



# RADIO WORLD

APRIL 6, 2011 | The News Source for Radio Managers and Engineers | \$2.50 | [RADIOWORLD.COM](http://RADIOWORLD.COM)

## INSIDE

### IN THIS ISSUE

• Ten years ago, Steve Anderson was America's most wanted pirate broadcaster. — Page 16

• Eddie Fritts, back at the show. — Page 22



• This man has been smiling a lot lately. Should you be worried? A chat with Tim Westergren of Pandora. — Page 26

• DAR.fm tries to solve the radio time-shifting riddle. — Page 32

• Is it too late for radio to be cool and socially relevant? — Page 34



istockphoto/peetresvare

## Engineering Is His Family's Affair

Colleagues Say Bob du Treil Sr. Stressed the Importance of Giving Back

BY RANDY J. STINE

**SARASOTA, FLA.** — When it came time to design an AM directional array, L. Robert du Treil Sr. acknowledges, he could get very creative if it would suit the needs of a client.

"I'd bend the rules but not break them. Though the FCC may disagree with that," du Treil said with a chuckle.

"I suspect it did get me in trouble a few times. I just tried to take advantage of what was available to me."

*(continued on page 8)*



NEWS MAKER

The partners in du Treil, Lundin & Rackley at the 2006 retirement celebration for Robert du Treil Sr. Top, from left, are John Lundin, Ron Rackley, Jeff Reynolds and Charles Cooper. Bob Senior and Bob Junior are sitting.

## HD Radio Looks to 'The New Dash'

Advocates Say Power Hike Helps With Advanced Data

BY LESLIE STIMSON

Digital radio developer iBiquity Digital says it is focused on giving broadcasters more features they can offer consumers, with the goal of keeping terrestrial radio relevant in the dashboard.

That strategy is reflected in its plans for the spring NAB Show and major themes HD Radio proponents have been highlighting.

Terrestrial radio long has held a dominant position in the dash; but HD Radio proponents, among others, believe that era is ending as car companies and OEM receiver makers increasingly embrace other media in their entertainment systems.

For iBiquity, and for some in radio like Clear Channel's Total Traffic Network and the Broadcast Traffic Consortium, the way to keep radio significant in the crowded dashboard is for stations transmitting analog/digital signals to provide associated HD Radio data features to consumers. That means multicasting; providing real-time traffic data; and enabling iTunes

*(continued on page 5)*

**Continental is hiring Electrical and Mechanical Engineers!**  
**Stop by our NAB Booth C2007, Call or Apply on-line**

**Continental Electronics**  
 www.contelec.com • (214) 381-7161

**HD Radio**  
 Licensed Manufacturer

# E-1 IS PURE GENIUS!



The compact E-1 Control Surface Console and associated ip88cb Console Audio Blade provide all the networked control, mixing, and I/O needed for small to mid-sized studios at a price comparable to similar sized standalone analog consoles. The E-1 features an integrated LCD Monitor for metering and control, a streamlined user interface with password protected access to complex functions via LCD display and touchpad, and 4 Main Mix busses as well as Control Room and Studio Monitor outputs with selectable sources from the audio network. Complex Mix Minus setups are made simple thanks to per channel Mix Minus outputs with selectable reference mix and talkback interrupt. You also get auto switching between off line Mix and on line Mix Minus per channel. The E-1 features 99 show presets and a programmable per-channel A-B Source/Select switch which emulates traditional broadcast consoles. Of course the E-1 will work just fine with Wheatstone TDM products, too! Completely made in the USA and available TODAY!

- **Digital Control Surface in new compact frame**
- **Integrated LCD Monitor for metering and control**
- **Monitor / Channel Display area is angled for better ergonomics and display view**
- **Streamlined user interface with password protected access to complex functions via LCD display and touchpad**
- **4 Main Mix Busses**
- **Control Room and Studio Monitor Outputs with selectable sources from Audio Network**
- **Per Channel Mix Minus Output with Selectable Reference Mix and Talkback Interrupt. Complex Mix Minus setups made simple.**
- **Auto Switching between Off Line Mix and On Line Mix Minus per channel**
- **99 Show Presets**
- **Incredible new price!**



*With the brand new ip88cb Console Audio Blade, a complete standalone/IP-Networkable Wheatstone console is well within the reach of any studio. And with the E-1's integrated LCD monitor, all functions are immediately viewable and editable with no additional hardware needed.*



**E-1** CONTROL SURFACE CONSOLE



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

## COFETEL BACKING OF HD RADIO IS KEY

The decision by COFETEL, Mexico's equivalent of the FCC, endorsing voluntary use of AM and FM HD Radio for the entire country bodes well for transmitter and receiver manufacturers, who can benefit from economies of scale, and for stations that choose to convert, for the same reasons.

Mexico has the second-largest economy in Latin America after Brazil, based on gross domestic product, according to the International Monetary Fund.

In terms of listenership and possible receiver sales, Mexico is important. At more than 112 million people, it is the 11th most populous country in the world, according to the CIA Handbook (which ranks Brazil fifth at more than

Improvement, or COFEMER, will now manage a public comment period.

COFETEL developed the rule and would respond to comments. If COFEMER is satisfied that the rule is not too harsh or monopolistic, the new rule is published in the Mexican equivalent of the Federal Register and becomes effective after that.

The comment dates were not set as of early March; however I hear the process typically takes 60 days.

COFEMER is an administrative body within the Mexican Federal Ministry of Economy; it promotes transparency in the development and implementation of regulations and makes sure they generate more benefits than costs.

### WHERE HD IS ON-AIR

My sense is the Mexican government will proceed with HD Radio approval, although how long this will take is any-

would certainly be a vote of confidence in HD Radio. Of particular interest will be Brazil, where AM and FM HD Radio tests began in 2005 and Digital Radio Mondiale tests began in 2007. It is the seventh-largest economy in the world in terms of GDP and the second-largest economy in the Americas behind the United States, according to the IMF.

And what of our other border country, Canada? It's 36th in population at nearly 34 million people, according to the CIA. I wrote earlier that Canada's broadcast regulators acknowledged last year that DAB had failed to catch on. My sense is they're going to do nothing for awhile, waiting until the economy recovers enough for stations to even think about going digital. Canada tested FM HD before regulators chose to go with the Eureka-DAB system. Like Mexico, many Canadian AMs too are abandoning AM for the FM band.

broadcast gear from people you trust



Lowest Prices and Largest Inventory on EVERYTHING For Broadcast

**BSWUSA.COM**

**800-426-8434**

201 million and the U.S. third at more than 310 million).

If the decision by the Federal Telecommunications Commission of Mexico makes it through a final administrative hurdle, and if more Mexican stations do decide to adopt HD Radio, receiver and transmitter manufacturers will be able to sell the same HD Radios there as they do in the United States. That saves them on design, manufacturing and packaging costs.

Most countries in Latin America use the AM and FM bands and modulation schemes found in the United States, though channel separations differ by country. This means Mexican stations can use the same HD Radio transmission equipment sold in the U.S. since, also like us, they would use the "hybrid" approach, transmitting both an analog and digital signal using the same spectrum.

The next step in the process is that the Federal Commission for Regulatory

body's guess since we're talking about two government bodies being involved.

The first HD Radio testing began in Mexico City in 2003. I've reported that since 2008, COFETEL has allowed permanent AM and FM HD operation within about 200 miles of the U.S. border on an experimental basis.

About a dozen Mexican stations currently are equipped for digital transmission, both inside and outside the border zone, according to iBiquity, which tells me stations in markets like Tijuana, Juárez, Nuevo Laredo and Caborca have been on the air continuously since 2008. Mexico has approximately 700 AM and 500 FM stations; several hundred Mexican AMs are in the process of moving to FM.

Other countries in Latin America will watch how this plays out. As we reported March 9, digital radio's fate in most of Latin America has seemed uncertain despite two decades of consideration. But final approval in Mexico

An HD standard used in both Latin America and the U.S. might eventually get Canada more comfortable with a common North America standard.

If Mexican stations do adopt HD Radio in significant numbers, they would inherit a more advanced system than their U.S. counterparts initially started with, including the ability to multicast channels, transmit data for iTunes Tagging and now, the ability to synch visual images with the audio.

HD Radios are now built into cars and available in several receiver form factors and at different price points. That compares to January 2003, when the first commercial (and non-experimental) station went IBOC. U.S. broadcasters transmitting a digital signal had to wait until January 2004 for the first HD Radio receiver to come to market, a Kenwood aftermarket tuner.

Lessons learned from the U.S. rollout would presumably be applied to any Mexico rollout.

April Specials From BSW!

## New Gear New Deals



### Dual Hybrid System Pack! Save \$1200!

This BSW Package Includes:

- Telos 1X6 digital hybrid with 6-line broadcast phone system in a single unit
- Telos ONE standalone digital hybrid
- Switch Console with buttons to control all popular functions
- Assistant Producer software

1X6PACK3 List \$4,360.00 **\$3,149!**



### The Next Classic

The new Electro-Voice RE320 is the next indispensable broadcast mic.

- High output, fast transient response and superb high-frequency detail
- Virtually noiseless
- Great proximity control
- Unique dual-voicing switch selects from two response curves
- Built like a tank

RE320 List \$499.95 **\$299!**



### New! Ultra-Compact

The new, feature-packed TASCAM DR-05 records high resolution audio to microSD or microSDHC media.

- Highly sensitive built-in omnidirectional stereo condenser mics
- Limiter, low cut filter
- Built-in speaker
- USB 2.0 port

DR-05 List \$179.99 **\$99!**



TASCAM

Let Us Save You Money On Your Next Project.

E-Mail Us Your Equipment List For Package Discounts!

info@bswusa.com

Shannon Nichols  
Sales Manager

# Do You *Need* to Go, or Just *Want* to Go?

Jim Withers Says Facebook Is Great, But Nothing Beats Face Time

BY JIM WITHERS

*Note from Paul McLane: For this issue I turn the page over to our friend and contributor Jim Withers for reflections on the big spring show.*

I've been going to the NAB convention for 36 years, and have missed only one in all that time. I've usually managed to convince the guy with the checkbook that I needed to go.

Of course, back in the day it wasn't all that difficult. Every station of any size at all sent someone to "The Show." Profit margins at TV and radio stations were astonishing — 50 percent was not uncommon — so convention trips were not given as much scrutiny as today.

The only thing I know that grows at a 50 percent margin these days is my waistline.

In addition to the economy (and my belt size), the NAB Show itself has changed. The two biggest exhibitors in 1974 were RCA and Ampex. Both are long gone, replaced by companies like Sony and Ikegami. Both were relative newcomers back then (Ikegami came to the convention selling its revolutionary "Handi-Lookie" ENG camera, and I am not making that name up).

This is to state the obvious: 2011 is a totally different environment for broadcasters, and station managers are examining expense requests accordingly. The employee who wants to be on hand to sample the equipment offerings (not to men-

tion the buffet at the Bellagio) will be prepared to justify the expense.

Here are strategies that have worked for me (and on me) in the past. Use 'em now or hold onto 'em for next year.

1.) *Save some dough* — There are bargains to be had. Many companies offer "NAB Show Specials" for the very good reason that they want to be able to tell visitors that "so-and-so from here-and-there broadcasting just bought three of these!"

2.) *Facebook is great, but nothing beats Face Time* — I remember, growing up, that my mother would put an egg timer beside our phone, the better to ensure that the once-a-year holiday long-distance phone call did not roll over the three-minute limit. Electronic communications have come a long way, but for all that, there is no substitute for sitting across from an important vendor, client or fellow engineer in a booth or over a beer after a day on the floor.

I have bought and sold equipment (and a station or two) in those meetings. I have gotten (and given) tips on new equipment from small vendors in out-of-the-way booths ("Hey, you gotta' go see this thing called a Handi-Lookie!") A tip that leads to one improvement in the operation back home could more than pay for the trip.

3.) *Meet the Man* — The FCC usually has



Gabriele and Mark Hayes from Oneworld Media collect info from Christopher Currier at the Sennheiser booth.

a booth. While your first thought when thinking of the regulatory guys might be to turn out the lights and hide in a closet, The Show is a perfect place to do a little "meet and greet."

If you work in broadcasting long enough, you eventually will be on the phone with, exchanging e-mails with or sweating out an inspection visit from the FCC. If you know in advance that they do not carry the handcuffs you have nightmares about, you will do much better when your turn in the barrel comes around.

4.) *You wanna see what this baby'll do?* — Every new system — HD Radio and TV, RBDS, Dolby encoding, going all the way back past FM stereo, videotape and cart machines — gets demoed first at the NAB Show. These "mini-shows"

are conducted with factory engineers standing around in monogrammed shirts waiting for someone to throw them a question for which they do not have an answer (which does not happen often). If you pay attention, you'll be prepared later when you get asked "Should we invest in that?" back home.

5.) *More than exhibits* — I have gone as a "full convention" attendee, and other times as an "exhibits only" free rider. The decision whether to pay the freight for the management and engineering sessions has a lot to do with your job function, as well as the program itself. In years when a huge development is being rolled out that directly affects me, "it pays to pay" so I can hear the pros talk about it. Other years, not so much.

6.) *Squeeze-the-Vendor game* — This is not as acrimonious as it sounds. Most vendors want to please customers anyway. But if you have a problem with a piece of equipment, or cannot get a part, or an answer, The Show is the place to fix it.

I once had an audio board with a broken button face that the parts guys just couldn't find. Small deal, but high on my Frustrate-O-Meter. I mentioned the problem to my sales guy while getting that Face Time I mentioned. He promptly went over to a board in their booth, popped off the button lens and gave it to me. Dollar to dollar, that isn't enough to justify a ticket to Vegas, but still, it felt pretty good.

7.) *Going to NAB is a perk* — Since engineers and operations people live on the expense side of the income statement, there just aren't many perquisites. Down in the bowels of the engine room — shoveling coal as the general manager yells down "More steam!" — you're rarely thought about until the iceberg looms out of the night dead ahead.

The NAB Show gives you a chance to get into the daylight for a week. To feel important and really, to *be* important. To be able to offer personal insight when the GM or the business manager asks for a summary of new technologies, or the difference between Console A or Console B. Going to the convention helps validate your answers. And good answers are more important than ever.

There is a quid pro quo, of course. When you have the green light to go, tickets and hotel confirmations in hand and a pocket full of quarters for the slots, remember that the expense should return value to the station. You are going with the purpose of becoming a better, more well-informed employee.

If that happens — if you get back and bring new information and knowledge that can be put to good use at the station — NAB might be one time when your needs and wants coincide.

Hope to see you on the floor.

## FOR 40 YEARS YOU'VE BEEN... COUNTING ON US!

**Founded in 1971, ESE set out to provide quality precision master clocks and timing-related products, delivered on time with excellent service. And after 40 years these simple statements still guide us today. We take care of our customers. Our products have become the industry standard for affordable, reliable, perfect time. Thank you for 40 years!**

Visit [www.es-web.com](http://www.es-web.com) to discover a brilliant display of timing systems designed for easy installation, set-up and operation. Put 40 years of "time" and experience to work for you.

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

[www.es-web.com](http://www.es-web.com)

## THIS ISSUE

APRIL 6, 2011

### NEWS

Engineering Is His Family's Affair	1
HD Radio Looks to 'The New Dash'	1
COFETEL Backing Of HD Radio Is Key	3
Do You Need to Go, or Just Want to Go?	4
News Roundup	6
Honor Roll	8



### FEATURES

Workbench: Identify Allocation Problems	12
America's Most Wanted Pirate Broadcaster	16
DAR.fm Hopes to Shift the Paradigm	32
Tell Me Something I Didn't Know	34

### NAB SHOW

#### MANAGER'S PREVIEW

She Wants Radio to GRASP Social Media	20
Eddie, Back in the NAB Spotlight	22
Smart Phones Play to Pandora's Strengths	26
At KBHP, Service Is a Heritage	28
A Manager's Session Sampler	30



### BUYER'S GUIDE

Sonifex RM-2S10 Squeezes a Lot Into a Little	36
--	----



36

### OPINION

Reader's Forum	45
With Regards to Nigel Tufnel	46

## HD RADIO

(continued from page 1)

Tagging as well as HD's newest feature, images synched to the audio content, called Artist Experience.

Artist Experience brings radio more up to date with what satellite radio receivers and cellphones provide, according to this mindset.

"This is a data-driven world, and consumers expect real-time information," said Barbara Janiak, product manager for the BTC — information such as traffic and weather data and fuel prices on their radio displays.

Right now, consortium stations, both commercial and noncommercial, transmit Navteq traffic data as FM analog signals via RDS and as digital signals via HD Radio to navigation devices made by Navteq partners.

Clear Channel stations do the same for its traffic partners Inrix and SpeedInfo. In January it announced new features to enhance the real-time traffic data service for consumers using the service via broadcast, the Web, wirelessly and through navigation devices.

### 'THE NEW DASHBOARD'

"There will be a ton of people who come to NAB who've never seen what HD looks like on a dash these days," said Stephen Baldacci, iBiquity senior vice president of marketing.

"We want attendees to experience the new dashboard, and all the work we've been doing on the user interface and these new features." He added that iTunes Tagging is a relatively new feature on OEM HD Radio receivers, and that the tagging capability will be displayed.

The technology developer plans to feature Artist Experience in two booths. Both will have several radios displaying AE, using signals of at least one and perhaps two local broadcast owners, said Baldacci.

Now that some HD Radio devices on the market can display images along with the HD Radio audio, iBiquity wants to promote how attendees can monetize that feature. The data for images that a station transmits can include advertising displays or station branding images, along with programming material.

Though adoption of HD Radio continues, uptake by stations slowed notably in the past couple of years, particularly since the recession kicked in. More recently the numbers have been rising at a slower pace, as we've reported.

iBiquity expects a slow, steady climb for overall conversions, though it would like to see a faster pace of stations offering associated HD data features. A year ago February, 1,966 stations were licensed to transmit HD Radio. As of early February 2011, that number was approximately 2,030; a month later



Photo by Leslie Stimson

iBiquity Digital demonstrated an HD Radio receiver with live Artist Experience in a 2012 Ford Focus at CES.

iBiquity put it at 2,121.

The HD rollout continues to be dominated by FMs. The FCC counts 1,627 FMs transmitting in HD Radio as of mid-March, including 1,030 commercial and 597 non-commercial stations, compared to 295 commercial AMs.

iBiquity is confident that enough stations transmit HD Radio to help reach advertisers in a meaningful way. Although the company would like more outlets to convert, "The stations we have today are dominant listening stations with plenty of reach to sell advertising." It hopes to convey how new features like AE can add to the value of a station's advertising, Baldacci said.

Multicast figures continue to rise, increasing by about 13 percent from this time last year.

One manufacturing source said there were a total of 1,133 multicast channels

as of February 2010, with 970 HD2 and 163 HD3 channels. The multicasting figure, according to the same source, stood as of this February at 1,287, including 1,062 HD2 channels, 215 HD3 and 10 HD4.

Radio World reported about a year ago that iBiquity and other proponents also expected a slow rise in the number of FMs raising digital power, as budgets and equipment replacement cycles allowed. Some FMs now are raising digital sideband levels, to help their digital coverage area match their analog and to support advanced data services.

Whereas special temporary authority had been required earlier, now stations that want to raise power by 6 dB, to -44 dBc, can simply notify the FCC, while those wanting a 10 dB increase must still seek an STA.

(continued on page 6)

The notice is out — a new EAS/CAP compliance deadline looms ahead. And the best way to keep your station in compliance is the DASDEC-II, flexible emergency messaging platform. Cover all your EAS and CAP requirements in one easy to use, easy to maintain, and surprisingly affordable package. Call 585-765-1155 today or visit [www.digitalalertsystems.com](http://www.digitalalertsystems.com). Don't delay - the deadline is just around that corner.

**Digital Alert Systems**

Your Partner on the Road to EAS & CAP compliance  
[www.digitalalertsystems.com](http://www.digitalalertsystems.com)

## NEWSROUNDUP

**NPR:** The U.S. House of Representatives voted in March to stop providing funding to NPR. The vote was 228 to 192, mostly along party lines. The legislation was not expected to find as much success in the Senate.

**CUMULUS GETS CITADEL:** Cumulus Media Inc. signed an agreement to purchase Citadel Broadcasting Corp. for \$37 a share. Once the deal is completed, expected by year-end, Cumulus would own 572 radio stations across 120 markets, plus the former ABC Radio network. Terms were not announced for the combination cash/stock deal; the parties said Citadel was worth about \$2.4 billion. Meanwhile six law firms are investigating potential legal claims, looking into whether Citadel's board got the best deal for its shareholders.

**PERFORMANCE ROYALTY:** The White House again endorsed a performance royalty for terrestrial radio. MusicFirst Coalition spokesman Tom

Matzzie stated, "The administration support underscores how important a performance right is to U.S. jobs and economic growth." NAB replied that the administration's position was not new and the legislation would hurt stations so much financially it would actually kill jobs, not create new ones. "NAB offered a legislative package to resolve this issue last year, which was summarily rejected by the musicFirst Coalition. Our offer still stands," stated NAB spokesman Dennis Wharton.

**LICENSE RENEWAL:** Each AM, FM, non-commercial educational FM, FM translator and low-power FM station must electronically file Form 303-S at license renewal time, which begins May 2 in some states. Significant changes to the form mean that stations now must certify that they ban prohibited ad agreements like "no urban/no Spanish" dictates; that the station has not been off the air for more than 30 days; that it complies with RF exposure limits; and

that the applicant does not have an attributable interest in a newspaper that would trigger cross-ownership restrictions.

**PROJECT 'LEAPFROG':** Arbitron plans to update its diary methodology. The company is experimenting with Project Leapfrog, a Web/mobile-based survey. Arbitron SVP Marketing Bill Rose says this would be different than the e-Diary, a past experiment that confused some participants. This time, said Rose, Web/mobile participation would be the first choice offered to survey participants, not an option.

**ZUNE WOES:** iBiquity Digital President/CEO Bob Struble says the company would be sorry to see the Microsoft Zune HD player go. He said it "blazed the trail for HD radio portable

products. When Microsoft built HD Radio technology into the Zune HD in 2009, it drove a tremendous amount of development activity focused on new lower-power, lower-cost solutions." Microsoft had not confirmed that the player would be discontinued but several reports indicated the company, while planning to retain the Zune brand name as a software-and-services platform, would drop the music player due to poor sales.

**MICHAEL POWELL:** Former FCC Chairman Michael Powell has been named president and chief executive officer of the National Cable & Telecommunications Association. Powell currently is a senior advisor with Providence Equity Partners and honorary co-chair of Broadband for America.

Transmission Research & Technology Geoff Mendenhall said the manufacturer is seeing "significant interest" from stations wanting to increase their FM digital sideband power levels to increase their coverage area.

## HD RADIO

(continued from page 5)

The commission said 225 FMs had raised their digital power as of early March 2011, compared to 24 FMs with STAs for higher power a year ago. Of those at higher power now, 207 are operating at between -20 dBc and -14 dBc, most at the latter power level. Twelve were operating at greater than -14 dBc, and six super-powered FMs were operating with increased digital power, according to the commission.

Meanwhile, proponents believe more FM stations will be able to increase digital power levels if the FCC allows them to raise just one digital sideband. NAB FASTROAD released initial results of asymmetric sideband testing conducted by iBiquity; the developer is conducting further tests. With that data, combined with additional testing from NPR Labs, proponents hope to make the case to the commission to allow stations to raise only one digital sideband to implement a power increase.

As HD Radio receivers can now offer advanced HD data features, so too can new HD transmission equipment. Broadcast Electronics, Continental Electronics, Harris Broadcast and Nautel at NAB will exhibit HD Radio transmission equipment capable of supporting advanced data features and the higher FM power levels now allowed by the FCC.

"Broadcasters tell us they want to increase their FM digital power levels, definitely. But they want to find a way to do it without necessarily replacing their existing transmission system," said Tim Bealor, vice president of sales for Broadcast Electronics.

Harris Broadcast Vice President

### 'LONG LENS'

Critics argue that the digital conversion peaked before the recession really kicked in during 2008 and that the bulk of the stations interested in converting have done so — leaving those that invested in HD Radio in the minority, having purchased a costly technology that serves no broad receiver base.

They also feel that for all the data services iBiquity is trying to get stations to use, few do — especially tagging, which has generated little consumer awareness. Stations that are multicasting tend to pay scant attention to their extra channels, even to whether the channels are on the air, opponents argue. They say the AM rollout has essentially been a failure and that HD Radio continues to add noise to both bands.

IBOC critics also dispute the premise that radio needs to be digital to preserve space in the dash.

Bealor of BE said it's understandable that some converted stations have been frustrated with the ensuing pace of the rollout.

However, he continued, "In the long lens of radio history, I suspect we'll look back on HD Radio as being the one thing we all did as a community that really made a difference to the future viability of radio. We are talking about huge changes in radios and transmission equipment. And even more to the point, what we're really doing is changing how the listener thinks about radio, and interacts with it. That kind of change doesn't happen overnight."

### It Speaks for Itself.

**The ASI5211. Not another dumb card.** With a microphone input, including a low noise pre-amp and 48V phantom power supply, on-board DSP, increased analog I/O level of +24dBu and a new GPIO that adds two opto-isolated inputs and two normally open relay outputs, the ASI5211 is one smart card. And considering it's priced the same as cards without all these features, it's one smart choice, too. For information, call us at +1-302-324-5333 or email us at salesasi@audioscience.com.

**ASI 5211 features:**

- +24dBu balanced analog and AES/EBU I/O
- 24bit A/D and D/A converters
- 16, 24, and 32bit PCM formats
- Up to 4 cards in one system
- Mic input with 48V phantom power
- Parametric Eq and Compressor/Limiter
- 2 in, 2 out GPIO
- Windows XP, 7 and Linux drivers

BUILT FOR BROADCAST

www.audioscience.com

**AUDIOSCIENCE**  
Acoustical Engineering  
 Since 1968

# The World's Most Popular IP Codec...



## ...Is Now Even Better!

Introducing

# ACCESS 2USB

Get the story wherever you are with more ACCESS than ever before. ACCESS 2USB now gives you two USB ports, support for select 4G Wireless USB modems and now includes MPEG-4 AAC Coding Algorithms standard! The best just keeps getting better and better!

IP • 3G • Wi-Fi • 4G • BGAN / VSAT • PSTN • DSL

*50 years*  
**COMREX**  
 ESTABLISHED 1961

19 Pine Road, Devens, MA 01434 USA Tel: 978-784-1776 • Fax: 978-784-1717 • Toll Free: 800-237-1776 • e-mail: info@comrex.com

## DU TREIL

(continued from page 1)

Colleagues believe there are stations operating today that could not have been built without his "outside the box" thinking, according to the nomination form submitted by Ron Rackley, his business partner of 25 years.

They say du Treil's strength was in visualizing designs for AM directional arrays and then making innovative proposals to the FCC in cases that had no clear-cut precedents.

Du Treil, 78, former president and co-owner of du Treil, Lundin & Rackley Inc., is considered by some to be an elder statesman of broadcast engineering. His contributions to the field over a 50-year career have earned him the 2011 NAB Radio Engineering Achievement Award.



Ron Rackley, left, and Bob du Treil Sr. are long-time business partners at du Treil, Lundin & Rackley.

The award was established in 1959 and is given to individuals for significant contributions that have advanced the field of broadcast engineering. Du Treil will be honored at the Technology Luncheon on Wednesday April 13 in the Las Vegas Hilton during the NAB Show.

His experience involves all aspects of AM, FM and TV allocations, FCC applications and various field work. In addition to consulting, du Treil spent much of his career researching and writing on a number of topics affecting broadcasters. He traveled extensively to make presentations to many local, state and national broadcast engineering groups.

In 1980 he authored instructional documents that served as the basis for discussions regarding AM directional antenna technology during the ITU Region 2 Conference, which revised radio station allocation engineering standards and procedures, according to NAB.



"The ITU wanted a new agreement to cover the whole hemisphere, instead of just North America, with provisions that, among other things, would provide for a station database to use for computer studies," said Rackley. "Bob contributed the training material for specifying AM directional antennas using standard patterns, which had earlier been adopted for doing allocation studies domestically."

The Region 2 agreement replaced the old North American Regional Broadcasting Agreement, or NARBA, which had roots going back to 1940 and was considered obsolete, according to Rackley.

### 'GIVING BACK'

"Bob always stressed to us the importance of giving back to the industry," said Rackley. "That's one reason why our firm always had the policy



Rackley, left, and du Treil are shown circa 1983.

of supporting efforts of the National Association of Broadcasters and other industry groups to further the interests of our clients, pro bono if it was possible to do so."

The firm of du Treil, Lundin & Rackley has designed some of the largest and most complicated AM antenna systems in the country, according to its website.

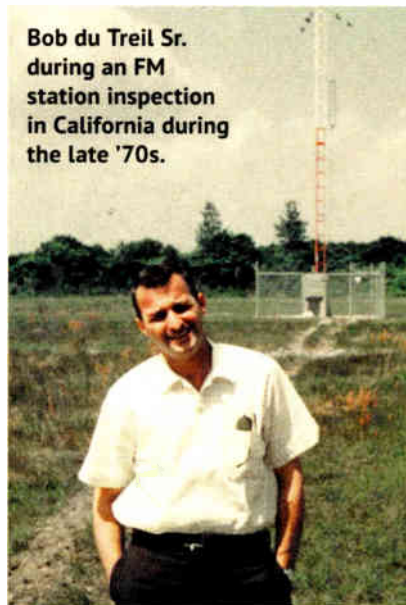
An example is WWRU(AM), an expanded-band station at 1660 kHz first licensed to Elizabeth, N.J., and then to Jersey City. In 2000, du Treil convinced the FCC to permit WWRU to upgrade from a non-directional station with daytime power of 10 kW and nighttime power of 1 kW to much more competitive directional pattern.

"We convinced the FCC to allow (WWRU) to operate at 10 kW at night, using the directional antenna, which then gave them fairly good coverage to New York City," du Treil said.

Another career highlight for du Treil was his firm's relationship with Hatfield & Dawson Consulting Engineers LLC. The firms created a joint venture to pursue high-power medium-wave antenna system and allocation engineering projects, most in excess of 50 kW, for the International Broadcasting Bureau.

"The joint venture was primarily for doing foreign broadcast station work.

Bob du Treil Sr. during an FM station inspection in California during the late '70s.



## HONOR ROLL

Winners of the NAB Engineering Achievement Award are listed. Beginning in 1991, radio and TV winners were named; radio winners are shown.

1959 John T. Wilner  
1960 T.A.M. Craven  
1961 Raymond F. Guy  
1962 Ralph N. Harmon  
1963 Dr. George R. Town  
1964 John H. DeWitt Jr.  
1965 Edward W. Allen Jr.  
1966 Carl J. Meyers  
1967 Robert M. Morris  
1968 Howard A. Chinn  
1969 Jarrett L. Hathaway

1970 Philip Whitney  
1971 Benjamin Wolfe  
1972 John M. Sherman  
1973 A. James Ebel.  
1974 Joseph B. Epperson  
1975 John D. Silva  
1976 Dr. Frank G. Kear  
1977 Daniel H. Smith  
1978 John A. Moseley  
1979 Robert W. Flanders

1980 James D. Parker  
1981 Wallace E. Johnson  
1982 Julius Barnathan  
1983 Joseph Flaherty  
1984 Otis S. Freeman  
1985 Carl E. Smith  
1986 Dr. George Brown  
1987 Renville H. McMann  
1988 Jules Cohen  
1989 William Connolly

1990 Hilmer Swanson  
1991 George Marti  
1992 Edward Edison & Robert L. Hammett  
1993 Robert M. Silliman  
1994 Charles T. Morgan  
1995 Robert Orban  
1996 Ogden Prestholdt  
1997 George Jacobs  
1998 John Battison  
1999 Geoffrey Mendenhall

2000 Michael Dorrough  
2001 Arno Meyer  
2002 Paul Schafer  
2003 John W. Reiser  
2004 E. Glynn Walden  
2005 Milford Smith  
2006 Benjamin Dawson & Ronald Rackley  
2007 Louis A. King  
2008 Thomas B. Silliman  
2009 Jack Sellmeyer

2010 Steve Church  
2011 L. Robert du Treil Sr.

It was definitely beneficial for both firms," du Treil said.

Du Treil retired from the company in 2007 but remains a consultant for the group.

Rackley, himself a recipient of the NAB Radio Engineering Achievement Award in 2006, contends that du Treil seemingly was predestined to excel in a radio engineering career, having been born into a family with close ties to broadcast engineering.

Bob du Treil's father, L.J.N. du Treil, worked at American Marconi as a telegraph engineer. L.J.N. du Treil eventually worked for the Federal Radio Commission, the predecessor to the FCC, as engineer in charge of its New Orleans office. He also began his own broadcast engineering consulting firm and is credited with the original construction of radio station WWL(AM) in New Orleans, du Treil said.

"My family has worked in technical fields for four generations, including my grandfather, who worked on steam engines. There was never much doubt I would continue in the field. I never dreamed of doing anything else," du Treil said.

He described his father, who died in 1985 at age 94, as a true gentleman who greatly enjoyed experimenting with

(continued on page 10)



# OMNIA.11 EVERYTHING YOU HEAR IS TRUE.

- Effortless dial dominance • Louder yes, yet always pure & uncompromised • Pop sparkles • Rock really rocks • Country caresses • Hip hop thunders • Voice is natural and intimate
- Push it hard and be amazed at how open and clean it remains

Find out more: [www.omniaaudio.com](http://www.omniaaudio.com)



©TLS Corp. 2011. All rights reserved.

Radio never sleeps. Neither do we. We're here for you, anytime, with free round-the-clock, 24/7 technical support. Call +1-216-622-0247

World Radio History

## DU TREIL

(continued from page 8)

electrical things, like storage batteries and tubes. The only time he heard his father cuss was when L.J.N du Treil got too close to high voltage in his amateur radio transmitter and his body became a conduit for the electricity.

### OPENED HIS OWN SHOP

Bob Du Treil received a BSEE from Louisiana State University in 1961 and joined the firm of John H. Mullaney & Associates in Washington.

"John Mullaney was a real inspiration to me and a real free thinker. He was willing to try things that no one else would and I was really inspired by that," du Treil said.

In 1967 du Treil joined his father's consulting firm in New Orleans, but returned to Washington in 1970 and soon joined Jules Cohen & Associates. He became partner in 1977.

"Jules was just a wonderful fellow who was very smart and created a good learning environment. I was fortunate to work at three tremendous firms."

Bob then founded his own consulting firm in 1983 and convinced Rackley, whom he had met at Jules Cohen & Associates, to join him. Du Treil-Rackley Consulting Engineers was born.

"Ron and I were good buddies and we were a good match in business together. I ran the business side and (Ron) became the top guy when it comes to AM direc-

**'I never dreamed of doing anything else.'**

tional design, and that was what we really became known for, even though we did FM and TV work, too."

The pair combined their company with A.D. Ring and Associates, led by John Lundin, in 1987. Thus du Treil, Lundin & Rackley was formed. Rackley and Lundin remain partners in the firm along with du Treil's son, Bob Jr.

NRBA, The Radio Association, is pleased to announce the appointment of a new engineering counsel, du Treil-Rackley Consulting Engineers.

The Washington, DC-based firm, formed by partners Robert du Treil and Ronald Rackley in 1983, will serve as counsel in filing engineering comments at the Commission and will assist in advising NRBA staff on engineering questions. du Treil-Rackley also will write a monthly column in **RE: Engineering** on topics of importance to both general managers and chief engineers.



du Treil

Robert du Treil has over 25 years of experience in communications engineering, having earned a B.S. degree in Electrical Engineering from the University of Southwestern Louisiana. He is a member of the Society of Broadcast Engineers, an officer in the Broadcast Technology Society of the Institute of Electrical Engineers (IEEE), a full member and past president of the Association of Federal Communications Consulting Engineers (AFCEE), chairman of the AM broadcast band expansion committee, and the author of papers concerning AM directional antenna systems (pattern design and standard patterns) and medium wave groundwave propagation.

Ronald Rackley, with over 15 years experience in electronic communications, has a B.S. degree in electrical engineering from Clemson University, where he specialized in the area of electromagnetic radiation and wave propagation. His studies have also focused on antenna design and performance measurements. A full member and officer in the AFCEE, he is also a member of the IEEE and a participant in the IEEE Antennas and Propagation Society and Broadcast Technology Society.

du Treil and Rackley currently serve on the Advisory Committee on Radio Broadcasting, an FCC-Industry body concerned with domestic allocation policy, technical standards, and international spectrum negotiations.



Rackley

NRBA wishes to thank Harold Kassens of A.D. Ring & Associates for his many years of service and engineering advice to NRBA members.

### MOTOROLA ASKS COMMISSION TO RETAIN SOME AM STEREO REGULATIONS

Many broadcasters welcome the deregulation of AM technical rules with open arms, yet AM stereo is one area in which some arms are guardedly folded. In comments filed on the proposed deletion of AM stereo service quality transmission standards, Motorola has asked the FCC to keep AM regulations affecting stereophonic distortion, noise and separation, for at least two years, as "complete deletion of standards... could retard the development of public acceptance of AM stereo."

Motorola felt that the FCC should require measurements of spectrum occupancy under various types of modulation, so that AM stereo equipment meets FCC rules.

Shown is an August 1985 announcement from the former NRBA, the National Radio Broadcasters Association, on "RE: Engineering, A Guide for Radio Managers" introducing du Treil and Rackley as the new engineering counselors for the association, which eventually merged into NAB.

The firm moved its offices from Washington to Sarasota, Fla., in 1992. "Early on we had to be near the FCC to get a look at the records, but then everything we needed to do our job became available on the Internet. Plus, Washington was really beginning to wear on us. I got tired of riding on the subway. Actually, I think the FCC treated us better after we moved to Sarasota," du Treil said.

Colleagues said du Treil excelled at project management and client relations and that AM broadcasting always remained his passion.

"I obviously enjoyed working with AM more than anything else. I enjoyed being in the field and getting those towers to do what they were supposed to do to make a directional pattern. It was very fulfilling to design a directional pattern in the office and then go out and actually make it work."

The transition to using computers for designing AM directional facilities was especially satisfying.

"Initially, when we designed a directional AM facility with three towers, it would take us three or four days using a mechanical calculator for calculations and drawing plans. It was just very time consuming. Now you can do the work in about three hours."

Many of the same AM radio broadcasters that du Treil helped with projects though the years now face challenges never seen before, according to the engineering consultant.

"Radio just doesn't have the punch it used to. However, all of radio is facing a challenge, not just AM. Someone very smart is going to have to come up with some very good ideas. But I'm still hopeful for the future. Many have given up on terrestrial radio, but I haven't," du Treil said.

Du Treil and his wife Barbara spend leisure time on their Silverton 34-foot convertible boat cruising waters near Sarasota, Fla. The couple has been married 49 years; they have three children and seven grandchildren.


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

## CORRECTION

The March 9 story "Digital Radio's Future Murky in Latin America" quoted Juan Fernández, director of Radio Mi País, as comparing digital radio's outlook in Argentina with its prospects in Canada. He said he'd intended to compare Argentina's population with that of the United States instead.

# MAKE WAVES

## EXPECT MORE FROM YOUR AM TRANSMITTER



MADE IN USA

**Presenting the Armstrong Transmitter X-1000B**

Bring major market sound to your radio station with the dual, hot-swappable 600 Watt RF modules capable of 150% modulation in Armstrong Transmitter's X-1000B, (1KW HD & DRM ready AM transmitter).

Engineered with the latest technology advances, X-1000B offers high reliability and built-in redundancy. Get ready to save money while improving your sound and reliability. Call us today!



Tel 315-673-1269 ▲ sales@armstrongtx.com ▲ www.armstrongtx.com

# Report-IT Enterprise Revolutionizes Newsgathering for Chum Radio

“

**Our experience has been amazing using Report-IT Live Enterprise Edition – it has revolutionized the way we approach live remote broadcasting.**

**Chris Larke, Broadcast Engineer, CHUM Radio Vancouver**

”



**Radio Host Ray Grover uses Report-IT**

Using Report-IT over wireless 3G networks or Wi-Fi for live remote broadcasts is a breeze and we no longer need to check for ISDN or POTS lines before a broadcast.

Our setup time for remotes has been reduced immensely and our announcers love using a wireless Live IP codec that is small enough to fit into your pocket. We can configure every setting from the studio end and all a reporter or announcer needs to do is open the app on their iPhone and connect at the touch of a single button.

We use Report-IT to broadcast our afternoon show live on-location, as well as sports interviews and reporting. Our sports reporters often use it to file reports via FTP and our producers can get these reports to air long before any other station.

We have a few advertising clients that like to voice their own spots but scheduling the client's time with studio time is often a challenge. The simple solution was to get the client to download the app for free and voice their spot using Report-IT. The quality of the built-in microphone on the iPhone 4 is excellent for this type of voice work and clients can FTP the 20kHz audio back to the studio at the touch of a button!

**Chris Larke, Broadcast Engineer, CHUM Radio Vancouver**



**NABSHOW**  
2011 OFFICIAL EXHIBITOR  
Visit us at booth #C453

For a **FREE** demo call 317-845-8000  
or email [sales@tieline.com](mailto:sales@tieline.com)

**Tieline**   
TECHNOLOGY

[www.tieline.com/report-it](http://www.tieline.com/report-it)

\*iPhone and App Store are trademarks and/or registered trademarks of Apple Inc., registered in the U.S. and other countries.

# Identify Allocation Problems

Facilities Activities Reports Are a New Offering From Cavell Mertz

The site [www.fccinfo.com](http://www.fccinfo.com) is a service of Cavell, Mertz & Associates. That consultancy has now released a new service called Facilities Activities Reports.

## WORKBENCH

by John Bisset

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

This is a reasonably-priced notification service that provides updated facility information, on a weekly basis, about

FCC filings that might affect a particular station. These reports are unique in that possible allocation problems are identified; links take you to the company's FCCInfo website, providing more detail at the click of a mouse. Consolidated reports for group engineering managers also are available.

A free custom report is available to *Workbench* readers. To find out more, contact Richard Mertz at (703) 392-9090. Maintain your competitive edge!

Tim Walker is a contract and projects engineer based in North Carolina. While visiting a client's station in Virginia recently, he discovered the bird in the station's transmitter.

of the plate blocking capacitor. It looks like contact with the plate cap of the PA tube cooked its goose. The 1970s vintage Wilkinson AM 1 kW transmitter has a 3 kV plate supply.

The construction of an open exhaust cavity above the PA cabinet would not be permitted today. A piece of half-inch wire mesh placed on top of the transmit-

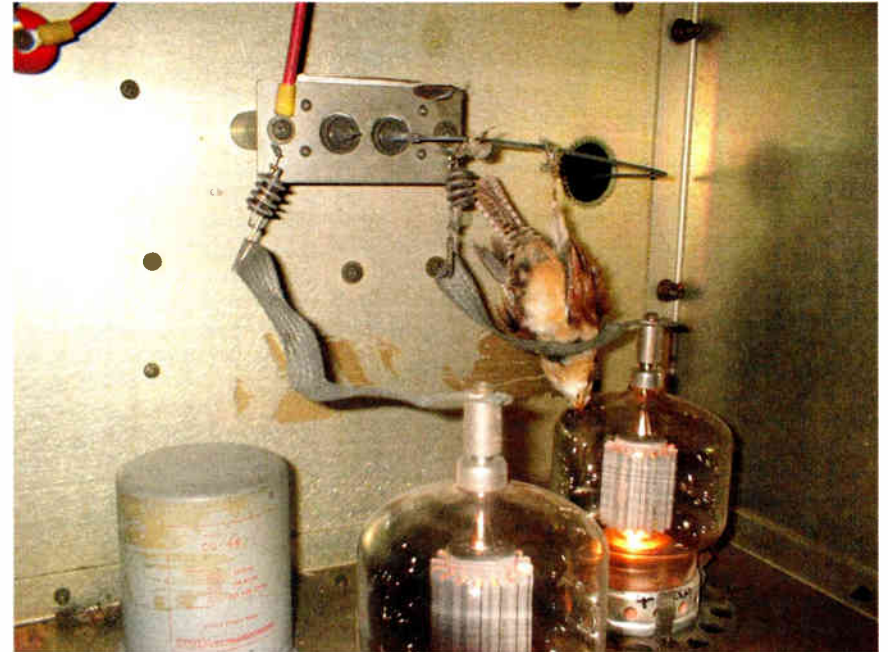


Fig. 2: An open air vent lured this unfortunate bird into the PA cavity.

This AM site uses a Wilkinson AM-1000B transmitter, which has an open air exhaust port above the PA tube deck. The avian explorer flew in, against the exhaust, only to land on the RF side

ter would guard against future intrusion.

Over the years in *Workbench*, we've had every kind of snake and rodent enter transmitters; I believe this is our first bird.

Tim Walker can be reached at [tim@clec.com](mailto:tim@clec.com).

Greg Manfroi handles engineering for the University of Illinois at Springfield. The station uses a Broadcast Electronics rack-mounted FMi-201 transmitter.

The AC mains circuit breaker in the transmitter opened. To access the breaker, you must remove screws on the side of the transmitter that secure the access cover. However, in Greg's case, a Harris HT-20 sits next to the BE, blocking access to the screws. Here's how he solved the problem.

It's been Greg's practice to save the rack panels that Middle Atlantic uses to keep their racks from distorting during shipping.

After the breaker opened, Greg installed two of these rack panels on the rear rails of the transmitter rack, leaving 3-1/2-inch spacing between them. He mounted another panel on the front rails.

He then took an 8-foot-long square timber from a local hardware store and cut

(continued on page 14)


 <b>Facilities Activity Report</b> prepared January 7, 2011 for Cavell, Mertz & Associates, Inc. New York Market (page 1 of 9)							
<b>Reference Facility WAXQ(FM) - Activity Since December 24, 2010</b>							
Call Sign	Chan	City, State	Power	Application Type	Data Source	Radius	
Type	Freq	File Number	Ant. Ht.	Application Status	Expiration Date	Margin	
WAXQ(FM)	Ch. 282B	New York, NY	1 kW	License to Cover	Engineering Database	100 km	
LIC	104.3 MHz	BL14-19960426KA	415 m	Application Granted	06/01/2014	32 km	
<b>FM Allocation Activity Potentially Affecting WAXQ(FM):</b>							
Call Sign	Chan	City, State	Power	Application Type	Data Source	Distance	
Type	Freq	File Number	Ant. Ht.	Application Status	Status Type, Date	Bearing	
W250B(LS)	Ch. 228D	Warwick, NY	0.25 kW(DA)	Minor Amendment to a Construction Permit	Engineering Database	67.1 km	
APP	93.5 MHz	BMPPT-20110104ACH	308 m	Amendment Application Received	New App 01/07/2011	332.0°	
W250B(LS)	Ch. 228D	Warwick, NY	0.25 kW(DA)	Minor Modification to a Construction Permit	Engineering Database	67.1 km	
APP	93.5 MHz	BMPPT-20110104ACH	308 m	Accepted for Filing	New App 01/03/2011	332.0°	
<b>FM regional activity within 100 km of WAXQ(FM):</b>							
Call Sign	Chan	City, State	Power	Application Type	Data Source	Distance	
Type	Freq	File Number	Ant. Ht.	Application Status	Status Type, Date	Bearing	
W290D(LS)	Ch. 293D	New York, NY	0.025 kW(DA)	Minor Amendment to a Construction Permit	Engineering Database	0.9 km	
APP	106.5 MHz	BMPPT-20100812ACG	286 m	Amendment Application Received (Note 1)	New App 01/06/2011	356.9°	
WJLK(LS)	Ch. 232	Asbury Park, NJ	-	Transfer of Control	Broadcast Applications	-58 km	
APP	94.3 MHz	BTCH-20101230AB1	-	Accepted for Filing (Note 2)	01/05/2011	-189°	
W250B(LS)	Ch. 256D	Warwick, NY	0.175 kW(DA)	Minor Change to a Licensed Facility	Engineering Database	67.1 km	
APP	99.1 MHz	BPT-20100920ACV	308 m	Application Granted (Note 3)	Status-Admin 12/30/2010	332.0°	
WAXQ(FM)	Ch. 208	Tombon, SD	-	Transfer of Control	Broadcast Applications	-79 km	
APP	101.5 MHz	BTCH-20101230ABC	-	Accepted for Filing (Note 4)	01/05/2011	-229°	
W297AS(LS)	Ch. 297	Danbury, CT	-	Assignment of License	Broadcast Applications	-82 km	
APP	107.5 MHz	BALFT-20101229AAY	-	Accepted for Filing (Note 5)	01/04/2011	-32°	
W308(LS)	Ch. 234	Town River, NJ	-	Transfer of Control	Broadcast Applications	-99 km	
APP	92.7 MHz	BTCH-20101230ABL	-	Accepted for Filing (Note 6)	01/05/2011	-189°	

Fig. 1: Cavell, Mertz & Associates offers Facilities Activities Reports. Here, a sample page from a report for station WAXQ(FM) in New York.

## Broadcast equipment for less.

Our competition may have led you to believe that you know them, or that you can trust them. But the plain truth is that they just want your cash, and lots of it!

In a time when cash is scarce, a better concept in sales, perhaps a more progressive one, is to work for a smaller profit and pass the savings along to the customer.

Realize the savings you can put in your pocket.

Call, click, or stop by Progressive Concepts today!

THE BEST IN BROADCAST ELECTRONICS SINCE 1990

 **progressive concepts**  
 305 South Bartlett Road • Streamwood, IL 60107

[www.progressive-concepts.com](http://www.progressive-concepts.com)  
 (630) 736-9822



Why do Axia consoles do phones best?  
(Hint: who's *your* daddy?)



Other consoles treat phones like an afterthought. But Axia's parent company is Telos, so phones are part of our DNA. Consider our Element AoIP console, and the Telos VX broadcast VoIP phone system. Both amazing on their own. But when you connect them — magic. Total integration, so talent can run complex talkshows without taking their hands off the board. Effortless. A dedicated hybrid for each caller, each assigned to its own fader, with automatic mix-minus and talkback. Painless hookup via CAT-5 — no extra I/O or logic connections required. An all-digital path for crystal-clear caller audio, even from cell phones. That's the Telos connection. And only Axia gets it. Axia: the console that talks Telos.



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

# America's Most Wanted Pirate Broadcaster

Hans Johnson Recounts the Real-Life Story of Steve Anderson

BY HANS JOHNSON

It's not every day that a radio station operator makes it on to "America's Most Wanted," a television show profiling criminal fugitives. But Steve Anderson of Somerset, Ky., managed to do just that a decade ago.

I wrote about the story for Monitoring Times and for the Cumbre DX newsletter. With the 10th anniversary of the case approaching, Radio World asked me to recount it.

Anderson started Kentucky State Militia Radio (KSMR) in March 2001 from his house; the first monitored broadcast transmission of the station was made on March 3 by veteran listener Harold Frodge and cited in Cumbre DX. He had floated the idea of such a station during a militia gathering the previous fall and got a favorable response.

The Kentucky State Militia was one of the most active paramilitary groups in the country at the time, according to the Anti-Defamation League; it conducted military training and hosted national gatherings of militia members. Its members were surprised when the station

came on the air so quickly. More importantly, most were shocked to learn that it was an illegal pirate station.

"Most [militia] members thought that this was to be a commercial radio station licensed through the FCC," said Patrick Perry, a communications officer with

side band, a mode many shortwave radio sets cannot receive. He said he did this to save wear and tear on the transmitter. KSMR also changed frequency from time to time. Early programs consisted of coded group and militia messages and news.

## Anderson started anti-Semitic rants on KSMR a few days after transmissions started.

the KSM at the time. "Members had no reason to believe that this station would be otherwise."

Anderson called his program "The Militia Hour." He only operated for an hour a day on shortwave initially. He later expanded his schedule to a few hours a day. His intended audience was militia members and supporters in Kentucky and beyond.

A licensed radio amateur, AA8DP, Anderson transmitted KSMR in single

Radio enthusiasts regularly monitor the shortwave bands searching for new or unusual stations. These enthusiasts use sophisticated receivers and antennas capable of receiving such signals; they regularly communicate with one another via e-mail and newsletters about their catches. Anderson's station quickly came to their attention as KSMR was heard across the United States.

A few apparently alerted the FCC's Enforcement Bureau.

Anderson was no stranger to the FCC; he'd already had a run-in with the commission over some of his amateur radio activities. The FCC alleged that Anderson had used unauthorized frequencies while operating as AA8DP. According to its records, Anderson ultimately turned in his license in February 2001, though he informed the commission that it had no authority over him, a self-described sovereign citizen. (He wrote, "I do not reside in any territory or possession of the Federal Government of the United States of America and am not subject to any regulation by this fictitious entity.")

The FCC recorded the KSMR broadcasts and issued warning letters that the transmissions must stop. They did not. KSMR's slogan was "Your First Amendment Station. Protected by the Second Amendment." He repeatedly vowed to defend KSMR. Anderson, described as a crack shot, backed up his slogan and vows with a house full of weapons and plenty of ammunition, according to news accounts in the local Somerset Commonwealth Journal and other sources at the time. He continued broadcasting.

Anderson started anti-Semitic rants on KSMR a few days after transmissions started. That was the last straw for the militia group; at the urging of

(continued on page 18)



## KINTRONIC LABORATORIES, INC.

WWW.KINTRONIC.COM

### WE SUPPLY

### COMPLETE CUSTOM AM BROADCAST SYSTEMS

- TOWERS
- PREFAB TRANSMITTER BUILDINGS
- DA PHASING & MATCHING NETWORKS
- INDOOR / OUTDOOR DUMMY LOADS
- TRANSMITTER & PATTERN SELECTION CONTROL RACKS
- RIGID & SEMI-FLEXIBLE TRANSMISSION LINES
- CUSTOM BULKHEAD / PATCH PANEL ASSEMBLIES

...AND MORE.

COME SEE US!!!

**NABSHOW**  
Where Content Comes to Life™

APRIL 9-14 LAS VEGAS, NV  
BOOTH C1030

3 TOWER 50KW DA  
WASHINGTON, DC



# Drops jaws. Not audio.



Broadband Internet is everywhere. Which makes it ideal for live remotes.

Unfortunately, the internet is also notoriously erratic. Even if you're lucky enough to get a good connection, it might deteriorate during your show. So you dial back the bitrate, sacrificing sound quality to play it safe.

There is a better way.

Meet the amazing new Z/IP ONE codec.

Telos and Fraunhofer collaborated to develop a unique coding algorithm that adapts to changing network conditions on-the-fly.

If your connection quality drops, the Z/IP ONE uses error concealment, elastic buffers, and bitrate adjustments to keep audio flowing at maximum quality.

The Z/IP ONE now makes it possible to use the internet for great sounding remotes.

The convenience of the Internet. The sound of Telos.

*Telos*  
AUDIO | NETWORKS  
[www.telos-systems.com](http://www.telos-systems.com)


© 2010 - 2011 Telos, Zephyr Z/IP and Z/IP ONE are trademarks of TIS Corp

### BROADCAST TELEPHONY



Telos is the trusted World Leader in single-line hybrids and multi-line phone systems.

### ZEPHYR IP & ISDN CODECS



With more than 20,000 in daily use around the world, Zephyr is The Best Way to Hear from Everywhere.

World Radio History

### STREAMING AUDIO



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

### AUDIO LOGGING



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

## ANDERSON

(continued from page 16)


Perry and others, it told Anderson to shut down the station. His solution was simply to change the name of the station to United Patriot Radio (UPR) and stay on the air. The KSM kicked him out of the organization in response.

Following the lead of radio enthusiast publications and their monitoring, other organizations became involved in reporting on Anderson and UPR. The Anti-Defamation League started listening and recording UPR's transmissions by April of 2001. The Somerset Commonwealth Journal ran a number of pieces and Anderson and his pirate station. It publicized the fact that a little-known radio monitoring group, The Far Right Radio Review, had described Anderson as the "number one hate show on shortwave radio today."


### ON THE RUN

Anderson responded on UPR by threatening Carol Coffey, the reporter who had written the story. The ADL alerted Coffey of the threat and gave her a tape. Coffey went to the FBI, but they reportedly could not help her. She said that the FCC would not return her calls.

Yet a local sheriff, Sam Catron, did take the threat seriously. Coffey was told to be more careful. "From some law enforcement, I have heard that they were waiting for him to commit a felony," she told me in 2002.



### ATF Most Wanted



**STEPHEN HOWARD ANDERSON  
(AKA STEVE ANDERSON)**

**Description**

<b>Date of Birth:</b>	<b>July 16, 1947</b>
<b>Height:</b>	<b>6' 2"</b>
<b>Weight:</b>	<b>235 pounds</b>
<b>Eyes:</b>	<b>Green</b>
<b>Hair:</b>	<b>Dark, short</b>
<b>Aliases:</b>	<b>Steve Anderson</b>

**Anderson should be considered armed and dangerous. Persons should not attempt to apprehend Anderson on their own. If you spot Anderson, immediately contact local law enforcement, the Kentucky State Police at (606) 573-3131 or (800) 222-5555, or the Bureau of Alcohol, Tobacco & Firearms at (888) 283-8477.**

**ATF INVITES QUESTIONS ON  
EXPLOSIVES TOPICS**

**W**e welcome any questions or topics regarding ATF and the explosives industry that you would like to have presented. You may contact the Public Safety Branch in Washington, DC, by mail, phone, or fax, as follows:

Bureau of Alcohol, Tobacco & Firearms  
Public Safety Branch  
800 K Street, NW, Room 710  
Washington, DC 20001  
Phone: (202) 927-7930  
Fax: (202) 927-8887

**NEWSLETTER DISTRIBUTION**

**H**ave you recently changed your address, or do you know someone in the industry not currently on the distribution list that may wish to receive the ATF Explosives Newsletter? If so, please notify the Public Safety Branch by phone or Fax us the following information and we will change your address or add their names to the distribution list. All we need is the following information:

Name: \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/State: \_\_\_\_\_

Zip code: \_\_\_\_\_

Phone No. (optional): \_\_\_\_\_

e-mail (Optional): \_\_\_\_\_

A newsletter from the Bureau of Alcohol, Tobacco and Firearms showed Anderson in February 2002.

Law enforcement got their wish that fall in Middlesboro, Ky.

A deputy sheriff pulled Anderson over for a broken tail light. The sheriff noticed an ammunition clip on the seat and asked Anderson if he had any weapons. Anderson replied that he had several. He then allegedly stepped out of the vehicle and fired at both the deputy and the deputy's vehicle. Some of the shots hit the vehicle; the deputy was unscathed.

A chase reportedly ensued and Anderson got away. He was now wanted by the Kentucky State Police for attempted murder; and the Bureau of Alcohol, Tobacco and Firearms wanted him for pipe bombs he had.

This, at least, was the end of United Patriot Radio, after seven months. A subsequent search by authorities of his basement radio room found a copper wire cage that prevented interference. Tapes of the shows were on one wall while another displayed the FCC warning letters and press clippings about the station.

Some in the radio enthusiast community were critical of the authorities, especially the FCC, for allowing Anderson to operate in the first place. There were claims that the commission dragged its feet. Yet pirates that defy the FCC can take years to shut down. Anderson not only was defiant, he was armed — and willing to use force, as his subsequent shootout with police proved.

### 'MOST WANTED'

Anderson managed to elude the authorities for quite some time. Frustrated that he remained on the loose a few months after the shootout, the Somerset Commonwealth Journal prepared a package on him and sent it into "America's Most Wanted," the television show that portrays criminal fugitives and asks viewers to call the police if they have any information. The show aired a segment on Anderson.

This did the trick. Police in North Carolina captured Anderson in November 2002 in response to a tip from someone who had seen the show. He was sentenced the following May to 15 years in federal prison.

During his trial, Anderson apologized for his actions and what he had said on the air. According to press reports of the time, he told U.S. District Judge Danny C. Reeves, "My actions were wrong — bad wrong. What I said was very wrong and I apologize for that."

He remains in prison today. Anderson declined an interview request from this writer 10 years ago, and to my knowledge hasn't talked to other journalists since.

*Hans Johnson has been writing about broadcasting for almost 20 years. He founded Cumbre DX in 1994; he makes his home in Florida.*

# iXm. The ultimate all-in-one.



Meet the best recording microphone ever. Enjoy an unbelievable sound. Experience a usability you've never seen before.



BGS call 352-622-7700



SCMS call 800-438-6040



**YELLOWTEC**



# Simplicity Made Smarter



*Pilot* LOGITEK

DIGITAL CONSOLE

Less than a decade ago building infrastructure at even the most modest radio facility was difficult and costly. Today, AoIP is making it possible to replace miles of cables and closed systems with routers that use standardized network protocols. The **JetStream Mini** brings you the benefits of this new technology, and nothing is easier to use, faster, or less expensive. Add a **Pilot** control surface that includes the basic operating features your staff will need and you have the most cost effective AoIP networked audio system available.

The Pilot is easy on the eye and the budget and like the JetStream Mini, Logitek has built it with ease of use and durability in mind. The Pilot is a tabletop control surface that includes all of the basic engineering features your staff will need- and more- including 4 Program busses, 3 monitor sections and 24 mix minus busses. It is available in frame sizes for 6 to 24 faders.



**JetStream MINI IP Audio Networking System**

Looking for lots of power in a small footprint? The JetStream Mini lets you load up to 64 channels of I/O into a 2 rack unit and the Pilot will service even the most constrained spaces with ease. Configure your system with microphone inputs and analog/digital I/O to suit your specific needs; our use of standardized IP protocols ensures advanced AoIP networking with fast and easy setup... all for a price that won't break the bank.

Logitek Electronic Systems, Inc. | Phone: (713) 664-4470 | Toll Free: (800) 231-5870 | [www.logitekaudio.com](http://www.logitekaudio.com)

  
**Logitek**

# She Wants Radio to GRASP Social Media

'The ROI of Social Media for the Broadcast Industry Is That You'll Be Around in Five Years'

BY CRAIG JOHNSTON

If you experience a major disconnect when you try to figure out how to integrate your station with social media such as Facebook and Twitter, Jessica Northey said it's not really your fault.

"Experts like to come in and make things complicated, give you too much information, so that they have job security."

The founder and CEO of Tucson-based Finger Candy Media has been working in social media since her days as a non-traditional revenue manager at a broadcast radio station, back when MySpace pioneered social media.

She says her radio background helps her connect with broadcasters, and speak their language. "After my seminars, workshop or speaking gigs, broadcasters tell me they had an 'aha moment,' about social media ... that I'm not saying anything they have trouble understanding; I'm saying it in their language."

Northey's presentation is built around the acronym G.R.A.S.P.:

- Goals (what is your target group?);
- Reach (whom are you trying to reach?);
- ABCs (what does your website look like; what does the traffic see?);

- Sociality (what do you want to talk about?);
- Promotion (inviting audience to follow you).

In detailing how to execute individual

The screenshot shows the Finger Candy Media website interface. At the top, there are navigation tabs for Home, About, Services, Applause, Thumbs Up, and Snaps. The main content area features a 'Must Tweet Monday with @AdamDrakeOnAir' post. The post text reads: "I viewed Texas Radio personality Adam Drake awhile back, as someone I thought was interesting. Over the years, I have had the chance to get to know him and was always impressed by his writing and sense of humor. Been trying to do something fun with 'Must Tweet Monday' and after several conversations, knew that Adam was the one to run with it! ENJOY! -Jessica". Below the post is a 'Share This' button with options for Facebook, Twitter, and Email. The website also has a search bar and a 'Follow' button for the user 'Jessica Northey'.



The founder of Finger Candy Media says stations should establish metrics to track the effectiveness of their social media programs.

steps toward a successful social media program, she draws on case studies and stories about what she has experienced while working with different radio stations, brands, celebrities and musicians.

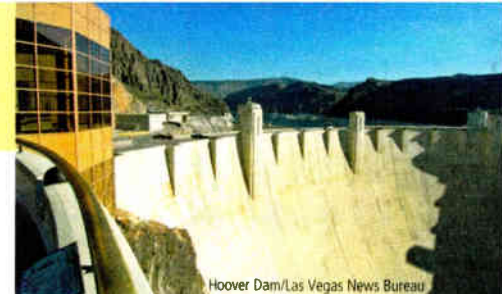
Northey promises to demystify social media for broadcasters at her "Are You Being Followed?" session on Monday of the NAB Show.

## GOALS

She said typical goals for a broadcaster are to increase brand awareness and manage reputation, improve search engine optimization, increase relevant

visitor traffic, grow a targeted following and "own" the story online.

Pick three or so, she said. Establish metrics to track the effectiveness of your social media program.



## IF YOU GO

**What:** NAB 2011

**Where:** Las Vegas Convention Center

**When:** April 9-14

**How:** www.nabshow.com

## How Much:

Smart Pass: \$1,144\*

Conference Flex Pass: \$495\*

\*Prices for NAB members registering by April 8. Various rates apply for non-member, military, government, student, one-day and exhibits-only.

In order to come up with a strategy or social media plan, Northey said it's important to know whom you are trying to reach. Define your target audience, she said, and understand how and when your target audience uses social media, what their gender and age is, and where they'll access you. Finally, what does your audience know about you today?

A station's social media plan should mirror its marketing plan, as well as complement its traditional media goals. A strategy must be developed to engage the audience while providing meaningful, relevant and personalized content directly to them. She advises that to simplify your listener's task of following the station among several different social media platforms, the handle (social media identifier) for each of the platforms should be the same.

One habit that Northey said dies hard at a broadcast station is that of talking *at* the audience.

"Learn to speak with your audience, not at them." Social media is all about communicating and user-generated content. "Forget 'What am I doing,' and ask your followers, 'What are they doing?'"

Another mistake Northey said stations make is hiding the links for their social media platforms, like Facebook and Twitter, in obscure places on the station website. She said this is often done out of fear that their audience will be hijacked on these platforms and never return to the station website.

"And then they wonder why they top out at just a few hundred followers? My dog has 5,000." She noted that if your station, whether terrestrial radio, Internet radio or TV, is the one the audience depends on for information, that

(continued on page 22)

## YOUR ULTIMATE SUPPLY & SERVICE SOLUTION

The advertisement for Lightner Electronics is divided into three main sections. On the left, a white service van is shown with the company logo and website URL, www.LightnerElectronics.com. Below this is the text "From our Facility to yours". In the center, a control room with multiple computer monitors and desks is shown, with the text "Design & Integration" below it. On the right, a repair shop with various electronic equipment and tools is shown, with the text "Repairs & On-Site Service Calls" below it. At the bottom, the company name "LIGHTNER ELECTRONICS" is prominently displayed along with the website www.lightnerelectronics.com, the toll-free number 1-866-239-3888, and the online shop URL www.broadcastavsales.com.

**SATELLITE SIGNAL LEVEL METER AND SAT IDENTIFIER**

Our new "SAT-BUDDY" satellite signal level meter will measure 950 - 2150MHz L band signals. The unit powers the LNB, and provides digital signal measurement for carriers. The unit can



identify satellites by name, measure signal levels -70 to 10 dBm, plus display carrier-to-noise (C/N), signal quality, and Bit Error Rate. Confidently recognize the satellite a dish is aimed at, and peak the antenna to maximum performance.

**SURGE SUPPRESSOR FOR LIGHTNING NEAR SATELLITE ANTENNA**

Place the "LNB-Zap-Stop" in the coaxial cable line that runs from the dish, to the satellite receiver. Think of it as an "insurance policy" to protect



expensive indoor equipment from lightning hits. Transient Suppressing Diode technology works to block high voltage surges. The lightning protection units can take multiple strikes, with no need for resetting or replacing.

**COVERSAT AND HEATSAT MAKE YOUR DISH RELIABLE IN BAD WEATHER**

The COVERSAT will prevent most signal outages caused by snow and ice. It is wrapped over the front face of a dish, creating a steep and slippery surface to prevent the accumulation of ice & snow. The cover is made to exactly fit the customers specified dish type. The HEATSAT satellite antenna



heater will completely stop signal outages caused by snow and ice. This reliable dish back-side electric heater keeps snow & ice from forming on the dish, by heating the reflector when snow and ice conditions are present. Purchase the HEATSAT to upgrade existing satellite antennas, and ask for it to be included with your new dish purchases.

**HD-GRADE SATELLITE LNB WILL BOOST EBNO ON RECEIVERS**

Invest a FEW-HUNDRED-DOLLARS into upgrading your satellite antenna-mounted LNB, to the new DAWNco "L series" LNBs, and watch for improved EbNo readings on your digital satellite receivers. DAWNco's latest generation of C and Ku band LNBs have best-in-industry specs for "1dB gain compres-

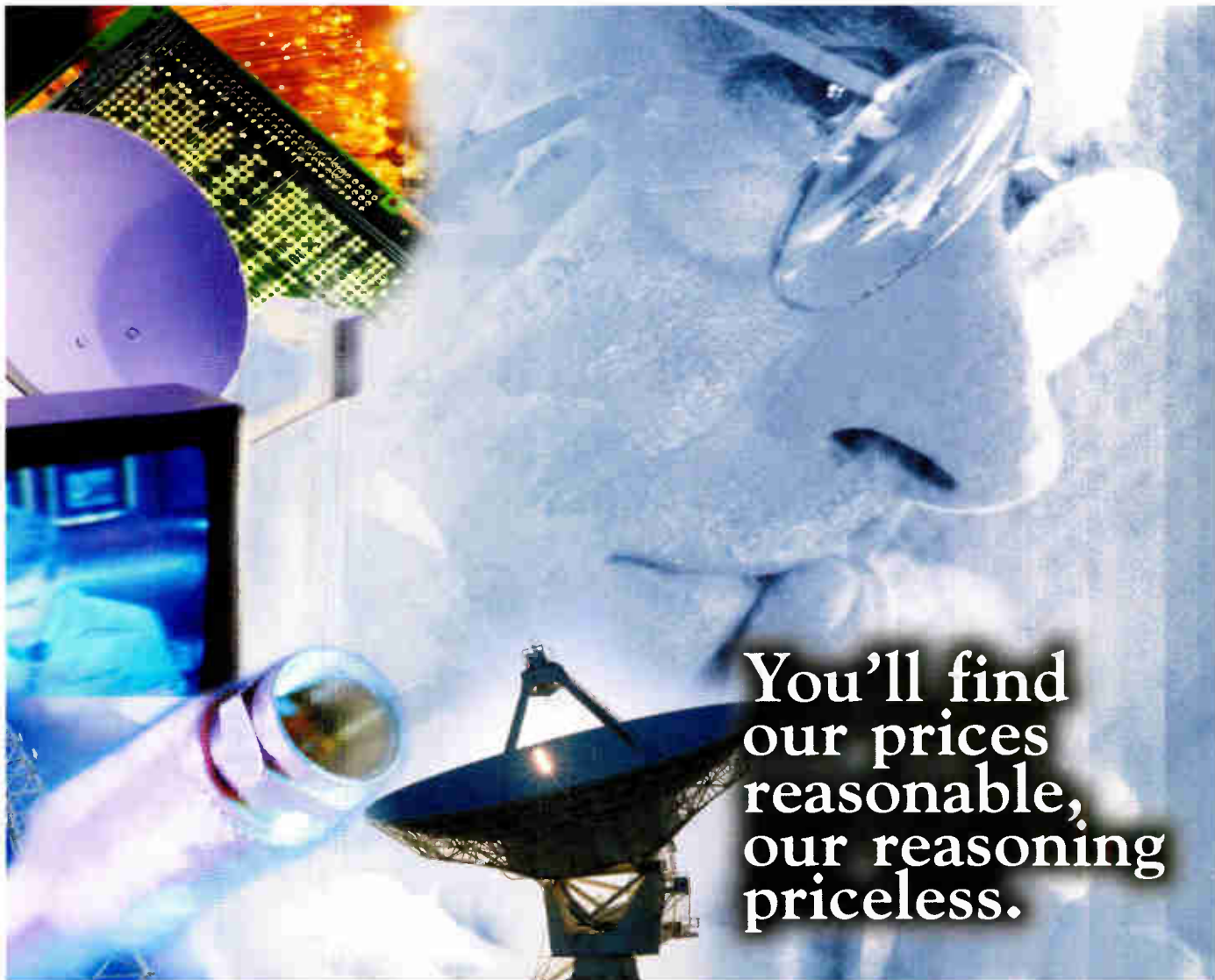


sion." Install these units to make a real difference in the reception of HD and other MPEG4 or DVB-S2 satellite channels. Internal circuitry has been completely redesigned for reduced power draw, so that indoor receivers and power supplies will never be over-taxed. In order to prevent signal outages, when outdoor temperatures fluctuate. DAWNco's best LNBs feature a highly stable +/- 5 KHz rating.

**IMPROVE RECEPTION WITH 3.7 METER SATELLITE DISH FOR LESS THAN \$2K**

Keep your dish cost under \$2K, and permanently improve your satellite reception capability, with our fiberglass 3.7 meter satellite antenna. This is the perfect dish for rooftop or island locations, where the 8 petal design offers easy transport to site. Ground mount USA sites may prefer our HIGH-GAIN aluminum sat antennas, in sizes up to 5.0

meter. The customer will specify stationary or motorized configuration for the dish, and DAWNco offers all other items needed for a complete system.



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

Keeping track of all the satellite and fiber optic communications products out there is a full time job.

That's why so many people come to **DAWNco**. They count on us for everything from satellite antennas, receivers, LNBs, and position controllers to fiber optic broadband links, satellite links and data links.

We offer the broadcast TV, cable TV, radio and educational fields high quality equipment at down-to-earth prices.

But more than equipment, we offer expertise. We can examine your situation and your budget, and recommend exactly what you need. You save both time and money by making the best possible buying decision.

Call a **DAWNco** expert with your questions by simply dialing **800.866.6969**. Use the same number for our free catalog, or find it all on the web at [www.DAWNco.com](http://www.DAWNco.com).



**DAWNco**

Reasonable prices, priceless reasoning.

See Us At NAB Booth # SU6813

# Eddie, Back in the NAB Spotlight

Association Will Recognize Its Long-Time Leader Edward O. Fritts

BY SUSAN ASHWORTH

For 23 years, Edward O. Fritts was at the helm of the National Association of Broadcasters, steering the organization from a modest-sized organization to one of the most powerful and influential lobbying entities in Washington.

"Eddie helped put NAB on the map as an advocacy force in Washington," said

NAB President/CEO Gordon Smith, "and his accomplishments on behalf of radio and television stations — and the listeners and viewers that we serve — will be felt for decades to come."

After his time at NAB, Fritts founded The Fritts Group, a Washington boutique telecommunications lobbying firm that represents radio and TV clients. At the NAB convention this year, he will

be honored with the NAB Distinguished Service Award during the opening keynote in Las Vegas. It is given to members of the broadcast community who've made significant contributions to the industry.

**Q:** *What are the key issues broadcasters ought to have on their radar as they head into NAB?*

**Fritts:** The three principal issues, I think: retransmission consent, broadcast spectrum [issues] and performance royalty agreements for radio.

**Q:** *Some critics say NAB's lobbying prowess has diminished as broadcasters are having a tougher time making money in this economy. How would you respond to that?*

**Fritts:** I think that Gordon Smith is a breath of fresh air. He has a plan, and he's very effective. [The NAB] just had 600 grassroots broadcasters in town, and the benefit of [hearing from] 50 station broadcaster associations. Gordon and his team specifically work with station associations to make them true partners. And they in turn work with stations in their home states to make sure they become known and have a good relationship with their members of Congress. It's a grassroots system that



few other industries have.

**Q:** *How does that grassroots effort go about benefiting broadcasting?*

**Fritts:** When he was president of the Motion Picture Association, Jack Valenti said to me, "What's I envy about NAB's grassroots organization is that you have broadcast stations in every congressional district." Those broadcasters are attuned to their hometown needs [and in touch with] the city council, mayor, state representative and congressional members in the House and Senate.

**The NAB** was founded in 1922 on the issue of music copyright, and that's still an issue today.

— Eddie Fritts

It's what makes a difference. You can have good arguments and sound positions, but if you don't have the right person in place, you'll end up coming up short. It's vital. The goal is to energize broadcasters because things in Washington are cyclical: You'll always

works, Northey suggests you look at advertisements, both print and broadcast, for multi-billion dollar companies like Pepsi, Ford, GM and Sears.

"They're putting big money into Facebook and Twitter, and at the bottom of their ads or in the tag line to broadcast spots they say: 'Follow us @ ...,' an invitation to enter their social media world."

Invitations to "follow us" shouldn't just be limited to links on the station site and in on-air mentions. She counsels clients to integrate such invitations into signage at remotes, on the back of station vans, on T-shirts, buttons, bumper stickers and other handouts. Add social media platform participation links to business cards, letterhead and other broadcast and print media. Run social media-only promotional offers, and invite followers to your events. Include links where they can register.

Northey is blunt when it comes to the subject of what the five-year return on investment for broadcasters is. "The ROI of social media for the broadcast industry is that you'll be around in five years."

# Get the mic you want the way you want it.

## Heil Sound Custom Shop

Join us for the

NAB Amateur Radio party @  
The Hilton Las Vegas, Ballroom B

April 13 @ 6:00 PM

Just bring your badge!

**Tom JOYNER**

**HEIL SOUND**

www.heilsound.com

Join all our friends on   

## SOCIAL

(continued from page 20)

audience will keep returning to you for more.

### 'SOCIALITY'

Northey offered a couple of tips.

If you're driving listeners to your website and social media pages like Facebook, make them desirable destinations.

"Make sure your website's in good aesthetic shape, that you don't have fan pages with empty tabs, no photos, no videos. Change backgrounds on platforms like Twitter, YouTube and MySpace to your station look." You may have to hire someone to do a custom Facebook page, but she said it's money well spent.

Also, your "stationality," your station's personality, and your "sociality," or social media personality, should match. What are your brand's unique characteristics? A station shouldn't be one thing on the air and another in its social media.

If you don't think social media

have issues. The NAB was founded in 1922 on the issue of music copyright, and that's still an issue today. Many of these issues don't go away; they rise to a higher level.

**Q:** *Who are clients you lobby for and what are their priorities?*

**Fritts:** We're a boutique firm, so have a small client base but pay a lot of attention to those clients, including CBS corporate, radio and TV; News Corp.; DirectTV; Motorola; Allbritton. For many of those clients, we're lobbying for the issues I mentioned earlier: retransmission consent, spectrum issues and performance royalty.

**Q:** *It has been said that Congress is a much less congenial place than it used to be and compromises are harder to come by. Are you finding this true as well?*

**Fritts:** Yes. It's unfortunate, but things change and times change. The [conversation] among different Republicans and Democrats and independents have become more shrill. There are many members with goodwill who are still getting together and working the deals despite the rhetoric, but it seems to be more difficult overall.

**Q:** *Would you be interested in owning radio stations again?*

**Fritts:** I have spoken fondly about radio for some time. I actually tried to make a couple of deals in partnership with some other people, and so, technically, I own a tiny piece of several stations in the Midwest, but not enough to be directly involved in them. My son works in radio in Mississippi.

**Q:** *Do you occasionally talk with Gordon Smith to offer background or advice?*

**Fritts:** I worked with him on congressional committees and in the Senate; and we've been friends for substantial period of time. I enjoy working more closely with him, and we sometimes play a round of golf and sometimes have a background conversation or two.

**Q:** *What do you miss most about NAB?*

**Fritts:** I think the interaction with broadcasters across the country was very inspirational. Looking back, you have a slightly different perspective than when you were under the gun and needed to perform every week.

I've had people in elevators thump me in the chest and say I had everything upside down and wrong, and others who've placed praise on me. I like the latter better.

There were far more accolades than criticism, at least in my face. I have really, really good memories of my time working at NAB and must say that the staff went out of their way to make me look good.

## THEY TEACH MEDIA IN THE FACEBOOK ERA

Broadcast educators, too, will meet in Las Vegas for their annual convention.

BEA2011 is produced by the Broadcast Education Association and runs April 9-13, concurrent with the NAB Show; sessions are in the Hilton. One highlight is a Sunday discussion about the state of the radio industry, with participants from Stephen F. Austin State University, the University of Wyoming, Washburn University, Liverpool John Moores University and Southeast Missouri State University.

On Monday, faculty advisers and a country radio station promotions person will discuss the impact of new



technologies on college radio content. Another Monday session features radio case studies, including a discussion by author Michael Keith about how prison radio affects the lives of inmates and their families, and another by Martin Hadlow on colonial radio broadcasting in the southwest Pacific in the years after World War II.

Sessions look at implications of digital technologies for radio pedagogy; Native American radio; the challenges of low-power FM stations; and new styles in radio/audio documentary. Speakers from West Texas A&M will talk about a campaign they've started to help prepare students for working in the world of social media and other new platforms.

Registration includes NAB Flex Pass. Info: [www.beaweb.org](http://www.beaweb.org).

full featured, professional consoles at amazing prices from **ARRAKIS**

# NEW ARC-8

Intro Sale  
**\$799**



8 channels  
Stereo Program output  
2 mic, 4 stereo line, PC, Phone in  
USB interface for play & record from a PC  
Mix-minus in-out for an external Telephone Hybrid  
BOTH balanced and unbalanced inputs and outputs for flexibility

## ...what more need be said ?

other members of the ARC family...



\$1,599  
ARC-10U



\$3,495  
ARC-158P



\$5,495  
MARC-15-12

www.arrakis-systems.com      970.461.0730

It's a good bet  
there's not a single  
person in America,  
who's listened to  
the radio in the last  
10 years, who  
hasn't heard an  
Audioarts D-75 radio  
console in action.

## D-75

D-75 STANDALONE AND D-75N NETWORKABLE DIGITAL AUDIO CONSOLES

That's how prevalent  
and powerful the  
Audioarts D-75 is.

**D-75**  
DIGITAL AUDIO CONSOLE

FLEXIBLE. AFFORDABLE. BUILT TO LAST.

phone 1.252.638-7000 | [www.audioartsen지니어ing.com](http://www.audioartsen지니어ing.com) | [sales@wheatstone.com](mailto:sales@wheatstone.com)



**AUDIOARTS**



# NOBODY EVER WINS A LATENCY RACE

There was a time not so long ago where 56K seemed like a ridiculously fast speed for surfing the internet. Where a 10 meg hard drive seemed about 10 times more than you'd ever need. When latency was simply a casualty of AOIP networking (still is in some places...) Guess what? Things changed. And they're changing now...

Audio LOVES as much bandwidth as you can throw at it. The more the better. Especially when you're tossing in everything else that travels down that ethernet cable. WHY would you ever limit yourself?

We believe in plenty of overhead. That's why we built it into WNIP. We're 10 times the speed of the other major system. Even if you don't use the speed today, think of it as money in the bank.



**THE INTELLIGENT NETWORK™**

phone 1.252.638-7000 | [WheatNetIP.com](http://WheatNetIP.com) | [sales@wheatstone.com](mailto:sales@wheatstone.com)

## IS YOUR AOIP NETWORK AN INTELLIGENT NETWORK?

Download the **FREE** white paper "The Technical Case for the Intelligent Network" at [WheatIP.com](http://WheatIP.com)



# At KBHP, Service Is a Heritage

BY JAMES CARELESS

On April 12, KBHP(FM) of Bemidji, Minn., will receive the NAB's Crystal Heritage Award, only the second time the honor has been given.

"KB101" will receive it in recognition of having won the Crystal Radio Award five times prior, dating back to 1994. Crystals are given to stations to salute their community service. The first Heritage recipient was WUSL(FM) of

Philadelphia in 2008.

Country KBHP is one of 16 Minnesota stations owned by Omni Broadcasting Co., which operates sports outlet KBUN(AM), AC station KKZY(FM), classic rocker KLLZ(FM) and oldies WQXJ(FM) in Bemidji, population about 14,000. It also has stations in Alexandria, Brainerd/Baxter and Wadena, which range in population from 4,200 to 19,000.

"As small-market broadcasters,

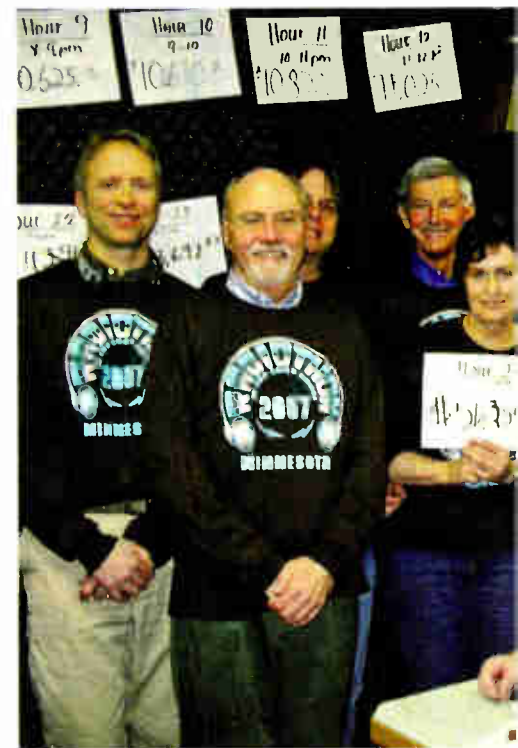
we are well aware of the incredible importance of community service to our listeners," says Vice President/Chief Financial Officer Mary Campbell, who co-owns the company with President/CEO Lou Buron. "It also matters to us that we make a positive contribution to the communities we serve."

## SMALL COMPANY, BIG SERVICE

Omni was founded in 1988 by Campbell and Buron, who'd worked

in major-market radio (Minneapolis/St. Paul) with Doubleday Broadcasting and Parker Communications. They wanted to maintain control and ownership and "do it for themselves."

"We started by purchasing KBHP



(FM) and KBUN(AM) in 1989," says Campbell. "Many of the staff who were there when we walked in the door are still with us. We are big believers in continuity, in having long-term employees who are loyal to us and us to them, and in paying more attention to the community than to ratings."

The numbers back up Omni's service claims. In 2009, KBHP raised \$760,000 for community organizations and collected 16,560 pounds of food and 2,000 winter clothing items for needy families. The station donated approximately 4,450 minutes of air time for PSAs, time valued at \$125,000. Meanwhile, the KBHP staff contributed 1,700 hours in volunteer service.

KBHP also took part in Omni's annual 24-hour Radiothon to End Child Abuse.

"We had been involved in this cause when we were in the Twin Cities, where Lou was chairman of the Minnesota Committee for the Prevention of Child Abuse," Campbell said. "When we moved to Bemidji, the committee asked us to start a radiothon here, which we were happy to do."

"It is amazing how much this means to our listeners," she adds. "After each radiothon, it is common for people to come up to me on the street and say nice things about our efforts."

Over 22 years, Omni's stations have raised \$824,000 to help end child abuse and neglect. The company twice has received the NAB Education

**THE WORLD  
HAS A BRAND NEW  
AUTOMATION SYSTEM.**

**Z E T T A<sup>®</sup>**

**ADVANCED RADIO AUTOMATION**

RELIABLE, INTUITIVE, FLEXIBLE



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

Visit us at NAB Show Booth #1610



Foundation's Service to America Partnership Award.

Mary Campbell and Lou Buron have fostered an environment that rewards employee loyalty and longevity. In return, their staff has matured like fine



Staffers celebrate the amount raised in an annual Radiothon to End Child Abuse. Shown: Todd Haugen, "Morning Show" announcer; Harry Hastings, sales; Mark Anderson, engineer (behind Hastings); Lou Buron, president/CEO; Mary Campbell, VP/CFO (holding amount); Jack Hicks, announcer; Kristie Jacobson, administrative assistant; Melissa Carlson, announcer; Mardy Karger, "Morning Show" announcer/news director; Kevin Jackson, sports director. At the desk is Peggy Hanson, general sales manager.

wine. Long-time "KB101 Morning Show" co-hosts Todd Haugen and Mardy Karger were nominated for the 2010 NAB Marconi Awards as small-market personalities. Sister station KBUN(AM) was one of five national nominees for Sports Station of the Year.

"We understand that you have to grow with the times, which is why we have added stations, established websites and are now looking into streaming media," says Mary Campbell. "But we value our staff: They are like family."

Mardy Karger has been with KBHP since 1972. Announcer Mark Anderson (heard on all four Bemidji FM stations) is a 17-year veteran. Sports Director Kev Jackson and Saturday afternoon jock Sam Sargent have been with KHBP for 24 years. Swing jock "Bubbles" has them both beat, with a quarter-century there.

Omni Broadcasting intends to stay

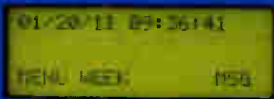


the course it has sailed for 32 years. "We will stay focused on the communities we serve, the people who work with us and doing the best we can for both groups and our company," says Campbell.

KB101 announcers are shown at a station client party. Front: Heidi Boyd, middays; Pam Michaud, weekends. Rear: Mardy Karger, morning show announcer/news director; Tom Szymanski, meteorologist; Dave Brooks, afternoons; Moose Richards, evenings; and Todd Haugen, mornings.

# We're Ready For CAP (so you can be, too)

SAGE DIGITAL ENDEC



Incoming Alert

Outgoing Alert

Attention Tone

Automatic

Digital Audio Lock



## New EAS Rules

Comply by September 30, 2011

Questions?  
914-872-4069

Or see us in April  
NAB Booth C1339

When you use the Sage Digital ENDEC to meet the new FCC EAS rules for CAP, you also receive an interface to:

- AES/EBU Digital Audio
- LAN/Internet for Web browser control and monitoring, network time, email
- Satellite receivers and Internet for CAP
- Text via CG, RDS, HD Radio
- Free downloadable upgrade to the final version of CAP 1.2

The Digital ENDEC is a drop-in replacement for the classic ENDEC, but new users love it too.

The Sage Digital ENDEC - your one-box solution for CAP and EAS.

**SAGE**

Sage Alerting Systems, Inc  
800 Westchester Avenue, Suite 641N, Rye Brook, NY 10573  
Phone 914 872 4069 info@sagealertingsystems.com  
[www.sagealertingsystems.com](http://www.sagealertingsystems.com)

## A MANAGER'S SESSION SAMPLER

Stories in surrounding pages explore selected radio sessions and themes of the NAB Show; here's a further sampling, from the Broadcast Management Conference and Legal & Regulatory Conference. Some are presented by the Radio Advertising Bureau. RW's March 23 issue previewed engineering sessions.

### MONDAY

**"Spectrum: The Air We Breathe"**

Jane Mago, Mark Fratrick, Bill Lake, John K. Hane III, Alan Frank

**"Making Localism Sound Great"**

Dale Thornhill, Commonwealth Broadcasting; Chuck Leary, Dial Global; Kirk Stirland, Dial Global

**"Radio-ready Cell Phones — Benefiting Consumers and Broadcasters"**

David Layer, NAB; Matt Straeb, Global Security Systems; Lane Bruns, iBiquity Digital Corp.; Jeffrey Smulyan

**"Selling Integrated Advertising Packages"**

Allison Warren, Entercom; Ruth Presslaff, Presslaff Interactive Revenue; Dawn Girocco, CBS Radio Los Angeles; Sheila Kirby, RAB

**"The FCC's Consolidated Licensing System (CLS)"**

John Garziglia, James Bradshaw, LaVonia Connelly, Cecilia Sulhoff, Warren Firschein

### TUESDAY

**FCC Chairman's Breakfast**

Chairman Julius Genachowski

**State of the Industry Address**

Gordon H. Smith, NAB President/CEO, followed by a conversation with Leslie Moonves of CBS

**"Copyright Myths and FAQs"**

Suzanne Head, Kevin Goldberg, S. Jenell Trigg, Bill Velez, Colin Rushing

**"Back to the Future 2.0"**

Tim Moore, Audience Development Group; Kevin Robinson, Bonneville St. Louis; George Johns, The Johns Company; John Gehron, AccuRadio; Jen O'Brien, Mid-West Family Broadcasting

**Radio Luncheon**

2011 NAB Broadcasting Hall of Fame award recipient Gerry House; keynote by CNET's senior commentator Brian Cooley; Crystal Radio Award Winners.

**"Washington Showcase"**

Featuring FCC Commissioner Meredith Attwell Baker



**"Digital Sales Best Practices"**

Daniel Anstandig, McVay New Media; Jennifer Williams, Greater Media Detroit; Lee Grau, Beasley Broadcasting; Brian Bartolo, Emmis Interactive

**"The FCC and You"**

Jack Goodman, Peter Doyle, Barbara Kreisman, Melodie Virtue, Margaret Tobey

**"Sensual Radio"**

Jeffrey Hedquist, Hedquist Productions

### WEDNESDAY

**"Next-Generation EAS: The Final Frontier"**

Larry Walke, Jamie Barnett, Greg Cooke, Damon Penn, Antwane Johnson, Wade Witmer, Whit Adamson

**"Revenue Road Show"**

Brandeis Hall, RAB; Sheila Kirby, RAB; Sheila Kirby, RAB

**Pilar Bonilla and Dianne LaGuardia of Sony review some facts and figures in the concourse.**



Photo by Kovacs/Dawley

**AM Ground Systems Co.**  
www.amgroundsystems.com  
1-877-766-2999

PHYSICAL AM SITE SERVICES

- CONSTRUCTION
- EVALUATION
- REPAIR
- SAMPLE, FEED & CONTROL LINE LOCATION, REPLACEMENT & REPAIR
- MOM MODELING PREPARATION WORK

SERVING THE TECHNICAL AND CONSTRUCTION NEEDS OF AM BROADCASTERS FOR OVER 25 YEARS

- Complete Ground System Construction, Evaluation and Repair Services.
- Fast, Efficient Full Site Construction Services.

Scan QR vCard with smart phone to save our contact info



www.amgroundsystems.com  
1-877-766-2999



SAMPLE TOROID RETROFIT SOLUTIONS AND SAMPLE LINE REPLACEMENT FOR METHOD-OF-MOMENTS DA PROOFING

Contact us today for a no obligation quote on any of our services.

We Hope to See You At  
**NAB**  
**April 11-14**  
We will be in or around the Radio Hall

**Reliable, On-time Installation**  
**Firm Quotes**  
**Quality Workmanship**

# PR&E® Oasis™



**An analog console built for your digital demands.**

A true standalone solution at a low cost, the next-generation Oasis console from Harris provides a digital migration path that fits your time frame — and your budget.

Learn more at [www.pre.com](http://www.pre.com).

**See Oasis at NAB 2011, Booth N2502.**

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

**HARRIS®**  
assuredcommunications®

Mid South: **Bob Mayben**... 1-877-391-2650  
South Atlantic: **Art White**... 1-770-632-1295  
North East: **Jim Peck**..... 1-315-623-7655  
Central: **Bernie O'Brien**... 1-731-695-1714  
North Central: **Pam Leffler**.. 1-513-376-8600  
South West: **John Lackness** 1-210-775-2725  
Mid West: **Mary Schnelle**.. 1-513-899-3036  
West Coast: **Doug Tharp**... 1-866-673-9267  
Pro Audio: **Ric Goldstein**... 1-877-640-8205  
Latin America: **Lily Massari** 1-760-650-1427  
Bradley Div.: **Art Reed**.....  
                  **Bob Eburg**..... 1-800-732-7665

**exclusive US dealer for Harris Studio products**

**35** YEARS  
1976 - 2011

of Trusted Business and  
Customer Satisfaction

**SCMS INC.**  
YOU KNOW WE KNOW  
RADIO

1-800-438-6040

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

World Radio History

# DAR.fm Hopes to Shift the Paradigm

Robertson Hopes for a Hit With His Web-Based Recorder of Radio Programs

BY JAMES CARELESS

Personal video recorders, or PVRs, have revolutionized the consumption of broadcast television. Now Michael Robertson, the Web entrepreneur who founded MP3.com in 1997, wants to bring the same "time-shifting" capability to broadcast radio through his new site, [www.dar.fm](http://www.dar.fm).

DAR.fm — the name refers to "digital audio recorder" — allows users to select their favorite radio programs from a station list and have them recorded on DAR.fm's servers. The content can then be streamed by the user to a PC, smartphone or Internet radio — for radio listening at their convenience.

"Radio has become the 'forgotten medium,' while everyone has been focused on improving the video experience," Robertson said when Radio World touched base with him.

"DAR.fm remedies that bringing radio listening into the 21st century."

## TUNING WITHOUT RECEIVERS

In contrast to conventional AM/FM listening that requires radio receivers, or TV-based time-shifting that requires specialized PVRs, DAR.fm merely requires its users to have a Web-connected PC.

"Everything involved with the system is done by our computers, remotely from the user," Robertson said. "All they need to do is create a free account on our website and choose what they

want to record, and that's it. There's no special equipment to buy; no monthly subscriptions to pay."

Here's how DAR.fm works. Once you sign onto the free site, you can select programs based on three categories: Talk, Music or Station Guide. The Talk category lets you drill down to programs such as "The Sean Hannity Show," "The Jim Rome Show" or "The Glenn Beck Program." Select a show, and you are taken to a menu where you

select the station it is accessed from. The show is then recorded for you on a daily and/or weekly basis.

The Music category is divided along format lines, covering well-known genres such as Adult Contemporary, AOR, Country, Hip-Hop and Top 40 (among others). Click on a genre, and you are taken to a list of radio stations. Click on a station, and DAR.fm asks you when you want to start recording their program, and for how long a

time period. The Station Guide works the same way. The Guide is organized alphabetically by city.

"Once you have selected your programs, we record them for you," Robertson says. "We get the audio from stations who are offering the content on their websites. We just connect to them like any user would, and record the audio to our servers."

Accessing the audio is simple. Log onto the site and access your account, and the programs are ready to be played. DAR.fm is not configured to support actual file downloads. The audio is streamed in real time to the listener.

To allow for easier mobile listening, DAR.fm has developed and posted free device-specific apps for the Apple iPhone/iPod Touch, Android smartphone, Palm smartphones and Windows 7 phones.

## IS IT LEGAL?

Michael Robertson isn't looking to make money from DAR.fm; at least not yet.

"Our goal is to build up a critical mass of, say, 10 million users," he says. "Once we have a base that's substantial, we can look at doing something with it. But right now, all I want to do is add users. That's why everything associated with DAR.fm is free."

Of course, DAR.fm is building its business on other people's content, namely from radio stations whose programs it will be recording. Given what happened to Napster, an obvious question comes to mind: Is recording other people's radio shows and then relaying them through DAR.fm legal?

"The question as to whether this is legal was resolved a few years ago, in the Cartoon Network vs. Cablevision case," Robertson says. "Cablevision had set up a remote PVR system for its subscribers, with the content being recorded and then accessed from Cablevision's own servers rather than home-installed PVRs. The New York federal court ruled that this was not an infringement of copyright, and that Cablevision could offer its remote PVR service legally. That's the model we are operating on: We are serving as a remote PVR for radio programs."

The radio industry likely will watch as DAR.fm compiles early subscriber numbers. As for DAR.fm's business premise? Logically, the recording model makes sense. So too does the fact that the content can be accessed over iPhones and other mobile devices, allowing it to be heard at the user's convenience.

What is not yet clear is whether or not consumers will record and then play back radio at a later date, in the same way they time-shift TV programs via cable and satellite today. Literally, only time — and DAR.fm's user numbers — will tell.

# GR

Gorman Redlich Mfg. Co.  
Is CAP-able

The CAP-DEC1, Gorman-Redlich is a stand-alone CAP-to-EAS converter for use with your existing emergency alerting equipment. This cost-effective device allows broadcasters to easily meet Common Alerting Protocol (CAP) compliance requirements mandated by the FCC without requiring the purchase of an additional encoder/decoder system or other costly

equipment. The CAP-DEC1 is CAP 1.2 compliant and requires only one unit of rack space. Trust the experts with over 35+ years experience in the emergency alerting industry to help you meet your broadcasting needs. Visit our website or contact us today for more information about the Gorman-Redlich CAP-DEC1. We continue to support equipment we made 35 years ago.



- Compatible with any existing EAS encoder/decoder made by any manufacturer
- Powerful 1.6GHz dual core processor and 1GB of memory
- Built-in text-to-speech conversion functionality
- FAST Gigabit network capability with built in firewall for security
- Options to print, store or email logs via built-in email server
- Five (5) USB ports for peripherals
- Nearly limitless storage capacity for logs and audio messages
- Automatic clock synchronization via NTP servers
- Software can be updated via LAN or USB
- Print alert reports to USB or network printer
- Polling 3 URL's currently with room for future expansion

PRICE  
\$1350

Gorman-Redlich Mfg. Co.  
[www.gorman-redlich.com](http://www.gorman-redlich.com)

257 W. Union Street, Athens, OH 45701  
Phone: 740-593-3150

Visit us at NAB Show Booth #C1735

World Radio History

# THE FUTURE OF GREAT RADIO

## New at the NAB Show 2011: Harris® Flexiva™ FM Transmitter

Since 1922, Harris has been helping you create, distribute and deliver quality audio content. Leading broadcasters turn to us for an outstanding range of analog and digital platforms, with products that operate reliably in radio networks around the globe.

Now, Harris unveils Flexiva™, our newest VHF FM solid-state transmitter, providing today's broadcaster with one platform capable of analog and digital operation. Incorporating field-proven Harris technology, the Flexiva family of products delivers world-class performance, reliability and quality with power volumes up to 20kW in the most compact, cost-efficient footprint on the market.

It's what you expect from Harris, the leader in Radio Transmission and inventor of many of the industry's key technologies and more than 50 major technical developments, including multiple world standards.



Visit Harris at the NAB Show 2011, booth N2502, for the debut of Flexiva.  
Learn more at [www.broadcast.harris.com](http://www.broadcast.harris.com) or (800) 622-0022.

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

**HARRIS**  
assuredcommunications®

# Sonifex RM-2S10 Squeezes a Lot Into a Little

### London-Based Broadcaster Likes Its Number of Inputs, Physical Size and Cost

## USERREPORT

**BY SIMON PRICE**  
Broadcast Engineering Service Manager  
Global Radio

**LONDON** — Over the last few years, as we at Global Radio have added services and outputs to our broadcast site and also transitioned many circuits to digital, we've outgrown our existing CTA monitor panels. Our key points in looking for a new monitor unit were the number of inputs, physical size and cost.

After much searching we decided upon the Sonifex RM-2S10 units. We now have three of these spread among our 54 broadcast racks providing monitoring of a mix of local sources and sources from our outside source router.

### INPUTS AND OUTPUTS

The Sonifex units have 10 stereo analog inputs and 10 stereo AES digital inputs. The meters on the front are switchable between a number of scales and algorithms. Ours are set to EBU PPM. There are a few settings that are definable by the supplied software,

like adjustment of the equalization that is applied to the speakers and the control of the audio selections.

The AES inputs have selectable 110 ohm termination, which can be useful for monitoring across AES sources without double terminating them. Although the handbook warns of the consequences of incorrect termination for digital connections, in practice we've found no problems. Some DIP switches on the lid of the unit offer a selectable input range of either -18, -12, -6 or 0 dBFS for the digital inputs.

The input selection knob selects the inputs 1 to 10 and pushing the button selects between the analog and AES input banks. There is also a handy LED indicator that illuminates to show signal presence on a particular input. The LED glows yellow to indicate which of the sources you're listening to.

In two of our areas, the unit's built-in speakers offer a sound that is more than acceptable. However for our main monitoring unit we use the two XLR

*(continued on page 38)*



# Site Control



**WVRC-8** Web-enabled and Voice Dial-up/Eight Channel Remote Control



**Site Sentinel® 16** Web-enabled Sixteen Channel Site Remote Control System



**WVRC-4** Web-enabled and Voice Dial-up Four Channel Remote Control



**Site Sentinel® 4** Web-enabled Four Channel Site Remote Control System



**VAD-2 Plus** Dual channel Voice alarm Dialer



**AUDIO Sentinel®** Web-enabled dual channel stereo silence monitor



**NEW!**  
**AC POWER Sentinele® 2**  
Remote Power Switch



**AC POWER Sentinele® 2 Plus**  
Remote Power Switch



**I/O Sentinele® 4**  
Web-enabled 4 logic/status input, 4 relay output module



**Relay Sentinele®**  
Web-enabled 3 relay module



**Relay Sentinele® 16**  
Web-enabled 16 open collector/SS relay module



**Schedule Sentinele®**  
Web-enabled Event Scheduler



**Temperature Sentinele®**  
Web-enabled 4-port temperature module



**Status Sentinele®**  
Web-enabled 3 status/logic module



**Status Sentinele® 16**  
Web-enabled 16-input status/logic module

USA Proud



**BROADCAST**  
*t o o l s*  
PROBLEM SOLVED  
[www.broadcasttools.com](http://www.broadcasttools.com)

Get your Broadcast Tools from these dealers: 305 Broadcast ¥ Broadcast Depot ¥ Broadcast Supply Worldwide ¥ Broadcasters General Store, Inc. Crouse-Kimzey Co. / ProAudio ¥ Giesler Broadcast Supply, Inc. ¥ Lightner Electronics Inc. ¥ RF Specialties ¥ SCMS

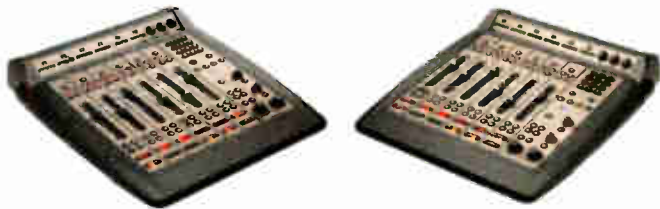
Visit us at NAB in the BGS Booth # C1920

World Radio History

**NAB  
Special:**

# FREE TELOS PHONE SYSTEM!

**Deal #1: Buy 2 Axia Element consoles...**



**...get a Telos Nx12 system!**



**Deal #2: Buy 4 Axia Element consoles...**



**...get a Telos VX VoIP system!**



## Now that we've got your attention...

What's better than a new studio full of great-looking, great-working, cost-saving Axia IP consoles? How about a new talkshow system from Telos, the broadcast phone experts — for free?

Everyone knows Telos phones are cream of the crop. And when they integrate with Axia's popular Element consoles, you get spectacular caller audio plus phone controls right in the board, so talent's attention is always on the console. Which means smoother shows, with fantastic phones.

How can we make this even sweeter? With our NAB Special: for a limited time, buy Axia consoles and we'll give you a matching Telos phone system at no extra cost. As in, *free*.

**Deal #1:** Building a small studio? Buy two Axia Element consoles — any size — and we'll give you a 12-line Telos Nx12 system, with Desktop Director phone set and Assistant Producer screener software. That's a **\$5,295.00** value.

**Deal #2:** Bigger studios earn you an even bigger deal! Buy four Element consoles — any size — and you'll get the hot new Telos VX broadcast VoIP system everyone's talking about. That's a VX Engine that can handle up to 50 phone lines, two VSet12 phone controllers, and VX Producer software. That's a complete package worth **\$10,480.00** in goodies, gratis.

How long will this deal last? Frankly, we don't know. But you should probably snap it up before someone comes to their senses. Oh, and even though it's our "NAB Special," you don't have to come to NAB to get it — *just call us!*



**Broadcasters  
General Store**

[www.bgs.cc](http://www.bgs.cc)

**1-352-622-7700**

World Radio History

**SONIFEX***(continued from page 36)*

outputs on the rear to drive an external pair of monitor speakers. These outputs are selectable via another DIP switch as being either pre- or post-front panel volume control. They are also selectable between analog and AES. The headphone socket on the front cuts out the monitor speakers when a jack is inserted. Both the headphone and speaker outputs pass through a protection limiter, which has proved handy quite a few times when selecting between sources of varying and unknown volume.

There are a host of available controls to allow the monitor speakers to have a combination of phase reverse, mono, sum + difference, dim and mute left and right channels applied.

The audio inputs are connected to the unit via two standard 25-pin D-sub on the rear panel. There is also a choice of either USB or RS-232 for accessing the software functions of the unit. There is also a connector for controlling some of the GPI functions of the unit. We have ours connected to our talkback unit so that it dims the monitoring speakers upon incoming talkback.

The only thing I'd like to see on a future model is the option to label the inputs, maybe through some kind of OLED or LCD screen, but I realize there is also a shortage of real estate, on the front. With 20 inputs it's a struggle to remember what everything is.

These units offer a good amount of inputs in a small amount of rack space with reasonable-sounding speakers, and have just worked well from the day they were installed.

For information, contact Fraser Jones at Sonifex/Independent Audio in Maine at (207) 773-2424 or visit [www.independentaudio.com](http://www.independentaudio.com) or [www.sonifex.co.uk](http://www.sonifex.co.uk).

**TECHUPDATES****AUDIO-TECHNICA GETS A HANDLE ON NEWS**

Audio-Technica has introduced the BP4001 Cardioid Dynamic Interview Microphone and the BP4002 Omnidirectional Dynamic Interview Microphone.

These mics, each featuring extended-length handles, are suitable for broadcast and remote newsgathering: on-location interviews, ENG, EFP, sports applications and other uses.

The BP4001's cardioid polar pattern reduces pickup of sounds from the mic's sides and rear, improving isolation of the desired sound source, and the BP4002's omnidirectional pattern provides a natural reproduction of surrounding ambience.

According to A-T, both mics have a frequency response tailored for natural, clear, articulate reproduction of spoken words. Also, both microphones provide isolation from handling noise.

The BP4001 and BP4002 feature a hardened-steel grille and an integral windscreen that protects against wind and breath noise. Output is three-pin XLRM-type connection. Included are a windscreen, carrying case, protective pouch and professional stand clamp.

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

**NEUMANN ENTERS MONITOR FRAY**

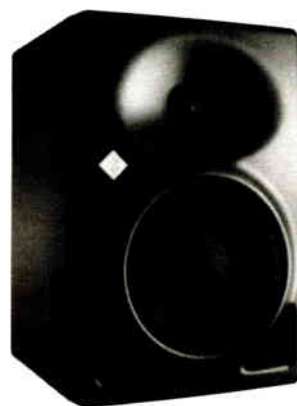
Neumann, a recognized pioneer in microphones, has announced the launch of its first studio monitor, the KH 120 loudspeaker.

The Neumann KH 120 is designed for use as a close-field monitor for detailed mixing and mastering, and as a rear loudspeaker in larger multichannel systems.

The KH 120 uses what the company said are "the latest in acoustic and electronic simulation and measurement technologies to ensure the most accurate sound reproduction possible." It has a Mathematically Modeled Dispersion waveguide (MMD), flexible acoustical controls, analog Class AB amplifiers, various input formats and an extensive mounting hardware range. All of this provides the user with versatility over a variety of acoustic conditions, source equipment and physical locations, according to Neumann.

A subwoofer can be added to deepen the low-frequency response to 18 Hz and increase the system's maximum output level. The KH 120 is suitable for tracking, mixing and mastering in music, broadcast, project and post-production studios.

For information, contact Sennheiser Electronic Corp. in Connecticut at (877) 736-6434 or visit [www.neumannusa.com](http://www.neumannusa.com).

**SONY PRODUCES NEW HEADPHONES**

Sony says its newest MDR-7500 Series professional headphones are intended to deliver strength, comfort and practicality to users in recording and broadcast studios.

The new models are designed to monitor the wide dynamic range and extended frequencies delivered by modern digital audio equipment. They use high-grade materials such as gold-plated Unimatch 1/8- to 1/4-inch adaptors.

For "golden ear" critical listening, the MDR-7520 studio headphones use wideband 50 mm HD driver units and LCP (liquid crystal polymer) film diaphragms for durability and sound quality. The 7520's noise isolation earpad cushions conform to the shape of the ear for comfort and acoustic isolation. The housing is constructed of a lightweight magnesium alloy to increase comfort, reduce fatigue and limit vibration.

Suitable for reference monitoring, the MDR-7510 studio headphones use 50 mm drivers and PET (polyethylene terephthalate) diaphragms to provide a wide frequency response, broad dynamic range and accurate sound playback at an affordable price. The 7510 uses neodymium magnets and OFC (oxygen-free copper) voice coils to deliver high performance.

For information, contact Sony in New Jersey at (201) 930-6332 or visit <http://pro.sony.com/bbsc/ssr/cat-audio>.

**ABOUT BUYER'S GUIDE**

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

**STATION SERVICES**

<p>Find us on <b>FACEBOOK</b> for a steady stream of <b>SALES TIPS, HOT LEADS, COOL IDEAS</b> and <b>CREATIVE RESOURCES</b> to help YOU sell more advertising (and YOUR ADVERTISERS sell more stuff)!</p>	
<p><b>Sound Ideas for Building Business<sup>SM</sup></b></p> <p><b>Radio Features You Can Sell.</b> :30/:60 sec. - FREE DEMOS!</p>  <p><b>GraceBroadcast.com</b></p>	<p><b>Sell Radio? Join the crowd.</b></p>  <p><b>RadioSalesCafe.com</b></p>

**ATTENTION PROVIDERS:** Promote your services to Radio World's readers. For information on affordable advertising call David at 212-378-0400 ext. 511 or email [dcarson@nbmedia.com](mailto:dcarson@nbmedia.com).



ON THE AIR

**SANITIZED FOR YOUR PROTECTION**

**SOME WORDS SHOULD BE OBSCENE AND NOT HEARD**



Eventide Broadcast Delays are designed to keep profanity off your air, and angry listeners, embarrassed advertisers, and the FCC off your back. We invented the obscenity delay and have a solution for stations large and small that provides up to 80 seconds of the highest quality revenue and license-protecting delay.

Our new HD compatible BD600, 24-bit delay, comes standard with AES/EBU, and provides up to 80 seconds of memory — twice as much as other delays. There are fully adjustable Delay and Dump functions, and a Sneeze function which “edits” and enters the delay, allowing the host to sneeze, cough, or make a short comment without being heard on air.

The BD600 offers two different methods of delay buildup and

reduction: Eventide’s catch-up and catch-down system, and an exclusive fast-entry-and-exit feature which allows starting a broadcast with the delay already built up to a safe amount and ending it with a rapid reduction of delay.

For HD the BD600 offers MicroPrecision Delay™ mode which allows up to 10 seconds of delay to be adjusted in real time in 100 nanosecond increments. This is useful for synchronizing analog and digital signals while on-air, without audible artifacts, to maintain a seamless user experience.

Whatever your size, whatever your format, you can’t expect to protect the integrity of your air and the foundation of your business without an Eventide Broadcast Delay in your rack.

**Eventide®**

**HD COMPATIBLE**

One Alsan Way, Little Ferry, NJ 07643 tel.201.641.1200 www.eventide.com  
Eventide is a registered trademark and MicroPrecision Delay is a trademark of Eventide Inc. ©2005 Eventide Inc.

See us at NAB Booth C2634  
World Radio History

**TECHUPDATES****WINDTECH SCREENS YOUR MIC**

Since 1976 WindTech has manufactured windscreens in the United States. There is a size for virtually any microphone; the company offers 30 models and up to 25 colors.

WindTech also distributes microphone accessories including mic clips, goosenecks, thread adapters, shockmounts, stand clamps, flanges and other accessories.

Also available is the SPS-1 Studio Pop Screen, a dual fabric screen, 5 inches in diameter, for use in radio stations and recording studios to control breath blasts to sensitive microphones.

A product family called Mic-Muff was introduced recently. This line offers faux fur windshields to fit over the foam windscreen in professional video, TV news and film applications. There are some 40 models of Mic-Muffs to fit most consumer and professional video cameras and microphones.

All WindTech windscreens and Mic-Muffs are made in America.

For information, contact Olsen Audio Group in Arizona at (480) 998-7140 or visit [www.olsenaudio.com](http://www.olsenaudio.com).

**KK AUDIO LABS OFFERS DS-6**

The KK audio labs DS-6 monitor speaker features a six-inch low-frequency driver using proprietary composite cone material with a one-inch, custom-designed titanium composite high-frequency tweeter. KK audio labs amplifier modules deliver 200 W to the tweeter and 350 W to the woofer respectively.

A feature of the DS series, which also includes the DS-8 eight-inch, two-way powered monitor, is the inclusion of four tuned presets that may be employed to optimize the monitor for any listening environment. Using balanced XLR inputs, the DS-6 handles a frequency range of 44 Hz–22 kHz ( $\pm 2$  dB) with a maximum peak SPL of greater than 111 dB (per pair) of music power, according to the company.

The DS-6 uses the company's proprietary Acoustic Cabinet Control (ACC) technology in its cabinet design. The enclosure, measuring 13.9 x 12.6 x 12.9 inches, is constructed from high-density MDF with a custom gray finish. Each unit weighs 25 pounds (11.3 kg).

For information, contact KK audio labs in California at 714-594-7174 or visit [www.kkaudiolabs.com](http://www.kkaudiolabs.com).

**BLUE RELEASES THE YETI**

For professional recording, according to Blue Microphones, you've had to decide in the past between traditional analog or the flexibility of digital recording via USB.

Blue seeks to change that with the Yeti Pro, the first USB and XLR microphone combining 24-bit/192 kHz digital recording resolution with analog XLR output.

Yeti Pro offers recording resolution up to 24-bit/192 kHz. At that rate, Blue says, Yeti Pro captures audio with four times greater detail than CD-quality audio. Suitable for studio or home setups, Yeti Pro's analog output allows the user to go from USB to XLR. For analog recording, it also includes an XLR stereo breakout cable for analog equipment.

Blue says most USB microphones are limited to fixed recording resolutions, whereas Yeti Pro

features an analog/digital converter chip that allows a range of recording resolutions from 22 kHz up to 192 kHz and common sampling rates in between. It is designed with the audio principles of Blue's professional studio microphones. Yeti Pro features separate circuit boards to maintain the integrity of the analog and digital signal paths and discrete electronic components to maintain signal quality.

Yeti Pro uses Blue's premium condenser capsules set in a proprietary triple capsule array, offering the flexibility of four recording patterns (cardioid, omni, bidirectional and stereo).

Features include a zero-latency headphone output with volume control for direct monitoring, adjustable microphone gain control and a mute button. Yeti Pro features driverless installation and works with PC and Mac.

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





# RADIOWORLD

The News Source for Radio Managers and Engineers

Our readers have something to say

“Radio World is my trustworthy source for all things relating to the industry I love. It's a daily part of my life.”

Rick Brancadora

President/CEO/GM  
LifeRadio 1020 WIBG  
WIBBAGE FM @ 94.3  
Ocean City, N.J.

Shown: Heil PR 40 from Custom Shop



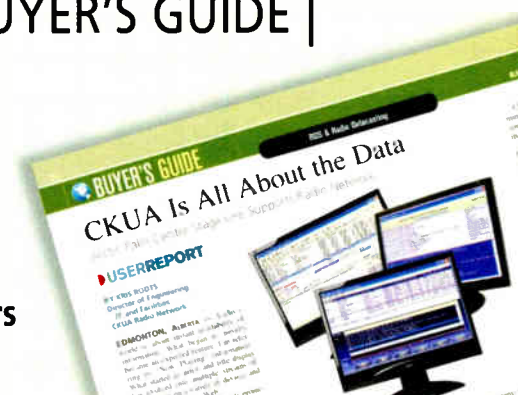
www.heilsound.com

**COMING UP IN BUYER'S GUIDE |**

**Transmitters**  
May 4, 2011

**Audio Processing**  
June 1, 2011

**Consoles, Mixers & Routers**  
July 1, 2011



# You've got more than callers on the line.



Ready for the best caller audio you've ever heard? You'll have it with the new Telos Nx6 talkshow system. With four advanced digital hybrids (each with its own carefully tuned AGC and Digital Dynamic EQ), Nx6 delivers smooth, sweet, consistent audio, from cell phones and landlines alike.

For control, choose from the Telos Desktop Director, Call Controller, or Console Director, each with exclusive Status Symbols visual call management icons that show line and caller status with just a glance.

The best part? The Nx6 package including Assistant Producer call screening software and one Desktop Director is yours for only \$4,295 MSRP.

Telos Talkshow Systems. Give your listeners a voice. Give your talent a boost. Give your wallet a break.

AUDIO | NETWORKS  
[www.telos-systems.com](http://www.telos-systems.com)

© 2011 TELS Corp.

## ZEPHYR IP & ISDN CODECS



With more than 20,000 in daily use around the world, Zephyr is the best way to hear from everywhere.

## BROADCAST TELEPHONY



Telos is the trusted World Leader in single-line hybrids and multi-line phone systems.

World Radio History

## STREAMING AUDIO



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

## AUDIO LOGGING



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

## TECHUPDATE

### HEIL SOUND INTRODUCES PR 31BW

Many manufacturers, to varying degrees, rely on customer input for new product development. For Heil Sound this practice appears to be standard operating procedure, with many of its microphones finding birth from engineers and artists. One example is the PR 35, originally built at the request of Joan Baez.

Heil Sound's PR 31 BW took this notion a step further. One evening last summer, Bob Workman, who mixes FOH for the Charlie Daniels Band and is a long-time user of Heil mics, called founder Bob Heil and asked if it would be all right for him to cut the chassis of his PR 30 in half.



"I believe his exact words were, 'Will this void my warranty?'" said Bob Heil.

Warranty issues resolved, the Bobs put their heads together and configured the chassis to hold all of the components of the existing Heil Sound PR 30. Heil says he now had the makings of a large diaphragm dynamic mic in a compact 4-inch chassis, which meant it could be placed virtually anywhere.

Replacing overly sensitive condensers and dull-sounding dynamics, the PR 31BW, according to the company, exhibits the sound of the Heil PR 30, a "go-to" microphone at such stations as KMOX(AM).

Heil says the -40 dB of rear rejection is a welcome feature where computers and equipment produce background noise. Exhibiting broad frequency response and solid speech articulation, the PR 31BW is suitable for broadcast and voice over studios.

For information, contact Heil Sound in Illinois at (618) 257-3000 or visit [www.heilsound.com](http://www.heilsound.com).

## PRODUCTS & SERVICES SHOWCASE

### COAXIAL DYNAMICS

#### ADVANCED WATCHMAN MONITOR/ALARM

- Dual-port Forward and Reflected Analog/Digital Power Monitor
- Network Interface for Setup, Monitoring, Alerts and Datalogging
- Audible, Visual and email Alerts with Failsafe Operation
- Bright Fluorescent Display of Forward and Reflected Power
- Two Year Limited Warranty



800-262-9425 [www.coaxial.com](http://www.coaxial.com)

## Want the best of both worlds?

**NEW:**  
Best energy saving transmitters  
Most user-friendly features  
Multiple remote supervision options  
Ultra compact, space efficient size

**OLD:**  
Built tough all around  
26 years supporting US broadcasters  
Real 24 hour tech support  
Talk with humans (even after the sale)!

The best of the new and the old at the best price

NAB Booth C450





**Professional Broadcast Engineering Services include:**

- Complete facility design & integration services
- Custom wiring harnesses – we build, you install
- Turnkey systems – large & small
- Passionate, knowledgeable staff with over 150 years combined experience
- New & pre-owned equipment sales



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

**(866) 386-4001**  
**solutions@dre.cc**

**NAB**  
Booth  
#SL5005

**WhisperRoom** INC.  
SOUND ISOLATION ENCLOSURES

**Standard Features**

- Door Window
- Ventilation System(s)
- Interior Light(s)
- Auralex Acoustical Foam
- Cable Passages
- 5-Year Warranty

**Optional Features**

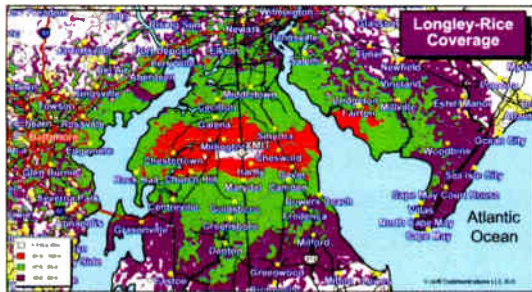
- Audio Jack Panels
- Wall Windows
- Caster Plates
- Wide-Access Doors
- Ventilation Silencing Systems
- 10" Height Extension
- Soundwave Deflection Systems



**WhisperRoom, Inc.**  
(423) 585-5827 • Fax (423) 585-5831  
[www.whisperroom.com](http://www.whisperroom.com)



**The Leader in Broadcast Engineering Software**



**Professional Software packages for FCC applications and predicting coverage.**

- Create stunning "real-world" coverage maps and interference studies using Longley-Rice, PTP, FCC, ITU-R P.1546-1, and Okamura/Hata with Probe 4™
- Search for FM channels under spacings and contour to contour protection using FM Commander™
- Prepare AM skywave and groundwave allocation studies and map FCC contours with AM Pro 2™
- Find STL channels and plot paths with Microwave Pro™

Quality custom mapping and FCC engineering consulting available.

[www.v-soft.com](http://www.v-soft.com)

(800)743-3684

**ACOUSTICS**

**Acoustics First**  
SOUND AND NOISE CONTROL MATERIALS  
Toll-Free Number: **888-765-2900**  
[www.AcousticsFirst.com](http://www.AcousticsFirst.com)

**AUDIO PROCESSING (INCLUDES ON-AIR)**

**WANT TO BUY**

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

**AUTOMATION EQUIPMENT**

**WANT TO SELL**

It's free and it has been expanded. The only cost is to keep you informed as to how the system is performing and let us know how you are using it. DIY-DJ, is a Linux based radio automation system and now sports a record scheduler (DIY-DJ-RECORDER) which allows you to schedule the recording of a network or any other program for replay later as well as a basic logging system. Beside these additions the system schedules music, does voice tracking (ALWAYS hit the vocal), create a shell, live assist, exact time events, join satellite feeds, automated temperature announce, do unattended remote events and more. Call (406) 679-0527 or email [krws@digitaldevelopment.net](mailto:krws@digitaldevelopment.net) for a copy today.

[digitaldevelopment.net](http://digitaldevelopment.net) for a copy today.

**WANT TO BUY**

Wanted: old analog automation equip, filters and EQ, tube amps, reel to reel, cart machines and parts. Pacific NW area. 503-493-2983.

**CART MACHINES**

**WANT TO SELL**

Hundreds of carts will go to the landfill soon, all lengths and condition, cCheap. Neil, 615-430-6482.

**MICROPHONES/ HEADPHONES/ SPEAKERS/AMPS**

**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](mailto:sixtiesradio@yahoo.com).

**MISCELLANEOUS**

**ROTRON BLOWERS AND PLATE BLOCKERS**, new & rebuilt for Ecom, Harris, CCA, CSI, McMartin. Goodrich Ent. 11435 Manderson St. Omaha, NE 68164 402-493-1886 Email: [CGoodrich@rcn.com](mailto:CGoodrich@rcn.com)

**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,

## 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
- Pre-Purchase Inspections
- 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](mailto:info@owleng.com) "Member AFCE"

Langevin, RCA, Gates, Urei, Altec, Pultec, Collins. Cash - pick up 773-339-9035

2" plastic "spot" reels 6.5 or 8" diameter, as used for quad video. Wayne, Audio Village, 760-320-0728 or [audiovlg@gte.net](mailto:audiovlg@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](mailto: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, KOBY, 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](mailto: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](mailto: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 women's affairs with a long promotion for Caygill's appearance at a local store. Anne Truax, Susanne Caygill, running time is 13:44. Ron, 925-284-5428 or email [ronwtamm@yahoo.com](mailto:ronwtamm@yahoo.com).

Looking for KTIM FM radio shows from 1981-1984 if possible unscoped. R Tamm, 925-284-5428 or [ronwtamm@yahoo.com](mailto:ronwtamm@yahoo.com).

Turntable: Thorens TD 124

or TD 124 Mk II, also 12" tonearm, hopefully in working condition. [heybales@bis.midco.net](mailto:heybales@bis.midco.net) or 701-400-5637.

**RECORDING & PLAYBACK HARDWARE**

**WANT TO BUY**

Large or small collections of 16" transcriptions or 12" transcriptions, not commercial LPs. Bill Cook, 719-687-6357.

Schnader telecriptions 16 mm musical films produced in the early 50 s. Bill Cook, 719-687-6357.

Standard Short-tune series. Bill Cook, 719-687-6357.

**STATIONS**

**WANT TO SELL**

A profitable LPMF station in the Atlanta Metro area. Call 678-454-5430.

A profitable regional AM station in South Carolina. Call 678-454-5430.

AM in Rome/Utica market. Xlators in KY, IL, and NC cheap. [mraley@bbnmedia.org](mailto:mraley@bbnmedia.org).

**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).

**GRAHAM BROCK, INC.**  
BROADCAST TECHNICAL CONSULTANTS  
Full Service From Allocation to Operation AM/FM/TV/AUX Services.  
Field Work, Antenna and Facilities Design  
Over 45 years engineering and consulting experience  
**912-638-8028**  
**202-393-5133**  
[www.grahambrock.com](http://www.grahambrock.com)

**Mullaney Engineering, Inc.**  
Serving Broadcasters Since 1948  
9049 Shady Grove Court  
Gaithersburg, MD 20877  
(301) 921-0115  
Fax (301) 590-9757  
[mullaney@mulleng.com](mailto:mullaney@mulleng.com)

Buying Or Selling Used Equipment?  
You're in the right place!  
**RADIOWORLD**  
Broadcast Equipment Exchange

## 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 Ll Camino Real, Suite K  
Carlsbad, California 92008  
(760) 438-4420 Fax: (760) 438-4759  
e mail [link@sur.com](mailto:link@sur.com) web [www.sur.com](http://www.sur.com)

**TUNWALL RADIO**  
SWITCH AND TRANSMITTER CONTROLLERS

AM/FM/MULTI-SWITCH AND CUSTOM DESIGNS  
330.995.9642 [www.tunwallradio.com](http://www.tunwallradio.com)

**RENTAL EQUIPMENT**

**OFF THE AIR? NEED TO RENT? CALL US!**

Test Equipment Field Strength Meters, Codecs, STL (IP and 950), FM Transmitters, Processors, Remote gear and more!

**1-800-438-6040**

**SCMS INC.**  
[www.scmsinc.com](http://www.scmsinc.com)



**NEW**

## ECONCO NEW TUBES

New tubes are now manufactured by **ECONCO** at our award winning facility in Woodland California! Of course, we continue our 34 year tradition of high quality power tube rebuilding.

TEL: 800-532-6626  
INTL: +1-530-662-7553  
FAX: +1-530-666-7760  
www.econco.com  
SE HABLA ESPAÑOL



### TRANSMITTERS/EXCITERS/TRANSLATORS

## TRANSCOM CORPORATION

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

#### Used FM Transmitters

250	Watt	2007	Crown FM250T, with internal stereo generator and tri-band processor, solid state.
500	Watt	2007	Crown FM500T, with internal stereo generator and tri-band processor, solid state.
3.5+1.75	KW HD	2007	BE FMi301, solid state
4	KW	2007	BE FM4C, solid state
14+5	KW HD	2005	BE Fmi1405 (XPi10 & Idr10), solid state
20	KW	2005	BE FM20S, solid state
25	KW	1986	Harris FM25K, solid state IPA
30	KW	1990	Continental 816R-6C, with new dual solid-state IPA
35	KW	1998	Continental 816R-5C, solid state IPA

#### Used AM Transmitters

10	KW	1988	Nautek Ampfet ND10
----	----	------	--------------------

#### Exciters & Miscellaneous Equipment

\*New\* 30W Synthesized exciters (2008) BE FM100C exciter, new, never used!  
BE FX1250 FM & HD exciter with ENGINE card  
BE XPi 10, HD Generator  
Bird Wattmeter with Elements  
Orban Optimods 8200, 8100XT, 8100A  
BE FC30, SCA Generator

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



Continental Electronics



CROWN BROADCAST



New TV Transmitters- Analog and Digital  
OMB, Pineapple and Technalogix  
VHF and UHF TV Antennas  
(10 W to 10 KW) TV STL

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!

Rest Assured! **FCC Certified**  
**FM Stereo Transmitter**

- ✓ 50W RF output, continuous duty!
- ✓ Auto protect with auto soft fail & auto restore!
- ✓ Automatic battery backup!
- ✓ Digital display of all parameters
- ✓ Perfect for LPFM, Translators, as well as stand-alone exciters

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

**ramsey** 800-446-2295  
In Our 36th Year!

#### WANT TO SELL

CCA AM 10,000 D – Call John KQSS 928-595-0263 between 10 & 6 PM Pacific Time.

**Broadcast Equipment Exchange**

For more information, ask David at 212-378-0400 x511  
[dcarson@nbmedia.com](mailto:dcarson@nbmedia.com)

**RADIOWORLD**

**Broadcast Equipment Exchange**



“BEE” in the habit of selling your used equipment here!

Call David for details at

(212) 378-0400 ext. 511

or e-mail [dcarson@nbmedia.com](mailto:dcarson@nbmedia.com)

**SPACE IS AVAILABLE!**

# 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, 917-324-8466 [mitchellrakoff@yahoo.com](mailto:mitchellrakoff@yahoo.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).

Charming, animated and creative on-air personality with capacity for immediate impact and station growth. Relevant Promotions and Marketing experience. Notable copy-

writing abilities. Nicole, 682-203-5991 or [nicolesamuel@gmail.com](mailto:nicolesamuel@gmail.com).

Motivated, tenacious, extremely proficient production/editing skills, or on-air. Strong copywriting abilities. Consistent show prep and ethics. Quick, dependable and attentive to details. Brian, 817-874-4350 or [k\\_rob1@yahoo.com](mailto:k_rob1@yahoo.com).

Manufacturer position sought. Highly experienced Broadcast Audio product sales & marketing manager available full time or contract biz dev/marketing services. I have great references within the industry, a broadcast degree and understand highly technical digital audio products and systems. Bill Ford, 615-584-8634 or [bford@coastside.net](mailto:bford@coastside.net).

## D And C Electronics

An International Distributor of RF Components

### Tubes

NEW & REBUILT

RFU, MOSFETS, VACUUM CAPACITORS, SOCKETS

BEST PRICES



Pro-Tek

FROM OUR STOCK

To Order: 1-800-881-2374 • Outside U.S. (352) 592-7800 • Se Habla Español

**RF PARTS™ CO.**  
Se Habla Español We Export

EIMAC • TAYLOR • SVETLANA  
New & Rebuilt Tubes - Same Day Shipping  
Motorola • Toshiba • SGS • Thomson & Mitsubishi Semiconductors

800-737-2787 760-744-0700  
[rfp@rfparts.com](mailto:rfp@rfparts.com) [www.rfparts.com](http://www.rfparts.com)

ADVERTISE YOUR EMPLOYMENT AD  
ON OUR WEB SITE FOR ONLY  
\$2 PER WORD!

ADS GET POSTED THE NEXT BUSINESS DAY AND WILL RUN FOR A FULL TWO WEEKS!

COMBINE THIS WITH AN AD IN OUR RADIO WORLD NEWSPAPER EMPLOYMENT SECTION AND REALLY COVER THE BROADCAST INDUSTRY AND THEN SOME!

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

Call David Carson for all the details at

212-378-0400 ext. 511  
[dcarson@nbmedia.com](mailto:dcarson@nbmedia.com)



ISO 9001 Certified

The Choice of Successful Broadcasters Since 1934

### NEW POWER TUBES

Triodes  
Tetrodes  
Pentodes

NEW SOCKETS & REPLACEMENT PARTS

Worldwide Availability

Made in U.S.A.

CALL 800-414-8823  
Int'l (650) 592-1221  
Fax (650) 592-9988

Visit our Web Site at [www.eimac.com](http://www.eimac.com)



### FOR THE BEST PRICE

& 24 Hr service on transmitting tubes & sockets/parts, new & rebuilt call Goodrich Ent. at 402-493-1886 day or night, [www.goodrichenterprises.com](http://www.goodrichenterprises.com).

## READER'S FORUM

### LEAD ON, GORDON

Paul, solid piece on Gordon Smith ("Thumbs Up for Gordon Smith," Jan. 12). I agree with your conclusions. I had a similar understanding last October when I saw him work up close at our CBA convention. It's proving to be a very good choice by the NAB board. Lead on!

*Mike Rice  
President*

*Connecticut Broadcasters Association  
Willimantic, Conn.*

### THANKS, MARK

Dear Mr. Persons, I read with much interest your *Tech Tips* articles in Radio World about your van and tool box. I sincerely hope that you plan to write more.

Your writing is definitely for the common person — easy to understand, and easily absorbed. Far too often today, writers forget that not all of their audience may have Ph.D.s, and overdramatize long words that often

mean "and," "to" and "around," to name just a few.

I look forward to future informative and interesting articles with the byline "Persons."

*James Paul  
Fuquay-Varina, N.C.*

### LET'S BE CLEAR ON EAS CERTIFICATION

There are claims that other manufacturers' EAS units with integrated CAP support are FCC-certified, while standalone CAP-to-EAS converters such as the Gorman-Redlich CAP-DECI are not.

I would like to point out that the FCC certification that integrated CAP-EAS units have received is the same certification that equipment referred to as "legacy" EAS equipment (sans integrated CAP support) has received and which will retain certification once coupled to a CAP-to-EAS converter.

Once the FCC revises Part 11 for the upcoming EAS revitalization, all units will have to be recertified as FCC Part 11-compliant to accommodate the changes. There is currently no test procedure required by the FCC to certify any CAP functionality on alerting

equipment. FEMA IPAWS is conducting an IPAWS Conformity Assessment program to determine conformity of CAP units to the necessary requirements. Gorman-Redlich is participating in that program with our CAP-DECI CAP-to-EAS converter unit.

*Jim Gorman  
President  
Gorman-Redlich Mfg. Co.  
Athens, Ohio*

### HOW TO

#### SEND A LETTER TO THE EDITOR:

E-mail [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com) with "Letter to the Editor" in the subject field. Please include issue date.

#### CHANGE YOUR MAILING ADDRESS:

Visit [radioworld.com](http://radioworld.com), click on the subscription button and follow instructions to change a subscription address.

#### CONTRIBUTE FREELANCE ARTICLES:

E-mail [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com) and request our Writer's Guidelines.

### ADVERTISER INDEX

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

PAGE	ADVERTISER	WEB SITE/URL
23	Arrakis	<a href="http://www.arrakis-systems.com">www.arrakis-systems.com</a>
30	AM Ground Systems Co.	<a href="http://www.amgroundsystems.com">www.amgroundsystems.com</a>
10	Armstrong Transmitter Co.	<a href="http://www.armstrongtx.com">www.armstrongtx.com</a>
34	Audio Technica	<a href="http://www.audio-technica.com">www.audio-technica.com</a>
6	AudioScience Inc.	<a href="http://www.audioscience.com">www.audioscience.com</a>
13	Axia - A Telos Company	<a href="http://www.axiaaudio.com">www.axiaaudio.com</a>
42	Bext, Inc	<a href="http://www.bext.com">www.bext.com</a>
36	Broadcast Tools, Inc	<a href="http://www.broadcasttools.com">www.broadcasttools.com</a>
37	Broadcasters General Store	<a href="http://www.bgs.cc">www.bgs.cc</a>
47	BSI	<a href="http://www.bsiusa.com">www.bsiusa.com</a>
3	BSW	<a href="http://www.bswusa.com">www.bswusa.com</a>
42	Coaxial Dynamics	<a href="http://www.coaxial.com">www.coaxial.com</a>
7	Comrex Corporation	<a href="http://www.comrex.com">www.comrex.com</a>
1	Continental Electronics Corp.	<a href="http://www.contelec.com">www.contelec.com</a>
21	DAWNco	<a href="http://www.dawnco.com">www.dawnco.com</a>
5	Digital Alert Systems	<a href="http://www.digitalalertsystems.com">www.digitalalertsystems.com</a>
42	Digital Radio Engineering	<a href="http://www.digitalradioengineering.com">www.digitalradioengineering.com</a>
4	ESE	<a href="http://www.es-web.com">www.es-web.com</a>
39	Eventide	<a href="http://www.eventide.com">www.eventide.com</a>
32	Gorman Redlich Mfg	<a href="http://www.gorman-redlich.com">www.gorman-redlich.com</a>
38	Grace Broadcast Sales	<a href="http://www.gracebroadcast.com">www.gracebroadcast.com</a>
14, 33	Harris Corporation	<a href="http://www.broadcast.harris.com">www.broadcast.harris.com</a>
22	Heil Sound, Ltd.	<a href="http://www.heilsound.com">www.heilsound.com</a>
15	Inovonics Inc	<a href="http://www.inovon.com">www.inovon.com</a>
35	JK Audio	<a href="http://www.jkaudio.com">www.jkaudio.com</a>
16	Kintronic Labs Inc	<a href="http://www.kintronic.com">www.kintronic.com</a>
20	Lightner Electronics	<a href="http://www.lightnerelectronics.com">www.lightnerelectronics.com</a>
19	Logitek	<a href="http://www.logitekaudio.com">www.logitekaudio.com</a>
8, 26, 38	Nautel Ltd.	<a href="http://www.nautel.com">www.nautel.com</a>
9, 27	Omnia - A Telos Company	<a href="http://www.omniaaudio.com">www.omniaaudio.com</a>
28	RCS	<a href="http://www.rcsworks.com">www.rcsworks.com</a>
12	Progressive Concepts	<a href="http://www.progressive-concepts.com">www.progressive-concepts.com</a>
29	Sage Alerting Systems	<a href="http://www.sagealertingsystems.com">www.sagealertingsystems.com</a>
31	SCMS	<a href="http://www.scmsinc.com">www.scmsinc.com</a>
17, 41	Telos Systems - TLS Corp.	<a href="http://www.telos-systems.com">www.telos-systems.com</a>
18	Thum & Mahr GmbH	<a href="http://www.yellowtec.com">www.yellowtec.com</a>
11	Tieline Technology	<a href="http://www.tieline.com">www.tieline.com</a>
2, 24, 25, 48	Wheatstone Corporation	<a href="http://www.wheatstone.com">www.wheatstone.com</a>
42	Whisper Room	<a href="http://www.whisperroom.com">www.whisperroom.com</a>

### FOTI

*(continued from page 46)*

as well as occurrences where the audio signal will sound abnormally weak, and usually non-musical.

This problem can be minimized through the use of multiband AGC/compression, but it still occurs. Actually, in the multiband case, a new and additional problem arises. When RMS detection errors occur, they now affect the sonic level, as well as the tonal balance of the spectrum. The result is a combination of incorrect levels and EQ, which is very non-musical and a double negative.

All is not lost, however. The magic lies in the RMS detector. As mentioned, a single averaging function is used. New development, in which the averaging function is performed through analysis of the signal's incoming density and rate of level change, allows the RMS detection to be accomplished in a natural and musical manner. All levels are adjusted properly across the audio spectrum. This enables the AGC function to operate in either a wideband or multiband configuration. When used in the multiband mode, the resultant spectrum is consistent in level and frequency balance.

#### TOO MANY BANDS?

Why is this so important? Now, the mechanism is in place to set RMS (loudness sensitivity) levels to where they need to be, and keep them there.

Also, spectral balance is achieved consistently over a broad range of content ... music, live speech, commercials, station sweepers, etc.

Now, here's the added benefit. Since the less aggressive-sounding sections, the WB-AGC and multiband compressors, have set the RMS (loudness) levels and EQ to the desired target range correctly, the following peak limiters and distortion-managed clippers are then set for moderate operation.

This yields less activity in the multiband limiter (reduced IMD), and the desired amount of distortion-managed clipping is consistent at all times!

This sheds some light on another misnomer about processing for level control, EQ balance and loudness. It has little to do with the number of processing bands. It has more to do with the control algorithms employed in the gain management sections. Using six or more bands in a limiter does not offer improved quality, EQ, detail and loudness. Too many limiter bands driven deep into processing generate dense, smashed and annoying sound.

With this new RMS implementation, the result is a sonic signature that is extremely clean, level and EQ consistent, as well as competitively loud.

This innovative method has been tested over recent years, as we brought our latest product to life. It was compared to our prior offerings, and the improvement in performance is easily apparent. I trust Nigel would be proud.

*Comment on this or any article.  
Write to [radioworld@nbmedia.com](mailto:radioworld@nbmedia.com).*

# With Regards to Nigel Tufnel

## Foti Says Improvements in RMS Detection Offer Advances in Creating Perceived Loudness

### COMMENTARY

BY FRANK FOTI

*The author is president of Omnia Audio.*

Nigel Tufnel might've been thinking about broadcast audio processing when he eloquently described his theory how "this one goes to 11!"

Yes, it's that hilarious scene from the movie "Spinal Tap." Nigel's comments about going to 11 may appear tongue-in-cheek, but we now have the means upon which to make his prognostication true.

Standing the test of time, radio stations constantly seek a magical method to empower their signal in order to capture and hold listeners. In a word, they try to be louder than everyone else. Except now, the industry has reached a point of diminishing

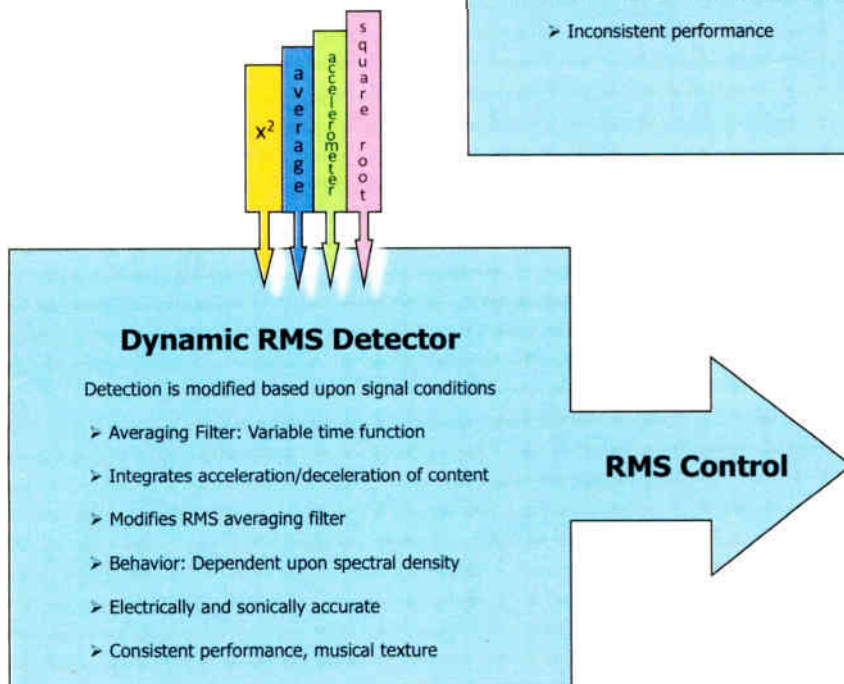
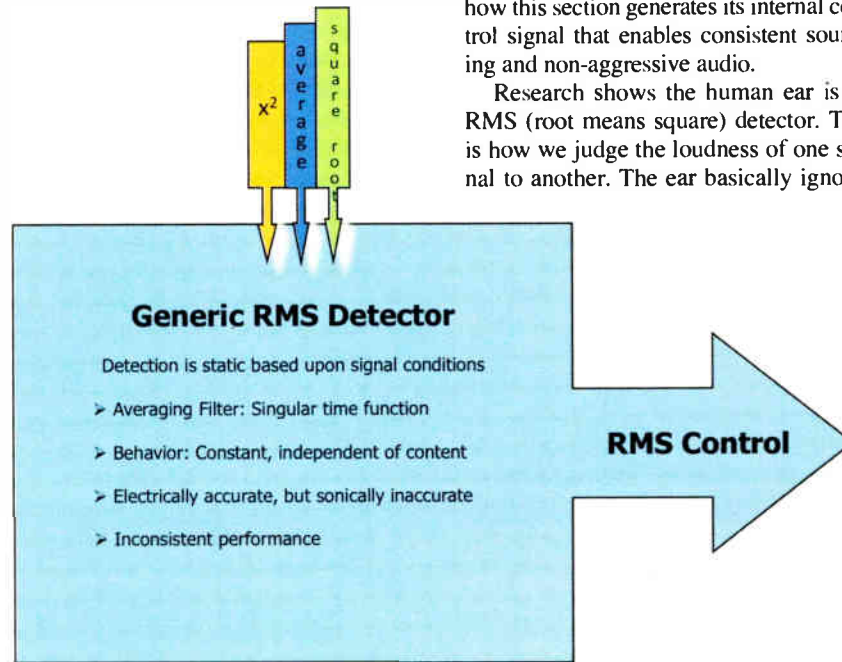
precision peak-controlled signal needed for transmission.

This is accomplished through a series of processing functions such as compres-

sions eliminate IMD have improved processing systems, but that's not the ultimate answer. Even though lowering IMD helps, limiters and clippers are still aggressive-sounding, no matter what.

The secret to generating consistent and pleasing competitive loudness is to be found in the AGC or compressor section. This is not novel or new. What is novel is how this section generates its internal control signal that enables consistent sounding and non-aggressive audio.

Research shows the human ear is an RMS (root means square) detector. This is how we judge the loudness of one signal to another. The ear basically ignores



returns, as radio stations have pushed their existing equipment to the limits.

Theories abound about how to create perceived loudness. The trick is how to achieve this, yet minimize the annoyance and distortion commonly associated with competitive processing. This article offers insight to a new method, available now, and it is on the air in most major markets. Without a need for rocket science, the basic concept is not new, but the means by which it is accomplished are.

### A PLEASING SECRET

In general, audio processors funnel wide dynamic range audio down to the

sion, limiting and distortion-managed clipping. Each provides its own function in order to obtain maximum sonic benefit. Simply, the compressor (least aggressive sounding) feeds a peak limiter (more aggressive sounding), and then the distortion-managed clipper, which is the most aggressive element.

Common practice has been to utilize the limiter and clipper for creating loudness, and the AGC to balance the spectrum. While this does work, it brings along associated intermodulation (IMD) distortion, which results in sonic annoyance to the listener.

Recent efforts to reduce and in some

a change in short-term peak level, but it locks onto a change in the "averaged" level over a period of time. Limiters employed in broadcast processors are peak-responding, and react over a much shorter duration. In order to increase the RMS level through limiting means, we need to ingest more limiting to increase the perceived RMS level. This is counter-productive, as considerable amounts of limiting are required. While the RMS level eventually will increase, so will the perceived level of IMD, and this is where processing artifacts are generated.

### INCONSISTENT

Effecting a change in RMS level is done in the AGC/compressor section. RMS-based compressors are not new. They have been deployed before; and based upon how the detector operates, they had a few sonic challenges to overcome, until now.

In prior implementations, difficulties were based upon the single time constant used to calculate the RMS level. This works great when measuring steady-state signals. Audio signals, on the other hand, cover a wide range of spectra; and the averaging function of the RMS detector is not consistent in level detection over this wider range.

The result is inconsistent level control,

(continued on page 45)

Next Issue of RADIO WORLD April 20, 2011  
Next Issue of ENGINEERING EXTRA April 13, 2011

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

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

### EDITORIAL STAFF

EDITOR IN CHIEF, U.S. Paul J. McLane  
NEWS EDITOR/WASH. BUREAU CHIEF Leslie Stimson  
GEAR & TECHNOLOGY EDITOR Brett Moss  
TECHNICAL ADVISER Thomas R. McGinley  
TECHNICAL EDITOR, RWEE Michael LeClair  
PRODUCTION EDITOR, RWEE Karen Lee  
CONTRIBUTING EDITOR John Bisset  
INTERNATIONAL EDITOR IN CHIEF T. Carter Ross  
LATIN AMERICA EDITOR IN CHIEF Rogelio Ocampo  
LATIN AMERICA EDITOR Karina Gerardi  
MANAGING EDITOR, WEB Brian Smith

### EDITORIAL CONTRIBUTORS

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

### ADMINISTRATION & PRODUCTION

PUBLISHER John Casey  
EDITORIAL DIRECTOR T. Carter Ross  
PRODUCTION DIRECTOR Davis White  
PRODUCTION PUBLICATION COORDINATOR Karen Lee  
ADVERTISING COORDINATOR Caroline Freeland

### CIRCULATION

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

### SUBSCRIPTIONS

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

### CORPORATE

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

### VIDEO/BROADCAST GROUP

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

### ADVERTISING SALES REPRESENTATIVES

US EAST & LATIN AMERICA: John Casey, jcasey@nbmedia.com  
T: 212-378-0400, ext. 512 | F: 330-247-1288  
US WEST & CANADA: David Carson, dcarson@nbmedia.com  
T: 212-378-0400, ext. 511 | F: 866-572-6156  
SOUTHERN EUROPE, AFRICA, MIDDLE EAST:  
Raffaella Calabrese, rcalabrese@broadcast.it  
T: +39-02-92884940 | F: +39-02-700436999  
UK & IRELAND, CENTRAL & NORTHERN EUROPE:  
Graham Kirk, g.kirk@audiomedia.com  
T: +44-1480-461555 | F: +44-1480-461550  
JAPAN: Eiji Yoshikawa, callems@world.odn.ne.jp  
T: +81-3-3327-5759 | F: +81-3-3322-7933  
ASIA-PACIFIC: Wengong Wang, ww@imasmchina.com  
T: +86-755-83862930/40/50 | F: +86-755-83862920  
CLASSIFIEDS: David Carson, dcarson@nbmedia.com  
T: 212-378-0400, ext. 511 | F: 866-572-6156

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, 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.

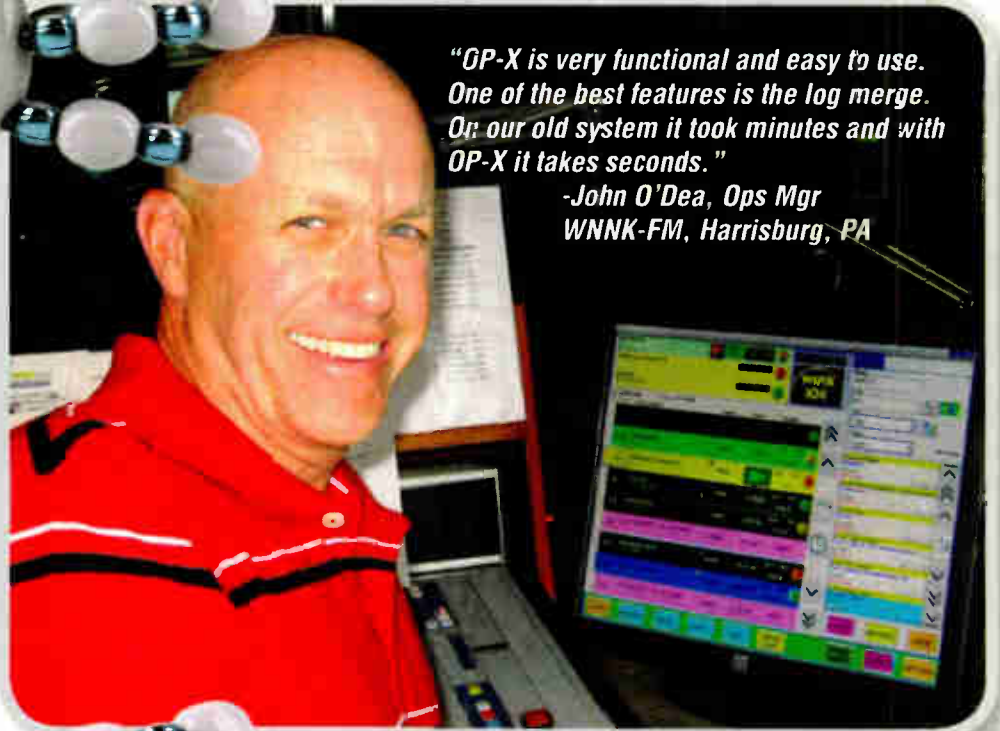
REPRINTS: Call or write Caroline Freeland, 5285 Shawnee Rd., Ste. 100, Alexandria, VA 22312-2334; (703) 852-4600; Fax: (703) 852-4583

Globe graphic ©iStockphoto.com / Edward Grajeda

Copyright 2011 by NewBay Media, LLC.  
All rights reserved.  
Printed in the USA







*"Op-X is very functional and easy to use. One of the best features is the log merge. On our old system it took minutes and with Op-X it takes seconds."*

*-John O'Dea, Ops Mgr  
WNNK-FM, Harrisburg, PA*



- Modular Operation in Op-X allows for a tiered system at a fraction of the cost of its competitors.
- Each studio client is capable of accessing all Audio Server modules on the network.
- Remote voice-tracking allows for creation of content for remote studios also running Op-X.
- The revolutionary design of Op-X's clock builder turns the previous task of scheduling satellite programming into a few simple clicks.
- Share serial devices from any machine using the Op-X Serial Server.
- Importing logs now gets its own module that takes confusion out of the process.
- Engineers will enjoy Op-X because it's easy to install, maintain, and has automatic backup features.

# AUTOMATION

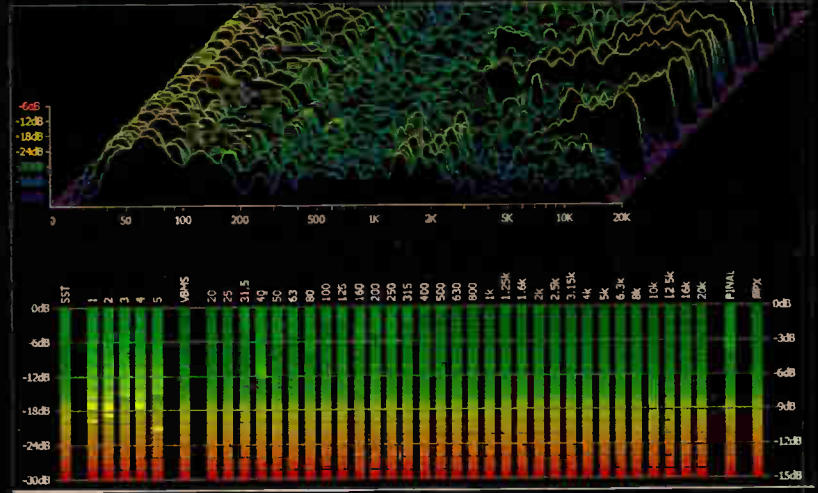
SIMPLE • POWERFUL • REDUNDANT

*Not since Axia audio-over-IP was introduced to the broadcast industry have we at BGS been so excited! It is with great enthusiasm we'd like to invite you to take a look at the new Op-X Radio Automation delivery system for any single or multi-station cluster. Op-X's versatility allows it to operate seamlessly with either Axia IP-Audio networks or legacy audio consoles.*



**Broadcasters  
General Store**  
352-622-7700  
www.bgs.cc

# VORSIS AIRAURA DIGITAL SPECTRAL PROCESSOR



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

"This processor is amazing!"

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

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

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

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

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

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

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

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

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

## Real Comments From Real Users About VORSIS

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



**IT'S TIME YOU WON THE RATINGS WAR**

phone 1.252.638-7000  
www.vorsis.com | sales@wheatstone.com

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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