



# RADIO WORLD

JUNE 7, 2017

The News Source for Radio Managers and Engineers

\$5.00

RADIOWORLD.COM

## INSIDE

### PRESERVATION

- Building NPR's corporate archive. — Page 4

### TECH TIPS



- Dress up that mic boom of yours. — Page 12

### CONNECTED CARS

- Our Road Warrior checks out radio/audio features on Honda's Civic and Ridgeline. — Page 14



## LeBlanc: Office Closures Were Difficult But Necessary

Former enforcement head, now in private practice, reflects on his time at the commission



Travis LeBlanc. During his time at the FCC, he said, he prioritized public safety. "This does not mean, however, that we ignore commercial complaints. But, first and foremost, we have to ensure that the public is protected."

## NEWSMAKER

BY RANDY J. STINE

WASHINGTON — Travis LeBlanc's return to private law practice brings a new perspective on Washington bureaucracy, following his stints with several federal government agencies.

The former chief of the FCC Enforcement Bureau has joined the law firm Boies Schiller Flexner as a partner. LeBlanc splits his time between offices in Washington and Palo Alto, Calif., advising clients on telecommunications, crisis response, privacy, cybersecurity and the regulation of "emerging and disruptive" technologies.

The former California prosecutor led FCC enforcement from 2014 until early this year. His résumé includes service under the Obama administration in the U.S. Justice Department's Office of Legal Counsel. New FCC Chairman Ajit Pai designated Michael Carowitz as acting chief of the Enforcement Bureau.

### FIELD OFFICE DEBATE

LeBlanc, 39, rose to notoriety in part because of huge fines issued during his time in FCC enforcement. Some observers, including the National Association of Broadcasters, believed several were

(continued on page 8)

## Strong Ties Bind Amateurs and Broadcasters

For many in our business, ham radio remains close to their hearts

BY JAMES CARELESS

Many people who work in broadcast radio got their start as amateur radio operators — hams — and remain active in the hobby.

At iHeartMedia alone, "we have 157 people on our ham radio list," said Charles Wooten, director of engineering and IT at iHeartMedia Panama City, Fla. An amateur radio operator himself since the age of 12 (call sign NF4A), Wooten maintains that list. "Ninety percent of them are engineers, but we also have DJs, program directors and operations directors." At least four of the company's regional engineering VPs are hams.

The fact that so many of iHeart's hams are engineers makes sense. Many of the skills that a ham learns to get on air are the same needed by a technical broadcast professional.

"Ohm's Law is Ohm's Law, whether you are using it to work on a home-built amateur radio transmitter or to keep a major-market radio station on air," said

(continued on page 3)

2000a  
 7000 5 AUGUST 11  
 00004512  
 318-1501  
 TOM HILLER  
 ASSISTANT CHIEF ENGINEER  
 0009383 18 RDWA 0009183 E1702  
 0009183 18 RDWA 0009183 E1702  
 056 3-DIGIT \*\*\*\*\*AUTO\*\*\*\*\*SCH 3-DIGIT 056



## Audio Console Meets App

A new way to manage audio at your station



Logitek  
HELIX

Learn more at logitekaudio.com

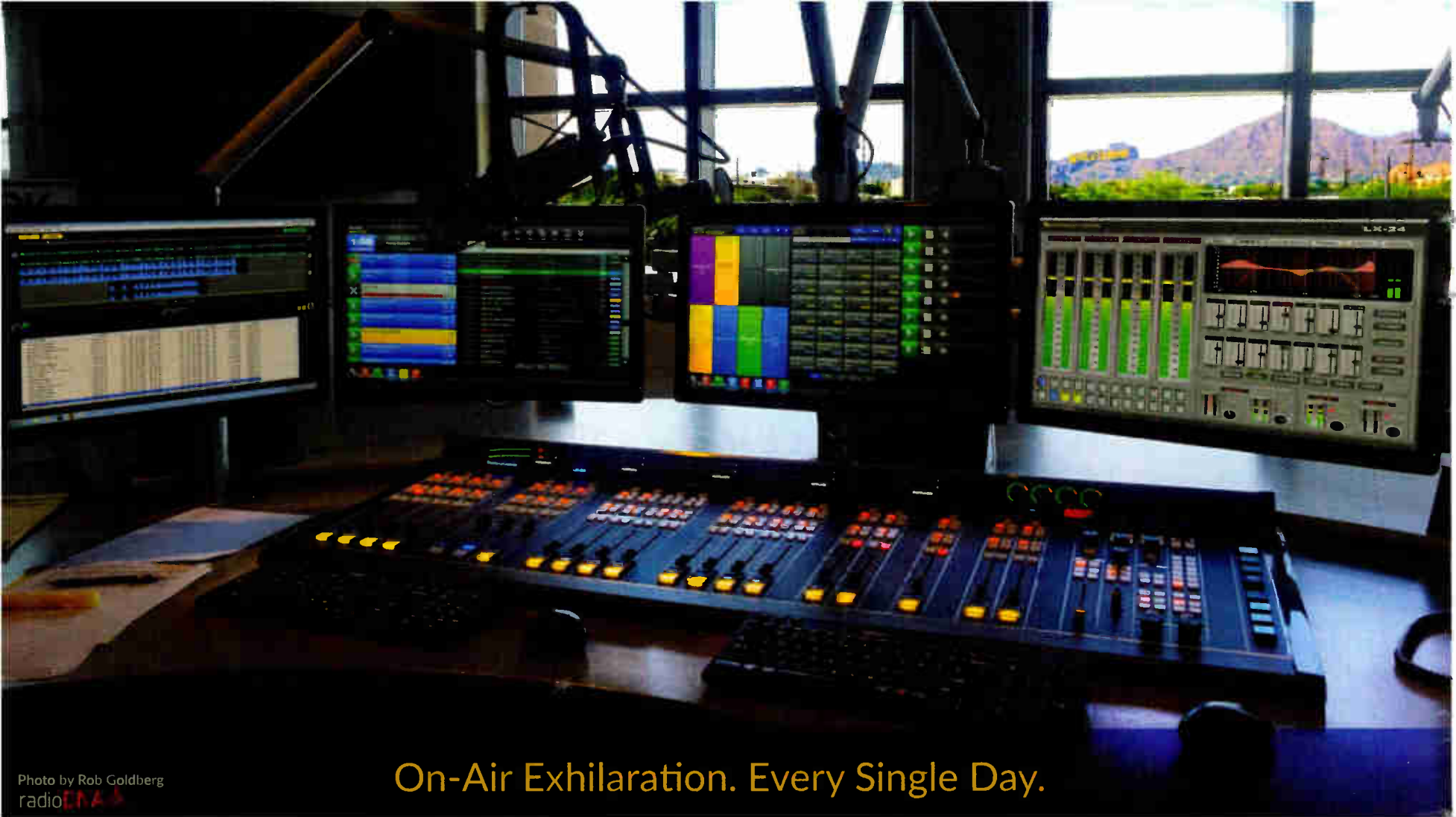


Photo by Rob Goldberg  
radio

## On-Air Exhilaration. Every Single Day.

What makes Wheatstone consoles best-of-class?

Breakthrough technology with award-winners like WheatNet-IP Intelligent Network & bus-minus. Unique design ingenuity. Precision production/starship-grade materials. Obsessive Wheatstone quality. FullTime support.\*

What does all that get YOU? Absolutely spoiled...



### LX-24 Control Surface

Exceptional console at every level, fully loaded and completely customizable.



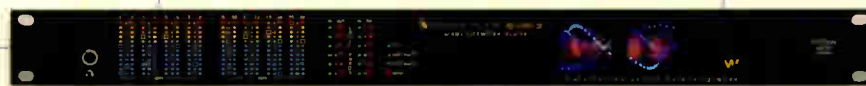
### L-8/L-12 Control Surfaces

Outstanding companion to the LX-24, perfectly sized for newsrooms, etc.



### IP-12/IP-16 Control Surfaces

Precisely designed and engineered for peak performance at mid-size stations.



### The IP Network is IN the BLADE...Like DNA

Each powerful BLADE-3 (point-of-use interface) contains the entire WheatNet-IP Intelligent Network to route I/O, access sources, add processing, mix to/from any device. Plus routable logic, silence sensing, gain control, automated mixing, discovery/control, and much more. Format agile: AES67, MADI, AES/EBU, TDM, Analog, and AoIP.



\*Includes on-site commissioning, in-factory total-system proof-of-performance testing, installation support, and real 24/7/365 service. We don't mess around.

Learn more: [wheatstone.com/consoles](http://wheatstone.com/consoles)



Designed and built in the USA. Phone +1-252-638-7000 | [wheatstone.com](http://wheatstone.com) | [sales@wheatstone.com](mailto:sales@wheatstone.com)

World Radio History

For address changes and subscription renewal, please visit [radioworld.com](http://radioworld.com) and click on the "Subscription" button. To submit letters or story proposals, to request writer's guidelines, or for other editorial matters, email the editor at [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com).

#### EDITORIAL STAFF

EDITOR IN CHIEF, U.S. Paul J. McLane  
GEAR & TECHNOLOGY EDITOR Brett Moss  
TECHNICAL ADVISER Thomas R. McGinley  
TECHNICAL EDITOR, RWEE W.C. "Cris" Alexander  
PRODUCTION EDITOR, RWEE Karen Lee  
CONTRIBUTING EDITOR Emily Reigart  
CONTRIBUTING EDITOR John Bisset  
WEB EDITOR Michael Balderston  
INTERNATIONAL EDITOR IN CHIEF Marguerite Clark

#### EDITORIAL CONTRIBUTORS

W.C. Alexander, Susan Ashworth, James Careless, Harry Cole, Ken Deutsch, Mark Durenberger, Charles Fitch, Christopher Friesen, Harold Hallikainen, Donna Halper, Craig Johnston, Alan Jurison, Paul Kaminski, John Kean, Peter King, Larry Langford, Mark Lapidus, Daniel Mansergh, John Merli, Jim Peck, Mark Persons, Stephen M. Poole, Carl Lindemann, James O'Neal, Tom Osenkowsky, Rich Rarey, John Schneider, Randy Stone, Richard Strickland, James G. Withers, Tom Vernon

#### ADMINISTRATION & PRODUCTION

PUBLISHER John Casey  
EDITORIAL DIRECTOR Paul J. McLane  
PRODUCTION MANAGER Karen Lee  
ADVERTISING COORDINATOR Caroline Freeland

#### AUDIENCE DEVELOPMENT

VICE PRESIDENT | CORPORATE DIRECTOR OF AUDIENCE DEVELOPMENT Meg Estevez  
CIRCULATION MANAGER Kwentin Keenan  
ASSOCIATE CIRCULATION MANAGER 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  
WEBSITE: [www.myRWNews.com](http://www.myRWNews.com)  
EMAIL: [newbay@computerfulfillment.com](mailto:newbay@computerfulfillment.com)

#### CORPORATE

NewBay Media LLC  
PRESIDENT AND CEO Steve Palm  
CHIEF FINANCIAL OFFICER Paul Mastrorandi  
CONTROLLER Rick Ng  
VICE PRESIDENT OF DIGITAL MEDIA Robert Ames

#### VIDEO/BROADCAST GROUP

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

#### ADVERTISING SALES REPRESENTATIVES

US REGIONAL & CANADA: John Casey, [jcasey@nbmedia.com](mailto:jcasey@nbmedia.com)  
T: 212-378-0400, ext. 512 | F: 330-247-1288  
US REGIONAL: Michele Inderrieden, [minderrieden@nbmedia.com](mailto:minderrieden@nbmedia.com)  
T: 212-378-0400, ext. 523 | F: 301-234-6303  
EUROPE, AFRICA & MIDDLE EAST:  
Raffaella Calabrese, [rcalabrese@nbmedia.com](mailto:rcalabrese@nbmedia.com)  
T: +39-320-891-1938 | F: +39-02-700-436-999  
LATIN AMERICA: Susana Saibene, [susana.saibene@gmail.com](mailto:susana.saibene@gmail.com)  
T: +34-607-31-40-71  
JAPAN: Eiji Yoshikawa, [callers@world.odn.ne.jp](mailto:callers@world.odn.ne.jp)  
T: +81-3-3327-5759 | F: +81-3-3322-7933  
ASIA-PACIFIC: Wengong Wang, [wwg@imaschina.com](mailto:wwg@imaschina.com)  
T: +86-755-83862930/40/50 | F: +86-755-83862920  
CLASSIFIEDS: Michele Inderrieden, [minderrieden@nbmedia.com](mailto:minderrieden@nbmedia.com)  
T: 212-378-0400, ext. 523 | F: 301-234-6303

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](mailto:NewBay@wrightsmedia.com)  
List Rental: 914-368-1024, [iganis@meritdirect.com](mailto:iganis@meritdirect.com)

Globe graphic ©iStockphoto.com / Edward Grajeda

Copyright 2017 by NewBay Media, LLC.  
All rights reserved.  
Printed in the USA



## HAMS IN RADIO

(continued from page 1)

Walter Palmer, W4ALT and director of broadcast operations, engineering and programming at Newsradio WGMD 92.7 FM in Rehoboth Beach, Del.

"So it makes sense that someone who loved ham as a teenager would be drawn to radio engineering as a career. It was certainly true for me."

### ONE LOVE DROVE ANOTHER

There's a good reason so many professional radio engineers started as ham radio operators: They were exposed to the hobby long before needing to find a job. This was the case for Wooten.

"When I was 11, I was curious as to what was causing the TV interference to my Saturday morning cartoons," he recalled. "Once I figured out that it was a neighbor's ham radio rig and got to see his shack for myself, I caught the bug right there and studied to get my ham license."

In turn, the RF propagation and electrical knowledge Wooten gained as a teenaged ham — often building his own equipment for very little money — gave him the insight and interest to seek out radio engineering as a career.

The same is true for Brad Humphries, AE4VJ and market director of engineering for the Beasley Media Group in Charlotte, N.C.

"I've been an electronic nerd most of my life, and a ham since I was 14," said Humphries. "A summer job at a local amusement park led me into fixing up their handheld radio system using my ham knowledge, which eventually led me into broadcasting."

Steve Dove, W3EEE and minister of algorithms for Wheatstone, said via email, "I got my license, G3YDV, as soon as it was legally possible at 14; for a brief while, I think I was the youngest ham in the [UK]." His entry into broadcasting? "I was a young, restless and somewhat rebellious anti-establishment teenager. The '60s ship-borne pirate radio station era (Radio London, Radio Caroline) was drawing to a close, and hordes of little land-based pirates filled the gap; including me."

As part of that merry band, Dove and his fellow pirates built home-brew tube transmitters up to 100 watts, and then the consoles to produce programming.

"In order to pay the subsequent fine when we were caught, we started a mobile disco using the studio gear and an equally home-brew PA, and the console drew the attention of a 'proper' console manufacturer, Alice," Dove said. "Commercial broadcasting started late in the UK [early '70s] and the timing was perfect; of the first 40 stations, we had consoles in 19 of them." He subsequently did console work while



When emergencies strike, hams such as these from the Richmond Amateur Radio Club in British Columbia, Canada, volunteer their services.

touring with AC/DC, Jethro Tull and Yes in his pre-Wheatstone days.

On the flip side, Nautel Regional Sales Manager Asia/Pacific Chuck Kelly, VE1MDO, got into amateur radio while working as a radio engineer.

"My father and grandfather were hams, so you could say that I grew up with the hobby," Kelly said. "But it wasn't until I was working in radio that I saw how having an amateur radio license and equipment could help my job; especially during emergencies where regular communications were down."

In the 1970s, Scott Westerman, W9WSW, was working in broadcast radio at Michigan State University, where he is now associate vice president for alumni relations. That was when he learned how useful ham radio operators could be during emergencies, providing lifeline communications for first responders and the public alike.

"Today, I am a licensed ham who belongs to the SKYWARN tornado spotter's network," Westerman said. "We keep an eye out for signs of pre-tornado swirling clouds from various locations, and radio that information into the National Weather Service during severe weather."

### MACGYVERISH GIFT TO RADIO ENGINEERS

There is no doubt that ham radio has inspired many of its youngest practitioners with a love of radio transmission and technology, a love that guided them to professional careers in radio broadcasting. The industry is better off for it.

But amateur radio has done more for radio than provide it with a pool of talented, motivated employees. It has also given these people an intellectual grounding in the basics of radio engineering, combined with a MacGyverish ability to make things work: no matter what.



Steve Dove. "I got my license as soon as it was legally possible at 14."

"I don't think that there is anyone who understands radio science and technology at such a profound a level as hams," said Chuck Kelly. "They've got such a deep grasp of radio that they can dive into and fix equipment problems at the most basic level; down to individual resistors, capacitors and diodes."

This profound knowledge and know-how is a function of equipment-buying poverty; particularly among older hams when they were teenagers.

"When I was starting out as a kid in amateur radio, I didn't have a lot of money, so I learned to make do with what I had at hand," said Wooten. "This teaches you creative engineering and trouble-shooting skills that really pay off at a radio station when things go wrong; especially during an emergency when spare parts aren't readily available."

A case in point: During Hurricane Katrina in 2005, Wooten used his ham radio skills to keep the Clear Channel cluster of five radio stations in Biloxi, Miss., on the air.

"Without the ability to improvise and

(continued on page 5)

# Establishing a Corporate Archive at NPR

Research, Archives & Data Strategy team took advantage of the organization's move in 2013

BY JANE GILVIN

*The author is a data and search strategist at NPR.*

NPR has always valued archives and research. We have an expertly organized audio archive that stretches back to the beginning of "All Things Considered" in 1971.

The early tapes reside at University of Maryland's Mass Media & Culture collection and the Library of Congress. CDs of later broadcasts live at NPR's headquarters in Washington, and digital files live on NPR-maintained servers. The library, the precursor to the current Research, Archives & Data Strategy team, was established very early in NPR's history.

NPR had, until recently, never established an in-house corporate archive of historical items. If items were saved, they were saved by the creators or the people who were last in possession of them. Some individuals had donated items to UMD, but NPR's formal rela-



Jane Gilvin

Photo by Wangyu Zhang/NPR

tionship to paper archives did not start until roughly 1990. It's unknown how many items were lost as employees left or as the organization moved buildings.

In 2012, NPR was planning a move to a new building. The RAD team spent years planning how to move the existing audio archive to the new building and to UMD. Management began to ask

employees to clean out their work areas and purge documents before moving. The office of general counsel developed a new document retention policy, with fairly strict guidelines for what should be thrown out, and its first drafts did not include dispensation for historical items and papers.

## OPPORTUNITY ARISES

As a team of archivists, data strategists and information managers, the RAD team felt this was an opportunity. Many items that would help document NPR's unique position in the media could be saved, organized and preserved, instead of thrown out.

The RAD team, after reaching out and lobbying the OGC, felt we were mandated to create the historical archive. The archive would establish an internal repository for items that illustrate what NPR is, what NPR has done and who makes up NPR. Because of our relationship with UMD, we hoped to be able to work with them to preserve many of these items, but we knew items that were highly sensitive, confidential, still in use or of high value would need a home in the new building.

We certainly had several challenges:

## FROM THE EDITOR



*We continue our special series about preserving the history of radio, in conjunction with the Library of Congress' Radio Preservation Task Force (<http://radiopreservation.org>).*

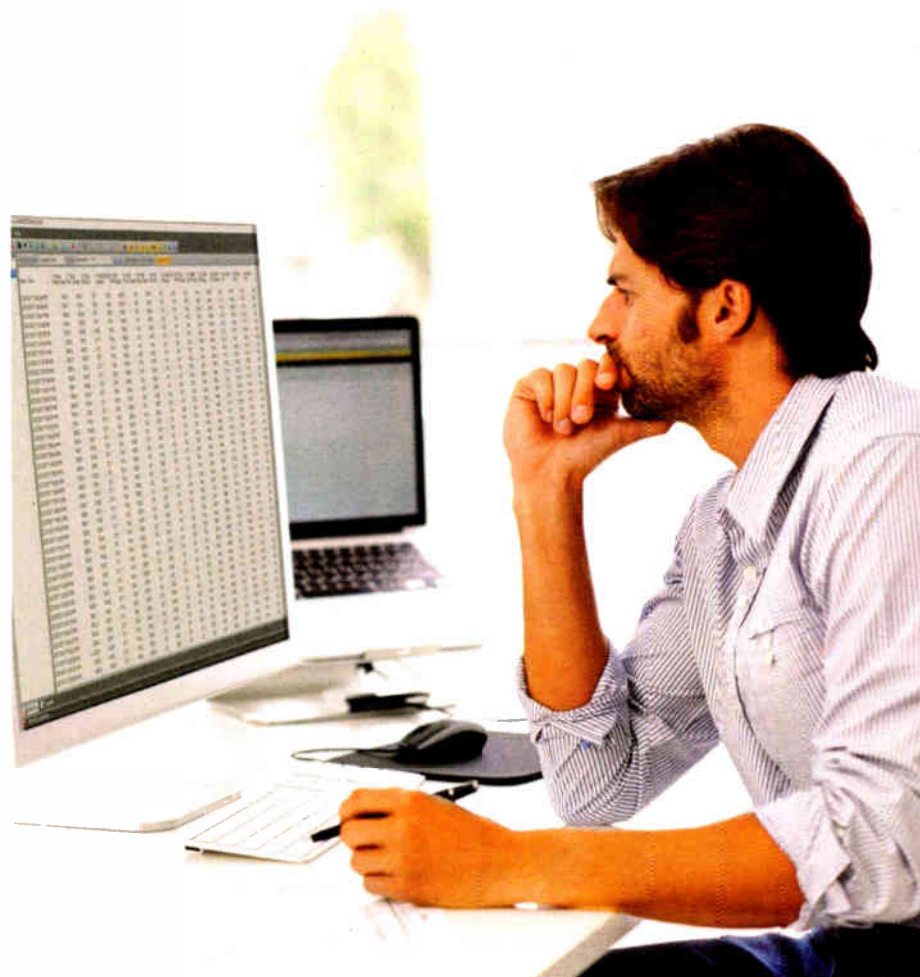
how to educate our colleagues, racing against the move timeline, securing space, physically collecting, preserving and moving items.

First, we had to educate our colleagues on what constitutes an archival record. We used NARA guidelines ([www.archives.gov/about/info/whats-a-record.html](http://www.archives.gov/about/info/whats-a-record.html)) as a starting point to explain what we were looking to save.

We discussed what is of value both historically and financially. Did an item tell the unique story of NPR? What everyday item might be considered valuable in the future?

No one department in an organization of NPR's size could accomplish a project of this size by itself. For help, we looked for allies within the organization who supported our mission, or

*(continued on page 6)*



## Capture the Moment!

Keep a close watch on critical parameters – without being there. Concerned about fluctuations in transmitter power, AC line voltage, STL signal strength? Want to know the ambient temperature when the auxiliary AC kicks in? Capture the moment with the new Captures feature on ARC Plus Touch and SL.

With Captures you can sample channel readings and alarm states at a programmable rate or trigger on events of interest. Store your captures right on the ARC Plus with no need for a network connection. Then download online anytime, anywhere to any number of PCs.

Flexible AutoPilot® reporting options allow you to observe trends over extended periods or drill-down for detailed analysis of critical time intervals.

Don't let the moment slip away! Call now to order a new ARC Plus with Captures, or to add Captures to your existing version 5 ARC Plus Touch or SL.



**BURK**  
TECHNOLOGY

[www.burk.com](http://www.burk.com) | [sales@burk.com](mailto:sales@burk.com) | 978-486-0086 x700

**THIS ISSUE**

JUNE 7, 2017

**NEWS**

LeBlanc: Office Closures Were Difficult But Necessary ..... 1

Strong Ties Bind Amateurs and Broadcasters ..... 1

Establishing a Corporate Archive at NPR ..... 4

In Case You Missed It ..... 6

Dayton Hamvention Tries Out New Venue ..... 10



10



12

Photo by Steve Shumaker

**FEATURES**

Get Rid of Your Boom Boing Boing ... 12

Look Ma — (Almost) No Knobs! ... 14

Community Involvement Never Gets Old. .... 15

**BUYER'S GUIDE**

Mt. Rushmore Scales New Heights With Report-IT ..... 20

AEQ's Virtual Capitol App Saved My Broadcast ..... 22

Tech Updates ..... 22, 24, 26

Burk Helps Full Power in New England ..... 26



20

**OPINION**

Suggestions to Improve EAS, Advanced Alerting ..... 29

Reader's Forum ..... 30

**HAMS IN RADIO**

(continued from page 3)

work with what we had, we would have gone dark when people most needed us," he said. Using his ham skills, Wooten and his team nursed a generator with a water leak along for a few days, keeping the five stations on air until a new one could be brought in. They also used a portable satellite dish to create a two-way satellite link.

"We were the only stations in the Biloxi area with telephone service," Wooten recalled. "The satellite channel provided T-1 [1.544 Mbps] bandwidth, part of which was used for a couple of Cisco IP phones connected back to the corporate offices in Texas. The staff could call anywhere on these phones."

All told, it was a fix MacGyver would have been proud of. "Ham radio is all about using what you've got laying around, when you have to do something," said Brad Humphries. "That is a good skill to have, because in the middle of the night when you have a problem at the radio station, you're just going to have what you've got at hand to do something with."

**A SOURCE OF NEW BLOOD FOR RADIO?**

It is widely held in the radio industry that engineering talent is scarce and becoming scarcer as engineers retire. At the same time, the upcoming generation of technically-minded youth is attracted to information technology rather than RF transmission and radio broadcasting. This begs a question: Could young people who are signing up as hams serve as an engineering talent pool for the radio broadcasting industry?

After all, "A repeater used for AM broadcasting is identical to one used by amateur radio operators," said Dana Puopolo, a licensed ham (K1PUW) for 43 years and chief engineer of WGLS(FM)/Rowan University Radio in Glassboro, N.J.

"My ham walkie-talkie was type-accepted to work both for amateur and commercial radio usage, while the antennas used



Photos courtesy Charles Wooten

Wooten's engineering vehicle in Biloxi, Miss., the day after Hurricane Katrina hit the Gulf Coast in 2005.



iHeartMedia's Charles Wooten, NF4A, left, and Tad Williamson Jr., WF4W, are shown at C82DX, a 2013 amateur radio event in Xai Xai, Mozambique.

by AM radio and the 160 meter ham band are basically identical, except for their configurations. So yes, there is enough crossover between ham radio and commercial radio to justify training hams as professional engineers."

This said, attracting young hams to radio broadcasting would require some changes in the radio industry.

"iHeartMedia pays our engineers well and treats them fairly, but there are many stations that don't," said Wooten. "Without better working conditions, talented young hams are likely to go into other fields of

engineering; even though they love radio and we could use them here."

Whatever happens, one thing is clear: The strong bonds between amateur radio and commercial radio continue to benefit the broadcasting industry, and inspire a love of the medium not found in many technical industries.

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

ON TIME

All the time.

Trust the name broadcasters have counted on for precision master clocks and timing-related products for over 40 years—ESE. Our products accurately synchronize broadcast operations using a choice of GPS, NTP, Modem, Crystal or line frequency for affordable, reliable, perfect time—all the time.

Visit [www.esweb.com](http://www.esweb.com) to witness world-class timing systems designed for easy installation, set-up and operation.

142 Sierra Street  
El Segundo, CA 90245  
(310) 322-2136

[www.esweb.com](http://www.esweb.com)

## ARCHIVES

(continued from page 4)

who had already been keeping their own archives.

We found allies in unexpected places. People entrusted us with confidential or sensitive information they had previously kept secret. We moved an entire 24-box collection from the engineering department that described its history, function and importance. Our allies also donated a 14-box collection of photos, including copies of one of the photos used to celebrate Carl Kasell's last show with "Wait Wait...Don't Tell Me!" (<https://tinyurl.com/lx75wk8>).

**Though NPR might be a unique case study, its dedication and maintenance of historical archives should not be unique in the broadcasting world.**

As things were donated, we reached out to UMD to determine their capacity to receive items, including the NPR sign from the side of the building. We organized items into collections from departments or individuals, given the time and physical constraints we faced.

After everyone had moved, RAD team members were some of the last people in the building, where we went floor to floor retrieving archival items. We found signs, ephemera, show memorabilia, paperwork, building plans, photos and much more.

Not only did we receive physical items during our collection period, we also received "born digital" items that we had to accommodate. We grappled with digital storage space, naming conventions and how to capture helpful and accurate metadata that would help us describe and retrieve the items in the future.

As we physically gathered our inventory, we also had to create policies and guidelines to govern the archive. We deepened and expanded both our col-



Archival material at NPR.

lection at UMD and our relationship with staff there. We have used interns and volunteers to inventory our collections — so far, two have been fully inventoried with several more partially inventoried.

If your institution does not have a historical archive but you are considering establishing one, here are tips:

- Identify who has an institutional memory.
- Identify who is an ally within the organization, recognizing they might be in unexpected departments.
- Begin to recognize what is of historical value and what it would take to save it.
- Reach out to archivists and historians at university archives, public libraries, historical societies and of course, the NPR Archives for guidance.

The NPR Historical Archive was born out of a recognized need to document NPR's unique journey as a media company. It came about because of individual and institutional relationships at a time of great change. Though NPR might be a unique case study, its dedication and maintenance of historical archives should not be unique in the broadcasting world. The RAD team owes many thanks to those who helped us through the process.

To learn more about the RAD team, find us on Twitter and Instagram as [@npr\\_rad](#) and [@nprchives](#).

## IN CASE YOU MISSED IT

*Radio World and its NewsBytes e-newsletter complement one another; the magazine brings you news analysis, features and deep-dive coverage 26 times a year while the daily newsletter provides a more immediate snapshot of one day's regulatory and technology headlines. To receive the free newsletter, click the Subscribe tab at radioworld.com, then Newsletters.*

*Here's a sampling of what NewsBytes readers learned about in recent weeks:*

### ► Main Studio Debate Gets Heated

Comments began flowing in on the FCC's proposal to do away with the longstanding stricture. Terms used include "archaic," "counterproductive" and "outdated" but also "essential," "necessarily" and "I want my station to stay local."

### ► Patent Troll Decision Seen as Victory in Radio

A Supreme Court ruling narrowed the rules for where so-called patent trolls can file lawsuits and could make it more difficult for plaintiffs to prove patent infringement. It's an issue that has played out in radio technology circles as well as the society at large.

### ► AES Goes to Cuba

It's the first international event held by the Audio



Engineering Society in that country. Said one organizer of the June conference, "The rich musical pulse of the island will provide an excellent sonic backdrop for this milestone event."

### ► ITU Supports Activating FM Chips in Smartphones

The North American Broadcasters Association said it won international support for the activation of FM radio receivers in smartphones. NABA submitted an "Opinion" on the issue that was adopted by the International Telecommunication Union in March.

# ENGAGING COMMUNITY

## ACCESS 2USB

Ultra-portable IP audio codec designed for usability

Sun Prairie Media Center's mission is to create relevant community programming and empower Sun Prairie, WI locals to create their own content. ACCESS 2USB makes their remote broadcasts easy - not just for the professional engineers, but for their community producers too.

**"When we were in the process of raising money to build the station, we learned it was a lot more fun to actually be outside and engaged with our listeners. It makes the station feel like a real thing, rather than a vague idea that people don't really understand."**

Jeff Robbins, Sun Prairie Media Center



Contact Us Today to Learn More  
1-800-237-1776 | [info@comrex.com](mailto:info@comrex.com)



**COMREX**

## LEBLANC

(continued from page 1)

excessive, including a \$325,000 indecency penalty against a Virginia television station for airing a brief pornographic image during a newscast in 2012. LeBlanc also levied multi-million dollar fines against AT&T, T-Mobile and other telecom giants for a bevy of alleged misdeeds.

He also oversaw implementation of the commission's controversial cost-saving modernization plan created by former Chairman Thomas Wheeler, a plan that resulted in the closure of offices and cuts in the number of field agents.

The FCC closed offices in Anchorage; Buffalo, N.Y.; Detroit; Houston; Kansas City, Mo.; Norfolk, Va.; Philadelphia; San Diego, Calif.; Seattle; Tampa, Fla.; and San Juan, Puerto Rico. It has 14 regional field offices remaining, and 34 field agents left from a staff of more than 60 prior to the changes.

Some observers believe these moves will hurt the agency's ability to mitigate interference and track down illegal radio operators, otherwise known as pirates.

"We faced budget problems right away when I took over enforcement," LeBlanc told Radio World. "The FCC budget had been frozen, and being the largest bureau, we knew we were going to be hit the hardest, particularly when you have 25 field offices open around the country. We knew we had to reorganize. It was an extremely tough job. Controversial, yes, but a very important job to get done."

LeBlanc understands that his FCC legacy will be tied to how well the modernization plan works over the long term. He contends the commission had an excess of office space for the number of field agents and was in need of reorganization.

"We had some cases of a single person working in several thousand square feet of office space. We had an office with four people and three of them were managers. We had to find a way to integrate the field offices into the work of the commission so that we could tailor our enforcement team to address the issues that matter most to the commission today. It was hard to do that, but we got it through," he said.

Wheeler hired a consultant to begin the department's review process, and ultimately, many of the consultant's recommendations were accepted, LeBlanc said. Those recommendations were made to LeBlanc and Jon Wilkins, who was the FCC managing director; they forwarded the modernization plan with their approval to the full commission to accept.

### ANTI-PIRACY EFFORTS

LeBlanc said he would have liked to have remained with the Enforcement Bureau long enough "to make sure the

promises made are actually delivered."

He said he still believes FCC efforts to hunt radio pirates will not be negatively impacted by the department cuts.

"As a general matter, it should not impair the Enforcement Bureau's ability to do its work. Field agents will still have time to pursue interference complaints, even though the regional approach for field officers will require them to travel more and cover a larger territory.

"We also created the concept of the tiger teams as a backstop, in case we got the plan wrong and we didn't have enough people to respond to emergencies. These are quick-response teams based on both east and west coast. If it turns out there are not enough field agents left, the FCC can easily hire more."

**You have to be smarter [about pirates]. Cut the red tape. Increase fines. And there really should be a push for states to criminalize illegal broadcasting.**

— Travis LeBlanc

The so-called "tiger teams" are based in Columbia, Md., and Denver. LeBlanc said when he left the employ of the FCC, the teams were at least partially staffed.

"Pirates are mainly a problem in three areas: south Florida, New York and Boston. The FCC has it under control in other parts of the country. The problem is the regime, or the enforcement process that has been set up to take enforcement actions against pirates is not especially productive and not attuned to handle pirates very well," LeBlanc said.

For example, he said after the initial citation and a notice of apparent liability, the maximum NAL the FCC can fine a pirate is \$25,000; it then typically goes to a forfeiture order. "Then if after the forfeiture order the pirate refuses to pay, the FCC goes to court."

Critics of the process say many pirates know the government may not pursue the matter past that point.

"This is a complex matter that takes a very long time for only \$25,000," he acknowledged. "And these are folks who can't afford it. It's really a disincentive. It doesn't work when [illegal broadcasters] know they can't pay the money, and no one will be able to get it out of them."

The Enforcement Bureau typically has a very hard time persuading the Justice Department to take on a case to recover such an amount when DOJ also is working on multi-million-dollar cases, he said.

"The Justice Department have to justify their expenses the same way everyone else does. It sometimes costs more to pursue the fine than the fine itself."

Thus LeBlanc said fines against pirates are rarely collected; also, seizure of the pirate's equipment can have limited impact, since transmission devices are much cheaper than they used to be. He describes a typical pirate setup as a laptop and small transmitter.

There are some solutions, LeBlanc said. He believes there needs to be legislative changes to speed up FCC procedures for a seizure and to increase fines.

"We started the conversation on how to do it. You have to be smarter. Cut the red tape. Increase fines. And there really should be a push for states to criminal-

ize illegal broadcasting. It would help to have the states engage the pirates and have them face real jail time," he said.

mission's work. "This does not mean, however, that we ignore commercial complaints. But, first and foremost, we have to ensure that the public is protected."

LeBlanc said he found his FCC work to be rewarding and interactions with broadcasters enlightening. One "best practice" tip to radio broadcasters is to treat Emergency Alert System with respect: "[EAS] is not a joke. Do not treat it as such. And train your on-air personalities on FCC rules."

### LESS ENFORCEMENT?

The most memorable incident LeBlanc can recall while at the helm of enforcement is a case in which FCC field agents engaged a separatist sect in Tennessee that refused to recognize the existence of the United States government. "So our field agents showed up with county sheriff's deputies. Whatever it takes to get the job done."

Most observers expect the Trump administration to bring a shift in FCC's enforcement policies, a result of the Republican majority's expressed interest in updating and reducing regulation. Commissioner Michael O'Rielly in a blog post in March reinforced those beliefs with a post that could be seen as critical of LeBlanc's tenure, writing: "Our enforcement staff should move away from headline grabbing and eye-popping penalties that will never be collected. Let's refocus our attention on our statutory responsibilities ..."

LeBlanc says he senses a shift in priorities and even a lack of enforcement under new Chairman Pai.

"Enforcement has not been a priority since the new chairman took over. The number of enforcement actions has gone down dramatically. The number of settlements has gone down even more. The handful or so of enforcement actions they have taken, a good portion of them are pirate radio or pirate TV. Some of them were investigated while I was still at the FCC. One would have to wonder what took them so long to take action," LeBlanc said. (Commission officials did not reply to a request for comment.)

He also expects to see more enforcement action "shifting to the state level" with an increase in "state's attorney general investigations."

LeBlanc doesn't expect to do lobbying work in his new position at Boies Schiller Flexner; he plans to work with clients, including telecommunication firms, that are being investigated in compliance matters and facing possible enforcement actions or litigation.

"I really feel the call to help innovators, like tech companies, as they find themselves ensnared in government or regulatory investigations."

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

### MORE RIGOR

In reviewing his time at the FCC, LeBlanc said the challenges of running the bureau evolved over the course of his tenure.

"I was really the first Enforcement Bureau chief to come from a prosecutorial background. Therefore, I wanted to bring some of the techniques, processes and rigor from more traditional law enforcement to FCC investigations. That meant ensuring that we had leadership in the bureau that could offer bring in that type of experience.

"I thought it was important to bring in personnel from a more traditional law enforcement background," he continued. "Not at the exclusion of others, but rather to balance those with great experience in communications law with those experienced in applying law to facts that could end up in court one day. I was fairly new to the communications space, so it took some time to put in these touches."

The Yale law school graduate defended the agency against critics who claim it goes after "low-hanging fruit" like EAS and tower fencing violations while ignoring stations that might be overpowered.

"As a government agency, we must and do prioritize public safety complaints," he said, still slipping into the present tense while speaking of the com-



# More than just an IP Codec...

**“ViA’s touch screen is a game changer for us. It allows you to access what you want quickly and this is particularly useful when connecting over Wi-Fi.”**

- John Herath, Director of Operations, Farm Journal Radio

AgriTalk is a live talk radio program focusing on agriculture and rural America which airs on 98 affiliate stations throughout the Midwest. The show is on the road for over 100 days a year and they rely on ViA for remotes over Wi-Fi, LAN and cellular connections.

- Full duplex stereo program plus separate full duplex IFB communications
- 5 input digital mixer and configurable matrix router (3 x XLR inputs, plus stereo analog line in, or stereo digital in/out)
- Built-in dual band Wi-Fi with integrated web-browser
- Dual LAN & USB ports & optional ISDN or POTS modules
- Schedule, dial, manage & hangup connections automatically
- Adjustable input EQ & compression, plus AGC limiting
- 6.5 hours of power with one internal battery

Join the #ViARevolution

**((( ViA )))**

**Tieline**   
The Codec Company

317-845-8000 | sales@tieline.com | tieline.com

World Radio History

# Dayton Hamvention Tries Out New Venue

World's biggest amateur radio event moves to Xenia

## AMATEUR RADIO

BY JAMES E. O'NEAL

If you're a radio amateur and getting to the world's largest assembly of hamfest held in Dayton, Ohio, happens to be on your bucket list; you blew it! It's not going to happen now! That big, big yearly gathering of hams in Dayton, Ohio — an annual event there for more than half a century — ceased to exist there with the 2016 show.

That's the bad news.

The good news is that the three-day event "Dayton Hamvention" is still very much alive and well — but you'll have to look for it in its new home at the Greene County Fair Grounds and Exposition Center, located in Xenia, Ohio, about 15 miles east and south of Dayton.

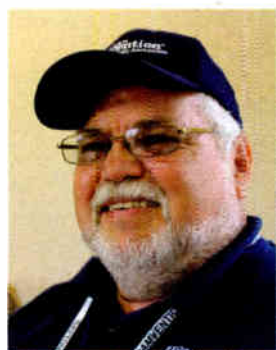
This year's event — the 67th such gathering of the amateur radio faithful — officially kicked off Friday morning May 19 amid some amount of nervousness and trepidation (we all know it's dangerous to monkey with success; look at what happened when the Coca-Cola folks introduced New Coke); however, according to the Hamvention's media chairman, Henry Ruminski, there was simply no choice for the Dayton Amateur Radio Club, which sponsors the event.

### YOU CAN'T GO HOME AGAIN

"Hara Arena is gone," said Ruminski. "Family cousins had to decide over the future of the arena, and they couldn't reach an amicable agreement, so they decided to shut it down and sell the property."

Ruminski said that a lot of club effort had gone into selecting a new site for the ham radio gathering, which goes back to 1952.

"It was a lot of work," he said. "Some 500 club volunteers spent untold thousands of hours searching out a new venue and then doing the planning work



Henry Ruminski

needed to ensure success at the new location."

Despite all of the planning, there were still some of the glitches that might be expected in such a large-scale move.

One of these was building space for commercial vendors, as buildings at the fairgrounds site provided significantly less square footage than the Hara

complex.

"We gained overall size," said Ruminski. "The fairgrounds are much larger in general terms than Hara Arena was. We lost some paved parking lot ... [and] obviously, the buildings here aren't as large, so we have fewer square



Vintage broadcast gear being offered for sale is usually a common sight at Hamvention flea markets; however, there wasn't that much this time. This RCA-branded remote broadcast console/turntable package was among the more visible pieces.

feet under building roofs. That's why you see some of the large tents we have set up here. The reduction is probably 20 or 30 percent less, but that's only a rough guess.

"We were able to accommodate everyone who applied for space in a reasonable time frame. We were getting requests two days before Hamvention who wanted spaces, and we had some people who applied earlier that we were not able to get in.

Ruminski noted that all of the "old time" or regular commercial exhibitors were accommodated and said that the flea market vendors typically got the space they requested. However, some latecomers could not be accommodated at the new venue.

"Unfortunately, one of the things we're going to have to look at next year is increasing the flea market space so we have more spots available, and

maybe have some additional tents for the inside exhibits. Space wasn't the greatest issue, but it was an issue.

"We've had some really great feedback. People like the atmosphere. They like the number of additional food vendors. So, there are a number of very positive comments we've received."

### RUSH HOUR TRAFFIC JAM

"The negative — and we predicted it — is traffic flow," said Ruminski.

"We knew that if everybody that wanted to come here came at the same time we would have a big problem. We put out directives, but a lot of people were upset."

And opening day vehicular traffic flow did



Steve Thomas

A first-timer at the show, Steve Thomas, MIACB, and a staffer at the Radio Society of Great Britain booth, was also upbeat about the venue. "I think it's in an excellent place," said Thomas. "Yesterday, very warm, very different than today. I put the shorts on, and now it's cooled off. It's been great for us, though. It's really important to connect with our international members in the U.S. People love our books, but [the Hamvention] is also a great way to talk to people and engage with our members over here in the States. We would absolutely do it again."

For the past several years, Hamvention attendance has been in the 25,000 range, with radio amateurs journeying from all over the world to attend. According to Ruminski, despite the uncertainty associated with the move, final attendance numbers for the 2017 event looked as if they would exceed those recorded at the final Hara Arena gathering.

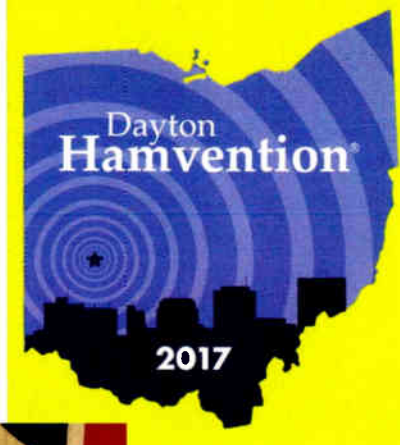
suffer. Primary entry to the fairgrounds is via four gates situated along the same two-lane road, which became saturated at least an hour before the 9 a.m. formal start time. Offsite parking was provided with shuttle buses, but not everyone availed themselves of this option.

Ruminski, speaking on the Saturday of the event, said that discussion among Hamvention planners had already started and that there would be numerous meetings about this before the 2018 event.

### NO DISAPPOINTMENT HERE

However, by and large, hams are a reasonable lot and took the delay in stride, with no "road rage" being reported. Even the heavy rains that turned much of the fairgrounds to mud, and temperature swings from the 80s on Friday afternoon to the 50s on Saturday morning, did little to dampen the enthusiasm of attendees.

Same Friends, New Home



The location may have changed, but the name remains the same.

Long-time Hamvention attendee Jay Adrick, K8CJY, who is retired from Harris Broadcast, was asked for his impression of the new venue.

"Overall, not bad," he said. "Certainly, better inside than [at] Hara Arena. The flea market yesterday was not too bad. The mud dried up pretty quickly. But of course, we had some rain overnight and we've got mud again. I don't know what was worse, the flea market with all the broken pavement and the sewer line rupturing at Hara" — a reference to flooding of the Hara parking lot a few years ago when a tailgater ruptured a sewer main while hammering in a tent anchor — "or the mud at this flea market. Flea market traffic I think is down a bit today, but the inside traffic appears to be up."

For the past several years, Hamvention attendance has been in the 25,000 range, with radio amateurs journeying from all over the world to attend. According to Ruminski, despite the uncertainty associated with the move, final attendance numbers for the 2017 event looked as if they would exceed those recorded at the final Hara Arena gathering.

For the past several years, Hamvention attendance has been in the 25,000 range, with radio amateurs journeying from all over the world to attend. According to Ruminski, despite the uncertainty associated with the move, final attendance numbers for the 2017 event looked as if they would exceed those recorded at the final Hara Arena gathering.

For the past several years, Hamvention attendance has been in the 25,000 range, with radio amateurs journeying from all over the world to attend. According to Ruminski, despite the uncertainty associated with the move, final attendance numbers for the 2017 event looked as if they would exceed those recorded at the final Hara Arena gathering.



# First We Invent. Then We Innovate.



## Introducing Axia IP-Tablet!

Axia invented AoIP for broadcast in 2003. Not one to rest on our laurels, we've continued to bring you the finest in broadcast tech. Part of our innovation is thanks to the largest network of AoIP broadcast equipment companies, the 100+ Axia Livewire partners. When you have Axia gear, you are part of a growing, innovation-driven ecosystem—not locked to just one company's vision of the future.

Witness the latest from Axia, the award-winning IP-Tablet, designed by our partner IP-Studio. This one-of-a-kind product removes cumbersome monitors from the studio by virtualizing the monitoring and control of your gear on a conveniently mounted touchscreen. The IP-Tablet adds great value to your Axia console purchase, putting your most used console functions right at your fingertips!

*Invent. Innovate. Repeat.*

[TelosAlliance.com/axia/ip-tablet](http://TelosAlliance.com/axia/ip-tablet)



# Get Rid of Your Boom Boing Boing

Also, an idea about how to get your talent's attention with colorful boom options

## WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

Dan Slentz — RW blogger, frequent Workbench contributor, veteran broadcast engineer — writes in with another great idea.

Traditional microphone boom springs can “ring” or boing from table vibrations. Not every station can afford the new springless mic booms that are available; if you don't have budget to buy replacement booms, how can you dampen noisy springs?

Thirty years ago, Dan saw an old engineer use the trick described here. It's an easy, cheap and not-ugly way to dampen noise: Use plastic wire wrap.

Wrap the coiled plastic (Fig. 1) around the springs of the mic boom (Fig. 3) — just cut a short piece of the plastic wire wrap and begin rolling it

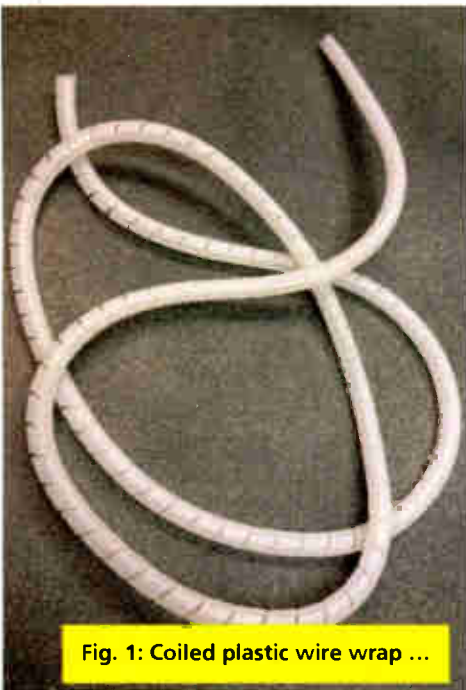


Fig. 1: Coiled plastic wire wrap ...



Fig. 2: ... cut to length to silence spring “boing ...”



Fig. 3: ... wrapped around the mic boom springs.

Figs. 2 and 3 photos by Steve Shumaker

around the spring (Fig. 2). The plastic has no effect on the tensile strength of the spring and noticeably quiets the boing.

Another feature of newer mic booms is the ability to add illuminated LEDs that let your talent know when the mic is live.

Thresa Gay of NotaBotYet brought a new product to the NAB Show called the Jelly-Tally, a universal microphone LED tally system. This ingenious device, shown in Fig. 4, is a translucent LED ring with male and female 5/8-inch standard mic threads on each end. It screws right onto the boom; the

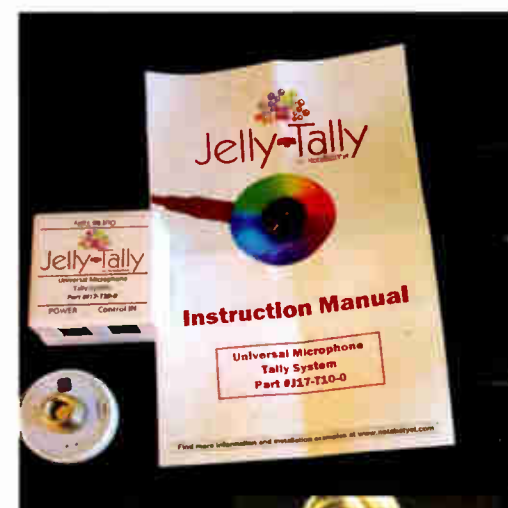


Fig. 4: The Jelly-Tally adds LED illumination to traditional booms.



mic screws into the other end.

As you can see on the ring in Fig. 4, a small connection and cable provides power and control signals to the Jelly-Tally control box.

What's really neat about this product is that the LED colors are programmable. One device, multiple colors — and you can program the colors you desire (see table in Fig. 5). You can also select whether the LED strobes, stays constantly lit or rotates. Talk about driving your air staff crazy!

The Jelly-Tally costs under \$200 and is available from Broadcasters General Store ([www.bgs.cc](http://www.bgs.cc)). It also offers some neat solutions to quiet the boom springs and add individual microphone illumination in your studios.

NotaBotYet is based in Mableton, Ga., and was established in 2015 by Thresa Gay and her engineering husband Michael. They got the idea for the

(continued on page 14)

## YOUR ULTIMATE SUPPLY & SERVICE SOLUTION



From our Facility to yours



Design & Integration



Repairs & On-Site Service Calls

LIGHTNER ELECTRONICS [www.lightnerelectronics.com](http://www.lightnerelectronics.com)

Toll Free 1-866-239-3888 Shop online [www.broadcastavsales.com](http://www.broadcastavsales.com)

FOR TRULY AUTHENTIC RADIO

# INTRODUCING THE NEW — NOVIA 272 —

FM PROCESSOR WITH STEREO GEN & DYNAMIC RDS

## PART OF THE NEW FAMILY OF NOVIA PROCESSORS FOR AM, FM, & STEREO.

The Novia 272 is a comprehensive FM airchain processor and includes the Stereo-Multiplex generator as well as a full-function dynamic RDS/RBDS RadioData encoder. Setup is easy with 10 Factory Presets, and dayparting is supported. In addition to quick and easy front-panel setup, a dynamic web interface enables total remote control of the NOVIA 272 using any PC or mobile device. This interface also accepts streamed program sources, allows remote audio monitoring and provides full SNMP support.

**IN:** Analog, AES-Digital, Streaming     **OUT:** Composite MPX, Streams Processed Audio



**i INOVONICS**  
BROADCAST



*A powerful and compact unit ideal for Rackpack bundles.*

[www.inovonicsbroadcast.com](http://www.inovonicsbroadcast.com) | [sales@inovonicsbroadcast.com](mailto:sales@inovonicsbroadcast.com) | tel: 831-458-0552



# Community Involvement Never Gets Old

## ♥ RADIO DOING GOOD

BY MARK LAPIDUS

*Stations help their communities — and their bottom line — in lots of creative endeavors. In our new semi-regular feature, we share some of them.*

### POLICING ATTITUDES

It takes guts for a radio station to tackle tough community issues head-on.

Kudos to Bay Area hip hop station KMEL(FM) for continuing to improve the relationship between youth and local police in the San Francisco/Oakland, Calif., area. KMEL, part of iHeartMedia, in May was hosting their second Street Soldiers Live Town Hall to talk about violence and help alleviate tension between cops and kids.

The industry needs to encourage more of this dialogue!

### JAMMING FOR VITALOGY

Whenever stations amplify star power to benefit communities, it's a win-win-win. The station earns the cool factor, the artist gets recognition for good work and the charity receives needed funds.

KNRK will benefit MyMusicRX (<https://www.mymusicrx.org/feed/all/>), providing musical support to kids in hospitals; KNND benefits Treehouse (<http://www.treehouseforkids.org/>), a charity assisting over 7,000 foster kids; and KISW's Pain in the Grass will go to the Downtown Emergency Feed program (<https://www.emergencyfeeding.org/>) and the Bureau of Fearless Ideas (<http://fearlessideas.org/>). KBZT's effort will go to the Surfrider Foundation (<https://www.surfrider.org/>) to help keep beaches clean.

Since 2015, over \$200,000 has been raised.

### IT'S STILL A THING

Do you think it's old hat to raise money for charity by creating and selling a station CD? Think again!

In Minnesota, the 28th Annual Cities 97 Sampler CD raised \$530,000 for nearly 100 local charities. The Cities 97 CD featured performances recorded live in Cities 97's Studio C by 20 artists, including O.A.R., X Ambassadors, Andra Day, Johnny Rzeznik, Ingrid Michaelson and Rachel Platten.

Listeners bought the CD at Target stores in the Twin Cities area and online.

Cities 97 is KTCZ(FM), an iHeart station in Minneapolis.

Got your own example of a station "doing good"? Email Mark Lapidus at [marklapidus@verizon.net](mailto:marklapidus@verizon.net).

Save | Share | Like



Saved from Instagram.com

Exploring Seattle Tacoma International Airport  
Photo by George Ross on Getty Images

Washlist Foundation saved to Pearl Jam Activism/Vitalogy Foundation  
Signed limited edition PJ posters are up for auction in support of the Vitalogy Foundation. Visit the auction page at [PearlJam.com/Activism](http://PearlJam.com/Activism) for more info. #PearlJam #Vitalogy

Entercom stations in San Diego, Portland and Seattle have joined forces to promote Pearl Jam's Vitalogy Foundation, which supports community health, the environment, arts, education and social change.

A portion of ticket sales from their annual marquee concerts go toward the cause, which raises money for charities selected by each station.

**ARRAKIS SYSTEMS INC.**

**'ALL' Arrakis Consoles are now AoIP !!!**

under \$1,000

ARC-15BP \$3,799\*

ARC-10BP \$2,599\*

ARC-8X \$849\*

**DANTE enabled**

**SIMPLE-IP**

Simple-IP is a one rack unit AoIP box using the world standard DANTE ethernet AoIP protocol. It is plug and play with CAT5e wiring to all Arrakis ARC or MARC series consoles. And Simple-IP isn't just a proprietary AoIP solution, it is plug and play with more than 600 products from over 200 other manufacturers from mics to speakers. For under \$1,000 per studio, you too can be AoIP from the world leader!

**Simple-IP solves wiring problems in old and new facilities alike !!!**

**Better by Design...**

\* Console list price... add Simple-IP for \$999 each

[www.arrakis-systems.com](http://www.arrakis-systems.com) 970.461.0730



## The Forever Console...Wheatstone LXE

Adapt to new technology, new techniques, and new workflows with LXE. Completely configure/reconfigure your console – every button, knob, and display on the surface is fully programmable using our intuitive ConsoleBuilder™ GUI/scripting interface.

With ScreenBuilder™ LXE, you can design dynamic custom touchscreen interfaces to augment LXE's extensive screen set. Beautiful to see and use.

Need more input faders? Enable up to four layers to double/triple/quadruple the number (up to 32) in the same footprint.

LXE is built to last in every way.

Learn more: [wheatstone.com/lxe](http://wheatstone.com/lxe)







## THE High Performance Standard for Radio Broadcast

What makes Wheatstone consoles best-of-class? Breakthrough technology with award winners like WheatNet-IP Intelligent Network with bus-minus®. Unique design ingenuity. Precision production/starship-grade materials. Obsessive Wheatstone quality. FullTime support\*. What does all that get YOU? Absolutely spoiled...



**LX-24 - This Really Changed Everything**  
THE standard in radio today. Exceptional console at every level, fully loaded and completely modular.



**L-8 & L-12 - Full-Featured, Smaller Size**  
Outstanding companions to the LXE and LX-24. Perfectly sized for newsrooms, etc.



**IP-12 & IP-16 - Best \$ Per Channel Ratio**  
Precisely designed and engineered for peak performance at mid-size stations.



**Intelligently Network Your Consoles**  
Each powerful BLADE-3 (point-of-use interface) contains a map of the entire WheatNet-IP Intelligent Network to route I/O, access sources, add processing, mix to/from any device. Plus routable logic, silence sensing, gain control, automated mixing, discovery/control, and much more. Format agile: MADI, AES/EBU, TDM, Analog, and AoIP. AES67 compatible.

Learn more: [wheatstone.com/consoles](http://wheatstone.com/consoles)



NEW!



## VoxPro Crushes It In The Ratings Thing

Getting rid of ALL your dead air makes better shows. Research shows that tighter programming dramatically retains listeners. Retained listeners = higher ratings. Download our free white paper, "The Business Case for VoxPro" at the link below.

### Speed To Air

VoxPro's software tools let you edit, remove silence, re-record your voice, add effects, and be ready to go...in seconds.

### Obsessive Organization

Hot buttons put a library of clips and tracks at your fingertips. Have your entire LIVE show programmed before you even start.

### Creative Controller

With VoxPro hardware, you control every aspect of the software. Designed and laid out for maximum speed and agility.

## VOX 7 PRO

RECORD/EDIT/PLAYBACK AUDIO LIVE, IN REAL-TIME, ON THE AIR

Learn more: [voxpro.wheatstone.com](http://voxpro.wheatstone.com)



NEW!



## Bring Your Sound Into This Century with Phase Linear Audio Processing, RDS, & Built-In HD Time Alignment

Wheatstone crafts powerful, persuasive modern sound by developing integrated processing tools like: Mastering Limiters, Intelligent AGC, BassTools, Multipath Control, and Baseband 192 for the all-digital processor-to-transmitter chain. All algorithms share data interactively, constantly optimizing your settings for remarkable consistency, track after track. Our new flagship, the AirAura X4, has a built-in HD tuner for automatic Time Alignment as well as full RDS capabilities. New Phase Linear processing delivers detail and transparency unheard of in on-air processors. Brilliantly modern.

Learn more: [wheatstone.com/processing](http://wheatstone.com/processing)

Includes on-site commissioning, in-factory total system proof-of-performance testing, installation support, and real 24/7/365 service. We don't rest until...

Designed and built in the USA | Phone +1-252-638-7000 | [wheatstone.com](http://wheatstone.com) | [sales@wheatstone.com](mailto:sales@wheatstone.com)

World Radio History

# HONDA

(continued from page 14)

tablet or smartphone.”

Once I learned the touchscreen, it was easy to adjust volume, tune stations and enable HD Radio reception. There's one change for the Odyssey: The volume knob returns to the dash.

Nelson said HD Radio capability was built into the audio head end that is controlled by HondaLink and is not a part of HondaLink itself.

One stumbling block with the infotainment systems in connected cars is the “menu diving” necessary to optimize the system for the driver and passenger. As system capabilities increase, Honda is developing an owner tutorial to reflect those additions.

Nelson says, “We encourage the dealers to make this a delivery best practice item as we expand the capabilities with-



Honda's Ridgeline, the 2017 North American Truck of the Year, is equipped with HondaLink.



Honda North America

Home Screen for HondaLink in the Honda Ridgeline.



Honda North America

A radio screen in the 2018 Honda Odyssey minivan.

in the HondaLink app to meet rising customer demands.”

So what does this mean for stations who wish to reach listeners who drive Hondas? Those stations that transmit music identification and other info on RDS must make sure the data is accurate and entered; those transmitting an HD Radio signal must make sure best engineering practices that have been discussed elsewhere in Radio World are followed. For all stations, it means ensuring



Honda North America

A forest of choices for those in the 2018 Honda Odyssey equipped with HondaLink.

that the content is compelling enough for those listeners to encourage them to go through the menus to find that content.

If you have suggestions for this feature or questions about connected cars and how they impact the radio ecosystem, send them to [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com). Answers may appear in a future installment.

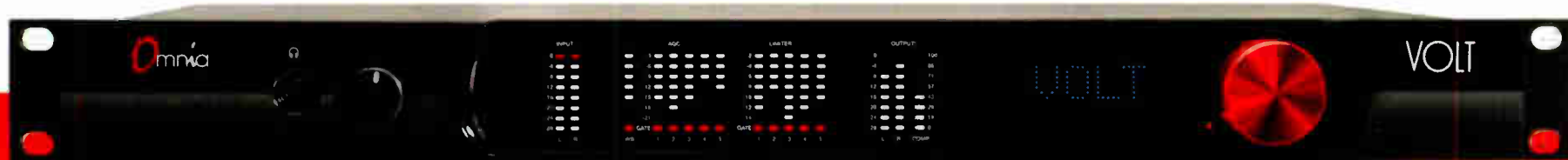
Paul Kaminski is the host of *msrpk.com*'s “Radio-Road-Test” and is in his 20th year as a contributor and columnist for Radio World. His Twitter handle is [msrpk\\_com](https://twitter.com/msrpk_com); Facebook: [PKaminski2468](https://facebook.com/PKaminski2468).

**NVLT Series** nautel  
 3.5 kW – 40 kW Outstanding Efficiency  
 Analog FM at Exceptional Value

[nautel.com/NVlt](http://nautel.com/NVlt)

## WRITE TO RW

SEND A LETTER TO THE EDITOR:  
 Email [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com) with  
 “Letter to the Editor” in the subject field.  
 Please include issue date.



# Leave Your Competitors in the Dust

Introducing VOLT, the hotrod new processor from Omnia that gives you more processing power and sonic performance in one rack unit than others give you in three. Sharing technological lineage with top-of-the-line Omnia products like the Omnia.11, VOLT drives you faster, with exciting sound that will take you from zero to 100 in seconds! In the race for electrifying, competitive, market-leading sound, VOLT puts the competition squarely in the rearview.

[TelosAlliance.com/VOLT](http://TelosAlliance.com/VOLT)

**Omnia**  
THE TELOS ALLIANCE

# Mt. Rushmore Scales New Heights With Report-IT

Monster Tieline codec for Monster Truck remote event

## USERREPORT

BY VIRGIL SCIGLA  
 Director of Engineering  
 Mt. Rushmore Broadcasting

**CASPER, WYO.** — I am director of engineering for 11 stations across the Mt. Rushmore Broadcasting group. I look after four FM stations and one AM station in Casper, one FM and AM station in Rawlins, Wyo., plus AM and FM stations in both Custer and Hot Springs in South Dakota.

We recently sought a portable remote solution to allow us to do live sponsorship remotes on KASS(FM) 106.9 MHz and all four FM stations from a variety of locations around Casper and all of Wyoming.

KASS/Kick 107FM is a 100 kW Class C station. We were replacing old Marti technology that had been used on remotes for years but had many limitations, namely line-of-sight requirements and a lack of portability. Critically, we wanted more flexibility to broadcast from anywhere, and the gear needed to be simple enough for nontechnical DJs to use.

After investigating alternatives and pricing, we settled on acquiring Tieline's Bridge-IT IP codec for the studio and a Report-IT Enterprise 10-pack for Android/iPhone.

### CONNECTIONS

Report-IT connects over a cellular or Wi-Fi connection and in my experience I've had solid connections every time. It's easy to configure and add user accounts with the TieServer Console smartphone app, which runs on an Android or iOS phone or tablet.

KASS runs a classic rock format; the first Report-IT remote went for over two hours from a car dealership with a Monster Truck onsite to promote an upcoming

event. Most people use a cellphone's built-in mic with Report-IT, which delivers studio-quality audio. The other option is to use the external headphone and mic jack on smartphones with a hand mic or portable mixer. In our case we utilized a Motorola Moto G Smartphone with Wi-Fi and cellular connections using an audio adapter cable to our mixer.

We also used a laptop computer with Radio DJ Free automation software with our classic rock library installed. We hooked the computer into the mixer along with the mic and presto — we had a mini radio station at the site. This sort of setup engages listeners who come to the remote location and see a functional radio station.

At first we intended to use the sponsor's Wi-Fi connection at the dealership, but it was poor, so we ended up connecting Report-IT to a Verizon cellphone hot spot over Wi-Fi and this worked perfectly. Utilizing Tieline's Music encoding algorithm at 64 kbps allowed us to provide FM-quality mono audio from the remote site using the smartphone to tie into IP networks.

During the morning we included one of Casper's best foodbanks, Joshua's Storehouse, which helps feed those in need. So we promoted this great cause at the



Virgil Scigla shows Report-IT on his smartphone.



same time and gave away free tickets to the Monster Truck show at the Casper Events Center.

Four hours later we did another two-hour remote for KASS from the Ramkota Hotel, where families, kids and adults all showed up to meet the drivers. We used a similar setup over

(continued on page 24)

DEVA<sup>®</sup>

Available in stock from  
 Broadcast Depot, Call: 800-313-7592  
[www.devabroadcast.com](http://www.devabroadcast.com)

**FM RADIO MONITORING RECEIVER**

**DEVA<sup>®</sup> BROADCAST**

MODEL DE4004

**Price: \$3200**

**BROADCAST AUDIO PROCESSOR**

**DEVA<sup>®</sup> BROADCAST**

MODEL DE6400

**Price: \$2450**

**FM RADIO RE-BROADCAST RECEIVER**

**DEVA<sup>®</sup> BROADCAST**

MODEL DB7007

**Price: \$2350**

# REAL. VIRTUAL. RADIO.



## ruby – the radio console with a whole new viewpoint.

Meet ruby, the new radio console from Lawo. So elegant and uncluttered, you might think something's missing — and you'd be right. We've moved most of the controls that litter the faces of other radio consoles onto an intuitive context-sensitive touchscreen, while essential controls like faders and monitor selectors are right where you'd expect them to be. ruby gives you the best of both worlds: familiar physical operations, and a modern graphical interface.



ruby's powerful visual interface is designed for fast-paced radio, with fingertip access to source, bus, and mix-minus assignments, as well as EQ and dynamics processing — freeing your talent to perform instead of searching for settings. You can even use ruby's GUI-building app to centralize control of studio software and peripherals. With intelligent AutoMix hands-free

mixing and one-touch AutoGain mic calibration, your operators will tackle the most complex shows with ease. Even voice-tracking while on the air takes only the push of a button. Be prepared: your talent may actually thank you! And because ruby is engineered and built in Germany, it might just be the last console you'll ever need to buy.

ruby, from Lawo. The console with a refreshingly new point of view.



[www.lawo.com](http://www.lawo.com)

# AEQ's Virtual Capitol App Saved My Broadcast

When disaster struck CNC Media's studios, an app restored the broadcast signal

## USERREPORT

BY MARCELO MENDIZÁBAL  
General Manager  
CNC Media

**ANTOFAGASTA, CHILE** — CNC Media is the leading communications company in the north of Chile. We run a digital newspaper, a television station and three radio stations: Canal95, FM Plus and FM Quiero. We are also members of ARCHI, the Chilean Radio Association.

In 2013, we acquired several AEQ Capitol digital mixing consoles to refurbish our studios.

The AEQ Capitol is a digital mixing console that provides all the features that any small- or medium-sized radio station may need. It comes with eight programmable faders, four microphone,

12 analog line and four AES/EBU inputs, eight analog line and four AES/EBU outputs. The console provides control for the monitors and headphones in the control room and studio, on-air signaling, optional dual-line telephone hybrid and many other features. Very soon, we realized that the Capitol was the perfect choice for us.

During the negotiations, two complementary applications to control the consoles were also offered: Virtual Capitol and Capitol Screen. Cristian Valencia, the general manager of radio operations, and I began an evaluation of these software applications.

Capitol Screen looked quite interesting to us. The broadcast parameters are nicely detailed on the screen of a studio PC or from a tablet: VU meters, clock, programmable key status ... and also control of equalizers, filters, com-

pressors/limiters, noise gate, etc. can be made on the fly extremely easily. In a nutshell, it offered greater visibility and ease of operation.

But we didn't seem to need Capitol Virtual, a remote control application reproducing all the physical console functions and controls on a PC or tablet. Why would we want that? We are already purchasing the consoles, Cristian said, worried about purchasing something we didn't really need.

However, controlling each console from my office or home was interesting to me. It could be nice to be able to access a console to change a fader passing onto another broadcast event without having an operator in the studio. These situations appear occasionally when producing a program at ungodly times ... Who knows? It might



prove useful to us.

Just in case, we installed the application on our respective laptop computers.

## SURFACE SOLUTION

And it did prove useful, but not in any of the foreseen ways.

It rained so much during the last days of 2016 that water collected on the station roof and, suddenly, both water and the roof itself collapsed onto the Canal95 studio console control surface, rendering it unusable.

We ventured into the station to evaluate the damage. Broadcast was reestablished by sending the FM Plus signal to the transmitter. We also did some cleaning and finally checked the console. The audio engine was not hit and seemed workable, but the control surface was completely ruined.

In order to check the engine, we connected Cristian's laptop to the console. We prepared some music, opened the channel and ... the VU meters lit up and audio came out of the monitors! We opened a microphone, did some checks, changed the transmission schedule and reestablished Canal95.

And there we had a laptop acting as the console control surface 24x7 for three weeks.

The physical control surface was sent to SERCOMSA, AEQ's dealer in Santiago de Chile. They inspected it but it was totaled, due to short-circuits and corrosion produced by water and mud. We were sent photos and a report for the insurance and ordered a replacement surface to AEQ, which arrived after a few days. Meanwhile, we could continue our normal operation without problems thanks to the Capitol Virtual application.

For information, contact AEQ USA in Florida at (954) 581-7999 or visit [www.aeqbroadcast.com](http://www.aeqbroadcast.com).

## TECHUPDATE

### RCS IS MOBILE

Broadcast software developer RCS says it is mobile with apps to take all of its main software platforms on the road.

The company's keystone product, GSelector music scheduling software, has Selector2Go. For that app the data flow is kept small to enable fast performance, even on mobile networks like 3G. Selector2Go gives users core scheduling, schedule editing functionality and essential analysis details of rotations in the palm of a hand.

The automation platform Zetta has a mobile sidekick, Zetta2Go (both shown). Using a tablet or smartphone a user can view and fire off hot keys for a station, from a laptop or remote desktop a user can control much more. A



desktop Internet browser can display logs, hot keys and the segue/voice track editor allowing the user to voice track empty voice track slots in the log, edit the segue of the voice tracks and fire hot keys from a hot keys bank.

The company's Aquira traffic software is the latest to go mobile with Aquira2Go.

Harnessing all the benefits of touchscreen technology, Aquira2Go's interface simplifies tasks, improves accuracy and productivity, allowing the Account Executive to deliver professional service to the client.

RCS' mobile apps operate on most PC and Mac computers as well as the vast majority of current smartphones, tablets and e-readers, including the iPad and iPhone.

For information, contact RCS in New York at (914) 428-4600 or visit [www.rcsworks.com](http://www.rcsworks.com).



### NM-250 MKII - Newsroom Mixer

#### Features:

- Built In Talkback System with 2 Send and Receives
- 1 Unbalanced Input /Output for computer Sound Card
- 1 Unbalanced Stereo Front Panel Jack Input
- 1 Balanced Mono Line Input for Telephone Hybrid
- 2 Balanced +4 dBm Stereo Line Inputs
- 2 Balanced Mono Mic Inputs
- Monitor Select (Mixer Output or Off Air)
- LED Meter Display
- Phantom Power Built In (48v)
- Built In Cue System with Dimming

**Dixon**  
Systems

800-779-7575  
[www.ram68.com](http://www.ram68.com)

# MAKING DIGITAL RADIO EASIER & AFFORDABLE



## HD **MULTICAST+** Importer/Exporter

Simple all-in-one solution. Cuts costs by 50%\* compared to prior equipment.



### HD **MULTICAST+** Importer

NEW Importer with higher performance



### NV<sup>LT</sup> Series

Now upgradable to HD Radio



### VS Series

HD PowerBoost!™ now included in VSHD



**Nautel Innovation:** Learn about Nautel's latest developments including seamless handoff HD Single Frequency Networks at [www.nautel.com/hd](http://www.nautel.com/hd)



\* For domestic JSA deployments of the Multicast+ Importer/Exporter. For international customers please contact your Nautel representative.

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



## TECHUPDATES

### COMREX INTRODUCES OPAL IP AUDIO GATEWAY

While many custom apps exist for audio transport over IP, Comrex says that common browsers — as found on almost every smartphone or tablet — possess tremendous potential for live, high-quality, two-way communications. Comrex recently introduced a product to make use of these browsers to provide quality interviews with simple set-up.

**95.7**  
THE GAME

Thanks for calling 95.7 The Game.  
Press Connect to talk to host.



Opal powered by COMREX

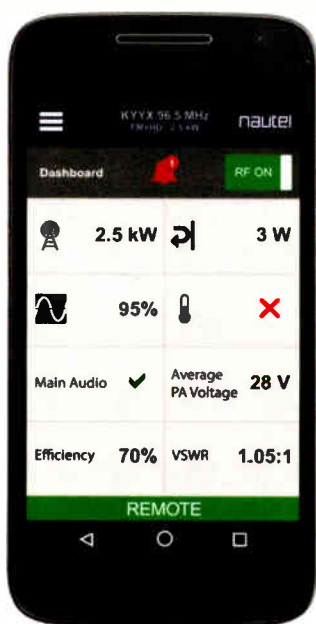
Comrex Opal provides near-studio quality audio with consumer-grade equipment. Suitable for coordinating call-ins with guests with no technical experience, Opal enables users to connect to the studio by clicking a link. Opal makes it possible to do long interview segments in HD Voice quality, without requiring guests to install apps or touch settings.

Unlike Skype and other apps, the remote guest doesn't install anything; they click a button and go live. Opal works by activating the Opus encoder in browsers. As a result, Opal can connect to any computer or Android device with one of those browsers installed. The remote guest's requirements to transmit audio are a browser and microphone.

Opal uses Opus, a codec built into browsers like Chrome, Firefox, Microsoft Edge and Opera. Opus transmits high-fidelity, low-delay audio in both directions. iOS users can connect to Opal with a free Comrex app since Safari browsers do not yet support the Opus coding algorithm.

For information, contact Comrex in Massachusetts at (978) 784-1776 or visit [www.comrex.com](http://www.comrex.com).

### NAUTEL RELEASES AUI COMPANION



Nautel has rolled out a controlled release of its AUI Companion, an application for mobile devices that brings critical transmitter parameters directly to the user.

The award-winning Nautel Advanced User Interface is available for all modern Nautel transmitters. In GV, NV and NX transmitters, the AUI is presented on a 17-inch front-panel touchscreen; for NVLT and VS Series, the AUI is available via the user's PC. With web-based access and commercial-grade instrumentation, Nautel says, the AUI has proven popular among broadcasters worldwide, deployed in more than 7,000 transmitters.

The AUI Companion works in conjunction with a user's AUI. Key parameters such as power, efficiency and temperature are available at a glance no matter where the user may be.

"This product is in its final stages of development, and we are looking for beta testers to help us finalize the details of the interface," said Matt Herdon, Nautel product

manager. "Anyone interested in being part of the controlled release should sign up at [www.nautel.com/auic](http://www.nautel.com/auic)."

For information, contact Nautel in Nova Scotia at (902) 823-5131 or visit [www.nautel.com](http://www.nautel.com).

### WORLDCAST APP CONTROLS SOLAR FM

The new Solar FM from WorldCast Systems is a turnkey retransmitter that can broadcast up to 10 kilometers (6 miles) for 10 hours per day using solar power alone (hybrid mode also enables AC operation).



In Africa and large parts of Asia, there are more smartphones than there are computers so when designing a new product for this market such as the Solar FM, it is wise to adapt the design accordingly, WorldCast says.

The proliferation of smartphone devices and the increased usage of apps coupled with the requirement to minimize power consumption meant that control via a mobile application was the preferred choice for system control on the Solar FM. The usual TCP/IP modules found inside a regular transmitter are replaced by a low-consumption Wi-Fi module.

Functionality-wise, the user of the Solar FM app has the same control as via a web-based GUI. He or she can fully configure the transmitter itself, the built-in satellite receiver and FM receiver as well as the analog and AES inputs using the mobile app.

The app also allows the user to schedule the operating times of the transmitter, provides the user with an overview of real-time status and enables monitoring of parameters such as preamplifier power, the current/voltage for each power source, etc.

The only limitation of app-based control is the fact that the WorldCast Support team are unable to remotely assist with installation and so, the Solar FM also offers the option to connect via serial port to a PC for high-level maintenance.

Given the typically isolated location of installations for the Solar FM and the ease of use, a mobile application is the ideal method for control. WorldCast Systems said will continue to add further functionality to the app in future releases.

For information, contact WorldCast Systems in Florida at (305) 249-3110 or visit [www.worldcastsystems.com](http://www.worldcastsystems.com).

### TIELINE

(continued from page 20)

Wi-Fi and this created more interest in the Monster Truck event. Report-IT broadcasts mono due to the hardware design of smartphones. However it's such good quality that we will always broadcast remotes this way.

Report-IT is also suitable for weather and traffic reports so I am integrating Report-IT into our AM station KVOC 1230AM. It features a talk format and we have lots of regular contributors who call in. From now on all our regular guests will use Report-IT.

Cities in Wyoming generally have good cell coverage with Verizon, AT&T and Union Wireless, so we can connect from most places quite easily. Rural areas can be spotty as the state is large with lots of mountains and deserts.

Why use 20th century technology when we have simple and affordable products like Report-IT that can deliver studio quality audio from a smartphone? We can send each guest a mix-minus studio feed and really improve our audio quality on-air.

Tieline's support is great too. Just after we bought Report-IT, I called Bill Miller, Tieline's support guy in Indiana. He talked me through everything and within 15 minutes or less I had a complete remote system configured.

I describe Report-IT as being "kick-ass" and versatile. For us it ticks all the boxes, and people rave about our audio quality on-air. Thanks to Tieline we've even picked up the two-year contract as Casper Events Center's radio broadcast group. Our competitors have held this contract for years. Thanks to our efforts during the Monster Truck broadcasts, we delivered a new level of remote broadcasting capability and this impressed them greatly.

For information, contact Dawn Shewmaker at Tieline in Indiana at (317) 845-8000 or visit [www.tieline.com](http://www.tieline.com).



# GET IT FOR THE STUDIO



## Flexiva 3kW (analog power) solid-state FM transmitter with Flexiva Integrated FM Exciter

Flexiva is designed for low- and high-power requirements, up to 40 kW, while utilizing the most compact design on the market today. Flexiva continues the legacy of the highly successful line of GatesAir FM transmitters and combines innovative, new quad-mode RF amplification and software-defined exciter technology to take FM transmission to the next level.

- Power levels up to 3850 W Analog FM, 3100 W FM+HD
  - Broadband, frequency agile design 87.5 to 108 MHz requires no tuning or adjustments
  - Best-in-class power efficiency for lowest operating costs
  - Compact, space-saving, 2, 3 or 4RU design
  - State-of-the-art, direct-to-carrier digital modulator
  - Operation at up to 1.5:1 VSWR with proportional foldback
  - Full remote control capability including:
    - Web-based HTML GUI interface
    - SNMP
    - Parallel control/monitoring
    - Extensive Fault, Warning and Operational parameter logging
- and more!*



**\$12,995.**  
regular price is \$31,995.

*Offer available till June 30th*

Another great deal from SCMS!  
**call 1-800-438-6040**  
[www.scmsinc.com](http://www.scmsinc.com)



Latin America  
750-650-1427

West Coast  
818-398-7314

Central  
315-623-7655

North Central  
573-478-3737

Southern Gulf  
866-205-6905

Mid-West  
844-436-4327

North-East  
315-623-7655

Mid-South  
877-391-2650

Pro Audio/South-East  
877-640-8205

Bradley Division  
800-732-7665

# Burk Helps Full Power in New England

ARC Plus system gathers and delivers important data through smartphone interface

## USERREPORT

BY BRIAN RAM  
Vice President, Programming  
and Engineering  
Full Power Radio

**LEDYARD, CONN.** — I'm the vice president of programming and engineering for Full Power Radio, with responsibility for the company's 16 radio stations located throughout New England.

Under my guidance, the stations have gone through a steady process of technical upgrades including deployment of Burk Technology ARC Plus Touch remote control systems at all 16 of our transmitter sites.

Using a combination of wired telemetry and IP-based SNMP interfaces, I've connected my ARC Plus systems to virtually all the functional systems at

each site. Control extends well beyond the transmitters to include STLs, tower lights, door alarms, room temperature, smoke detectors and dead air alarms.

**I can also receive a notification of when tower lights illuminate each night, giving me peace of mind that they are functioning as required.**

Using Burk's Autoload Plus software, I'm able to have the transmitter locations talk to each other, no matter how far away they are from each other. This is essential for auxiliary and backup sites.

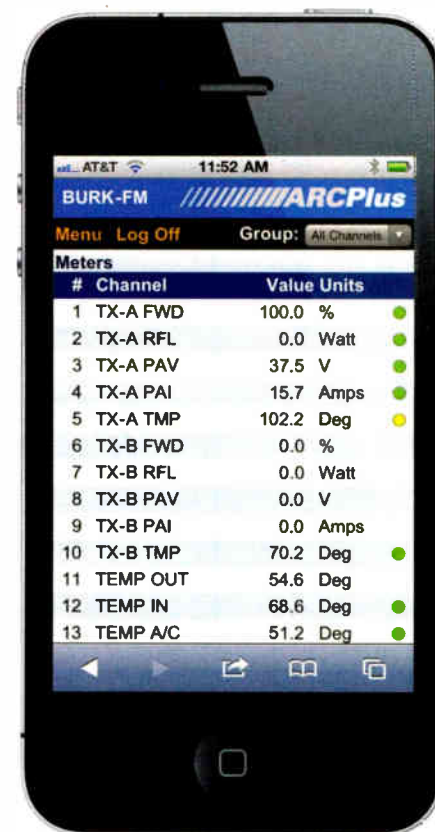
The Burk mobile monitoring and control capabilities are absolutely essential to keeping on top of the operation of my transmitter facilities. For example, I receive text messages on critical alarms

such as transmitter failure, and I am able to monitor the switchover to the backup transmitter and manually intervene if necessary directly and easily from my smartphone.

I can also receive a notification of when tower lights illuminate each night, giving me peace of mind that they are

functioning as required. I've used the interface on both Android and iPhone, and it works great on both. By far, the Burk ARC Plus is the most intelligent remote control available, and I would recommend it to my peers.

For information, contact Matt Leland at Burk Technology in Massachusetts at (978) 486-0086 x700 or visit [www.burk.com](http://www.burk.com).



## TECHUPDATES

### AXIA IP-TABLET PUTS CONTROL IN YOUR HANDS

The Telos Alliance says its Axia IP-Tablet app monitors and controls gear on touchscreens of your choice. It not only saves space and streamlines studio design but adds value to a Fusion console by putting often-used console functions — normally accessed via a monitor — at the user's fingertips.



Axia PowerStation and StudioEngine IP-Tablet licenses unlock control of connected Axia consoles. Users can customize the layout for each user, choosing from predesigned templates. For more customization, the simple drag-and-drop design interface designs a screen containing a mix of VU meters, timers, time and date display, status of on-air, preview and talkback, fader control, fader sources, console settings and Vmix control with faders.

An Axia xNodes license allows IP-Tablet users to access the internal mixer inside the xNode, changing sources and routes and controlling the levels of each with virtual faders. When you combine IP-Tablet software with an xNode you get a customizable mini mixer.

IP-Tablet licenses are also available for Omnia.9 and VOCO 8 processors; Telos VX and VX Prime phone systems; Telos Z/IP One; and Axia Pathfinder. A Metadata Tools license lets users pull metadata from the automation system to display on the tablet screen, suitable for consolidating critical info into a central location for your board operators and on-air talent.

The IP-Tablet can be mounted in the console itself with the IP-Tablet Fusion Mount (which occupies four console slots) or used separately, giving users control from across the desk or across the room.

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



### ENCO ADDS MOBILE STREAMING FEATURE TO ENCLOUD SUITE

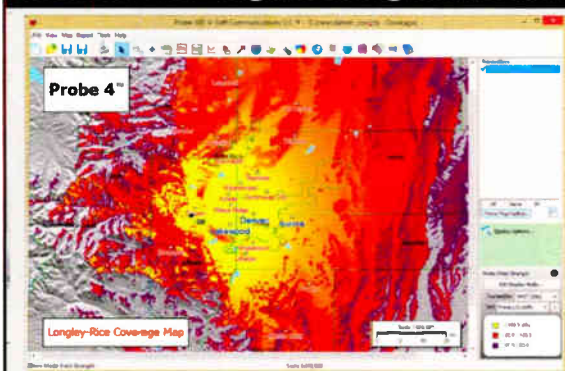
ENCO's enCloud Suite includes remote voice tracking for off-site audio production, remote content manipulation, remote control, and flexible iOS and Android apps to simplify live newsgathering and contribution from field. ENCO recently added its iDAD-Live application to the enCloud suite, which allows journalists to stream audio from their iOS device, in real time, to their DAD automation system for layout.

ENCO's iDAD and enDroid applications allow reporters and announcers to record, label, transport, and now stream audio directly to ENCO automation systems, with ENCO's Interchange utility enabling a secure connection between the two worlds.

Remote Voicetracking software allows broadcasters to voice-track programs from around the world using Windows or Mac web browser, iPad or PC without a VPN requirement. Additionally, ENCO's WebLib2 application provides direct browser based access to playlists and libraries, and allows staff to modify, upload, download and audition new and existing content.

For information, contact ENCO in Michigan at (248) 827-4440 or visit [www.enco.com](http://www.enco.com).

## Broadcast Engineering Software



- Create stunning "real-world" coverage maps, interference studies, and population reports with Probe 4™
- Find STL broadcast auxiliary and Part 101 microwave frequencies and generate PCN letters with Microwave Pro™
- AM Pro 2™, used daily by FCC engineers, performs skywave and groundwave allocation studies and AM coverage mapping
- Map FM stations and discover upgrade possibilities using FCC minimum separations and contour-to-contour methods with FMComander™



www.V-Soft.com (800) 743-3684

## ACOUSTICS



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.

Wanted: real plate reverb. abgrun@gmail.com.

## AUTOMATION EQUIPMENT

### WANT TO SELL

DIY-DJ Version 2.0 is now available. Over 500 copies of DIY-DJ, a Linux based radio automation system, have been distributed and now version 2.0 is available. Voice tracking, join satellite feeds, do unattended sports and remote events, temperature announce, scheduler, automatic cut editing on import, and much more. It's FREE. If you are using version 1.0 or would like to try DIY-DJ, go to krwsfm.com, register and download your free full version. The only thing we ask is that you let us know if and how you are using the software. Call (406) 679-0527 or email krws@digitaldevelopment.net for a copy today.

## AUDIO PROCESSING (INCLUDES ON-AIR)

### WANT TO BUY

Teletronix LA-2A's, UREI

# CONSULTANTS

**OWL ENGINEERING, INC.**  
 Consulting Communications Engineers  
 5844 Hamline Ave. N., Shoreview, MN 55126  
**651-784-7445**

- AM/FM/NCE Applications
- Allocation and Upgrade Studies
- Insurance - Investigation & Claims
- ANSI and NRSC Measurements
- AM Directional Array, Design, Tuning and Proof using Method of Moments
- Tower Detuning
- Intermodulation Studies
- Radiation Hazard Evaluation and Measurements

Fax (651) 784-7541 E-mail: info@owleng.com "Member AFCCE"

## MICROPHONES/ HEADPHONES/ SPEAKERS/AMPS

### WANT TO SELL

1934 RCA 77A double ribbon microphone, originally used by Arthur Godfrey at WFBR Baltimore. 100% perfect condition. Contact Bill Cook, 719-684-6010.

### WANT TO BUY

RCA 77-DX's & 44-BX's, any other RCA ribbon mics, on-air lights, call after 3PM CST, 214 738-7873 or sixtiesradio@yahoo.com.

## MISCELLANEOUS

### WANT TO SELL

I'm selling between 150 and 200 cassette tapes that consist of old-time radio shows, sports shows, some local New York radio talk shows, etc... Must take entire collection and the price is negotiable. Please call me for details and, my phone number is 925-284-5428.

Radio broadcasts of Major League Baseball, NFL, and some college football games that are on cassette tapes, approx 100 to 125 games, time period of entire collection os from the 1950's - 1970's, BO. Must purchase entire collection. Contact Ron, 925-284-5428 or ronwtamm@yahoo.com

WYBG 1050, Messina, NY, now off the air is selling: 8-channel Harris/Gates console; 250' tower w/building on 4 acres; collection of very old 78s dating back to 1904; 12' satellite dish on concrete base;

prices drastically slashed. 315-287-1753 or 315-528-6040

### WANT TO BUY

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.

2" plastic "spot" reels 6.5 or 8" diameter, as used for quad video. Wayne, Audio Village, 760-320-0728 or audiovlq@gte.net.

Equipment Wanted: obsolete, or out of service broadcast and recording gear, amplifiers, processing, radio or mixing consoles, microphones, etc. Large lots preferred. Pickup or shipping can be discussed. 443-854-0725 or ajkivi@gmail.com.

I'm looking for San Francisco radio recordings from the 1920's through the 1980's. For example newscast, talk shows, music shows, live band remotes, etc. Stations like KGO, KFRC, KSFO, KTAB, KDIA, KWBR, KSFX, KOBV, KCBS, KQW, KRE, KTIM, KYA, etc. I will pay for copies... Feel free to call me at 925-284-5428 or you can email me at ronwtamm@yahoo.com.

Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSFO radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSFO Radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

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 wom-

**GRAHAM BROCK, INC.**  
 BROADCAST TECHNICAL CONSULTANTS  
 Full Service From Allocation to Operation AM/FM  
 Field Work, Antenna and Facilities Design

Over 45 years engineering and consulting experience

**912-638-8028**  
**202-393-5133**  
 www.grahambrock.com

## Broadcast Equipment Exchange

For more information, ask Michele at 212-378-0400 x523 or minderrieden@nbmedia.com

**RADIOWORLD**

## DISTRIBUTOR DIRECTORY

The following distributors serving the broadcast industry would be glad to help you with any of your requirements.

**CORNELL-DUBILIER MICA CAPACITORS**  
 FROM STOCK

**JENNINGS VACUUM CAPACITORS**  
 FROM STOCK

**HIGH ENERGY CERAMIC CAPACITORS**

**SURCOM ASSOCIATES**  
 5674 El Camino Real, Suite K  
 Carlsbad, California 92008  
 (760) 438-4420 Fax: (760) 438-4759  
 e-mail: link@surcom.com web: www.surcom.com

## TUNWALL RADIO

SWITCH AND TRANSMITTER CONTROLLERS



AM/FM/MULTI-SWITCH AND CUSTOM DESIGNS  
 330.995.9642 www.tunwallradio.com

## RECORDING & PLAYBACK HARDWARE

### WANT TO BUY

1960s-vintage MacKenzie Repeater machines, magazines, spare parts and manuals, complete or "parts" machines considered, James, 870-777-4653.

Large or small collections of 16" transcriptions or 12" transcriptions, not commercial LPs. Bill Cook, 719-684-6010.

Schnader telecriptions 16 mm musical films produced in the early 50 s. Bill Cook, 719-684-6010.

Standard Short-tune series. Bill Cook, 719-684-6010.

## RECEIVERS/ TRANSCEIVERS

### WANT TO SELL

Johnson Electronic SCA880 module, 67/92 Khz, 417-881-1846.

### WANT TO BUY

AM Stereo radio. Call 417-881-1846.

Buying Or Selling Used Equipment?

You're in the right place!

RADIOWORLD

Broadcast Equipment Exchange



## Rebuilt Power Tubes 1/2 the cost of New!

Se Habla Español

# ECONCO

Se Habla Español

Tel: 800-532-6626 Web: [www.econco.com](http://www.econco.com)  
Intl +1-530-662-7553 Fax: +1-530-666-7760



### STATIONS

#### WANT TO SELL

(2) LPFM radio stations for sale, located in the NW part of central Florida on the gulf coast, covers the county, get out of the cold weather, come to Florida, call or write for particulars, 352-613-2289 or email [boceey@hotmail.com](mailto:boceey@hotmail.com) or Bob, PO Box 1121, Crystal River, FL 34423.

#### TAX DEDUCTIBLE EQUIPMENT

Donations Needed: All Volunteer, Non-profit Low Power community radios stations need Equipment. Will offer tax deduction letter. You determine donation value, We will pay shipping. Equipment shared between three Wisconsin stations. Looking for Mics, Mixers, field equipment, etc. You name it. Email: [Dan@WIECradio.org](mailto:Dan@WIECradio.org).

### TRANSMITTERS/EXCITERS/TRANSLATORS

**TRANSCOM CORPORATION**  
*Serving the Broadcast Industry Since 1978*  
Transmitters and Broadcast Equipment for Radio & Television

Please visit our website,  
[www.fmamtv.com](http://www.fmamtv.com), for additional listings.

#### Used FM Transmitters

55W	2000	Harris DIGIT CD
3.5 KW	2000	Harris Z3.5CO, solid-state
1.3/3.5 KW	2006	Harris Z6HD- Tri-Mode HD
5KW	1988	BE FM5A
5 KW	1995	Harris HT5 w/DIGIT
5 KW	1992	BE FM5B
10 KW	1988	BR FM10A, Dual 5
20 KW	2002	Harris Z20CD, 2x Z10 Combined
21.5 KW	1990	Continental 816R2B, SS IPA
35 KW	1990	Continental 816R5B, SS IPA
25 KW	1982	Harris FM25K with DIGIT
35 KW	1991	BE FM35B

#### Used AM Transmitters

5 KW	2003	BE AM5E
10 KW	2001	Nautel XL12, solid-state
50 kW	2001	Harris OX50
50 KW	2005	Harris 30X50
60 KW	2007	Nautel XL60

#### Exciters & Miscellaneous Equipment

Exciters->DIGIT, CE802B, BE FX50  
Bird Model 8932, 10 kW air-cooled RF Load  
Harris N + 1 Controller

800-441-8454 • 215-938-7304 • FAX: +1-215-938-7361

[www.fmamtv.com](http://www.fmamtv.com) • E-mail: [transcom@fmamtv.com](mailto:transcom@fmamtv.com)

RETUNING & TESTING AVAILABLE - CALL US FOR A QUOTE!



**HARRIS nautel**

**CROWN BROADCAST**

Used TV Transmitters-DTV & ATV  
\*\*Rohde & Schwarz\*\* Harris Maxiva

New TV Transmitters- DTV & ATV  
Anywave, DMB, and Technalogix

\*\*1KW Special w/4 channel encoder\*\*  
VHF and UHF TV Antennas  
(10 W to 10 KW) TV STL



[www.amgroundsystems.com](http://www.amgroundsystems.com)  
866-22RADIO

Buying used equipment?  
Selling used equipment?

**YOU'RE IN THE RIGHT PLACE!**

**RADIO WORLD**

Broadcast Equipment Exchange

For more information,  
call Michele at  
212-378-0400 ext. 523

### TUBES



Keeping you on the air since 1934!  
ISO 9001 Certified

#### NEW POWER TUBES

Triodes  
Tetrodes  
Pentodes

#### NEW SOCKETS & REPLACEMENT PARTS

Worldwide Availability

Made in the U.S.A.

Call (800) 414-8823  
Int'l (650) 846-2800  
Fax (650) 846-3795

Visit our Website at  
[www.cpii.com/eimac](http://www.cpii.com/eimac)



Broadcast Equipment Exchange



"BEE" in the habit of selling your used equipment here!

Call Michele for details at  
212-378-0400 ext. 523

# EMPLOYMENT

### POSITIONS WANTED

Are you a small market station needing a good nuts & bolts engineer in the Los Angeles area? I will make your station shine! CET, fully FCC Licensed. Available for Full/Part-time/Contract work. Available immediately. Mitchell Rakoff, 909-446-6820, [mitchellrakoff@yahoo.com](mailto:mitchellrakoff@yahoo.com).

Experienced radio station manager seeks new management opportunity. More than 39 years experience in radio. Willing to relocate. Family-friendly format(s) preferred. Send details about your management opening to: [radiogm@hotmail.com](mailto:radiogm@hotmail.com).

Extremely knowledgeable and articulate racing writer/talk show host Adam Amick is available for shows, correspondent, features, etc. Check out [www.bleacherreport.com](http://www.bleacherreport.com) for samples. Call 214-384-5812 or email: [adam@rubbinsracingshow.com](mailto:adam@rubbinsracingshow.com).

ALWAYS ON TIME! Energetic, positive, fun person to be around, and connects. Driven and a go-getter. On-air, News/Talk and marketing savvy. Mike, 260-228-1215 or [mikeward986@gmail.com](mailto:mikeward986@gmail.com).

Radio broadcaster/freelance photographer. Connect-ability, with keen eye and sharp skills. Motivated, thrives on betterment of self, and industry. Driven, talented, creative. Jeff, 405-609-7052 or [jpoolmedia@gmail.com](mailto:jpoolmedia@gmail.com).

Fresh talent! Passion for the industry. Not a stranger to the mic, plus DJ'ed events. Seeks opportunities music/broadcasting, to entertain! Richard, 469-719-5008 or [rewalentino@gmail.com](mailto:rewalentino@gmail.com).

Radio/TV professional seeking to change lives through media. Performer, speaker, singer, theater. Speaks several languages and able to connect to audience! Clarisse, 682-314-7820 or [clarissengih04@yahoo.com](mailto:clarissengih04@yahoo.com).

Run your employment ad on our website for only \$2 per word!

[www.radioworld.com](http://www.radioworld.com)

Call Michele for all the details at  
212-378-0400 ext. 523

[minderrieden@nbmedia.com](mailto:minderrieden@nbmedia.com)

# Suggestions to Improve EAS, Advanced Alerting

The A/331 standard doesn't address all of the problems with the current system

## COMMENTARY

BY FRANK W. BELL

*The author is CEO and chief technology officer for Kybernetix.*

The Advanced Television Systems Committee has developed standard A/331, called Advanced Emergency Alerting.

The XML format can vary by country and is flexible. Options include CAP or the EDXL protocols alongside encryption, but a minimum of a PC level processor is required (e.g., 486).

The A/331 protocol is carried on the highest power level of the Layered Division Multiplex modulation, which is QPSK, giving it the greatest range and a receive capability by small antennae in smartphones. That received QPSK data is usable for TV on smartphones. The lower levels of the protocol use IP or related standards, which is broadcast in South Korea TV.

A/331 does not meet the system latency for Earthquake Early Warning System alerts of three seconds or less, and could be improved in the U.S. implementation. The possibilities for smartphones to receive alerts include WEA, AEA, social media and alerting vendors, among other sources.

To avoid alert fatigue, developing definitions and software is imperative. One goal could be having a maximum of two alerts for life endangering messages and one for others, and several manufacturers are working on this, including Verance.

WEA is using single-level cellular broadcast including Femto (10 m), Pico (200 m), micro (1 km) up to macro-cells (up to 10 km). While macrocells are expected to have generator backup, Femto and Pico cells most likely do not. During an extended power outage, the macro cell service restricts the number of supported calls. For cell broadcast alerting, the loss of power would mean the loss of alert area polygon selection. With macrocells, the selectivity should be implemented in the handset based on relative location and transmitted the polygon data.

During Hurricane Sandy, which primarily affected the New Jersey, New York and Connecticut area, only one New Jersey broadcaster went off the air;

residents could easily tune to another station. Likewise, during Hurricane Katrina, a few broadcasters in New Orleans went off the air (one was a Spanish-language radio station).

Having multilingual capabilities for EAS is important when communicating emergencies. While Text-To Speech is useful, there are situations in which the pronunciation or meaning is mistaken due to numerous languages. The inclusion of the International Phonetic

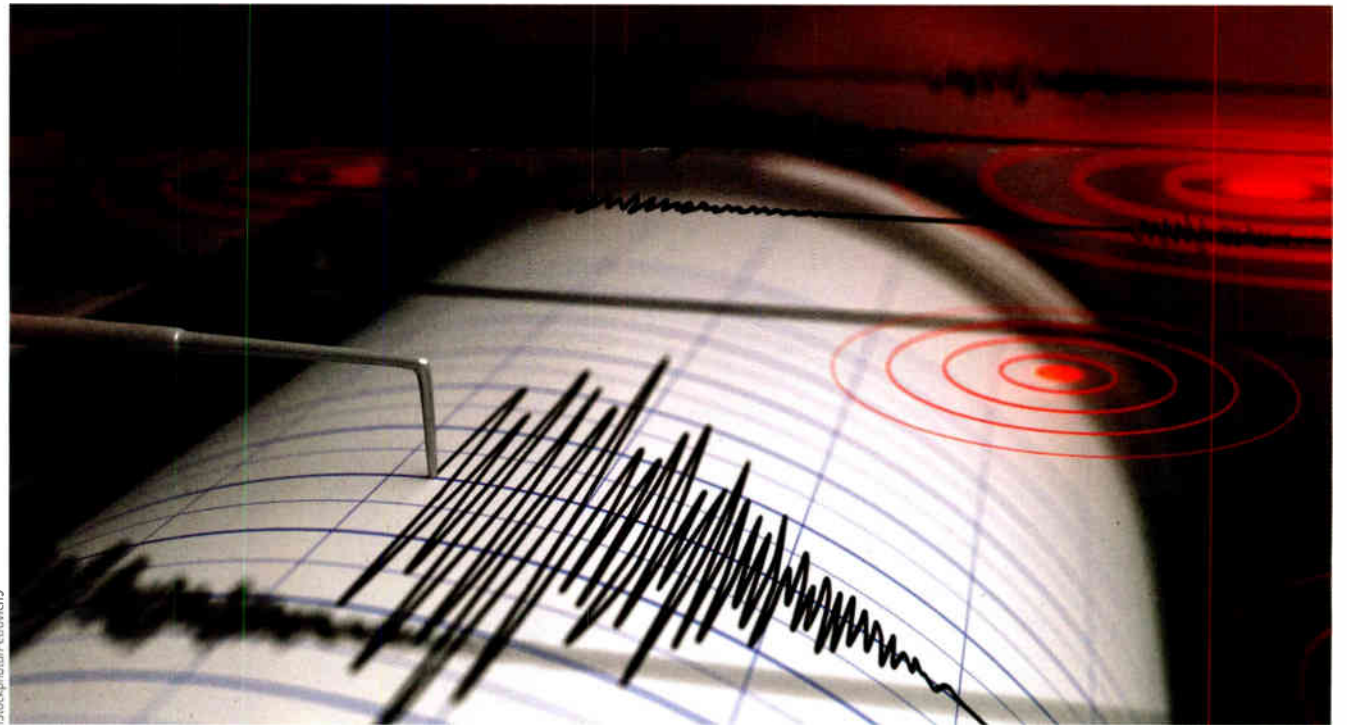
are implemented in the receiver, which is primarily using software on a suitable processor including the following: an 8-bit microcontroller for less cost, less power consumption and less electromagnetic interference generation, which is important for radios that have the antennae within the radio.

Because of varying CAP profiles and language or location/jurisdiction systems, the implementation of AEA would vary by country; the improved EAS is without these limitations. A country code would define the jurisdiction ID system. A coding system provides for varying languages where a maximum of

Radio data transmission capabilities are not utilized. Analog modem tones could not add area selection polygons or the message text.

Though ATSC 3.0 would use AEA, translating to an improved EAS would be simple, as defined for CAP. The transmission of the EDXLs and other file formats are possible without disturbing the public.

A worldwide standard is preferable for consumer electronics manufacturers. CAP is in process of becoming an ITU standard X.1303. Kybernetix considers this in the definition development for an improved EAS standard.



A/331 does not meet the system latency for Earthquake Early Warning System alerts of three seconds or less, and could be improved in the U.S. implementation.

Alphabet as part of the ASCII text and part of other worldwide alphabets would be beneficial and simplify processing.

A/331 does not add any improvements for the implementation of EAS to legacy broadcasting radio and TV, nor for cable, fiber (e.g. FiOS), DBS (e.g. DirecTV or DISH Network) or SDARS (SiriusXM). An improved EAS is needed and a proposal has been made that addresses most limitations of the present system, especially radio.

### KYBERNETIX

A Kybernetix proposal discussed with FEMA addresses a majority of those limitations, and the implementations vary between HD Radio (or other digital radio) and other TV systems.

Certain specifications and operations

six per country is suggested for practical international and technical implementation; two being local languages, and the others multinational.

A Digital Daisy Mesh is important for redundancy. This consists of two (or more) regional primary stations with monitoring receivers at other broadcasters that can function as system quality control monitors reporting to the State Emergency Communications Committee. With the large coverage area typical of TV broadcast and considerable bandwidth for multiple languages and data transmission, these would make the best primary stations. Currently, radio stations function as the primaries with the existing EAS. The analog modem tones are the data transmission and contain only the message header and tail; HD

The least cost to consumers always is desirable, and approximately two cents for about 1 MB of additional memory is expected to be the requirement; a discrete 1 MB USB flash memory costs around 50 cents. With suitable encoder/decoders installed, the cost of an upgrade to the system for a radio station should be limited to a software upgrade plus digital broadcast receivers with a data output for the Digital Daisy Mesh.

### PROBLEMS TO ADDRESS

One major problem for EAS is the ability to selectively deliver an alert within a broadcast coverage area. With HD Radio, everyone in the affected area would be force-tuned to the analog sig-

*(continued on page 30)*

**EAS**

(continued from page 29)

nal, except those listeners allowed to opt out of the message; they would be able to continue with the HD signal. If the alert is for everyone, then all signals are switched to alert. Not all radio transmitters support a -15 dB or higher injection level of HD data carrier because of intermodulation becoming excessive.

Another problem is how to rapidly deliver EEW messages. There are check-sums built in. The first data transmission is not delayed, and if validated,

er and the automation system. When data regarding the duration of the alert is provided, a trigger to the playout of alternative content (e.g. PSAs) of identical duration on receivers without the alert becomes possible.

Improvements have been made, but more are needed. None so far have addressed issues that require permitting changes to the present definition of EAS. The use of a selectivity mechanism is not permitted, nor is the proposed latency reduction for an EEW.

Other limitations exist: 1) The ability to selectively deliver alerts to first

**An improved EAS is needed and a proposal has been made that addresses most limitations of the present system, especially radio.**

and the receiver is selected, this would start a playback of the warning tones and the word "EARTHQUAKE" from receiver memory. Subsequent reception of the audio (having the HD delay) provides further alerting and information as previously described. This process means that the alert audio allows for analog degradation and single language selection normally, thus accommodating radio stations not set up for Digital Daisy Mesh.

Current EAS event codes do not provide a prioritization scheme in terms of timeouts or immediate override. Permitting a timeout scheme would enable interaction between the encoder/decod-

responders using a temporary additional HD Radio stream on selected broadcasters via agreement; and 2) The ability to use AEA as a source for a Digital Daisy Mesh, for which requires testing and debugging prior to deployment is recommended.

If all these changes are made, the improved EAS would be a valuable system. For more information, go to <http://kynx.us>.

*Frank W. Bell holds two patents, has worked in telecom and consumer electronics and has participated in engineering the launch of 21 TV signals. He also worked in facility recovery after 9/11.*

**ADVERTISER INDEX**

This listing is provided for the convenience of our readers. Radio World assumes no liability for inaccuracy.

PAGE	ADVERTISER	WEBSITE/URL
15	Arrakis Systems Inc.	<a href="http://www.arrakis-systems.com">www.arrakis-systems.com</a>
11	Axia - The Telos Alliance	<a href="http://www.telosalliance.com/axia">www.telosalliance.com/axia</a>
4	Burk Technology	<a href="http://www.burk.com">www.burk.com</a>
7	Comrex Corporation	<a href="http://www.comrex.com">www.comrex.com</a>
31	Dawnco	<a href="http://www.dawnco.com">www.dawnco.com</a>
20	Deva Broadcast Ltd	<a href="http://www.devabroadcast.com">www.devabroadcast.com</a>
22	Dixon Systems	<a href="http://www.dixonsystems.com">www.dixonsystems.com</a>
1	ENCO	<a href="http://www.enco.com">www.enco.com</a>
5	ESE	<a href="http://www.es-web.com">www.es-web.com</a>
13	Inovonics Inc	<a href="http://www.inovonicsbroadcast.com">www.inovonicsbroadcast.com</a>
21	Lawo	<a href="http://www.lawo.de">www.lawo.de</a>
12	Lightner Electronics	<a href="http://www.lightnerelectronics.com">www.lightnerelectronics.com</a>
1	Logitek	<a href="http://www.logitekaudio.com">www.logitekaudio.com</a>
6, 10, 18, 23	Nautel Ltd.	<a href="http://www.nautel.com">www.nautel.com</a>
19	Omnia - The Telos Alliance	<a href="http://www.telosalliance.com/omnia">www.telosalliance.com/omnia</a>
25	SCMS	<a href="http://www.scmsinc.com">www.scmsinc.com</a>
9	Tieline Technology	<a href="http://www.tieline.com">www.tieline.com</a>
2, 16-17, 32	Wheatstone Corporation	<a href="http://www.wheatstone.com">www.wheatstone.com</a>

**READER'S FORUM**

**REMEMBERING RON NOTT**

Ron Nott was a wonderful, friendly, giving guy, always interested in talking about his favorite subject, antennas.

The obit forgot to mention Ron was also a member of the ham radio fraternity; his call was K5YNR. He was an Extra class, and one of the few who really deserved that classification.

*Michael Wm. Bach  
Applications Engineer,  
Broadcast Products  
Kathrein  
Richardson, Texas*

I am so sorry to hear this news.

Ron and I were good friends when I lived in Farmington and I had the pleasure of visiting and learning from him often. I accompanied him to my first-ever NAB conventions in Vegas.

Ron used to like to "play" with our station, KENN, which was using his folded unipole antennas in a three-tower directional array.

We also had a mutual interest in railroading. He built and co-owned a scale model live-steam railroad which ran on 18-inch rails. Among his railroad memorabilia was a living room coffee table that consisted of a scale flatcar on a wooden trestle, both made from scratch.

I have many fond memories of listening to Ron discuss how lightning really worked and helping him "proof" some of the articles he wrote on the subject. Ron was a huge influence on my life, and he will surely be missed.

*Lee Reisinger, N5SXM  
Market Engineer  
Cumulus Media  
Topeka, Kan.*

**Ron Nott, Consultant and Supplier, Dies**

Widely regarded for his work to prevent lightning damage

April 4, 2017

By Randy J Stone

Ron Nott was known by many in the broadcast industry as one of the foremost experts on designing systems to prevent lightning damage to radio transmission facilities. Broadcast engineers respected Nott's meticulousness when it came to protecting their precious antennas, transmission lines and transmitter components from lightning and power surges.

Nott, founder of Nott Ltd, passed away Friday in Farmington, N.M. He was 82.

The veteran broadcast engineer, also known for his work with AM unipoles, began his career in electronic communications in the United States Army in 1958. Following training, Nott was assigned as an electronics instructor in the Ordnance Missile School at Redstone Arsenal in Huntsville, Ala. He joined two radio stations in Baton Rouge, La., in 1960 and a few years later entered TV broadcasting as an engineer.

**Chairman Pai: The Radio World Interview**

He wants FCC rules to reflect the needs and structure of the current marketplace

BY PAUL McLANE

Radio World sat down with Federal Communications Commission Chairman Ajit Pai at FCC headquarters this month. It was his first interview with a radio broadcast trade publication since becoming chairman. He met with Editor in Chief Paul McLane and Contributing Editor Emily Reagent. The conversation touched on the main studio rule, cross ownership, the future of digital radio, his regulatory philosophy and other topics. Questions and answers have been edited for brevity.



Radio World: We've all been struck in the industry about your personal warmth for radio. Talk a little bit about why you have such an obvious connection with this medium.

Pai: Part of it to me is personal. I grew up in a small town in rural Kansas, and some of my fondest memories involve listening to radio.

**NO MANDATE, HUH?**

Excellent interview with Chairman Pai in the March 29 issue. He seems a capable and caring man who does seem to have a real interest in radio. Like Mr. Pai, I, along with hundreds, perhaps thousands of others over the age of 35, grew up listening to local (and almost always) live radio. Suffice it to say Pai's background prior to becoming involved with the FCC stands him in good stead for his present position.

I only had one "huh?" moment: On page 4, he is quoted about FM chips in phones: "As I pointed out in my speech, I don't think the FCC has the legal authority to issue a mandate ..."

Let's see. The 1980s AM NRSC standards ... the elimination of the requirement for operators to hold a 3rd Class (or above) Radio Telephone License with a broadcast endorsement ... the 1950s, which method of achieving stereo FM modulation ... also which method for achieving color television modulation ... the list of notable FCC "mandates" goes on.

If, as Pai claims, the FCC doesn't have legal authority to issue a mandate, how did all these other mandates slip through?

All in all, a very good look at where the FCC may be going under Pai's leadership.

*Jerry Arnold  
Terre Haute, Ind.*

**FLEXtest METER TO IDENTIFY SATELLITES & PEAK DISHES**

Customers report that they can boost EbNo performance by several dB, when using the FLEXtest meter to perfectly peak their satellite dishes. Base unit with SAT module will display satellite names, and show precise signal quality feedback for every adjustment to antennas. Portable unit with neck strap to allow hands-free adjustment of the dish. Much more precise than a spectrum analyzer, plus it powers the LNB during work. USA tech support. Ask about option to add measurement of Cable TV & Off Air.



**FLEXtest-XR3 meter + VSAT module CALL**  
Option: Add cable TV/OffAir module & case

**TI FILTER TO PREVENT TERRESTRIAL INTERFERENCE**

Block local radar before it enters your dish-mounted LNB. Rhythmic drop-outs and degraded satellite reception often occurs near airports, harbors, or military bases. The filter also blocks interference from the newly FCC authorized 3.65 Ghz Wimax transmitters. Pass the desired 3.7 to 4.2 Ghz satellite channels with super-low .4 dB insertion loss. Block out-of-band interference by up to 70 dB.

**TI Filter, best grade CALL for special price**



**DAWNflex LOW-LOSS CABLE, BOOST SIGNAL LEVEL FROM DISH**

Improve signal quality on satellite downlink, by increasing signal level without using noisy amps. Reduce loss on signal cable run from dish to building. Flexible coax passes satellite L band signals from LNB. Flooded for direct burial, quad shielded for best protection from signal ingress. Connectors with lightning protection on both ends.

**DAWNflex cable \$1.29 per foot**



**FIBER OPTIC LINK FOR LONG DISTANCES PASS SATELLITE OR CABLE TV SIGNALS**

500 feet to fifty miles is no problem using fiber. Place a transmitter (TX) on one end, and receiver (RX) unit on the other end. The TX and RX units will convert your signals to light, which will pass your important information over a long distance of SingleMode fiber optic cable. Choose the SATELLITE fiber link to pass the L band 700-2800 Mhz output from one LNB. Choose the CABLE TV fiber link to pass Cable TV channels in the 45 to 860 Mhz band. Call for help choosing the best system for your needs.

**SATELLITE fiber TX/RX link #F55-95F13T&R \$1599**

**CABLE TV fiber TX/RX link #FBS-870F6T&R CALL for Price**



**STATIONARY 3.7M DISH PACKAGE FOR RADIO-SAT-MOVE**

Best stationary 3.7 meter satellite antenna package, to ensure great reception of programming for the RADIO-SAT-MOVE. The 3.7 meter antenna package includes: One 4-petal aluminum satellite "dish" antenna, one 2-port C band fixed feedhorn, one cover plate to fit over one of the unused ports, and one top grade C band LNB with best-in-industry specs for maximum reception quality. New dish and parts ship in crate directly to the site, and fit onto customer provided 5.5 inch OD pipe. Call DAWNco to discuss options for: ground mount, roof mount, long distance cable run, option for high wind protection for hurricane areas.

**Stationary 3.7m sat dish package for Radio-Sat-Move \$2471**

**Stationary 3.7m satellite antenna-only, #D37F48-4PC-5.5 \$1999**



Basestand to mount new dish onto existing cement pad. CALL for info.

**You'll find our prices reasonable, our reasoning priceless.**

We can help you choose the best SATELLITE and FIBER OPTIC products to suit your needs. Our advice can help you get what you need, without paying for features you won't need. DAWNco high-gain satellite antennas will give you great reception, and our top-grade LNBs will optimize the reception quality of your finicky digital channels. Check out our web site, or give us a call today.

**www.DAWNco.com • PHONE 248-391-9200 • EMAIL sales@DAWNco.com**

**PREVENT SIGNAL OUTAGES IN WINTER**

Winter can be bad for reception of satellite signals. Snow and ice can pile onto your dish, which can cause a shift in the focal point and extra signal attenuation. Block the winter snow pile-up with DAWNco covers and heaters, and keep your signals strong.

**COVERsat** for protection under most conditions. Heavy vinyl cover is wrapped over the front face of your dish, to create a steep slippery surface that will prevent accumulation of ice & snow.

**COVERsat for 3.0m dish \$399 other sizes... CALL**



**HEATsat** completely stops snow outages. Electric HEATING system arrives as a kit for customer installation on a new or existing satellite antenna. Kit includes custom sized sheets of heater matting, plus sensors for precipitation and temp.

**HEATsat for 3.0m dish \$2400 other sizes... CALL**

**TOP-GRADE LNBs for C & Ku BAND**

Try our new generation of LNBs, and watch for improved EbNo readings on your digital satellite receivers. Mandatory upgrade for HD and 8PSK satellite channels. Best-specs for "gain compression" and "phase noise." Stability rating of ±2 KHz will prevent video picture tiling and signal outages when outdoor temps fluctuate.



**C band LNB, high grade \$219**

**C band LNB, best grade CALL**

**Ku band LNB, best grade CALL**



**SIGNAL SPLITTER & POWER FOR LNBs**

All signal wires go into this amplified splitter. 1 LNB can feed signal to up to 9 receivers, or 2 LNBs can each feed 5 receivers. 18 vdc power to LNBs.

**DIVINSUP-2-1X5A \$219**

**LNB POWER SUPPLY**

Insert 18v dc power via coax cable for 1 or 2 LNBs

**DCP7A \$77**



**SAT SIGNAL SPLITTER**

high quality to pass L band

**2x DED772A \$18**

**4x DED774A \$24**

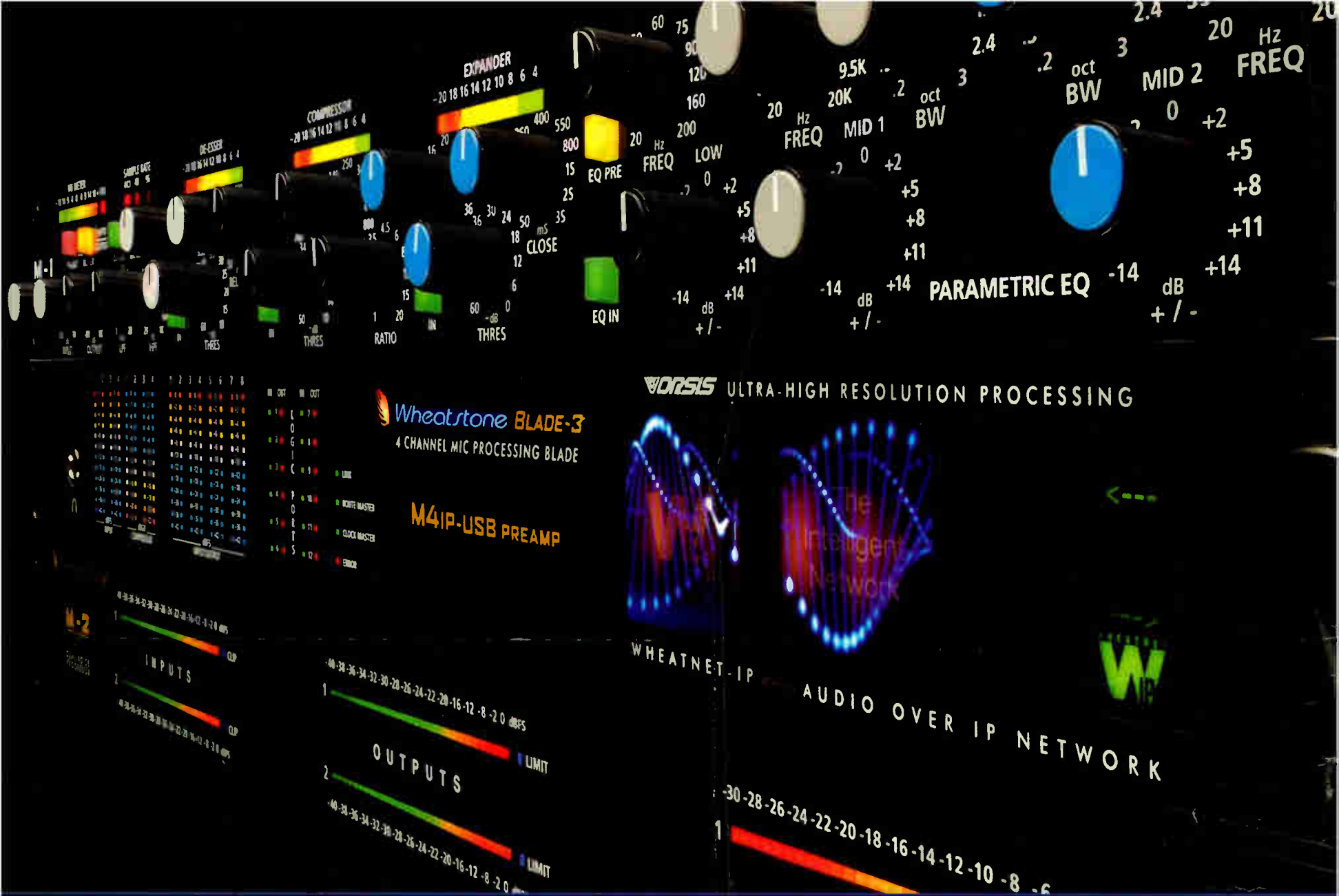


**SURGE SUPPRESSOR for LIGHTNING**

Stop lightning surge on signal cable from damaging equipment. Units can take multiple hits, with no need for resetting.

**LNB-ZAP-Stop \$122**





## Make Them Sound Great

Push your talent's voice beyond the limits and dominate the airwaves

Wheatstone Voice/Mic processors give you everything you need to make voices grab listeners by the ears.

For our SQ (Super Quiet) mic pres, we emulated and hot-rodged legendary studio preamps to sound incredible for modern radio.

Our compressors, limiters, & EQs are maximized for vocal smoothness, allowing your talent to stand out on-the-air.

Wheatstone's Graphical User Interfaces give you deep, intuitive control to tweak our world-class presets and save those you create.

The result? Voices that can sound superhuman.

### Wheatstone M-Series Voice/Mic Processors

M-1: single channel with knobs and buttons • M-2: dual channel with multiband compression • M4-IP USB: four-channel networkable BLADE-3

Learn more at [wheatstone.com/superhuman-voices](http://wheatstone.com/superhuman-voices)

**Wheatstone**  
BROADCAST AUDIO PERFECTIONISTS®

Designed and built in the USA. Phone +1-252-638-7000 | [wheatstone.com](http://wheatstone.com) | [sales@wheatstone.com](mailto:sales@wheatstone.com)

World Radio History