



RADIO WORLD

MARCH 12, 2014 | The News Source for Radio Managers and Engineers | \$2.50 | RADIOWORLD.COM

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AM Ideas Fill the FCC Inbox

Industry debates wider use of translators, as well as far more dramatic ideas

BY LESLIE STIMSON

WASHINGTON — Ever since Commissioner Ajit Pai brought the plight of U.S. AM radio owners into the forefront a year and a half ago, broadcast engineers, owners, consultants and public interest groups have been prepared to give the FCC ideas

about how to help.

Now they've done so. Responding to a Notice of Proposed Rulemaking, individuals and companies offered suggestions ranging from moving stations off the AM band entirely, to giving owners more flexibility in terms of signal coverage, antenna equipment and interference protections.

Many think the commission should split certain topics off into separate rulemakings, rather than tackle everything at once. Some offered services should the FCC need help sorting through it all. Many solutions involve complex engineering.

More than 160 initial comments were filed to MB Docket 13-249. To give the public more time to sort the ideas and develop thoughtful responses, the

commission granted a request from the Association of Federal Communications Consulting Engineers to extend the deadline for reply comments. Those are now due March 20.

Below are excerpts illustrating some of the major themes. Topics are grouped by subject, so certain commenters appear more than once.

AN "AM-ONLY" TRANSLATOR WINDOW

National Association of Broadcasters:

The commission's decision in 2009 to allow AM radio stations to use FM translators to rebroadcast their AM service has been a resounding success. To date, approximately 720 AM radio stations are using translators to overcome some technical and economic challenges. ...

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Radio World Founded by Stevan B. Dana

Radio World (ISSN: 0274-8541) is published bi-weekly with additional issues in February, April, June, August, October and December by NewBay Media, LLC, 28 East 28th Street, 12th Floor, New York, NY 10016. Phone: (703) 852-4600, Fax: (703) 852-4582. Periodicals postage rates are paid at New York, NY 10079 and additional mailing offices. POSTMASTER: Send address changes to Radio World, P.O. Box 282, Lowell, MA 01853.

For custom reprints & eprints please contact our reprints coordinator at Wright's Media: 877-652-5295 or NewBay@wrightsmedia.com

Globe graphic ©iStockphoto.com / Edward Grajeda

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Printed in the USA



LPFMs Must Participate in EAS

That means having CAP-enabled alert equipment and Internet connectivity

COMMENTARY

BY WILLIAM ROBERTSON

The author is vice president of business development for Digital Alert Systems.

The world of the next-generation Emergency Alert System continues to be governed by three undeniable axioms: Number one, EAS is not going away; number two, regulations and requirements for EAS will continue to change; and number three, broadcasters must comply.

With the addition of Common Alerting Protocol capabilities and requirements, this continuous change furthers the impression that all things EAS are in a constant state of flux. In essence, the dust never truly settles. Even now, the FCC is likely looking at additional rulemaking on national EAS, having issued a broad request for comments on the past Emergency Action Notification testing.

Because of these continuous fluctuations, broadcasters must ensure that the EAS equipment they have purchased is designed to keep up with changing

alerting requirements, and that suppliers they choose have the expertise, stability and commitment necessary to support those solutions over time.

Ideally, broadcasters invest in EAS equipment as a platform that can be adapted to meet changes in EAS requirements, such as possible modifications on handling the EAN code, the possible use of the National Periodic Test code, and even changes to the Federal Information Processing Standard code

and locations, as well as the continuous changes and improvements of FEMA's Integrated Public Alert Warning System.

There are many changes in the works! Inevitably, one or more of these things will influence the functionality needed in EAS equipment and the way the encoder/decoder must respond to the messages it receives, whether from a federal, state or local emergency management organization.

Within this continually evolving EAS environment (see image below), one of the most notable occurrences of late has



Bill Robertson. "LPFM stations ... stand to play a valuable role in exposing more people in more places to critical emergency alerts."

been the rise of new low-power FM stations. The recently concluded round of FCC filings has opened the door for more of these stations, and their emergence represents some of the most significant industry growth in quite some time. This is important, not only because it offers smaller groups — often churches and other organizations reaching out to a local listening audience — an opportunity to gain a voice on the airwaves.

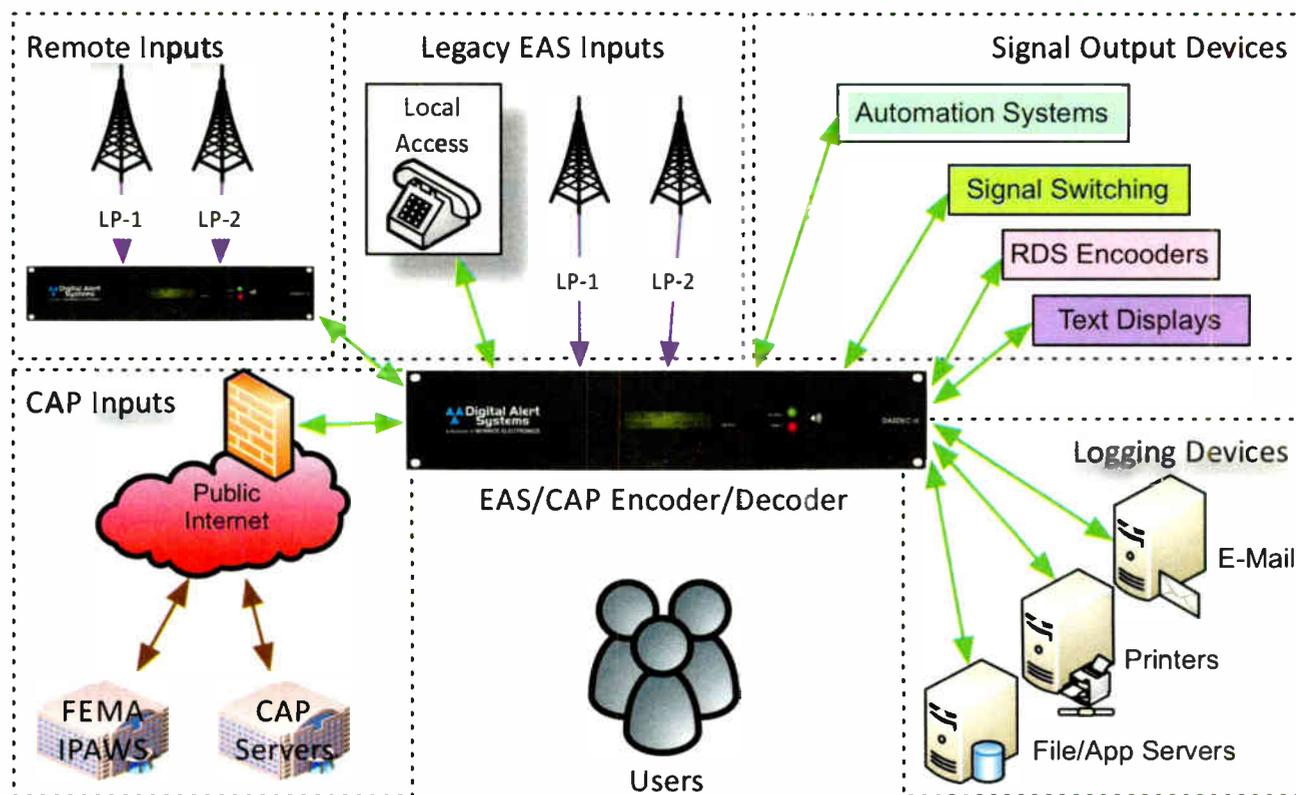
With respect to EAS, the growing number of LPFM stations is meaningful because along with the acquisition of a slice of the

broadcast spectrum, completion of their transmitter installations and the launch of their broadcasts comes the responsibility to provide EAS messages to their communities.

In short, the importance of LPFM stations to EAS is that these new broadcast operations service areas that may not enjoy particularly strong signals from other broadcasters. They stand to play a valuable role in exposing more people in more places to critical emergency alerts.

(continued on page 5)

Below: The EAS/CAP Ecosphere



RW's Community Grows Online

Here's a sampling of recent stories and offerings that may interest you

Radio World's online community has grown tremendously, with wonderful stories, commentaries and discussions.

You are an important member of this thriving multiplatform community of technology professionals; and I hope you take part by visiting *radioworld.com* regularly, posting opinions, reading our expanding library of free eBooks to which you have (free) access, receiving your free (and growing) Radio World Newsbytes newsletter every day, and following *@radioworld_news* on Twitter. That's the full RW experience.

Here's a sampling of recent postings and stories you might have missed, and how to find them:

 We've been telling you about the many LPFM stations coming on the air in the United States soon. I recently wrote on the RW blog about one that's cut from my kind of cloth.

Mississippi non-profit organization Classic Book Radio is starting a low-power FM radio station that will broadcast readings from classic works of literature. Founder Christopher Howard, who has audio and amateur radio experience, is trying to raise \$15,000 to help buy studio gear, EAS equipment, transmitter and streaming services.

Read about his plans in my blog post titled "Now Read This" at *radioworld.com*, keyword Literature.

 Radio World news contributor Randy Stine recently broke the story that broadcast groups appear to be in settlement talks with the firm that sued them over their use of HD Radio technology.



Photo by Kovacs/Dawley

Our coverage of the NAB Show starts with this "prelude" issue of Radio World; more to come next time.

Some people think this is a "patent troll" situation, and took exception to the idea of a settlement. See "Possible Settlement in HD Patent Suit," again at our website, keyword Settlement.

(If you saw that story elsewhere first, you read about it late. Are you getting Radio World NewsBytes? Sign up at *www.radioworld.com/subscribe* and click on "Subscribe to Radio World newsletters.")

 Our NewsBytes Editor Brett Moss has been featuring extended selections of comments about AM revitalization.

You will read selections of them in this issue; but the infinite nature of the Internet allows us to explore many of those in far more depth (without you

having to dip into the FCC's database).

Read that fascinating selection of AM ideas at *radioworld.com/amcomments*.

 Twitter is but one piece of our new media world, yet it acts as a very effective breaking news service and social community. Follow *@radioworld_news* and share thoughts (with us and with your tweeting pals) about radio and new media issues.

We share top stories there from RW and also regularly retweet insightful comments from the likes of James Cridland, Kirk Harnack, Jennifer Lane, Fred Jacobs, Ajit Pai, Holland Cooke, the IEEE and other industry thought leaders and organizations that use social media to identify nifty stuff.

FROM THE EDITOR



Paul McLane

 Our coverage of the NAB Show starts with this "prelude" issue of Radio World, in which we preview promising sessions for managers.

Meantime, recipients of Radio World NewsBytes have been getting a bonus first look at planned product introductions at the upcoming NAB Show, via our Sneak Peek newsletter. We send six weekly issues of that special coverage in advance of each spring convention, which helps you decide what to spend time looking at in Vegas.

To sample those wares on the website, use keyword Sneak.

 As I write, Radio World just published the seventh in our series of eBooks, which have been a runaway hit.

"Digital Radio Around the World" is from the editors of our sibling Radio World International, and focuses on radio's transition to digital outside the United States.

The eBook provides coverage of the history of DAB and DRM digital radio broadcasting; the evolution of digital radio around the globe; the technical specifications and potential benefits of each standard, as well as digital receiver status. But you'll be interested no matter where you live.

This eBook joins others on topics like streaming, audio processing, transmission and low-power FM. Grab a cup of Joe, fire up your tablet or PC and check 'em out at *www.radioworld.com/ebooks*.

(continued on page 8)



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THIS ISSUE

MARCH 12, 2014

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**EAS***(continued from page 3)***EAS PARTICIPATION**

The majority of new LPFM stations are being built from scratch, and the current rules dictate that they employ an EAS solution minimally capable of decoding EAS/CAP emergency messages so they may receive alerts properly and forward messages appropriately.

So, LPFM stations clearly must participate in EAS, which requires having CAP-enabled EAS equipment and Internet connectivity to monitor FEMA's IPAWS. However, LPFM stations have a bit of an economic advantage in that they have the option to use a CAP/EAS decoder-only solution, which can be less expensive than a conventional CAP/EAS encoder/decoder. All of this means that LPFM stations should carefully evaluate their EAS equipment and connectivity requirements and options.

As the three irrefutable laws of EAS govern all U.S. broadcasters, LPFM stations are not immune to the impact of technical and regulatory advances, whether they present new opportunities or new challenges. Therefore, it is equally important for these new broadcasting players to make smart equipment decisions. Even a decoder-only system should be equipped not only to address all current requirements, but also to handle future requirements with easy-to-upgrade software. The system also must support a range of interfaces and communication standards.

With the adoption of CAP as an open standard for sending emergency information — the underlying basis of FEMA's IPAWS program — the messages that

stations receive via the familiar and well-established radio relay EAS system may be augmented by CAP messages, which may include supplemental text, photos, videos or audio. In fact, now that CAP is in play, emergency managers at the state level are rediscovering EAS/CAP as a great way to better communicate to the public. Several states are adding CAP origination tools as they update their emergency response plans.

Yet this new CAP and related IP-based communication technology has stirred another sort of dust storm as now any CAP-enabled device can conceivably receive alerts from "anywhere." The likely increase in the number of "boundary" conditions — stations that are licensed in one state or county yet operate across county or state lines, capable of receiving alerts for their entire operating area — will expand.

In the past, stations were more geographically bound by terrain and distance from the EAS monitoring sources, but

now CAP's Internet-based communications effectively eliminate these boundaries. The resulting boundary confusion requires more detailed work among the bordering states, along with their respective emergency managers, state broadcast chairs and State Emergency Communications Committee coordinators. Together, they will need to create plans that address scenarios such as when an alert from one state should be communicated by a station that happens to be located along the edge of the bordering state.

So, radio's future continues to look bright. New players are joining the fold, demonstrating the many virtues of radio while also strengthening emergency communications within their communities. Equipped with flexible EAS equipment, these radio broadcasters will join the ranks of stations that efficiently and effectively provide critical services to the listening public. Welcome aboard.

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

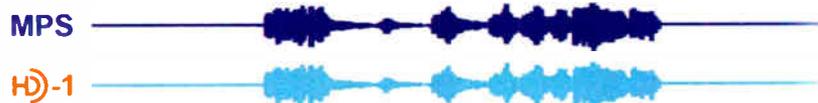
NEWSROUNDUP

NIelsen-ARBITRON: The Federal Trade Commission has okayed the last remaining barrier to Nielsen's purchase of Arbitron, settling the FTC's own allegations the deal was anti-competitive. The final order settling the FTC's charges requires Nielsen to sell and license, for at least eight years, certain assets related to Arbitron's cross-platform audience measurement services to an FTC-approved buyer.

DINGELL: Rep. John Dingell, D.-Mich. plans to retire; he will not run for re-election after his term expires at the end of the year. The 87-year-old chaired the House Energy & Commerce Committee from 1981 to 1994 and again from 2007 to 2008. Though Thomas Bliley, D.-Va., chaired the committee when lawmakers debated and passed the 1996 Telecommunications Act, Dingell remained part of the core committee leadership team working on the bill.

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AM COMMENTS

(continued from page 1)

As the notice states, however, the universe of FM translators that are both eligible and available for use by AM radio stations is largely exhausted. To alleviate this problem, the commission proposes to open an FM translator filing window exclusively for AM stations. NAB agrees that such an approach will help expand the pool of cross-service translators.

PROCEED CAREFULLY ON TRANSLATORS

Common Frequency:

CFI wholeheartedly agrees with the FCC that eligibility for translator procurement must be "limited to AM broadcast licensees or permittees, and may apply for only one FM translator per AM station." In fact, since such little room for FM translator licensing exist in major markets, we might even recommend that only one translator may be only licensed per licensee and not per AM station in the Top 50 Arbitron markets.

NOT A LONG-TERM FIX

Joint commenters consisting of Radio One, Multicultural Radio Broadcasting, Liberman Broadcasting and 25 other AM owners:

The most popular proposal by far is the FCC's proposal to offer one FM translator for every AM station. But, of course, moving the AM programming over to the FM band does nothing to fix the problems with the AM band. In fact, it will tend to prolong the problems by discouraging AM station owners from spending money to repair or replace equipment as needed. ...

"... moving the AM programming over to the FM band does nothing to fix the problems with the AM band."

This proposal is nothing more than a partial step toward transitioning the AM service to the FM band. ... The FCC's proposal to open a window period for existing AM stations to apply for new FM translators may assist some additional AM stations, but there is limited spectrum available in most urban areas for FM translators, and the proliferation of FM translators will only serve to create more congestion in the FM band.

NO NEW AM STATIONS

du Treil, Lundin & Rackley:

We believe that the AM band has reached maturity and that with the numerous alternative program delivery options there are available today and the smaller total audience of AM listeners, it makes no sense to consider adding new AM stations. Existing AM stations should be encouraged to improve their service to their actual audiences with as much flexibility as possible in choosing their transmitter site locations and the details of their technical facilities — or get out of the way to let other stations make improvements subject to agreements submitted to the FCC for that purpose.

AM ONLY WORKS IN CARS ANYMORE

RF manufacturing engineer Dave Hershberger filed these comments as an individual:

The main problem with AM radio is that it only works in cars anymore. It is mostly unusable in residences. Speaking from my own experience, I am 6.4 miles from my local 5 kW AM station (KNCO, Grass Valley, Calif.). My daytime signal strength is predicted to be 47 mV/M. This is a good strong signal. Yet on common radios in my house the signal is unlistenable. ... I bought a Pixel Technologies active broadband loop antenna, poured concrete for a mounting post, and trenched in coax in conduit. The Pixel loop antenna is 130 feet from my house. At last, I can receive AM radio in my house again. ...



Dave Hershberger told the FCC: "The main problem with AM radio is that it only works in cars anymore." He installed a Pixel Technologies broadband loop antenna to pull in the signal from KNCO(AM), Grass Valley, Calif., six miles from his home.

TAX CREDITS TO GIVE UP AM LICENSES

Georgia-Carolina Radiocasting Companies:

GACA believes there are many hundreds of thousands of AM stations which would be incentivized to relinquish their AM licenses if the commission would have Congress enact tax credits for the surrender of AM station licenses. ... We would suggest that these tax credits be commensurate with the population served by the licensee ... with the minimum tax credit being \$100,000 for the AM licensees in the least populated areas and to allow the transfer of these "credits" from surrendered AM licenses to profitable operators.

REDUCE DAY, ELIMINATE NIGHT COMMUNITY COVERAGE STANDARDS

NAB:

NAB also agrees with the commission's proposals to relax the AM broadcasting daytime community coverage standards, and eliminate the nighttime standards. These rule changes will remove certain technical obstacles to relocating AM transmitter sites, and in some cases, save broadcasters the considerable expense of operating separate daytime and nighttime transmitter facilities. Permitting AM stations to conserve resources on these types of utility and infrastructure costs will increase broadcasters' resources for services that more directly benefit the listening public.

... ELIMINATE BOTH

Hatfield & Dawson:

We believe that the "community coverage" requirements of the commission's rules are entirely inappropriate in the context of the 21st century demographic circumstances of the United States, and should simply be eliminated. Even when these requirements were first adopted they were difficult to justify based on

the totally disparate state government rules about city incorporation, expansion and annexation.

CHANGE CLASS A PROTECTION

du Treil, Lundin & Rackley:

We believe that the rules should be changed to make the protected contour for daytime co-channel overlap, daytime first-adjacent channel overlap, daytime critical hours protection and nighttime overlap from co-channel skywave signals the 0.5 mV/m groundwave contour for Class A stations. In the daytime, this will replace

"... It has been difficult for us to acknowledge that Class A station 0.5 mV/m nighttime coverage has become obsolete."

the presently protected 0.1 mV/m contour — which we believe should not be considered a coverage contour under today's noise conditions. At night, it will replace the 0.5 mV/m skywave contour — which we believe to be obsolete. ...

It has been difficult for us to acknowledge that Class A station 0.5 mV/m nighttime coverage has become obsolete in modern times, because of our own tendency as well as that of others to romanticize listening to distant signals fade in and out overnight and the hobby aspects of "DX-ing" distant signals. The reality is that the wide-area programming that used to be carried overnight by Class A stations exclusively can now be distributed to listeners fulltime wherever they are with consistent audio quality using other modern technologies like satellite and Internet protocol delivery.

(continued on page 8)



Journalist: Maria Carrasco

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AM COMMENTS

(continued from page 6)

DON'T CHANGE SKYWAVE PROTECTIONS

Clear Channel Media & Entertainment:

As the commission has recognized, the "AM band is also subject to interference concerns not faced by other broadcast sources." In the NPRM, the commission notes that some proponents have suggested changes to nighttime skywave protection for Class A AM stations, which the commission acknowledges, at a minimum, would be a complex change requiring additional comment, research, and analysis. ...

Class A AM stations are among the only AM stations with interference-free nighttime coverage and are also among the only AM stations that still garner substantial listening. Clearly, any proposal that would increase interference in the AM band is not a solution to the band's problems.

KILL THE "RATCHET" RULE

NAB:

NAB supports approval of the long-pending petition filed by the engineering firms of duTreil, Lundin & Rackley, Inc. and Hatfield & Dawson Consulting Engineers LLC (duTreil *et al.*), which asked the commission to eliminate the ratchet rule because it has failed to achieve its goal of reducing interference on the AM band. The petition explains that, as a practical matter, stations seeking to improve service, such as through a transmitter relocation, must reduce power to comply with the ratchet rule's obligation to reduce electromagnetic radiation. This usually causes stations to lose a substantial amount of interference-free nighttime service. As a result, many AM stations forego opportunities to improve service, or must seek a waiver of the ratchet rule to minimize losses of nighttime service.

MCLANE

(continued from page 4)

 I see and approve comments that readers post to our online stories, so I know when people are engaged with our content. The range of people is fascinating and includes specialists in all corners of our industry.

Lawrence Behr, Tim Cutforth, John Anderson, John Pecore, Gary Ellingson, Michi Bradley, Dave Burns, Frank Hertel, Burt Weiner, Rich Phoenix, John Pavlica, Charlie Gawley, Bob Gonsett — all have posted thoughts in just the last few weeks, and that's only a sampling. Add your voice. The comment field appears under each story. (But if you read RW, you know I also love actual letters to the editor; so never hesitate to email radioworld@nbmedia.com.)

This is an exciting time in radio and at Radio World. I thank you, our loyal reader, as well as the many companies who support these ventures.

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EMPLOY ALL-DIGITAL HD AM ...

IBiquity Digital Corp.:

The HD Radio all-digital mode offers AM broadcasters the best long-term solution to the problems that have caused listeners to turn to alternative forms of programming and entertainment. ... [T]he dramatic audio quality upgrade the digital signal enables will address many of the concerns about analog AM audio. ... [T]he all digital system increases the power levels of the OFDM carriers. This enhances the range of the digital signal and reduces susceptibility to power line interference, further improving the listening experience. ...

There are analog AM stations today that have few existing listeners but cannot convert to digital due to interference constraints. If these stations were allowed to convert to all-digital operations, they could enjoy the upgrade in audio quality digital can offer and develop a more commercially viable path to success.

... AND ADDRESS RECEIVER STANDARDS

Bryan Broadcasting Corp.:

[Bryan] believes the testing underway by the National Association of Broadcasters and others will demonstrate the viability of digital-only operation by AM stations on the AM band. Should this prove out, [Bryan] would ask the commission to address the issue of receiver standards. Much as the digital TV conversion was preceded by a digital receiver requirement, the commission should require AM digital-only mode to be the default AM mode in receivers and tuners before any sunset of AM analog broadcasting. This "digital sunrise" would serve as the long-term and final answer to the technical problems that plague AM broadcasting today.

MOVE AM TO TV CHANNELS 5, 6

Dave Hershberger, filing as an individual:

The basic approach I propose is to migrate most AM stations away from AM and onto ... [n]ew VHF broadcast allocations using TV Channels 5 and 6, and/or possibly Channels 7–13 where available. [Digital Radio Mondiale+] appears to be the best choice among existing systems for a new digital VHF allocation. Rather than specifying a transmission mode, we should instead specify the receiver as a flexible software-defined platform. At first the transmission mode might be DRM+ but it could be changed or upgraded with over-the air transmission of new receiver software.

Joint commenters, consisting of Radio One, Multicultural Radio Broadcasting, Liberman Broadcasting and 25 other AM owners:

The Joint Commenters support the comprehensive proposal filed by the Broadcast Maximization Committee that proposes the migration for all AM stations to Channels 5 and 6 on a voluntary basis. ... Rather than relying on FM translators, the BMC proposal offers the real thing. ... The Joint Commenters ... would not mind operating in the digital mode under such circumstances and bypassing the IBOC transition with its inherent problems. Their existing AM facilities with multiple-tower directional arrays that occupy acres of land could be dismantled, the land sold and new facilities located on existing towers reducing the number of existing towers on the landscape.

NEWSROUNDUP

HEARTRADIO: Clear Channel Media and Entertainment's streaming music and live radio service, iHeartRadio, is entering the wearables market with a new app for the Samsung Gear 2 Smartwatch. The integration means Samsung Gear 2 users can control their iHeartRadio smartphone app from their wrist; they can access live and custom radio stations, save favorites, scan or skip songs as well as Thumbs Up or Thumbs Down songs. Samsung expects the smartwatch to be available in April.



NEWSROOM STUDY: The FCC has cancelled its so-called newsroom study, which was to ask journalists and newsroom managers about decision-making procedures. FCC Commissioner Ajit Pai praised the decision, as did House Republicans Energy and Commerce Committee Chairman Fred Upton of Michigan and Communications and Technology Subcommittee Chairman Greg Walden of Oregon. Walden had been prepared to introduce legislation barring the study.

TIME TO REVISIT DIGITAL?

Broadcast Warning Working Group:

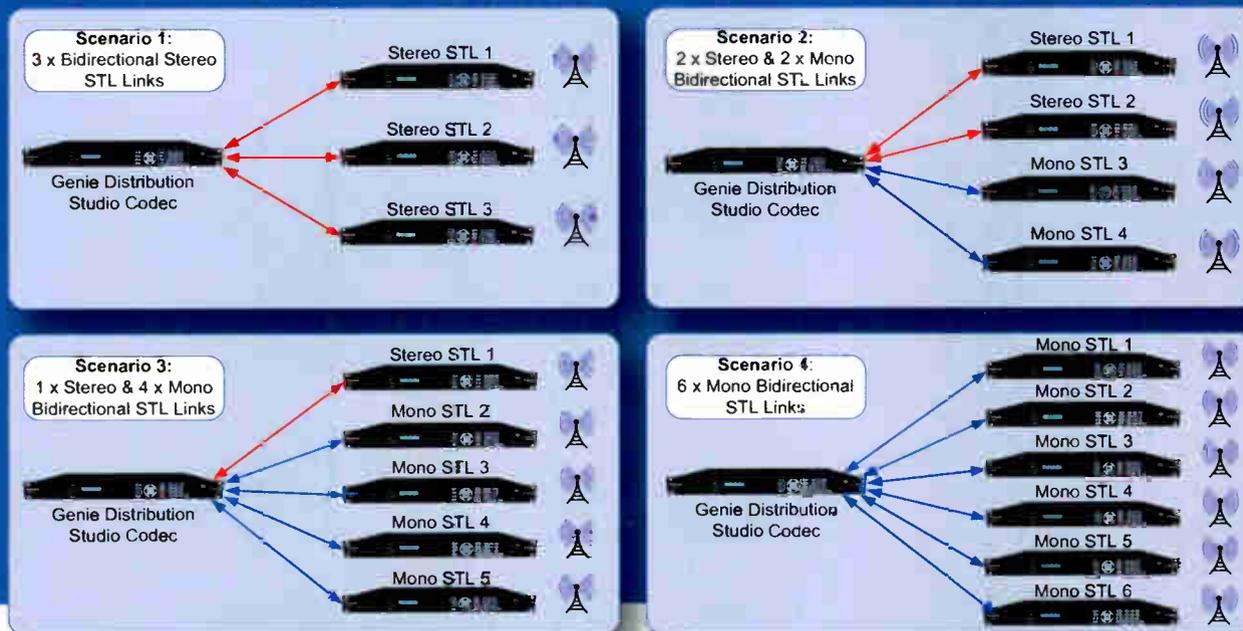
Introduction of digital audio to the AM band (IBOC) has proven to many AM band engineers that "no good deed goes unpunished." Arguably, certain audio bandwidth standards adopted voluntarily by some broadcasters have reduced analog audio fidelity. Furthermore, compromise advantages designed to foster AM digital broadcasting have indeed hurt the coverage of many adjacent channel stations.

While listeners may perceive an apparent enhancement of quality from the digital signal, the realities of in-car AM listening frequently negate that advantage when IBOC car radios apply the "blend" mode whenever a digital signal drops out. Further, digital transmission cannot magically solve the noise floor problem. When the noise floor increases beyond a certain level, the integrity of digital transmissions is impaired to the point where the signal suddenly goes away.

We believe it may be time for an honest and rigorous revisiting of IBOC for AM to see if turning it off can help revitalize this troubled band by giving amplitude modulation signals "breathing room."

Read more and lengthier samples at radioworld.com/amcomments.

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WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

Generally speaking, we've all benefited from the presence of computers at the transmitter site. Many transmitters now have computer hardware built right in.

One company that has taken advantage of the processor's power is Nautel. Its AUI screen monitors almost everything in the transmitter, which is beneficial to the engineer.

If you maintain a touchscreen Nautel transmitter, Crawford Denver Chief Engineer Amanda Hopp says you may have had issues from time to time with the monitor screen responding slowly, if at all. When she encountered this, Nautel gave her a simple solution: Short the reset terminal on the control board to ground.

When you open the front of the NX50, the top board has a row of wires going into screw terminals. One is the reset terminal, and one is ground. Any-

time she had the issue, Amanda would take a short wire and carefully touch the screw for the reset terminal to the screw for ground. While this worked, it was a little dangerous. She could have touched something else and caused a problem.

Amanda's solution was to buy an SPST momentary pushbutton switch, pictured in Figs. 1 and 2. She installed

it in line across the terminals (ground and reset). Some heavy solid buss wire, soldered to the switch's terminals and

covered with heat shrink, keeps the switch firmly mounted and insulated. Now all they have to do is push the button and the AUI will reboot.

Note that Amanda's problem is only with the local AUI screen on the transmitter. Any remote querying of the AUI is fine.

Radio World also checked in with Nautel about this.

The company's John Whyte tells us: "While the early releases of our NX and NV Series had some minor memory leaks that might have resulted in sluggish AUI performance over time, subsequent firmware releases have gone a long way to minimize these issues. In addition, a reset functionality has been added to the AUI. These improvements apply to both the NX Series and to the NV Series. In addition, most NV Series transmitters have a hard AUI Single Board Computer reset button on the control card in the event you can't get to the soft reset screen.

"It is probably worth noting that Nautel designs its transmitters so that the AUI is a non-critical element of RF transmission."

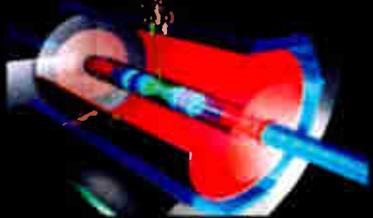
Reach Amanda Hopp at amanda.hopp@crawfordbroadcasting.com.

(continued on page 12)



Fig. 1: A side view of the reset switch.

Fig. 2: Easily installed and pressed to reset the Nautel AUI screen.



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WORKBENCH

(continued from page 10)

Engineer Paul Sagi, a frequent contributor to *Workbench* from Malaysia, sent along a couple of comments about previous tips.

The first concerns the use of urinal cakes to keep mice and snakes out of equipment, such as AM antenna tuning units. Paul suggests you check the ingredients before you buy; make sure the cakes are para-dichlorobenzene, not naphthalene. Lengthy exposure to naphthalene can induce cataracts.

With reference to drawing programs, Paul writes that the key combination of "Alt+Print Screen" will copy the active window, which can then be pasted to the Microsoft Paint program that comes with Windows. The image can then be cropped or resized as needed.

Contact Paul Sagi at psagi.92@gmail.com.

Speaking of computers and IP networks, recall that in the Feb. 1 issue, Frank Hertel offered us a means of finding available IP circuits.

Todd Dixon, an assistant engineer at

Crawford Broadcasting's Birmingham facility and fellow RW contributor, reads *Workbench* regularly and enjoys reading how other engineers solve problems.

He wrote me to add a nice tool to the one Frank suggested. It is called Angry IP scanner (<http://angryip.org/w/Download>). There are versions of the program for Linux, Mac or Windows. The newer versions require Java. The older version is only a 120 kb download!

Angry is a network scanner, quick and efficient. If you are permitted to hook up your computer and get an IP address, you can quickly scan a subnet

and find out which IP addresses really are available and which are not.

But Angry does a lot more than that, allowing you to explore ports and so forth. Todd uses it for what Frank suggested. An added benefit is that it does read beyond the initial network segment. Best yet, if you are not permitted to hook up your own computer to the client's network, the program is small enough to be placed on a thumb drive and executed from there.

The screenshots page (<http://angryip.org/w/screenshots>) gives an idea of how the program performs. Thanks, Todd, for taking the time to send such a useful tip — especially suggesting the thumb drive!

Reach Todd at tdixon@crawfordbroadcasting.com.

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Winston Hawkins is project manager for the Positive Radio Group, based in Blacksburg, Va. He sends in Fig. 3 as another method to maintain access to your site and not get locked out by other tenants. We've shared various ideas about this in the past.

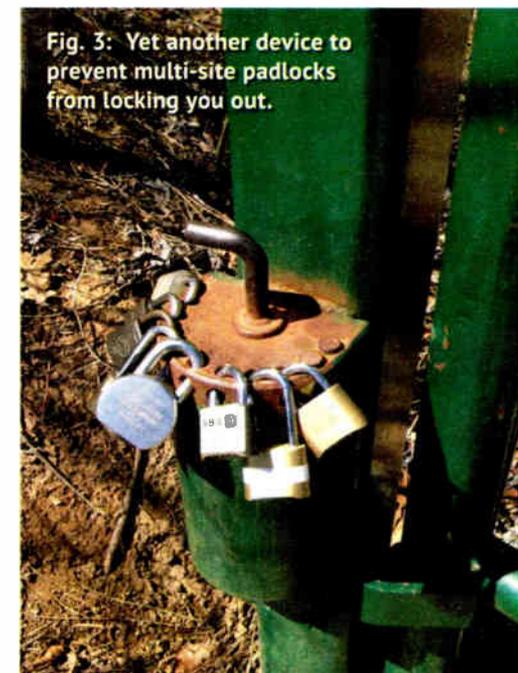


Fig. 3: Yet another device to prevent multi-site padlocks from locking you out.

To open the gate, you remove your lock and pull up on the vertical bar until the locking pin is pulled up through the hole from which you removed your lock. This gives you access without the chance of someone locking the gate behind you.

Reach Winston at winhawk1@comcast.net.

Contribute to *Workbench*. You'll help your fellow engineers and qualify for SBE recertification credit. Send tips to johnpbisset@gmail.com. Fax to (603) 472-4944.

Author John Bisset has spent 44 years in the broadcasting industry and is still learning. He is SBE certified and is a past recipient of the SBE's Educator of the Year Award.

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Editor's Picks: Management Conferences

If your time is limited, here are panels that particularly caught our eye

BY PAUL McLANE

Hey managers! Do you know who is listening to, or looking at, your content on all those new platforms your station uses?

Measuring audience across various media is a question of growing concern to broadcasters, and it is among themes at this year's Broadcast Management Conference at the NAB Show.

Key topics of the BMC also include AM revitalization, implications of the "connected car," FM reception in mobile devices, performance rights and "best practices" for digital offerings.

Radio World sifted through the agenda of radio-oriented sessions and identified the following as particularly promising. Next issue we will focus on engineering and tech sessions.



RADIO RENAISSANCE

Radio's advocates find themselves in an interesting position these days. Culturally, radio often is depicted as hopelessly "old school," just another legacy medium. But research data indicate that 242 million Americans listen weekly; and based on anecdotal evi-

dence, radio continues to play a relevant role in consumers' lives, including those of young people.

A Monday morning panel called "Radio Renaissance" will discuss how FM and AM managers can deal with cultural, financial and other pressures. A big part of the discussion will be the proposals being considered by the FCC to help AMs, and various strategies that FM owners are pursuing.

The panelists represent a mix of expertise. Peter Doyle has been invited; he is chief of the Media Bureau at the commission and often appears at the spring convention, sometimes taking questions from people eager to talk in person to someone in authority at the commission.

Ben Downs is vice president and general manager of Bryan Broadcasting Corp., and serves on NAB's Radio Board; he has been an advocate for AM revitalization. Joycelyn James is a senior attorney and Cathy Hughes Fellow at the Minority Media & Telecommunications Council; she is active in issues involving minority and women's entrepreneurship. Rebecca Rini of Rini O'Neil PC represents telecom, media and technology clients before Congress and the FCC, and handles communications-related transactions.

The moderator is Christina Burrow, who works in regulatory communications at law firm Cooley LLP. She was a partner at Dow Lohnes, which recently merged with Cooley.



A lunch panel Monday produced by the Radio Advertising Bureau will discuss "Radio's Four Significant Issues."



IF YOU GO

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Where: Las Vegas Convention Center

When: April 5-10

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How: www.nabshow.com

How Much: Packages vary from \$150 for a "session three pack" to \$1,349 for a "Smart Pass," with various discounts for one-day, government/military and other types of registration

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As RAB sees it, those issues are perception, digital revenue, HD Radio and overall advertising trends.

"Radio is a dynamic, efficient and effective advertising medium, yet too often advertisers and agencies miss out on radio's full potential because of their perception," the organization states. RAB President/CEO Erica Farber will talk about that.

Deborah Esayian, co-president of Marketron Interactive, will explore a bright spot: digital revenue growth.

Based on a recent study, RAB believes U.S. commercial radio's digital revenue will surpass a half-billion dollars this year for the first time; while that's still far less than "traditional" radio revenue, it would be a growth rate for digital of 22 percent. The study by Borrell Associates estimates that the average station made \$166,490 in digital advertising, or about 3 percent of total revenue. Some station earn far more, through tools like mobile app development, search engine optimization and social media

and email management.

Also at the lunch, Drew Horowitz, executive vice president and chief operating officer of Hubbard Radio, will talk about the sales aspects of HD Radio; and Tom Buono, CEO of BIA/Kelsey, will offer data about overall advertising trends and projections.

The RAB plans four other "revenue- and growth-oriented" sessions Monday and Tuesday including "Concentrating on Core Radio Revenues," "Radio's Best Ad Categories for Your Sales Staff to Target," "Creative Radio Commercial Production and Imaging" and "Rapid Fire Revenue Generators for Small/Medium-Market Radio."



LOCAL MEASUREMENT

And then there's that measurement topic.

Radio has just seen a big change in its audience metric environment, with Nielsen acquiring Arbitron. Insiders say radio programmers are still getting adapted to working with the unfamiliar world of what is now called Nielsen Audio.

But there are bigger challenges than that. Today, managers want to be able to measure the use of all their media, all the time — and advertisers certainly want that information too.

A Tuesday panel of the Broadcast Management Conference, "Local Measurement: All Media/All Users/All the Time" will explore how to make the most of existing ratings systems and what might be ahead in regards to new audience measurement practices.

The session will be keynoted by David Poltrack, president of CBS Vision and chief research officer of CBS Corp.; he designed and oversees CBS Television City in Las Vegas, CBS' research center.

Also in the discussion will be Matt O'Grady, executive vice president and managing director of Nielsen; Steve Lanzano, president of the Television Bureau of Advertising; and Erica Farber, president/CEO of the Radio Advertising Bureau.

Find more on pages 18-20; and see the full conference agenda at www.nabshow.com/2014/sessions/conferences/.

Follow @radioworld_news on Twitter for live show developments and observations from management sessions at the NAB Show.

MORE FOR MANAGERS

This issue of Radio World focuses on events at the NAB Show of interest to radio managers, including the Broadcast Management Conference; below is a sampler of more management sessions. See www.nabshow.com for a full list. Our next issue will feature technical sessions and exhibit listings.

Monday, April 7

9 a.m. — Show Opening: state of the industry address by NAB President /CEO



FCC Chairman Tom Wheeler

Gordon Smith and a conversation with Haim Saban, chairman of Univision and chairman/CEO, Saban Capital Group, Inc.

2 p.m. — "Concentrating on Core Radio Revenues"

3:15 p.m. — "Radio's Best Ad Categories For Your Sales Staff to Target"

Tuesday, April 8

9 a.m. — FCC Keynote, featuring Chairman Tom Wheeler

Noon — Radio Luncheon: David Pogue, Yahoo tech columnist and host of "NOVA ScienceNow," will speak. Steve Harvey will be honored.

2:30 p.m. — "40 Secrets to Successful Radio Management," a three-hour block of sessions to help managers improve the day-to-day operations of their stations. NAB's Josh Miely will introduce and close the sessions.

Wednesday, April 9

9 a.m. — "The Status and Security of the Emergency Alert System."

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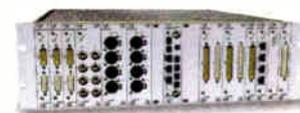


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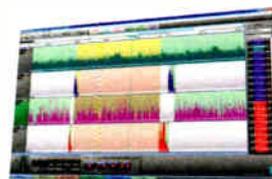
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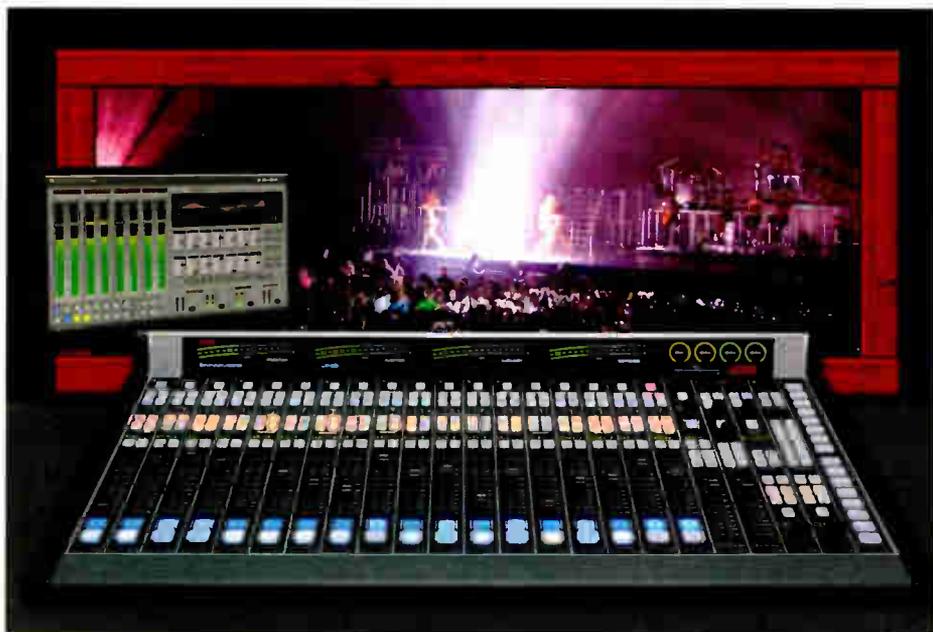
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TS-4



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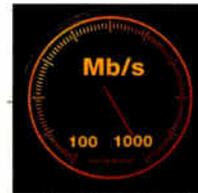
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Here's part two of our 2-part series entitled "What's Inside A BLADE". Obviously, we could go on forever. But we suggest you check WheatNet-IP out for yourself and learn just how much of a difference it can make.



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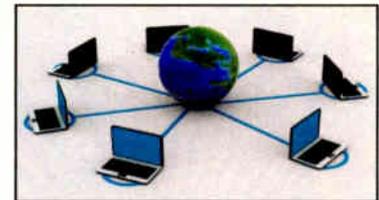
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Radio Can Engage Next “Young Generation”

Learn how to tap into millennials' potential

NAB PRELUDE

BY JAMES CARELESS

Nearly five decades ago, the baby boomers were the “Young Generation” whose talents and aspirations baffled their Depression-era elders.

Fortunately for radio broadcasting, some smart managers grasped the baby boomers' potential, and used it to revitalize the radio industry as a pop culture music medium. The rest, as they say, is rock radio history.

Today, “millennials” make up the Young Generation. They are recent college grads and 20-somethings who have grown up in the new millennium, amidst game-changing paradigms of the Web and social media. Now millennials' talents and aspirations baffle the boomers and younger “Generation X” radio people, whose demographic sits between these disparate age groups.

Yet again, it is radio's chance to move ahead by harnessing the passions and energies of a Young Generation.

IN YOUR WORKFORCE

Jayne Charneski says that like boomers before them, millennials have a different approach and attitude to work than their parents.

“They have different expectations for the workplace — they want to do more than just earn a paycheck and have a cool job,” said Charneski, who



Jayne Charneski

will speak during the NAB Show in April about “activating the young workforce” at radio stations. She's a millennials analyst and president of Jayne Charneski LLC.

“They are different in so many ways, but a *big* one is that their definition of success has changed. They want to do good and do their small part in changing the world for the better. Ideally, they'd do this through their job and the company they work for.”

As was the case in the Flower Power days, radio managers need to “bridge the generation gap” to get the most from younger employees. Millennials do not share the same cultural context as their bosses.

“They feel just as perplexed by the Xers and boomers in the workplace as the Xers and boomers feel about them,” said Charneski. “It's so import-

ant to bridge this gap and bring the generations together; there is just so much potential to tap into with millennials.”

This potential is real, yet sometimes denigrated by boomers and Xers who may view the millennials' attitudinal differences as laziness and pay little heed to youthful energy and creative vigor. “Millennials are often misunderstood, especially in the workplace,” Charneski said. Rather than being lazy and unmotivated, “they are the most educated, tech-savvy, creative, socially conscious, and despite the recession, optimistic generation of workers to date,” she said.

“Besides, these are the people that are the future of radio,” said Charneski. Moreover, they “will represent 50 percent of the workforce by 2020!”

Charneski's session will dig into useful ways to motivate millennials and to harness their creativity for the good of radio. In doing this, she said, attendees will be asked to consider, “How much you know about why millennials do what they do, and how can you use this understanding to work together more effectively with them?” she said.

Charneski offered the following insights for attendees to ponder, to prepare for “Activating the Young Workforce at Your Radio Station.”

1 “Millennials are often viewed through the lens of their manager's generation — boomers or Xers,” said Charneski. “But millennials are so different. For example, millennials grew up with parents who were

more like ‘peer-ents’ — more like peers than authority figures. Many millennials consider their parent a best friend, and treat them as such.”

2 “Cut to the workplace: The boss or manager is effectively the workplace parent, right? So millennials expect the same dynamic with their manager as the one they have with their parents,” Charneski said.

“In other words, they expect to be more like friends and peers. Their Xer and boomer managers, meanwhile, are expecting an authoritarian-like relationship — just like the one they had with their parents. These manager feel disrespected when millennials treat them casually and more like a ‘bro’ than a boss.”

3 Millennials not only grew up being asked for their opinions, but being their parents' tech support when it came to computer, the Web and smartphones.

“They grew up the CIO of their household, knowing more about tech than their parents. Now, insert them into a hierarchical structure at work where they are the lowest man on the totem pole, so they aren't being asked for their opinions, and they don't get it. And they don't feel valued, and they have no idea why they aren't being utilized.”

Boomers take note: You demanded that your elders listen to and respect your opinions. Now, it's your turn. (Somewhere, the boomers' retired bosses can be heard cackling with unbridled glee.)



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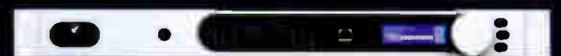
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COMMENTARY

BY SKIP PIZZI

The author is senior director of new media technologies for NAB.

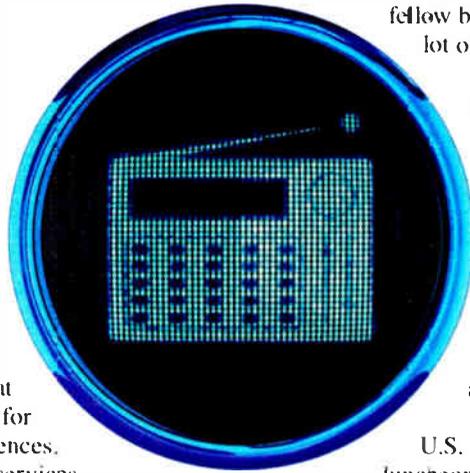
NAB Labs, in conjunction with the NAB Radio department, created the Digital Strategies Exchanges for Radio (DSX4r) workshop in response to a need for radio managers to meet and consider in a comprehensive fashion the many non-traditional options that are available to them today, as they look for ways to better reach their existing audiences, and to draw new listeners to their core services.

There is such an eye-glazing blur of possibilities out there that we thought a well-curated selection from the crowd, presented in a clear and actionable fashion, would be of value to radio managers. We first presented DSX4r in 2012, and we're heartened that it's grown each year into something that attendees and prospective presenters alike now seem to greatly anticipate.

DIGITAL DIRECTORS

This year's event will be fast-paced and diverse, considering topics like new methods of online audience measurement and radio's role in the connected car. We'll also present strategies for radio to stay at the top of mind for listeners despite ever-growing competition from other platforms. And of course, we'll look at hybrid radio, particularly the promise of the NextRadio app for handhelds and the digital dash.

One of the founding premises of DSX4r is for it to live up to its name as an "exchange" of strategies among radio stations,



so most of the presenters are broadcasters talking to their fellow broadcasters. Thus there are purposely not a lot of vendors on the program.

This year we'll drill down on that component by presenting a "Digital Directors Roundtable," an interactive discussion with some of the top digital strategy leaders from the U.S. radio environment, who will share their greatest successes and biggest challenges. We'll also talk with several eminent radio managers about the importance and proper process of hiring a digital director, which we know is something on the mind of many stations and groups right now.

And we won't stop our exploration at the U.S. shores. A highlight of the day will be a luncheon talk from the well-known and ever-affable James Cridland, who will take us on an international tour of how radio broadcasters elsewhere are applying digital and social media to their offerings around the planet.

One place where we will hear from vendors, however, is a popular session we've done each year called the "New Idea Showcase," in which selected purveyors of new-media products or service get a few minutes to make their elevator pitch to radio broadcasters — our own version of the Shark Tank.

We end the day with this so attendees can collar any of the vendors they were intrigued by to talk further.

Despite the packed agenda, we've built in plenty of time for interaction with the attendees throughout the day, again to enable the "exchange" component. We're looking forward to another exciting—and mutually educational—experience at the 2014 edition of DSX4r.

It runs from 10:30 a.m. until 4 p.m. on Wednesday, April 9, in Room N238 of the Las Vegas Convention Center at the 2014 NAB Show. Hope to see you there!



Wednesday April 9

Introduction
10:30 a.m.

Advances in Web Measurement for Radio
10:40 a.m.
Shawn Smith, Interactive One; Kathleen Bohan, Univision Communications; Farshad Family, Nielsen

Connected Car Marketplace Update for Radio
11:20 a.m.
Julie Koehn, WLEN Radio; Justin Nielson, SNL

Staying Top of the Dial for Radio
11:45 a.m.
Charlie Sislen, Research Director Inc.; Tim Murphy, Entercom; Rob Williams, Greater Media Boston

Digital Strategies for Radio: A World Tour (Box Lunch)
James Cridland, media.info

Digital Directors Roundtable for Radio
1:15 p.m.
Skip Pizzi, NAB; Lacey House, The Cromwell Group; Alan Segal, Cox Media Group; Sam Stiers, Interactive One Local

Hybrid Radio/NextRadio
2:15 p.m.
Paul Brenner, Emmis Communications; Skip Pizzi, NAB

Hiring a Digital Director for Radio
2:45 p.m.
Angie May Cook, Emmis Communications; Stacey Sedbrook, Beasley Broadcast Group

New Idea Showcase for Radio
3:15 p.m.
John Armstrong, synchronicity.co; Carla Borque, Smartify; Cait Watson, Nobex Technologies Inc.; Kim Wilson, SocialNewsDesk, Inc

Closing Comments
3:50 p.m.

THESE ARE THE CRYSTAL FINALISTS

The National Association of Broadcasters announced 50 finalists for its Crystal Radio Awards. The 27th annual event will be made at the NAB Radio Luncheon, April 8.

The awards are given to "radio stations for their outstanding year-round commitment to community service," according to a release.

Finalists were chosen by a panel of judges representing broadcasting, community service organizations and public relations firms.

KAJA(FM), San Antonio
KBCO(FM), Denver
KBFB(FM), Dallas
KCMS(FM), Seattle
KCVM(FM), Cedar Falls, Iowa
KFOR(AM), Lincoln, Neb.
KHHT(FM), Los Angeles
KJAM(AM), Madison, S.D.
KMBZ(FM), Kansas City, Kan.
KMIK(AM), Phoenix
KOZT(FM), Fort Bragg, Calif.
KPCW(FM), Park City, Utah
KPRS(FM), Kansas City, Mo.
KRLC(AM), Lewiston, Idaho
KRWM(FM), Seattle
KSTP(FM), St. Paul, Minn.
KSTZ(FM), Des Moines, Iowa

KTAR(AM), Phoenix
KTAR(FM), Phoenix
KTMY(FM), St. Paul, Minn.
KTTS(FM), Springfield, Mo.
KUPL(FM), Portland, Ore.
KVIL(FM), Dallas
KXKT(FM), Omaha, Neb.
KXLG(FM), Watertown, S.D.
KYKY(FM), St. Louis, Mo.
KYNT(AM), Yankton, S.D.
KZPK(FM), Saint Cloud, Minn.
WALR(FM), Atlanta
WBMX(FM), Boston
WBQB(FM), Fredericksburg, Va.
WCCO(AM), Minneapolis, Minn.
WCDK(FM), Weirton, W. Va.
WDHR(FM), Pikeville, Ky.



WGY(AM), Albany, N.Y.
WILV(FM), Chicago
WLEN(FM), Adrian, Mich.
WMZQ(FM), Washington
WOBM(FM), Ocean County, N.J.
WPOI(FM), Tampa, Fla.
WSB(AM), Atlanta
WSOY(AM), Decatur, Ill.
WTMX(FM), Chicago
WUSY(FM), Chattanooga, Tenn.
WVEE(FM), Atlanta
WWJ(AM), Southfield, Mich.
WXKQ(FM), Whitesburg, Ky.
WXTU(FM), Philadelphia
WYCD(FM), Detroit
WZUS(FM), Decatur, Ill.

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- **1st** to deliver asymmetrical HD sidebands.
- **1st** to deliver MER HD Radio instrumentation.
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World Radio History

Summit Finds Success With VS Series

Nautel unit bailed out one station and now serves another as its exciter

USERREPORT

BY FRED A. FRANCIS JR.
Contract Engineer
Xenirad Inc. Broadcast Engineering

PRICHARD, W.VA. — One of my clients, Summit Media, operates five stations in West Virginia. Their country station in Sutton — WDBS(FM), "The Boss" 97.1, acquired in 2000 — had undergone a major rebuild about a decade ago but later began having issues with their transmitter and exciter. That exciter, which had sounded decent, became problematic, with intermittent power problems, and had been sent back to the factory twice.

On its third failure I suggested to the owner that he purchase a Nautel VS300 for use as an exciter; if the main transmitter were to fail again, the VS300 could be used as the on-air transmitter in a pinch.

This happened several times.

The switching of exciters to the VS300 was relatively painless. I had to change a relay contact to invert the mute line on the resident transmitter so that it would unmute the VS300 when exciter power was needed and the station was on the air.

The VS300 sounded great, and with the nearly transparent composite clipper turned on, it was loud and audio quality was much improved. The station was so loud, in fact, the owner did not believe he was legal,



and asked me to prove that the modulation was where it needed to be. I took a video of the mod monitor to show him and he was quite surprised.

The station's Optimod 8200 processor required only small changes to reduce the high end. The owner liked the way the VS300 sounded, so much so that he purchased a VS1 for another station, WVBD(FM), to replace a transmitter that had never sounded quite right. WVBD, Fayetteville, W.Va., is using an Optimod 8100XT processor and easily is the loudest and best-sounding station in the market.

When the main transmitter at WDBS gave out for the last time, after just 10 years of service and many major outages, the station purchased a Nautel NV20 transmitter, freeing the VS300 exciter for other uses. Now it is running at another station, WKQV(FM) in Cowen as the exciter and backup transmitter to an Armstrong FM2500B. Coincidentally, that station's slogan is "We Rock West Virginia Louder," and now thanks to the VS300, they actually do.

When each of these Nautel units was installed, we noticed a slight coverage increase along with the incredible increase in loudness and audio quality. Summit Media is a happy Nautel customer. Other stations in their markets are baffled by WDBS', WVBD's and WKQV's loudness and quality of audio.

Both the VS300 and VS1 units have been rock-solid in performance. With the built-in AUI interface they are easy to manage now that the stations have IP connectivity to all their sites. It is easy to manage one of these units and see at a glance if anything is wrong — simple enough for a station owner to do, but intuitive enough for an engineer to get to the root of the issue.

For information, contact Wendell Lonergan at Nautel in Nova Scotia at (902) 823-5131 or visit www.nautel.com.

TECHUPDATE

ELENOS ETG3000 DIGITAL TRANSMITTER

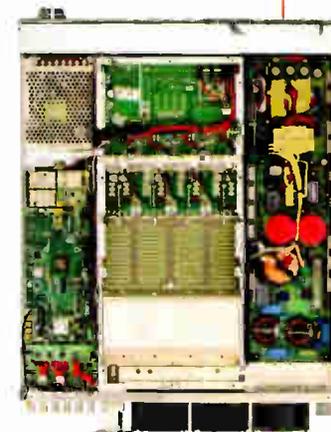
Elenos describes its ETG3000 as a 3 kW high-power, "ultra-compact," lightweight digital FM transmitter that fits into two rack units. The company says that it combines efficiency, low power consumption and reliability with fidelity and sound purity through the use of digital technology.

ETG3000's energy efficiency saves money. Elenos adds that integrated technologies such as intelligent protection, ICEFET technology, eco-savings and proprietary Lifextender algorithms make the system reliable even under extreme conditions.

Planar construction technology provides for repeatability, reliability and ease of maintenance, the company says, and performance will remain stable over time thanks to the use of trimmer electronics (presets) and advanced components.

The ETG3000's remote control function allows users to receive data and send instructions to the transmitter via SMS, GPRS, Internet and SNMP.

For information, contact Elenos USA in Florida at (855) 353-6670 or visit www.elenos.com.



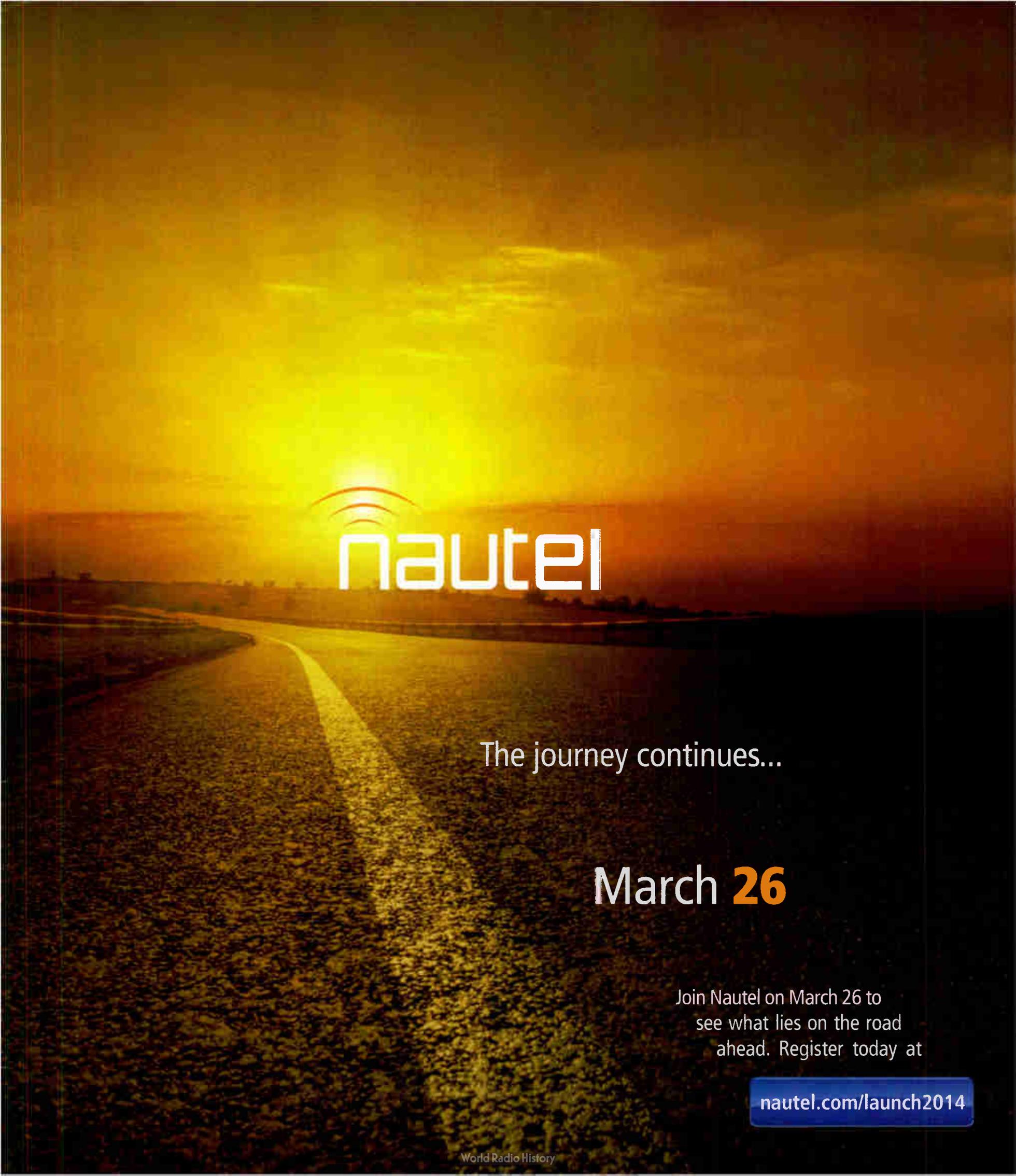
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With FME-350FS, We Are Royals

Crown transmitter serves KVSL(FM) in the White Mountains of Arizona

USERREPORT

BY MIKE WOODWORTH
Chief Engineer
Peak Broadcasting Co.

SHOW LOW, ARIZ. — Having worked in radio broadcasting for 26 years, I have dealt with a fair number of manufacturers. Particularly when it comes to mission-critical purchases such as a transmitter, I have learned to value suppliers who provide reliable products backed by efficient support.

For an FM transmitter for KVSL(AM/FM) in Show Low, Ariz., I recommended the Crown FME-350FS.

I run Peak Broadcasting, providing engineering services to many AM, FM and TV stations in northeastern Arizona; and I serve as chief engineer for the New Directions Media organization, which owns KVSL(AM), 1450 kHz.

New Directions recently purchased KVSL, and with the recent changes that allow AMs to use FM translators, KVSL now simulcasts with a translator (K300CL) on 107.9 MHz. My role was to recommend and implement the best transmitter for the new translator.

MORE CONTROL

Robert Zellmer, owner of New Directions Media, asked my opinion. Two factors came to mind: durabil-

ity and simplicity. You want a unit built to withstand the environment of a transmitter site (lightning and power surges top the concerns), a unit that gives you what you need without time-consuming complexity.

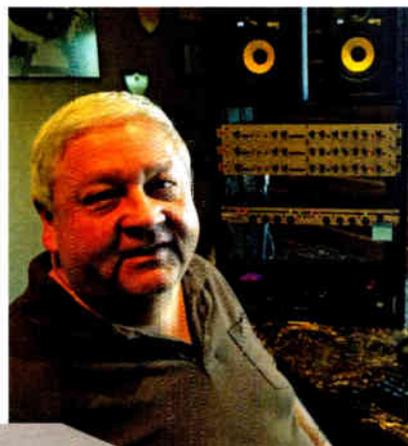
Also, you want a company that provides good support when needed. All units put out an RF signal and have similar audio specs; but Crown gives you neat features like the Web interface and proven reliability.

Years ago, I purchased a Crown 250-watt transmitter for use in my busi-



ness. When a station's exciter or main transmitter would fail, I would use this transmitter as a temporary backup. The transmitter has worked flawlessly at many places, appreciated for its good sound and simplicity.

I can see that the FME-350FS is an even better unit, with more features and the same rock-solid design. The newer unit is built around a direct-to-channel digital modulator; it's the newest technology and should deliver even greater



audio quality and reliability.

The FME-350FS provides a greater level of control and information than I have seen. The

translator is on top of Porter Mountain, five miles southeast of Show Low. Since Internet is available there, we access the unit via the Web interface. Telemetry and control functions can be accessed easily.

With the TCP/IP option, we received the system's Advanced Measurement Interface. Although I have not yet explored this to the full, it seems to be a comprehensive overview of the transmitter operation, with a display of

detailed analysis of the RF spectrum, MPX spectrum, audio spectrum and peak meters.

We selected a year's subscription to the EMR service for maintenance reporting. EMR gives me online access to key parameters and sends regular reports so that I am kept informed of maintenance issues that should be addressed. Let's face it, most of us can do with an extra set of eyes and ears.

With a one-year EMR subscription, we receive a 10-year warranty on the FM-E350FS system, a sign of a manufacturer with confidence in their design and one of these things that helps me sleep a little easier.

The unit was installed Oct. 25, 2013. We utilize a two-bay circularly-polarized antenna operating with a TPO of 200 watts, well within the transmitter rating of 350 watts. The station is collocated with another FM and many low-power users.

I initially tried to set up the unit from the front panel, but found the Web interface method simpler and less time-consuming. If you need to make changes to the unit and do not have your computer with you, the front-panel access is convenient.

Crown transmitters set the standard when it comes to quality, reliability, and effortless interface and control. The company has always been a phone call away when needed, providing excellent customer service.

For information, contact Kent Koselke at Crown Broadcast in Indiana at (866) 262-8972 or visit www.crownbroadcast.com.

TECHUPDATES

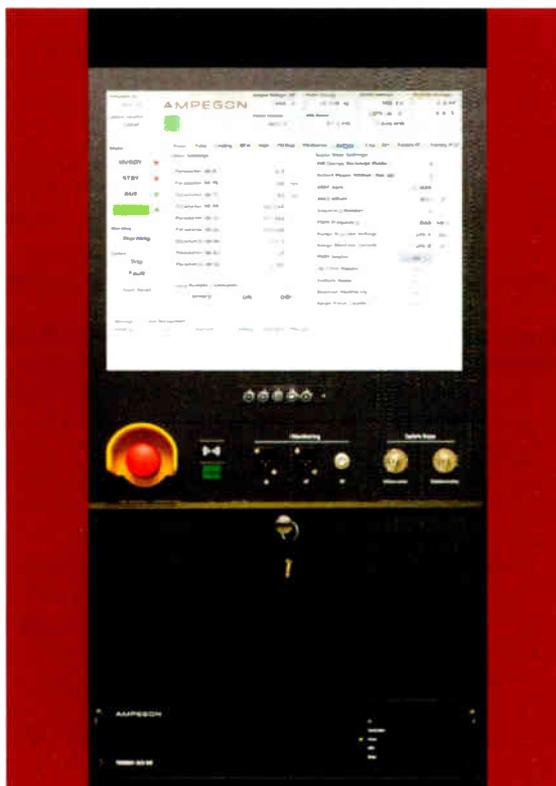
NEW GENERATION OF SHORTWAVE TRANSMITTER SUPPORT FROM AMPEGON

Ampegon says its shortwave transmitters incorporate recent advances in their control, motor drive tuning and measurement acquisition systems.

The new Ampegon UCS (Universal Control System) transmitter control system is a connecting link between user and transmitter, with a selection of functions and detailed transmitter information. It interacts with various subsystems and performs required measurements.

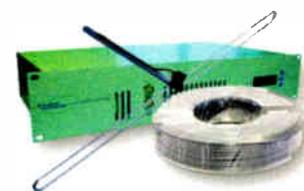
The company says the tuning system, with DC motor technology, allows faster, more accurate positioning of transmitter tuning circuits, with digital control. This allows comfortable, automated frequency changes. In order to achieve required measurements, the simplified measurement acquisition system captures measurements in real time for data display, data logging and data analysis; this leads to more efficient maintenance and fewer spare parts requirements, Ampegon says. Remote control options support flexibility of the overall transmitter system by ensuring independent control and operation.

For information, contact Ampegon in Switzerland at 011-41-58-710-44-00-83 or visit www.ampegon.com.



PROGRESSIVE CONCEPTS OFFERS TURNKEY LPFM PACKAGES

Low-power FM transmitter packages from Progressive Concepts are suitable for the growing LPFM sector.



Packages are based on TX300+ stereo FM transmitters, which include built-in audio processors and are FCC certified for use in LPFM.

The LP300 package includes TX300 transmitter, MP1 Circular Polarized FM Dipole Antenna and 100 feet of Belden 9913 cable with connectors installed.

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Packages include a 30-day money-back guarantee and two-year warranty.

For information, contact Progressive Concepts in Illinois at (630) 736-9822 or visit www.progressive-concepts.com.

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TECHUPDATES

TRANSRADIO'S DMOD3-CS — THE FULLY INTEGRATED DRM SOLUTION



The DMOD3-CS combines a DRM exciter, DMOD3, with a DRM audio/multimedia encoder and multiplex generator based on Fraunhofer's DRM ContentServer R5 technology. This includes the new xHE-AAC audio codec which was integrated into the DRM standard in January. The DMOD3-CS is adjustable to the needs of a user; functionality can be upgraded at any time as those needs evolve.

As an exciter, the DMOD3-CS offers the features of the DMOD3, including automatic initial equalizer adjustment to ease installation, automatic measurement point selection and dynamic pre-correction during DRM operation for a high-quality on-air signal and short mode change times to minimize interruptions. The company also highlights its reliability and robustness. The DMOD3 is compatible with major transmitter brands and is deployed in a large number of DRM installations.

The integration of Fraunhofer's DRM ContentServer R5 technology enhances the functionality of Transradio's DMOD3 at the encoder and multiplex generation side. Most of the features of a standalone FhG ContentServer can now be offered by the DMOD3-CS:

- Encodes the standardized maximum number of four DRM services in parallel, with access to all multiplex configuration and signaling options provided by the DRM standard
 - Supports audio codecs defined by the DRM standard including the all-bitrate xHE-AAC codec
 - Provides management/configuration options for standardized DRM data services such as Text Messages, Journaline, Slideshow, EPG/Electronic Program Guide, TPEG/TMC traffic information, along with flexible interfaces for future and broadcaster-specific applications
 - Easy configuration planning based on calendars and interfaces for external triggers
- For information, contact Transradio in Germany at 011-49-30-33978-501 or visit www.transradio.de.

BE STXE GOES EVERYWHERE



Broadcast Electronics highlights its STXe 500 line for customers needing analog FM, FM+HD and HD-only digital exciters and low-power transmitters.

The exciter/transmitter (along with a 60-watt version, the STXe 60) is now the standard exciter in current-production BE FM transmitters. It features IP connectivity, fully-

rated output into 1.5:1 VSWR, an extensive remote GUI interface and compatibility with single-frequency networks, including external 10 MHz and 1 PPS inputs.

In addition, the STXe500 is compatible with Broadcast Electronics' adaptive pre-correction and crest factor reduction technology, VPe.

Along with these features, STXe provides compatibility with the new 192 kHz digital composite input. The remote control interface is SNMP II-compatible for maximum interface flexibility and security. Internal control communications is done using CAN bus technology, providing maximum resistance to interference, especially in high-RF environments like crowded transmitter sites. CAN bus is the standard for automotive control interfaces. The basic control circuitry and exciter technology are also used in the STX LP 1 kW through 5 kW, BE's low-power FM and FM+HD transmitter line. The STXe series is also type-approved for LPFM use.

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

PTEK POWERS UP FM1050ES



PTEK's new FM1050ES is a 1,000 watt transmission system or single-box translator for FM radio. PTEK says its features are intended to keep owners on air and provide trouble-free operation. These include two 1,000 watt power pallets generating 1,200 watts (thus reserving 150 watts of extra power if it's needed).

According to the company, the FM1050ES has analog, digital and composite inputs to future-proof the equipment by giving flexibility to interface with existing and upcoming audio kits. Hot-swappable power supplies slide out and can be replaced in seconds.

The company says that direct-to-channel FM carrier generation produces clear audio. Ethernet IP control allows remote monitoring and control of the transmitter from any computer. Built-in FSK ID can turn the FM1050ES into a translator, without external hardware or hourly audible announcements.

It is also available in 150-, 300- and 500-watt models.

For information, contact PTEK in California at (888) 889-2958 or visit www.fmbroadcast.fm.

ROHDE & SCHWARZ LAUNCHES LIQUID-COOLED TX

Rohde & Schwarz launched a transmitter that it says is highly efficient and reduces costs for operators of radio networks.

The liquid-cooled R&S THR9 high-power FM transmitter can cut energy costs by as much as 50 percent and reduces maintenance and rental costs over the lifecycle of the transmitter, the company says.

It provides output power from 5 kW to 40 kW and is digital-ready, making it equipped for future needs because it supports FM and digital standards in VHF Band II such as HD Radio.

Rohde & Schwarz says that network operators will benefit from the MultiTX concept, which involves integrating multiple transmitters into a single rack. In combination with the liquid-cooling system, this helps reduce the amount of space required. This makes it possible to accommodate four 10 kW transmitters in a rack and is suitable for transmitter sites requiring high output power in tight spaces.

The company highlights the transmitter's amplifier design and system design. For example, two RF power components — the power combiner and the RF rigid line — have minimum attenuation; this allows the transmitter system to achieve efficiency values of up to 75 percent in analog FM mode, it says.

The liquid cooling system reduces space requirements. MultiTX systems with liquid-cooling can achieve space savings up to 80 percent, the company says. The cooling system has two pump modules in active standby and a heat exchanger with two redundant fans.

The redundancy concept supports dual-drive configurations, N+1 configurations or a combination of the two. System configurations of up to 3+1 are possible in one space-saving R&S THR9 rack.

For information, contact Rohde & Schwarz in Maryland at (888) 837-8772 or visit www.rohde-schwarz.com.



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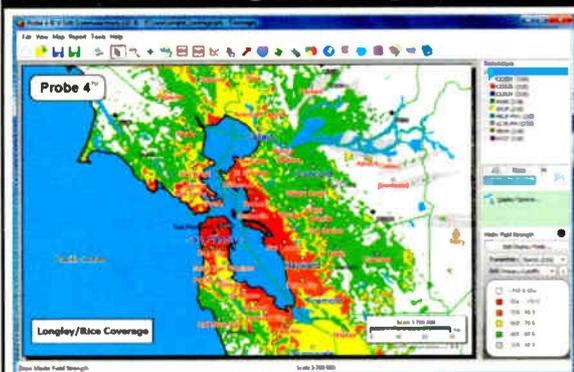
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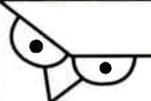
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Looking for KFRC signoff radio broadcast from 1930 Andy Potter, running time is 0:22 & also the KLX kitchen the program guest is Susanne Caygill, a discussion of women's affairs with a long promotion for Caygill's appearance at a local store. Anne Truax, Susanne Caygill, running time is 13:44. Ron, 925-284-5428 or email ronwtamm@yahoo.com.

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Collector wants to buy: old vintage pro gears, compressor/limiter, microphone, mixing consoles, amplifiers, mic preamps, speakers, turntables, EQ working or not, working transformers (UTC Western Electric), Fairchild, Western Electric, Langevin, RCA, Gates, Urei, Altec, Pultec, Collins. Cash - pick up 773-339-9035 or ilg821@aol.com.

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READER'S FORUM

THE TV PERSPECTIVE

I just read Scott Clifton's commentary on saving AM by expanding the FM band ("AM, You Want a Fix? I Got a Fix!," Feb. 12 issue).

I still don't know where radio industry folks are coming up with the notion that VHF Channels 5 and 6 are little used. At last count, there were more than 300 licensed stations and CPs on those channels. There is no reason to assume that they will be going anywhere else in the repacking.

If anything, Channels 5 and 6 will figure in more prominently as stations are moved. Plus, the FCC has clearly stated on their "How to Apply for a Radio or Television Broadcast Station" Web page that, "Expansion of the AM or FM radio bands is unlikely to occur in the near future." End of discussion.

Further, expanding the FM band has nothing to do with actually saving the AM band, but it does have everything to do with saving AM stations.

Here's a better approach: Sunset analog radio on both bands. Digital-only is the future. As it is, analog FM stations occupy far too much space per channel. I have no doubt that, should FM go through a digital repacking of its own, double, if not triple, the number of stations could exist on the current band of 88-107.9 MHz.

Keep in mind that when television went through its DTV transition, it lost 108 MHz of UHF spectrum. And yet no station was without a channel assignment. FM could easily stand a similar belt-tightening and more efficiently use its allocated spectrum.

As for AM, toss it to the dogs. Or perhaps a better approach is to allow an LPAM service and let first-time broadcast station entrants apply for licenses.

As television broadcasters, we are already in full battle mode against the telco, cable and wireless broadband raptors who are hungrily eyeing our spectrum. We certainly don't need radio coveting our spectrum as well.

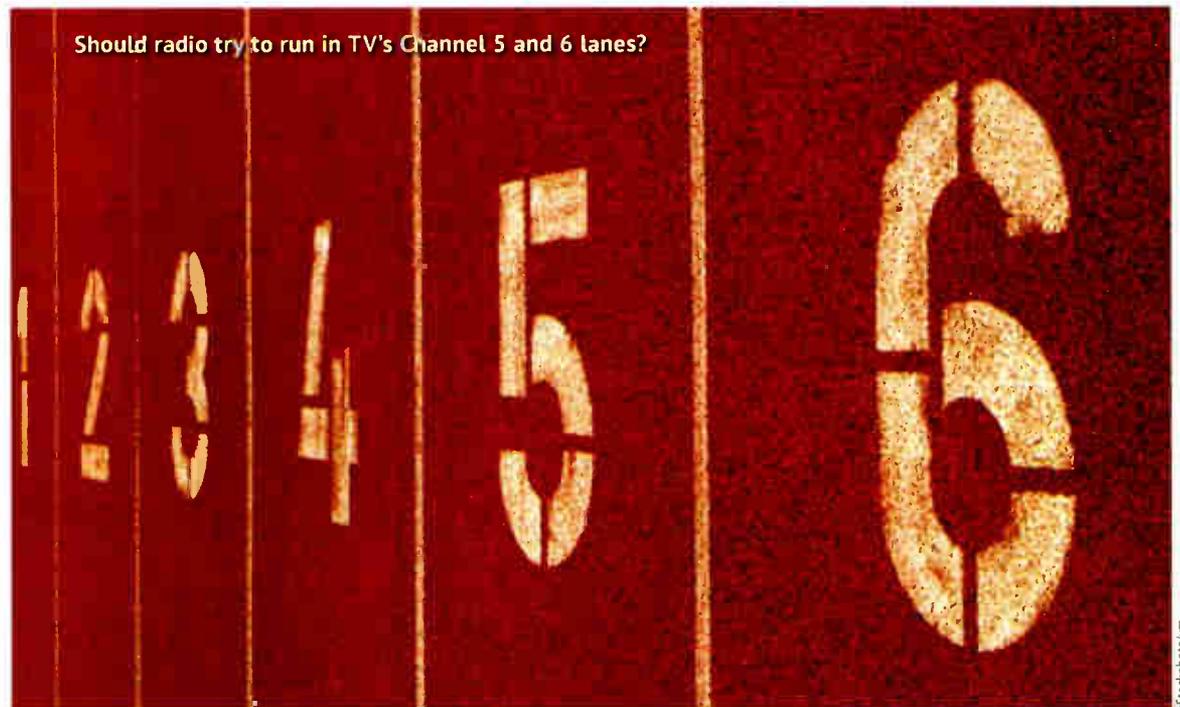
Daniel Brown
Owner/Manager
KCCF(TV)
Morro Bay, Calif.

WORKABLE SOLUTION

I find Fred Baumgartner's idea a provocative, serious and workable solution ("Commentary: Return MW to What It Was Born to Do," Feb. 1 issue).

I solidly support opening unused TV Channels 2 through 6 for FM radio broadcasting, not only for migrating AM stations, but for noncommercial operations of various kinds. Reconfiguring the MW band using AM or suppressed sideband (and why not include LW to the equation?) is a brilliant idea, *provided* there are strict limits on the number of super-power stations per customer — no more than one or two — else Clear Channel and their ilk will again monopolize it all.

Ron Myers
Founder and Senior Network Engineer
Radio 74/Radio 74 Internationale
St. Julien-en-Genève, France



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