet now. Yes ... until cell circuits, phone circuits and Internet are out, as they were after the 1989 California Loma Prieta earthquake, in parts of New York City after 9/11 and in New Orleans after Hurricane Katrina in 2005. And as they often are when wires are down due to a storm in your area or when a fiber line is damaged.

A simple battery-operated radio or TV — or a cellphone with receiver built in, designed to use low power in the radio/TV receive-only mode, not mandated but optional — will be there for you when the cell circuits are down. I don't think radio should be forced into every cellphone. But people need to know that their cellphone, iPads and any other device using the Internet will not be there all the time for you, especially in a disaster.

*Al Tobia*  
Northern California

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E-mail: radioworld@nbmedia.com  
Web site: www.radioworld.com  
Telephone: (703) 852-4600  
Business Fax: (703) 852-4582  
Editorial Fax: (703) 852-4585

For address changes and subscription renewal, please visit radioworld.com and click on the "Subscription" button. To submit letters or story proposals, to request writer's guidelines, or for other editorial matters, e-mail the editor at radioworld@nbmedia.com.

**EDITORIAL STAFF**

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**EDITORIAL CONTRIBUTORS**

W.C. Alexander, Barry Blesser, James Careless, Harry Cole, Ken Deutsch, Mark Durenberger, Charles Fitch, Ty Ford, Harold Hallikainen, Craig Johnston, Paul Kaminski, Peter King, Mark Lapidus, Daniel Mansergh, Mark Persons, Sharon Rae Pettigrew, Stephen M. Poole, Carl Lindemann, Ted Nahil, James O'Neal, Tom Osenkowsky, Rich Rarey, Tom Ray, John Schneider, Randy Stine, Richard Strickland, James G. Withers, Tom Vernon

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EDITORIAL DIRECTOR T. Carter Ross  
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ADVERTISING COORDINATOR Caroline Freeland

**CIRCULATION**

ASSOCIATE CIRCULATION DIRECTOR,  
AUDIENCE DEVELOPMENT Tracey Dwyer  
CIRCULATION MANAGER Kwentin Keenan  
CIRCULATION COORDINATOR Michele Fonville

**SUBSCRIPTIONS**

Radio World, P.O. Box 282, Lowell, MA 01853  
TELEPHONE: 888-266-5828 (USA only 8:30 a.m.–5 p.m. EST)  
978-667-0352 (Outside the US) FAX: 978-671-0460  
WEB SITE: www.myRWNews.com  
E-MAIL: newbay@computerfulfillment.com

**CORPORATE**

NewBay Media LLC  
PRESIDENT AND CEO Steve Palm  
CHIEF FINANCIAL OFFICER Paul Mastronardi  
CONTROLLER Jack Liedke  
GROUP CIRCULATION DIRECTOR Denise Robbins  
VICE PRESIDENT OF WEB DEVELOPMENT Joe Ferrick

**VIDEO/BROADCAST GROUP**

EXECUTIVE VICE PRESIDENT Carmel King  
VICE PRESIDENT / SALES DIRECTOR Eric Trabb

**ADVERTISING SALES REPRESENTATIVES**

US EAST & LATIN AMERICA: John Casey, jcasey@nbmedia.com  
T: 212-378-0400, ext. 512 | F: 330-247-1288  
US WEST & CANADA: David Carson, dcarson@nbmedia.com  
T: 212-378-0400, ext. 511 | F: 866-572-6156  
SOUTHERN EUROPE, AFRICA, MIDDLE EAST:  
Raffaella Calabrese, rcalabrese@broadcast.it  
T: +39-02-7030-0310 | F: +39-02-7030-0211  
UK & IRELAND, CENTRAL & NORTHERN EUROPE:  
Graham Kirk, g.kirk@audiomedia.com  
T: +44-1480-461555 | F: +44-1480-461550  
JAPAN: Eiji Yoshikawa, call@world.odn.ne.jp  
T: +81-3-3327-5759 | F: +81-3-3322-7933  
ASIA-PACIFIC: Wengong Wang, wwg@imaschina.com  
T: +86-755-83862930/40/50 | F: +86-755-83862920  
CLASSIFIEDS: David Carson, dcarson@nbmedia.com  
T: 212-378-0400, ext. 511 | F: 866-572-6156

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**NewBay Media**

# Perfect, Low Cost STL Solution

"We use BRIC-Links for our main STL on 107.7 FM, one of the satellite stations for WTOP, with very good results. I was pleasantly surprised at just how easy it is to set up a pair of BRIC-Links out of the box. I had my final configuration within ten minutes of powering up the units. We're running AAC audio that sounds every bit as good as the circuits to our other transmitter sites.

We had been struggling for about a year to find a reliable audio STL to our transmitter site on top of a mountain in Warrenton, VA. The telco lines degraded every time it rained, causing dropouts in our T1 and ISDN service. This summer, when services that did not rely on the leaky copper cables were finally built out at the site, we tried a pair of BRIC-Links on our new broadband Internet service. We've kept our transmitter on them ever since. We're going to be purchasing more pairs of these units to feed audio to our other sites."

**David Kolesar, Senior Broadcast Engineer**  
Bonneville International Corporation  
WTOP / WFED, Washington, DC

We design our products to be dependable. So, you wouldn't think we'd be surprised by how many people put our products on the line every day. But, we are. And, honestly, we're kind of proud, too.

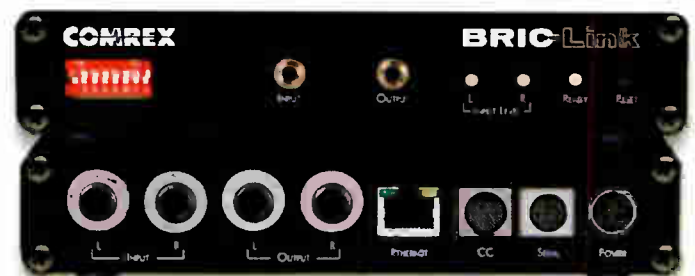
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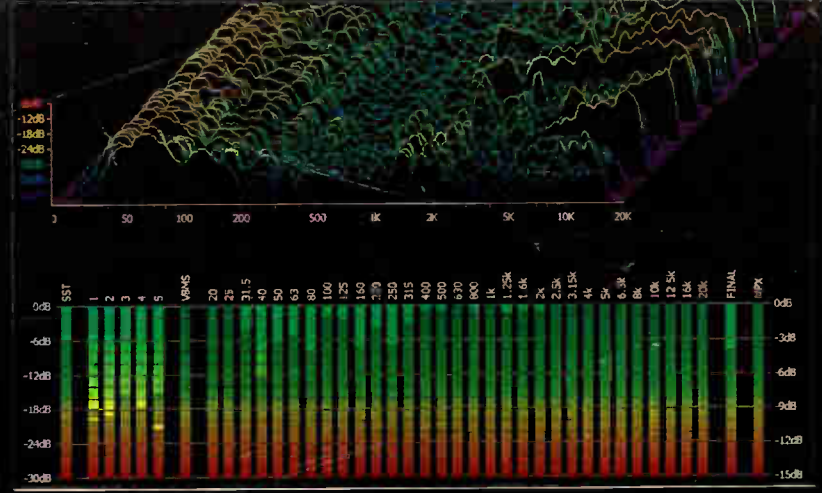
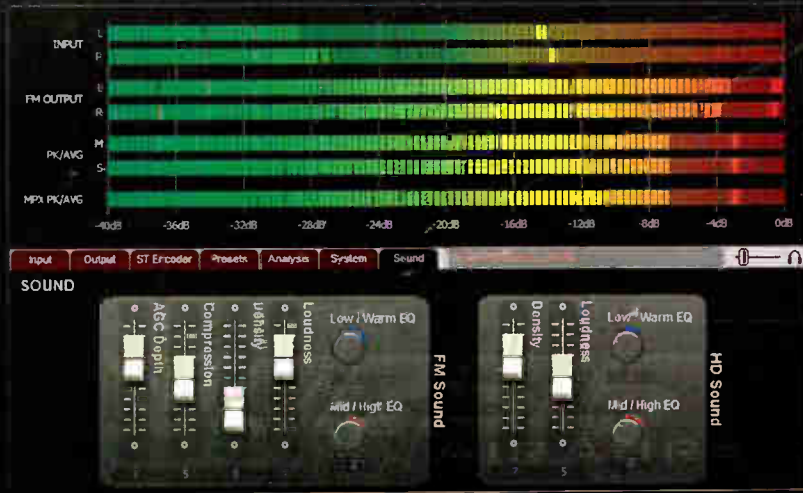
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# VORSIS AIRAURA DIGITAL SPECTRAL PROCESSOR



"I am giving the VORSIS development team a BIG thumbs up as this product stands out as a very SUPERIOR audio processor design."

"This processor is amazing!"

"I have the HD output feeding our web stream encoder, and two national program hosts at remote locations in the US have told us 'your audio stream sounds incredible!'"

"I can say that the VORSIS processor does NOT sound like the "O"ther guys! It sounds far better and has a very unique 'signature'. I really, really like how this processor sounds! Every other station in the market sounds like crunched up FM radio while our station is loud now and yet it still has "life" with CD quality dynamics and punch."

"I've listened to the station since the first few days after the format flip (which was a month ago yesterday), and the one thing I notice most is that the new VORSIS processor's audio quality is always terrific, regardless of the source material."

"If the VORSIS that I heard while you were testing processors last night is your final air chain (it was) it might just be the cleanest and best sounding FM I've heard since...well, forever. Great work!"

"Thanks for a great sounding box that makes us sound bigger than the so called big stations!"

"Your Sweet Spot Technology AGC has the most invisible gain correction that I have EVER heard in ANY on air processor. Listeners have been calling to compliment us on the improvement in our on air sound."

"We've used your product close to a year now and it's just out of this world. When we put the VORSIS box online our audience noticed the difference instantly and started calling asking questions like "What's going on? What did you all do? Your sound is clear, crisp, and bright and the audio sound level is great now!!!"

"The music sounds great, and this box can be tweaked to anyone's preference. There is a lot to discover in this machine....but our single biggest achievement has been achieving the clearest, cleanest "voice" I have ever heard come from an FM processor."

"I am extremely impressed with the unit's capabilities and how well it performs with our NPR talk/Classical format."

## Real Comments From Real Users About VORSIS

## Just wait until they get their hands on AirAura™



IT'S TIME YOU WON THE RATINGS WAR

phone 1.252.638-7000

www.vorsis.com | sales@wheatstone.com

"What an amazing difference in sound quality!!! This is a brand new FM station and comparing it to the other new station in town using the Other brand of processor our client is louder, cleaner, and even legal. Wheatstone definitely has a winner here with VORSIS."

"This is a great sound and we are so, so pleased with our new VORSIS on-air processor. You just threw down the gauntlet to the processing industry with this new unit! Nobody can match a sound this loud, this clean, and this unique! Now everybody gets to chase after us for a while. Thanks VORSIS!!"

"Our signal used to virtually disappear in downtown New York when we went on night pattern because of the extremely high level of man-made noise. Now when we're on night pattern our coverage in downtown is actually better than when we are on day pattern, the other brand of audio processor and a 10X higher powered transmitter! We're buying a second one to put on our daytime transmitter!"

"You have to be kidding! I have NEVER heard FM audio sound this good, this detailed, this smooth, this clean, and this loud (how did you do it??). Very nice work!"

"Love the box!!! Overall the sound of the station is vastly improved. It's loud, wide and clear."

"I guess the only word for VORSIS is 'WOW!' It's got some great bottom end, and it's more transparent than any processor I've heard."

"The AGC/Compressor/SST combination is simply amazing. We play classical CDs. Older classical CDs were mastered at a much lower level than current ones. Announcers don't compensate and never will. Your processor is able deal with what amounts to probably 40-45dB (or more) "average" level variations and hold them perfectly in the sweet spot with virtually no squashing, pumping, sucking, or other usually audible artifacts of such wide range level control. In short it does its job perfectly every time."

"This box sounds much better than any other processor I have ever tried. Ever!"

"I love classic rock and it's the program format on the station that I own. No other processor that I've tried (and I think I've tried them all!) sounds as good on this format. We're nice and loud and still cleaner than the other stations in the market. We were surprised to hear the intentional dynamics of songs actually get on the air - other processors just flatten them out or turn them into a sea of mush. For the first time ever we're also hearing subtle nuances in songs that we used to think we knew every single note of. What an amazing air sound! No.... What an amazing processor!!"

"The SST algorithm is the least audible of ANY processor I have ever had experience with. I'm not sure how you did it or exactly how it works but its automatic "leveling" is excellent - no pre-processing whatsoever is necessary with SST."

"The high end of this processor is very open sounding - there is no fake "sparkle" with the HF EQ either. Perfectly clean and natural sound. And did I mention LOUD?"

"Your equalizers are actually useful and unlike other processors do not grunge-up the sound merely by enabling them."

"Finally! A processor that deals effectively and transparently with overly-sibilant announcers and audio levels that usually go all over the place! (I especially love the tweak-able multi-band thresholds!)"

"Why haven't the other audio processor companies been able to make an AM box that sounds this good? I can't think of a positive superlative that is big enough to describe how pleased I am with our AM sound now. Our coverage seems to have increased by quite a bit too!"

"Our multipath is Gone! GONE! As an engineer I have difficulty believing a processor can make this much difference in apparent coverage area but the listening is the proof. We've had several listeners call and comment that their reception has greatly improved and even I've noticed vast improvements when driving through what were previously horribly multi-path prone areas. I'm not sure why, but it sure does work!!"

"This box has great metering and excellent analytical tools - you get good visual indication of everything that is happening inside."

"The unit's stability has been flawless, not even a tiny glitch. We have it set up to time-sync and it works great. The scheduler-based (and SILENT!!) preset switching is perfect! Unit sounds very accurate sonically and is very easy to set-up."

"We are now VERY unique in our audio. Compared to other stations in the market, we are as loud yet maintain legal modulation (at least 4 stations in our market run with 130%+ modulation). We're not "squashed" sounding at all and if you compare us with the other stations (all formats) we're clearly a dynamic and clean stand-out signal on the dial now."

NOTE: We aren't naming names because everyone who is reaping the rewards of sounding better appreciates their anonymity (with respect to the competition). We won't blow your cover, either.