



# RADIO WORLD

SEPTEMBER 26, 2012 | The News Source for Radio Managers and Engineers | \$2.50 | RADIOWORLD.COM

## INSIDE

### A GOOD LABEL IS HARD TO FIND

John Bisset shares why it's always a good idea to label equipment. — Page 16

### BUYER'S GUIDE

Program automation and more. — Page 22



### VI ATTITUDE JUSTMENT

Jul Levine on why we should stop complaining and learn to embrace better content on AM radio. — Page 38

## Retail Sales Tax Loophole May Close

### Push for level playing field among retailers gets attention of broadcast equipment sellers

BY RANDY J. STINE

Broadcast equipment suppliers are watching to see what action Congress will take on a bill that would close a longstanding loophole in how states collect sales tax on phone, catalog and Internet sales.

Though the Market Place Equity Act — H.R. 3179 — appears to be gaining momentum on Capitol Hill, it was unclear in early September whether it would be voted on by the end of the year, observers said. A similar version, S. 1832, is moving forward in the Senate.

The Consumer Electronics Association is supporting the measures while online retailers like eBay Inc., Google and Overstock.com oppose the legislation.

The focus of the bills, introduced late last year, is to "improve the states' rights to enforce the collection of state sales and use tax laws," according to language in H.R. 3179.

Currently, equipment suppliers and other retailers that sell through a catalog or online must collect sales tax from customers when the seller has a direct

or indirect physical presence in a state, known as "nexus" — such as a sales office, manufacturing facility or distribution center.

For example, Broadcasters General Store, according to its website, collects sales tax on catalog and Internet sales

forms for our files," according to the BGS website. The company is headquartered in Ocala, Fla., but has outside sales offices in Indiana, Kentucky and North Carolina.

The current proposals would expand this requirement to cover sales in any state, whether the seller had a nexus there or not.

Equipment sellers contacted for this story say collecting additional sales tax



The SCMS Inc. inside sales group during a recent training session. From left: Ernie Vincent, Brittany Hilton, Michael Sharpstene, Bob Cauthen (president), Mike Phelps, Chuck Johnston and Matt Cauthen (vice president.) The company's 13 field sales people are not pictured.

from Georgia, Florida, Illinois, Indiana, Ohio, Kentucky and North Carolina.

"Some of our manufacturers may require us to collect tax for other states that they have nexus in and this will be added to your invoice and noted. Anyone not required to pay tax must complete and fax the appropriate state

would create a burden and increase operational costs.

"Let's put it this way, we are not rushing out to begin collecting taxes from our customers until it is absolutely required. Ideally we would like the current sales tax system to stay in

(continued on page 6)

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# Smartphone/Car Integration Is in Flux

The founder of Livio Radio says an industry standard is needed

## COMMENTARY

BY JAKE SIGAL

*The founder and chief executive officer of Livio Radio writes about a problem in the digital dashboard that affects radio broadcasters hoping to stream content on more platforms.*

Imagine not having standards for anti-lock braking systems in cars, or if only luxury vehicles could offer it.

Imagine if ABS systems were controlled by the brake pedal in some cars, voice-activated in others and operated by the emergency brake lever in some other models. Like current iPod or iPhone cables for your car, ABS would be an optional \$100 upgrade for a part that costs automakers \$3 to install.

And if it's raining, or if you want to



Detroit-based entrepreneur Jake Sigal founded Livio Radio in 2008.

use ABS outside of the United States on a trip to Canada, it's an in-app upgrade to stop, as ABS is only licensed for optimum driving conditions within a certain country.

Sound far-fetched? It's not. This is happening in the business and development meetings that your OEMs are having about integrating your smartphones with vehicles shipping in 2013–2015.

With the Internet in our pocket, vehicle safety is under threat like never before. There is a simple solution to this problem: an industry standard. If a standard existed, car companies wouldn't compete with each other on a feature that comes at your expense and safety.

If you're a typical consumer (and not in high school, or working in the radio industry), your first concern about a car isn't its radio. People are still buying

*(continued on page 10)*

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## NEWSROUNDUP

**APPLE:** In advance of the debut of the iPhone 5, reports began to surface that the tech company was preparing to launch its own ad-supported customizable online radio service similar to what Pandora and iHeartRadio offer. Apple wouldn't comment on a story, first reported by the Wall Street Journal, that the company had begun discussions with record labels about licensing deals that would give its customers more flexibility in how they consume music. If a deal is finalized, it could be months before Apple has any deals in place and is ready to launch the service.

**TOWER LIGHTS:** The FCC began granting tower owners permission to turn off some tower lights. The commission had received nine applications as of early September; six were granted and the others were pending. Federal wildlife biologists believe fewer migratory birds will die if steady red lights on towers taller than 351 feet are turned off, while red flashing lights are left on. The FAA agreed the change would not affect air safety and updated its obstruction lighting standards. Broadcasters who want to turn off red steady lights must go through a two-step

process, first asking the FAA permission and then asking the FCC for approval to modify an Antenna Structure Registration. When the lights have been turned off, the owner needs to renotify the FCC for each tower.

**MEXICO HD:** The Mexican Institute of Radio says its HD Radio conversions will be complete by the end of the year. Known as IMER, the organization is a government-owned radio group. The broadcaster has agreed to convert stations across the country, according to iBiquity Digital Director of Business Development in Latin America John Schneider. IMER is planning on a total of 24 HD stations on 23 AM and FM frequencies, plus 18 multicast channels. The broadcaster also plans what it calls a "virtual" station, previously heard on shortwave, on an HD2 channel.

**HARRIS, SBE:** Harris' Broadcast Communications Division President Harris Morris is the keynote speaker for the upcoming national SBE convention Oct. 23-24 at the Crowne Plaza Hotel, Denver International Airport. Morris is scheduled to speak at the SBE National Awards Dinner on Oct. 24. The national meeting is being held in conjunction with the Rocky Mountain Audio Video Expo (AVX 2012) and the SBE/SMPTE Engineering Boot Camp.

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# Winter Is Coming ... So Grab a Book!

My shelf is creaking under all the cool books that have come to my attention

Here's a rapid roundup of recent and relevant reads.

"*Audio Engineering 101: A Beginner's Guide to Music Production*" — Timothy A. Dittmar makes this topic accessible with friendly text and cartoons. Inside: Characteristics of sound, how the ear works, basics of microphones and mixing consoles, signal flow and other useful stuff for the newbie looking to understand audio concepts. Keep in mind that he means it when he says "for beginners." It's not for someone who has significant experience working in audio. Paperback and Kindle, published by Focal Press in 2011.

"*Lee de Forest: King of Radio, Television and Film*" — Author Mike Adams, a media professor at San Jose State University, knows radio and film; he brings those worlds together in his discussion of de Forest, including the inventor's role in the film industry. This is a well-documented history book that media and technology history fans will appreciate. Paperback or Kindle. Published late last year by Springer Science+Business Media.



"*Hitler's Radio War*" — Roger Tidy writes about Nazi international broadcasting before and during the war. He takes on a broad range of topics like "Becoming Lord Haw-Haw" and "Wooing America by Short-Wave Radio." These are covered mostly in "thumbnail" chapters of six to 10 pages, so the book is more of a quick introduction to the topic than a deep dive. Hardback, published by Robert Hale.

If you are already well familiar with the topic of Nazi radio propaganda but want more details, you might better enjoy ...

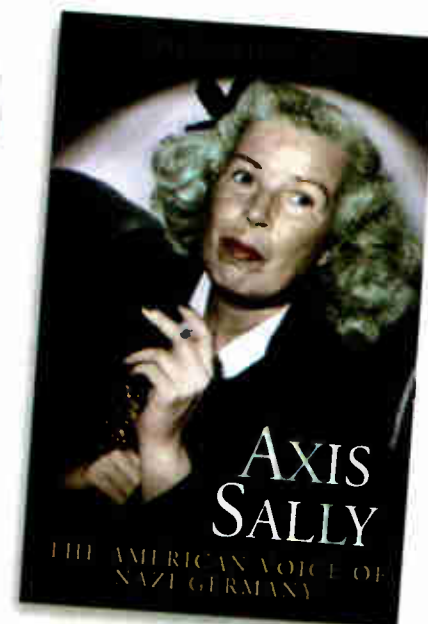
"*Axis Sally: The American Voice of Nazi Germany*" — This book was pub-

FROM THE EDITOR

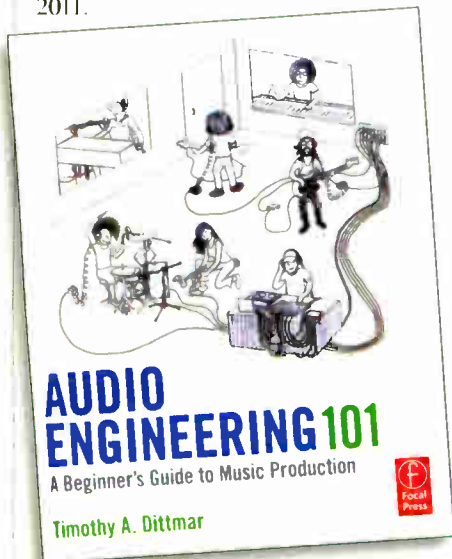
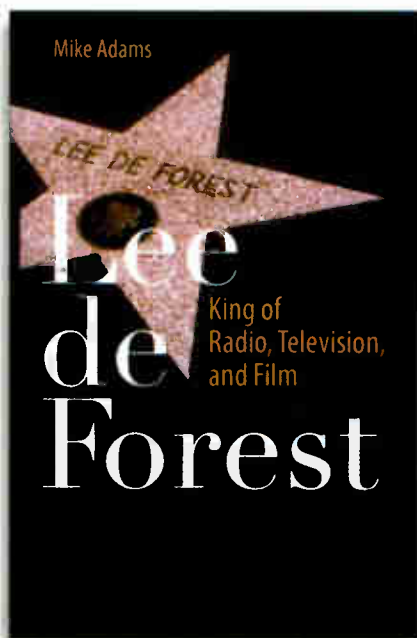
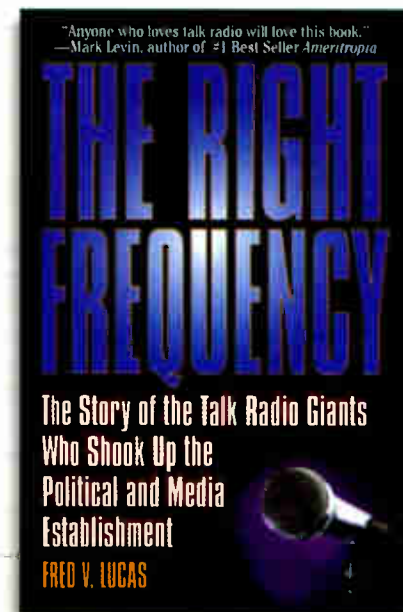


Paul McLane

lished by Casemate in 2010; it also is on Kindle and, just this fall, in paperback. Richard Lucas is a shortwave radio enthusiast and freelance writer interested in the use of radio in propaganda. His book is about Mildred Gillars, American-born mouthpiece for Hitler. He writes that it is "not intended to be an *apologia* for a convicted traitor" but rather aims to "portray a life lived on 'the wrong side of history' with compassion and insight."



"*The Right Frequency*" — Fred V. Lucas subtitles his book "the story of the talk radio giants who shook up the political and media establishment." As Martha Zoller states in her introduction, Lucas seeks to trace the history of talk radio as a mover of conservative thought. The book is a light breezy read, no heavy lifting here; but if you are interested in how Rush Limbaugh "saved the



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# THIS ISSUE

SEPTEMBER 26, 2012

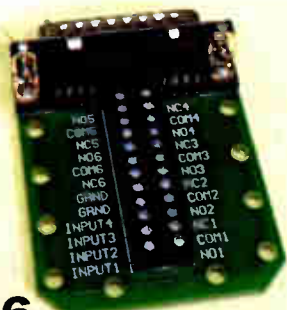
## NEWS

Retail Sales Tax Loophole May Close ..... 1

Smartphone/Car Integration Is in Flux ..... 3

News Roundup ..... 3, 8

Winter Is Coming ... So Grab a Book! ..... 4



**16**

## FEATURES

AES Explores IT and Streaming Issues for Broadcasters ..... 14

Workbench: Labels: Smart, But Often Ignored ..... 16



**32**

## BUYER'S GUIDE

Pristine's CR-7 Controls the Clock ..... 22

Arctic Palm Puts KADI at Center Stage ..... 24

Airtime Takes to the Internet ..... 26

RadioTraffic.com Shines From the Cloud ..... 32



**38**

## OPINION

Reader's Forum ..... 37

AM: Drop the Gloom and Doom ..... 38

AM dial" and about radio talkers who came before and after him — Kaltenborn, Couglin, Hargis, Grant, Dobson, Boortz, Liddy, Reagan, Hannity, Bennett, Beck — this is for you. Paperback and Kindle, published 2012 by History Publishing Co.

"*Network Radio Ratings, 1932-1953*" — Talk about a specialty topic! Jim Ramsburg offers "a history of prime-time programs through the ratings of Nielsen, Crossley and Hooper." He spent many years in radio and sales and is a member of the Minnesota Broadcasting Hall of Fame. He has written a reference book for the true believer in radio's

# NETWORK RADIO RATINGS, 1932-1953

A History of Prime Time Programs through the Ratings of Nielsen, Crossley and Hooper



golden age. It features essays that cover one year at a time, about each network season, plus actual year-by-year monthly and annual ratings for prime-time shows. Do you want to know how "Mr. Keen" did in September of 1943? It's in there. The book is pricey at \$65; but of all the books I mention today, this is the one I most find myself flipping through, the one most likely to stay on your shelf for that mid-winter history argument over bourbon about whether Burns & Allen pulled in more Friday night listeners than their CBS pals Amos & Andy in 1938-39 Paperback, published by McFarland.

(George and Gracie smoked 'em.)

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## SALES TAX

(continued from page 1)

place,” said BSW President/CEO Tim Schwiieger.

BSW collects state sales tax for Ohio, Nebraska and Washington. The company would be faced with additional burdens if the new catalog and Internet sales tax law is passed, he said.

“For the sellers, if these new regulations result in a complex tax structure, it will be a terrible burden for the small business owner that will increase expenses and impact cash flow,” Schwiieger said. For sellers, “It will mean more money out of their pocket to pay taxes results and less money available to buy equipment. The selling price of goods and services will slightly increase.”

Additionally, “All Internet businesses will be forced to raise prices to cover increased costs associated with the tax collection. In the end the buyer pays more,” said Schwiieger.

According to government statistics, 45 states and the District of Columbia impose a sales tax. State tax rates range from 5 percent to 9.35 percent. Penalties and interest rates for non-collection vary from state to state.

Simply collecting sales tax is often a confusing and time-consuming endeavor,

or, according to Bob Cauthen, president of equipment dealer SCMS Inc.

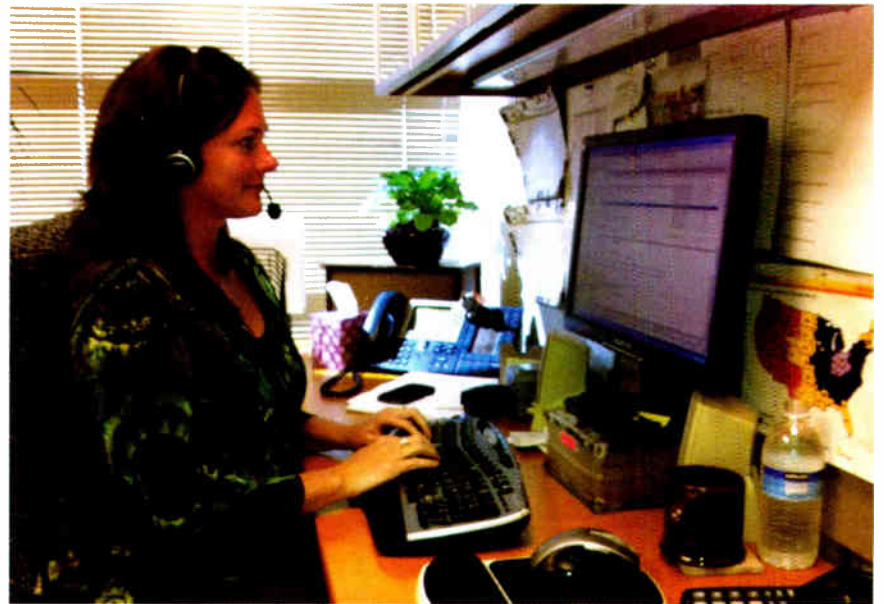
“Each state defines nexus differently. Some states consider you having nexus just by selling into the state or attending a trade show in that state. The two states that we have found are most stringent are Florida and Tennessee,” Cauthen said.

SCMS devotes a one full-time staff position to processing sales taxes, and that workload would surely grow dramatically if new state sales tax collection laws are adopted. “Even though we have it as automated as possible, it is so complex that states even have different tax rates based on the city equipment is sold in,” Cauthen said.

Effective enforcement of a new catalog and Internet state sales tax law would also be complicated, Cauthen believes.

“The government cannot efficiently enforce [the new law] on all the companies on the Internet that are selling into their state, so another approach would have to be developed. The big websites could be audited easily, but what about the guy selling via eBay out of his home?” Cauthen said.

The House bill does have a “small seller” carve-out: “An exception for remote sellers with gross annual receipts in the preceding calendar year



**BSW Sales Manager Shannon Nichols on the phone with a customer.**

from remote sales of items, services and other products in the United States” not exceeding \$1 million or in the state not exceeding \$100,000.

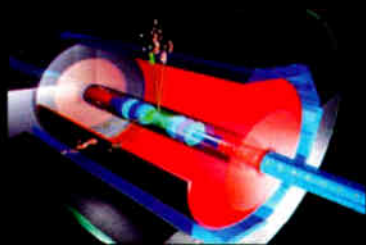
The proposal can affect manufacturers too. For example, a spokesman for Continental Electronics Corp. said the transmitter company doesn’t sell over the Internet but it does collect state sales tax for two states on parts sold to buyers via phone. “CEC charges sales tax on

all sales shipped to Texas (8.25 percent) and Alabama (9–10 percent) addresses,” he said.

Brick-and-mortar retailers have long argued that their online competitors have an unfair advantage because often times there are no added sales tax on purchases.

The Consumer Electronic Association submitted a written statement from

(continued on page 8)



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Dan Jackson, engineer for 92.9 FM in Perth, Australia was faced with a unique challenge. Breakfast hosts Paul Hogan and Lisa Fernandez would be cycling for hours in strong winds and pouring rain as part of the 92.9 Kids Appeal for Telethon.

The unique solution was to equip Dan's bike as a mobile production facility. The talent wore wireless mics AND in-the-ear monitors which communicated with receivers and transmitters in a rack bag on Dan's bike.

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## SALES TAX

(continued from page 6)

President Gary Shapiro to the House Judiciary Committee supporting the Marketplace Equity Act.

"The large loophole in the collection of state sales tax is harming traditional brick-and-mortar retail businesses. The Marketplace Equity Act is an effective solution that will place all retailers on an

**Ideally** we would like the current sale tax system to stay in place.

— Tim Schwieger, BSW

equal playing field while assisting states in collecting approximately \$23 billion in uncollected state sales tax," according to CEA. "Let's be clear, the Act would not enact new taxes. It simply closes a collection loophole."

The Direct Marketing Association, which opposes the new tax collection bills, has asked Congress to require states and other jurisdictions to simplify their sales and use taxes before conscripting every remote seller in the country to become a tax collector for every state with a sales tax.

"There are more than 9,600 taxing jurisdictions in the U.S. today," stated Jerry Cerasale, DMA's senior vice president of government affairs, in a press release. "Requiring any business to comply with the rules in all of those jurisdictions in order to do business across state lines is a precipitously high barrier and a very costly one. It would throttle new businesses before they even get off the ground."

E-commerce specifically has ballooned in the past decade, according to data from the U.S. Department of Commerce, while catalogue sales have faltered, analysts indicate. The government agency estimate of U.S. retail online sales for the second quarter of 2012 was \$54.8 billion, an increase of 3.3 percent from the first quarter of 2012.

Online retailing free of sales tax originated with a Supreme Court ruling in 1992 and then the Internet Tax Freedom Act of 1998, which the government passed to help Internet-based business flourish. The act exempts e-tailers from collecting sales tax unless they're selling to customers in a state in which they have a physical presence or nexus. In 2007, the current version of the Internet Tax Freedom Act was extended to 2014.

According to one member of Congress, it's likely that a congressional vote on the bills will have to wait until 2013. Virginia Republican Rep. Randy Forbes told The Virginian Pilot newspaper he doubts the legislation requiring sales tax collection on Internet transactions will get through Congress this year.

However, he does expect the bills to pass both houses when they do come up for vote.

## NEWSROUNDUP

**ANN ARNOLD:** Broadcasters and EAS advocates reacted to Ann Arnold's death. The president of the Texas Association of Broadcasters died after a more-than-20-year battle with leukemia. Engineer and EAS expert Richard Rudman said one of his first discussions with her as plans were forming for what might be done to improve the Emergency Broadcasting System centered on what states needed to do to provide that infrastructure. "It was not unusual to get a call from Ann not only asking for opinions, but to make sure that community knew where she stood" on EAS issues, he said. Maine Association of Broadcasters President/CEO Suzanne Goucher, too, worked closely with Arnold for on EAS and other issues. She credits Arnold's involvement in alerting with a renewed interest in and focus on EAS at the federal level.



Arnold took over the TAB helm in 1987 after a newspaper career; she also was then-Gov. Mark White's press secretary, the first woman to hold that position for a Texas governor. The TAB planned a memorial for Arnold. The group promoted Vice President Oscar Rodriguez to president.

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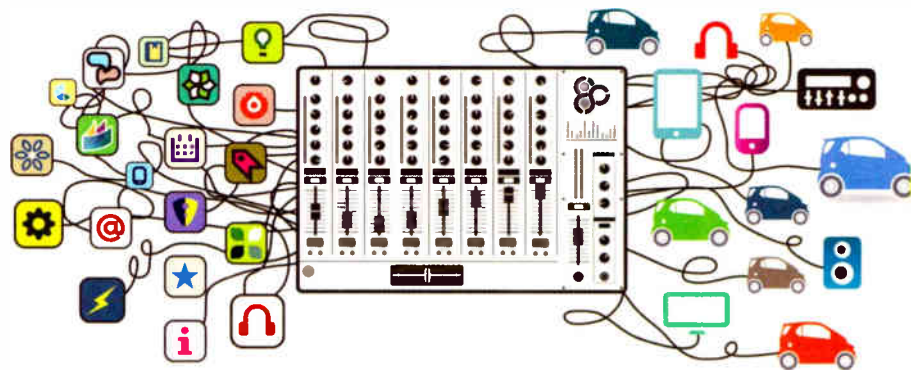


## INTEGRATION

(continued from page 3)

cars for the purpose of *safe* travel.

When it comes to entertainment options, users aren't concerned with *how* it works; they just want it to work. If it doesn't, end users break the rules, plug their iPods or smartphones into their auxiliary jacks or FM transmitters, leading to the texting-while-driving behaviors they're trying to avoid in the first place.



**Consumers want and expect new apps to work with their vehicle systems and smartphones. Integrating them all one by one would be unwise, according to Livio. The company says its technology keeps consumers and their products clear of such a mess.**

It may also explain why J.D. Power and Associates reported that in-vehicle problems with hands-free communication devices have increased 137 percent in four years and why the industry average for infotainment reflects 102 problems per 100 vehicles.

At Livio, we spent the first few years of our existence developing hardware that solved the problem of getting Internet radio into the home for everyone in an easy, simple way. Today, Livio is working on getting apps into cars with Livio Connect, aiming to create less work for car stereo manufacturers, automotive original equipment manufacturers and mobile app developers. Livio Connect is an application programming interface that uses a tethered connection to allow smartphone apps to run on the car, rather than an embedded solution built directly in the head unit. The middleware framework protocol enables hardware devices and mobile apps to connect to and interact with one another.

Livio Connect brings safe smart-

phone app interaction while driving, starting with Internet radio, mapping app controls to the built-in buttons on your car stereo.

Just recently, we announced that Livio has joined the GENIVI Alliance, a non-profit industry group that advocates adoption of an open-source development platform for in-vehicle infotainment. GENIVI provides an industry standard, creating less work for automotive companies while simultaneously reducing development costs.

accelerating innovation and meeting customers' expectations faster. Livio is working to integrate Livio Connect on GENIVI platforms.

Instead of providing the actual content, car companies need to be focused on providing the technology APIs that allow all content to be safely accessed in the vehicle, and to continue doing what they do best: That is, making the cars we can't live without.

As a broadcaster, join us at Livio in taking action with Congress, with automakers and with the mobile phone manufacturers to ensure that your content can be accessed safely in the vehicle, regardless of whether it's AM, FM, or IP-based. Write your local representative to Congress to lobby for safer access in the car.

Providing standards and pushing legislation that allow innovation — protecting drivers of any age by giving them safe access to the content they love most — is just as important as ABS working in every car, in every country, and in every condition.

*Entrepreneur Jake Sigal has been an XM Satellite Radio product manager for Delphi when he left to start Livio in 2008. The company has grown to 15 people and introduced more than 25 products on the market. Sigal sits on the Consumer Electronics Association's Board of Industry Leaders and the Small Business Council. Reach him at press@livioconnect.com or on Twitter: @jakesigal.*







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With this huge installed base of broadcast studios around the world, we've attracted dozens of partner companies, all offering Livewire™-compatible products. A device with a Livewire port is instantly available to any other device on the network. So, if you're shopping for IP consoles, be sure you ask: "How many partners do you have?" Because a network that only plays with itself isn't very well-connected... is it?



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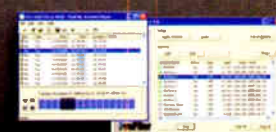
World Radio History

## STREAMING AUDIO



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

## AUDIO LOGGING



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

# AES Explores IT and Streaming Issues for Broadcasters

Convention provides an opportunity to review advances in audio streaming, networking, more

BY MEL LAMBERT

A visit to the annual Audio Engineering Society convention is always a worthwhile experience. This year's 133rd gathering at the Moscone Center, San Francisco, Oct. 26–29, should prove

## DAES2012

to be particularly valuable for radio professionals. The technical sessions and workshops include several presentations targeted at our community, ranging from audio streaming through networking solutions to practical IP topologies.

As on previous occasions, David K. Bialik from CBS Radio's Radio Streaming Operations serves as chair of Broadcast and Streaming sessions, and he has developed a diverse program of highly relevant discussions. "We make a special effort to develop mini-tracks focused on topic-related issues," Bialik states. "Attendees will find groupings of events that are virtually crash courses on such issues — but these are discussions of technologies and techniques, not sales presentations.



David Bialik

Broadcasters should make the sessions an essential destination if they want to stay on top of cutting-edge technologies."

### STREAMING

Bialik is personally moderating a useful session entitled "What Happens to Your Production When Played Back on the Various Media?" during which Frank Foti from Omnia, Greg Ogonowski and Robert Orban from Orban, Karlheinz Brandenburg from Fraunhofer, Steve Greenberg from S-Curve and Grammy-winning engineer George Massenburg from McGill University

will focus on key production issues, including techniques for ensuring that audio mixes sound similar when replayed on various systems and formats.

Dan Braverman from Radio Systems will focus on "Audio Networking Techniques," with panelists that include Greg Shay from the Telos Alliance and Tag Borland from Logitek. With wir-



The show was last in San Francisco in 2010.

ing, routing and configuring of broadcast studios evolving into a complex networking process of audio and control functions, the session will explore various IP-based technologies and techniques for configuring such facilities.

"Key talking points at this year's AES convention," says David H. Layer, NAB senior director, advanced engineering, "will include the impact of streaming over mobile broadband on broadcaster operations, and useful nuts and bolts information on the technologies broadcasters utilize to support these services." Layer will moderate a technical session entitled "Stream Distribution: IP in the Mobile Environment," during which presenters will discuss the IP infrastructure that supports mobile streaming and how broadcasters can optimize the quality of their audio delivery.

Of the various broadcast/streaming track topics, "Understanding Codecs," chaired by Barry Mishkind from Broadcasters Desktop Resource, with Kirk Harnack from Telos, Chris Tobin from Musicam USA, consultant J.J. Johnston and Jeff Riedmiller from Dolby, will examine techniques for maximizing the effectiveness of codecs for digital data streams. In addition, a session to be moderated by Rusty H. Hodge from SomaFM will spotlight various intricacies of "The

Streaming Experience," while "Audio Encoding for Streaming," chaired by Fred Willard from Univision, will enable a team of seasoned experts — including Samuel Sousa from Triton Digital, Casey Cambra from Dolby and Robert Reams from Streaming Appliances/DSP Concepts — to examine the various needs and aspirations of broadcasters.

A companion "Networked Audio" session, intriguingly entitled "Interoperability! The 'Holy Grail' for Audio Transport Over IP-Based Networks," overseen by Tim Shuttleworth, will consider "a host of technological and operational advantages, and an equal number of workflow issues and potential quagmires. In keeping with the AES goal for the convention to serve as a forum to 'Listen, Learn and Connect,' the opportunities for traditional networking and information exchange will be manifest," Shuttleworth says.

"Audio Network Device Connection and Control," to be chaired by Richard Foss from Rhodes University, will include practical demonstrations of the self-discovery of audio devices on local-area networks, connection management and control of various parameters. Issues related to streaming audio, such as bandwidth management and synchronization, plus connection management and control protocols also will be covered. "The Unified AV Network," to be chaired by Rob Silfvast from Avid, will provide an overview of AVnu Alliance, a consortium of audio manufacturers and core technology companies. AVnu also offers a program that enables products to become certified for interoperability.

"Interoperability Issues in Audio Transport Over IP Based Networks," a workshop to be chaired by Shuttleworth, will focus on multichannel audio

(continued on page 18)

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# Labels: Smart, But Often Ignored

Also, a helpful product from Brother that can help with your labeling

**J**ohn Hosford, director of engineering at Montpelier Broadcasting in Vermont, sometimes is surprised at what we publish in *Workbench*, because he finds that he's been doing whatever it is for years.

## WORKBENCH

by John Bisset

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

For example, we recently discussed labeling of power cords and wall warts; Jon picked up that idea from *Workbench* years ago, but agrees that it's worth a reminder, especially for folks new to the industry.

In addition to labeling plugs and power supplies, Jon labels both the back and front of the gear in a rack. We all need to walk non-technical people through things on the phone; his labeling practice helps them when resetting power or moving a cable on the correct piece of equipment.

Jon tries to put the label near the unit's power plug if it's removable, because rebooting power is the most common thing he asks others to do.

He adds another tip: Many APC uninterruptible power supplies have a SmartSlot expansion option, seen in Fig. 1. APC has a module for SmartSlots called a Relay I/O Module (part #AP9610). The module offers inputs and outputs via relay contacts to monitor and control the UPS.

At a remote site with a transmitter



**Fig. 1:** Take advantage of the APC SmartSlot option.

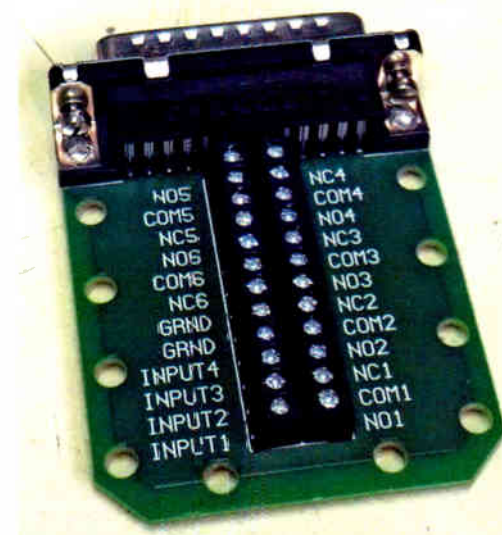
remote control, this gives you the ability to reset a UPS or monitor whether it's operating on battery via standard contact closures. The module has controls to turn the unit on, off and "gracefully" off, as well as to run the self-test. (A graceful shutdown process shuts down load equipment before the UPS turns off.) The outputs are for "on battery," low battery, replace battery, overload and fault.

With this card, you can reset a unit remotely should it lock up. Anyone with a UPS at a transmitter site knows this can happen. If you don't have AC line monitoring on your remote control, this option will, at the least, indicate the UPS isn't happy with the AC line power and that it has switched to battery.

As you can see in Fig. 2, the card

**In addition to labeling plugs and power supplies, Jon labels both the back and front of the gear in a rack.**

comes with a nice breakout removable connector with screw terminals. Note that the unit expects at least 1 second of stable contact closure to be considered a valid input command. That means some remote controls will need their output



**Fig.2:** The relay I/O module offers a variety of uses.

command time lengthened.

Commercial-grade UPS products that accept this module are not the least expensive, but Jon has found that cheaper ones from APC often don't like genset power, so they run on battery (and eventually die) the whole time the building is on auxiliary power. The commercial-grade units also have settings to make them more tolerant of the slightly incorrect power that a genset can produce, and to turn off that darn beeping "on battery" alarm. For this reason, Jon justifies spending a little more.

APC also offers modules for SNMP, 10/100BASE-T, serial, Modbus, Out-of-Band management, environmental monitoring and more.

Jon Hosford can be reached at [jhosford@pointfm.com](mailto:jhosford@pointfm.com).

**GR**  
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**G**ary Wachter, director of engineering for KKDA(AM/FM) in Dallas, agrees that labeling wall warts and plugs using a Brother P-Touch labeler is a great idea. But he found that labels have a tendency to fall off over time; either they are too stiff, or what they are attached to is too rough.

Brother makes an inexpensive TZe Series of labeling tape that cures these ills. The Flexible ID Series, designed for cables, comes in various widths and can be wrapped completely around a cable or made into a pigtail. Either way, the label sticks to itself and will not come off.

The text can be printed lengthways or sideways. If labeling across the width of the tape, make sure that the printer can accommodate the wider tape. The TZe-FX251 is 24 mm (0.94 inches) wide. These tapes are not usually on display at the office supply stores but can be special-ordered, or purchased online. Head to [radioworld.com/links](http://radioworld.com/links) to find out more.

Gary Wachter has been actively involved in broadcasting for more than

(continued on page 18)



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## WORKBENCH

(continued from page 16)

40 years. He can be reached at [garyw@k104fm.com](mailto:garyw@k104fm.com).

**B**roadcast engineer Mike Payne points out that roller inductors can become intermittent and cause issues, especially in phasors. Sometimes you don't have proper cleaning materials at hand when you spot the intermittent.

A nifty trick that works for Mike is to apply a light film of WD-40 or similar lubricant. This will clean and lube the

parts nicely. However, the oil can attract dirt; and if you use too much, it can get gummy, possibly making the situation worse.

Visit [radioworld.com/links](http://radioworld.com/links) for a caution about using WD-40 in electrical/electronic applications. An alternative is Caig Labs' DeoxIT. We've got links to both companies' application notes at the links page.

While we're on the subject of phasors, Mike adds that when inspecting those big mica capacitors in a phasor or antenna tuning unit, look for a thin etching that shows through the surface

of the ceramic. This is tough to spot the first few times; but the etching can point out a bad capacitor. Make it a priority

**Slightly warm is OK;  
hot is not!**

to keep the glass and ceramic bodies of capacitors clean — of course, with the power off.

As far as rigid feed lines are concerned, Mike routinely runs his hand along feed lines and elbows to check temperature. The plants that Mike tends are a maze of rigid copper fittings and line sections. The "hand method" is a fast, sure way to find problems, especially if you don't have an IR thermometer. This inspection includes the harmonic filters, too. Slightly warm is OK; hot is not!

Mike writes that the prices of IR cameras have really dropped. You can pan an area quite easily and see possible problems in real time, then take a photo of the problem, if need be.

Reach Mike Payne at [mike.w0lvj@gmail.com](mailto:mike.w0lvj@gmail.com).

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

John Bisset has spent 43 years in the broadcasting industry, and is still learning. He is SBE certified and is a past recipient of the SBE's Educator of the Year Award. He works for Elenos USA, an FM transmitter company based in Miami.

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## AES 2012

(continued from page 14)

distribution over Ethernet LANs for low-latency, high-reliability interconnections, and the interoperability of audio contribution over Internet Protocol (ACIP and ACIP2), while "Audio Networks — Paradigm Shift for Broadcasters," to be chaired by Stefan Ledergerber from Lawo, will consider whether traditional cross-point matrix switches or routers will be replaced by networks, and what components will deal with signal processing that currently is accomplished within audio routers.

"Error-Tolerant Audio Coding," chaired by David Trainor from CSR, will consider the increasing delivery of real-time audio services over the Internet or cellular networks, and the variable capacity/reliability of such networks for real-time audio streaming, including error-tolerant coding algorithms. Finally, "Open IP Protocols for Audio Networking," hosted by Kevin Gross from CobraNet and QSC, will address the multiplicity of protocols for carriage of audio over IP networks, including VoIP, HTTP streaming, real-time transport protocol (RTP) and IEEE 1588 precision time protocol (PTP). An overview of recent work on the AES X192 streaming audio-over-IP standard also will be presented.



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Assign any source of any type anywhere on your network to any fader. Each input channel can be assigned to four stereo busses, plus four pre/post-selectable aux sends, a stereo CUE bus, four mix-minuses and the panel's own bus-minus. Full Vorns EQ and Dynamics let you sculpt and control your sound with the quality of the finest dedicated outboard

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The LX-24 is advanced in ways that can make a HUGE difference in your capabilities. But it's also immediately familiar to anyone who has ever sat behind a board at a radio station. Use it to make your programming the best it can be. Just plug it into your WheatNet-IP Intelligent Network - with it, and the BLADES across the page, you can, dare we say it, rule the world.

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**Low-profile** table-top design - no cutout required

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**Control room and headphone outputs** with level control and source selection

**Two independent studio outputs**

**Stereo cue speakers and amplifier**, built-into meter bridge

**Onboard VGA and USB-Mouse connectors**

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- Source name display
- A/B source selector
- 2 programmable buttons
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**Our BLADES carry out your orders network-wide at Gigabit Ethernet speeds - no bottlenecks**

As an integral part of the WheatNet-IP Intelligent Network, BLADES interface, move, bend, shape, route and control everything you want to do with your audio. If it's audio, a BLADE will handle it - at lightning speed.

Use them organically with our control surfaces, run them from our Glass-E software wherever you have internet access, or control them from the front panels. BLADES make your life incredibly easy and secure.

As you need more functionality, just plug in more BLADES - they come in configurations to handle whatever you need (analog, digital, a/d, mic, MADI). Each BLADE is self-configuring and has the DNA of the entire self-healing network.

With BLADES, you can do everything from a simple (or complex, if you like) snake to STL-over-IP to full-on multi-studio/facility networking - even processing. And because of Wheatstone's partnership with the top suppliers of automation and remote gear, you'll have control over your entire system right from WheatNet-IP. Ruling the world has never been easier.

**And this is ALL the extra stuff you need to wire-up the Intelligent Network:**

Four CAT-6 cables and a low-cost switch that handles the gigabit speed WheatNet-IP runs at.

Let's do the math - plug in eight connectors, power up a console and three BLADES, add your audio and you are ready to rock, roll and rule the radio world. Brilliant. you ask? Nah - just really, really intelligent.



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**Front panel bar graph meters** switchable to display source input level or destination output level after gain trim

**Front panel routing control** - any system source to any destination on that BLADE

**Front panel headphone jack** with source select and level control - monitor any system source

**Flexible GPI logic** - 12 universal logic ports, programmable as inputs or outputs, routable throughout the entire system

**Built-in web server** so you can configure and control locally or remotely without having to run dedicated software

**SNMP messaging** for alerts

**Silence detection** on each output that can trigger alarms or make a routing change

**Silent - no fans** - can safely be located in a studio with live mics



# Pristine's CR-7 Controls the Clock

Louisiana broadcaster finds it easy to switch between local and satellite broadcast modes

## USERREPORT

BY MARK CHREENE  
Station Manager  
KASO/KBEF Radio

**MINDEN, LA.** — KBEF(FM) and KASO(AM) run a combination of local- and satellite-oriented programming. Pristine Systems' Control Room-7 has been more than capable of handling the sometimes tricky transitions between the two during our broadcast day.

Since CR-7 is designed from the ground up to take advantage of Windows 7, everything you need to access is easily located on the attractive 1,920 x 1,080 high-definition main display. A weather forecast, at the top of the screen, constantly updates temperature and weather conditions. One click pulls up an extended forecast for our local area. There are also automatic time and temperature announcements using our own voices.

### USEFUL FEATURES

One new feature of CR-7 that we like is the "Card Viewer." We use it to streamline different announcements and broadcast schedules. Anyone from any computer in the station can update the

cards so jocks on air get the information

The Hot Keys are a nice feature in Control Room-7. When in satellite mode, hot keys display the liners, sweeps and jingles. In local hours they can play any audio on the system: music, commercials, music beds and jingles. For those last minute changes, add any file you want, on-the-fly.

We also use it for local ball games. The names of the files are easier to read and the buttons (48 of them!) can be color-coded for organization. With its own input on the board, it's easy to mix in with music and other programming. The optional USB Hotbox has a button for every one of the hot keys and allows you to perform many of the functions on the live-assist side.

Nothing is more frustrating than having a local satellite spot set too long or too short. Control Room-7's new time

scaling feature stretches or compresses your breaks to the correct length. We now have a uniform sound between local and satellite with this one feature alone. With 48 controllable relay closures, additions to our growing list of satellite-driven programs are handled easily.

### INTEGRATION

Since we balance between local and satellite hours several times a day, background recording of the network commercials is important. Control Room-7 handles these with ease. We also carry several sports networks and are able to transition between games and local programming with no issues.

We use Natural Log software for traffic and it integrates well with CR-7. The audit log feature also allows quick troubleshooting, keeping lost advertising dollars to a minimum.

Control Room-7 can also send "now-playing" data to our streaming Web server, our website and RDS encoder.

CR-7 offers complete remote control from other computers, iPhones, iPads, Android and most other smartphones.

Control Room-7's built-in recorder, which is available on both production and on-air machines, is great for simple cuts for news or for recording a program live while running a shift on-air. For most production and ripping music, we use Adobe Audition and can be ready to play within minutes.

Pristine Systems' technical support, when needed, has proven to be readily available and able to handle any problems quickly. Because their background is in radio, the software is written with radio in mind.

Control Room-7 has been a tremendous boost to our stations, giving us flexibility to offer a wider variety of programming. It has proved able to handle anything we throw at it.

For information, contact Kevin Loper at Pristine Systems in California at (310) 831-2234 or visit [www.pristinesys.com](http://www.pristinesys.com).



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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).



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# Arctic Palm Puts KADI at Center Stage

Broadcaster says Center Stage software 'Brings it all together'

## USERREPORT

BY ROD KITTLEMAN  
Program Director  
KADI(FM)

**SPRINGFIELD, Mo.** — For more than six years, we have been trying to integrate our Simian automation system with our Inovonics RDS unit, [www.99hitfm.com](http://www.99hitfm.com) website, texting, Twitter and Facebook.

We wanted to interact with our listeners on all levels. What a pain it was proving to be. Until now, that is. Thanks to the recommendations from broadcast consultant Doug Raines, we have finally brought it all together.

Arctic Palm Center Stage proved to be the missing link. That software, integrated with our Simian automation, enables us to send "now playing" information to our Inovonics 713 RDS unit. It also connects to our Secure Systems website player which feeds the 99HITFM KADI Android and iPhone apps. Set-up was a breeze, thanks to



the impeccable help of Stu Buck from Arctic Palm. Stu worked with the Secure Systems programmers to make the magic happen.

But this is just the tip of the Arctic Palm iceberg, so to speak. The Center Stage software has other built-in tools

that make it useful for live, in-studio use. It has a scheduler module that on-air talent can use for news, weather, promos, public service announcements, liners, school closing information. All of these elements can be programmed to be sent to Web feeds, RDS, text and social media as well.

For commercial purposes, our sales team is able to sell sponsor messages that can scroll across radios equipped with the RDS feature and other digital platforms. Each message can be triggered and targeted to specific times and days when the commercial plays on air. There are so many information options — blackout, manually insert and schedule. All events are logged for verification.

My only complaint is that the running program can only be minimized on the computer. It would be great if it could just be a running program icon.

Overall, Arctic Palm's CS software has been well thought-out.

There are still a lot of features we are discovering. As a program director who now has to oversee more than just a radio station, Arctic Palm is a recommended tool.

For information, contact Stu Buck at Arctic Palm Technology in Ontario at (519) 452-0002 or visit [www.arcticpalm.com](http://www.arcticpalm.com).



## TECHUPDATE

### MUSIC 1 ADDS UPGRADES

The latest version of Music 1, a Windows-based music scheduling software, has added a traffic and billing module, Traffecta.



Version 7 also adds a built-in auditioning player allowing users to click-and-hear any song while they are working with M1. The player is incorporated into the M1 scheduler itself and is not dependent on any automation system.

Traffecta handles spot orders, consolidates and rectifies schedules and then bills and reports, all within Music 1.

Music 1 can schedule any broadcast element including jingles, liners, links, voice-tracks, long-form programs and automation system commands. The non-music scheduling functions are incorporated into M1. Additional software or plug-ins are not required.

Music 1 says its program is networkable and portable. Music and program directors can install it on their laptops (no additional fee) and can take it with them on the road, do their scheduling from anywhere and then email or FTP the automation playlists back to the station.

A single install of M1 is capable of scheduling any number of stations, channels or streams from the one computer.

It has built-in interfaces for widely used automation systems.

Music 1 has also released Music 1 SE, a scheduling software for webcasters. According to Music 1, SE is based on the source code of the full Version 7 with some scaled-down functionality, thereby providing webmasters with an efficient scheduling tool that meets their needs at a low, buyout price.

Music 1 SE is also an option for broadcasters' HD channels or standalone webstream stations.

For information, contact Music 1 in Texas at (512) 392-2415 or visit [www.gomusic1.com](http://www.gomusic1.com).

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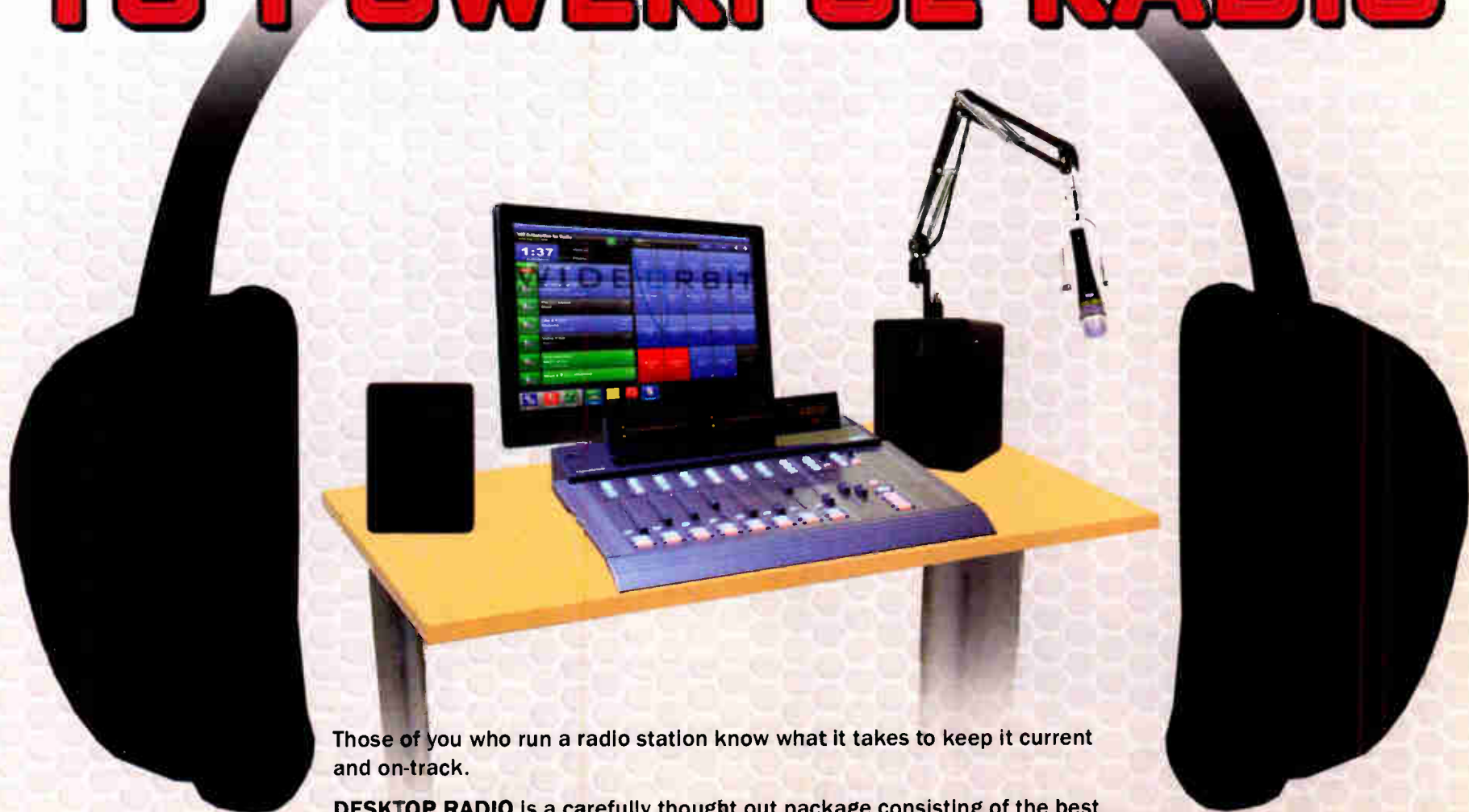


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# A SIMPLE APPROACH TO POWERFUL RADIO



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ASUS ET2410 series all-in-one PC which comes loaded with a 24" Touchscreen Monitor, Intel i5, 4-core, 2.5GHZ, 8MB Cache, 6GB DDR3, Win 7, with all software installed and tested. A slim design with a profile of only 6cm, with the latest computing features that include a multi-touch display, side panel USB 3.0 ports, an HDMI input and more.

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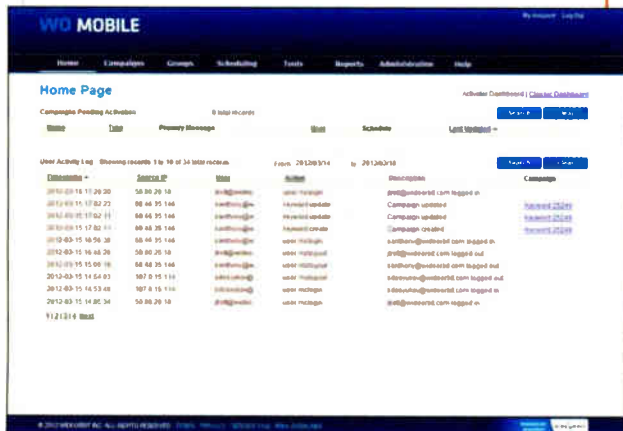
**Airtime Takes to the Internet**

...user's accounts. In giving others the ner-

**TECHUPDATES**

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For information, contact OMT Technologies in Manitoba at (204) 786-3994 or visit [www.imediatouch.com](http://www.imediatouch.com).



**MARKETRON PROVIDES NEW TOOL**

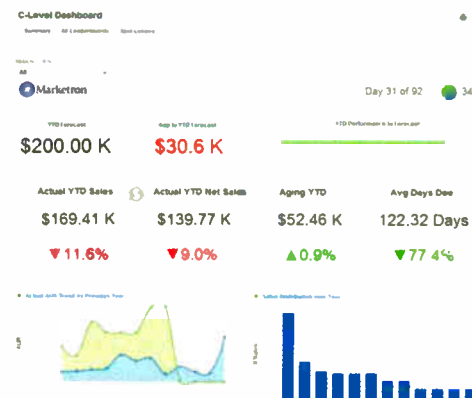
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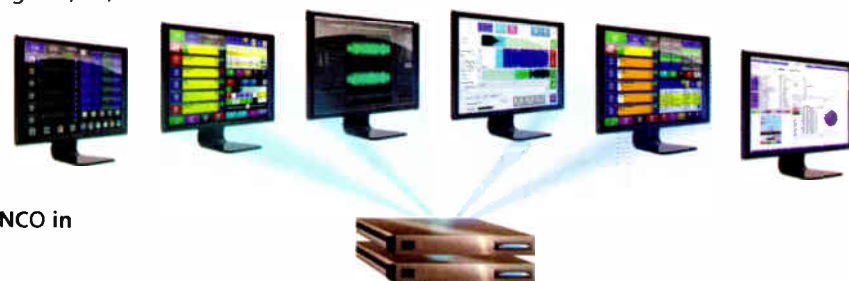
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According to ENCO, traditional IT infrastructures have been reaping the rewards of virtualizing for years. The virtualized environment simplifies deployment, increases efficiency, lowers operating costs and offers high availability as the risks of downtime are eliminated, says the company.

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ENCO1 is capable of replacing five, 10, 20 or more workstations and servers in a single facility. Hybrid deployments are also an option to allow transitioning to virtualization and audio over IP technologies, according to ENCO.

For information, contact ENCO in Michigan at (800) 362-6797 or visit [www.enco.com](http://www.enco.com).



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# Airtime Takes to the Internet

Beginner broadcasters get up and running with Airtime

## USERREPORT

BY **GRAHAM PICKLES AND REBECCA ROYALE**  
RAG Radio Production

**ARCHIESTOWN, SCOTLAND** — Just over a year ago we started a radio production company, RAG Radio Production. Our aim was to produce radio programs for other stations from our own studio. After a few months we decided that the way to move forward was to establish a radio station of our own as well. After much searching, we found a reliable and affordable streaming company and one that could also offer other benefits such as the use of own programs for broadcast and also the ability to play out scheduled programming via a reliable calendar.

### LESSONS

Airtime was then a new software program on the market. It seemed to cover all the bases: a streamer which was scalable to handle high or low numbers of listeners and with an easy-to-understand calendar which allowed repeat programs at the touch of a switch.

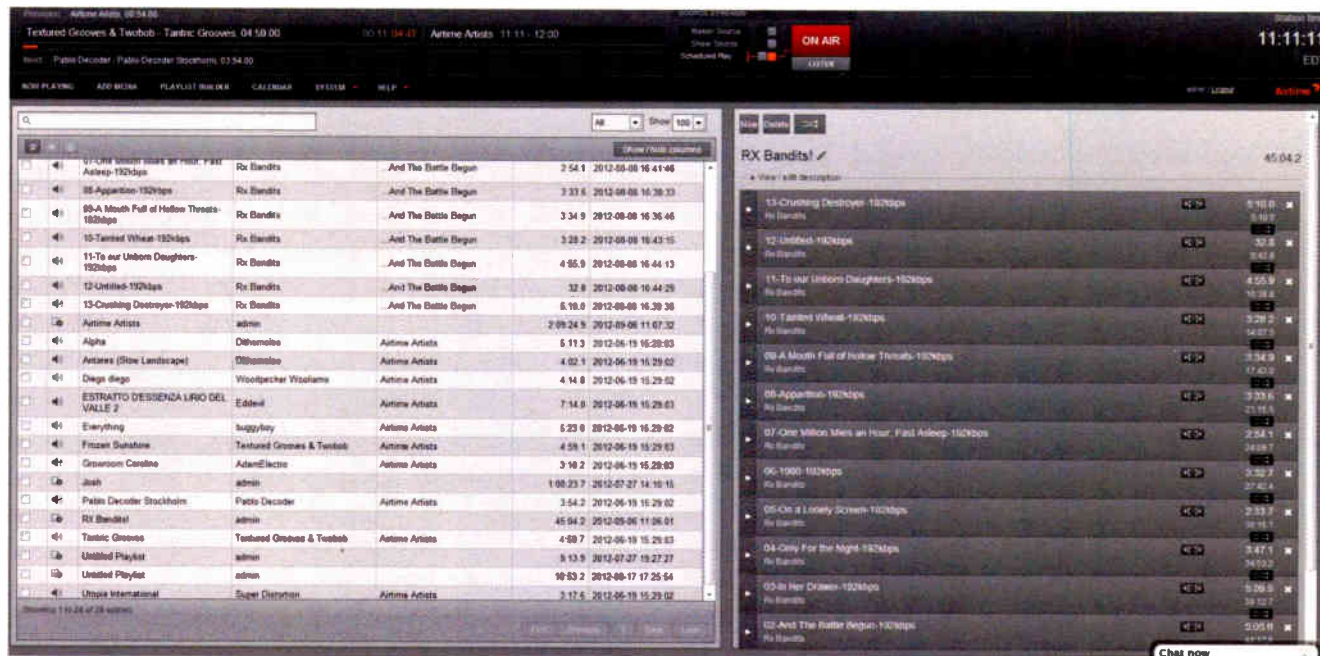
When we originally installed the program, we did find it a little bit complicated, but that might have been due to our broadcast inexperience. In order to get fully up and running, we had to have a Skype call with one of the tech lads who stayed with us until the system was fully

up and running. He also ironed out a few problems we had with the way we used it.

Once we were up and "on-the-air" we found out that we did not really under-

stand the different things we would also need in the very near future. It became quickly apparent we needed a way to log on outside DJs who worked from home or from their own studios.

With the introduction of Airtime 2 this became available to us. They added a separate platform for outside DJs to be able to log-in to the stream with the use of a secure password. They log in to the



stream and at the end of the show log out which allows the calendar to pick up control and revert it back to the main stream. You can give DJs one of three levels

of accounts. A DJ's account allows them to see the calendar but not use it to add or delete programs. A manager's account allows them to see and use the calendar so they can add shows into the calendar or delete shows from it. A full administrator's account allows them to do all we can within Airtime. Obviously, at that level we only allow trusted people to use that log-in because they can delete other

user's accounts. In giving others the permission to do these things it cuts our time down from having to upload shows, place shows in the calendar, etc.

It is unfortunate that Airtime doesn't have a live module (I am assured this is in the pipeline). In order to do live broadcasts, you need to use an outside program linked to Airtime. This was a

bit hard at the start to work but together with the Airtime technical folks we got it running.

One of the biggest problems we have encountered is the calendar playback. Airtime would seem to forget to stream out from time-to-time. We used to send an email to Airtime within a few hours if it had not corrected itself. Even when the fault was ours, they would fix it in a courteous and friendly way.

If the program has one fault, it is that it does not give average listening figures for your reports at a glance. We approached Airtime and one of the technicians devised a small program for us which he sends to us every month in order to do our licencing quarterly report.

As for the cost, the product is like buying modules to add on as needed. You can run as small or as large as you want, and if you need something different, they are always there to make a program designed for you and your needs. This makes it a good value and we can work out our own budget in advance knowing we can expand or shrink to fit our needs.

We have found the whole program to be stable, with few problems occurring. The whole time we have used Airtime the servers have stayed active with no noticeable offline time. Any problems we have had have mainly been small glitches to the system and have been corrected speedily.

For information, contact Josh McLain at Sourcefabric in Ontario at (312) 789-5659 or visit [sourcefabric.org/en](http://sourcefabric.org/en).

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Inside this 2RU chassis beats the heart of a giant, with power to run two RAQ or DESQ consoles. Or maybe one of each? It's okay, we don't judge.

QOR.16 console engine doesn't just look cool - it stays cool thanks to beefy heat-sinks and fanless design.

Built-in Ethernet switch lets you easily network devices and studios. Plenty of professional, balanced analog, AES and Livewire I/O, too.

Rugged, built-in, auto-ranging power supply. No line lumps or wall-warts on Axia gear.

Event timer has manual and auto-reset options.

Time-of-day clock can slave to your NTP server.

Onboard headphone control with Preview option. Cheesy outboard amps need not apply.

Four-position monitor selector lets you switch between Program or External monitor feeds on the fly.

OLED channel displays have an audio confidence meter, too.

Smooth 100mm. premium faders are side-loading to foil dirt and debris.

Machined-aluminum work surfaces are made tough, to stand up to what jocks dish out.

Avionics-grade switches with LED lighting.

Can a super-duty, high-performance rotary gain control still be called a fader? Just don't call it a "pot" - that's old tech.

Four Show Profiles for instant recall of console configurations. Try that on a PA mixer.

The more you saw, the more convinced you were that IP consoles made sense for your station. Problem was, you had small spaces to work in. Some behemoth board that looks like a '78 Oldsmobile just wouldn't fit. But there was no way you'd settle for some cheap plastic PA mixer that looked like a refugee from the church basement. "Wouldn't it be great," you thought, "if someone made an IP console that didn't take up a whole room?"

Then you saw the new RAQ and DESQ consoles from Axia, and your problems were solved. With the power and features of a big console, but minus the ginormous space requirements. RAQ will drop right into those turrets in your news station's bullpen -

the reporters can send their finished stories right to the studio. And DESQ is perfect for the auxiliary production rooms.

But what sealed the deal was finding out you could run two RAQ or DESQ consoles with just one Axia QOR.16 mixing engine — you know, the one with all of the audio I/O, the power supply and the Ethernet switch built in. That brought the cost down so low that when you told your GM the price, he actually didn't swear at you (for once). Make another decision like this, and you might just be changing the sign on your door from "Chief Engineer" to "Genius."

Available in the U.S. from BGS: (352) 622-7700

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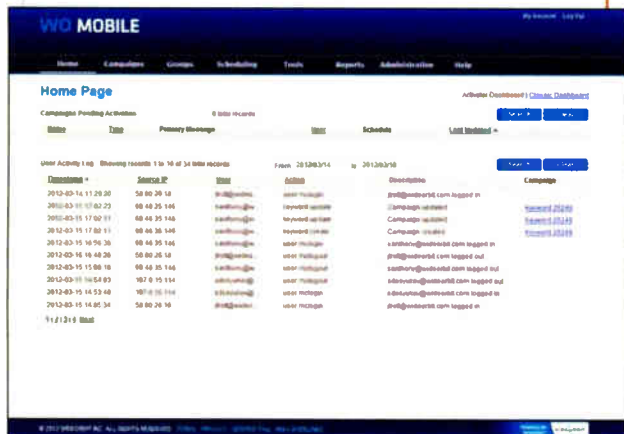
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**TECHUPDATES**

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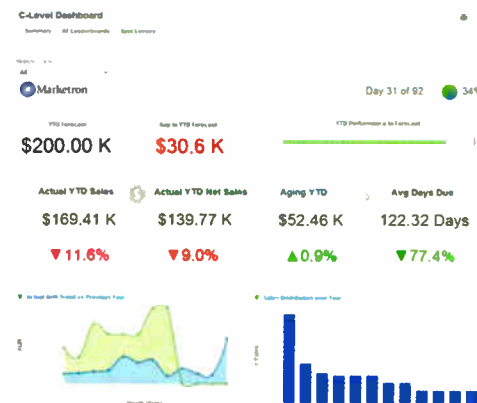
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*Corus Quay Studio shot - Courtesy of John Coldwell - Corus Entertainment*



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[World Radio History](#)



**TECHUPDATES**

**BROADVIEW SOFTWARE ADDS CLOUD HOSTING OPTION**

BroadView Software says it has added enhancements and improvements to its media management tools including ad hoc reporting capabilities, a cloud hosting option and radio management integration, from research and sales proposal to traffic.

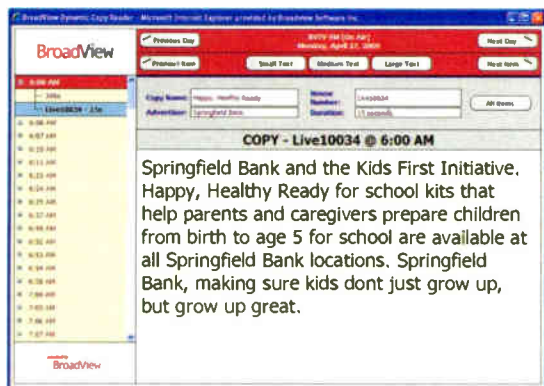
Building on BroadView's seventh-generation media management tools, the research and sales proposal and post tools powered by OneDomain's MediaOffice creates integration, in which approved sales proposals quickly become sales orders in traffic. That way, there is no need to straddle two software packages. This simplifies workflow, saves staff time and reduces errors, according to BroadView. Such workflow also eliminates software management issues inherent to running multiple systems in tandem, by ensuring qualification between different software versions.

According to the company, its new ad hoc reporting enhancement offers flexibility to deliver the information the client wants, in the way they want it. Instead of having to choose between standard report forms or having to order expensive customized reports, the ad hoc feature allows the client to tailor reports to suit their needs and tastes.

It is "drag-and-drop" simple, according to BroadView, and makes it easy to use BroadView's data extraction capabilities for sales reporting, and easy to include built-in multistation roll-up. This is in addition to ready-to-use reports including sales and avails that are both schedulable and emailable.

The cloud hosting option gives customers an added level of ease and flexibility in deployment and operation, says BroadView. According to the company, it brings certain advantages to radio managers seeking a way to have BroadView's tools with a lower upfront cost for running the solution. It is an extension of the company's philosophy of lowering IT costs by running on the lightest possible hardware.

For information, contact BroadView Software in Ontario at (334) 742-9811 or visit [www.broadviewsoftware.com](http://www.broadviewsoftware.com).



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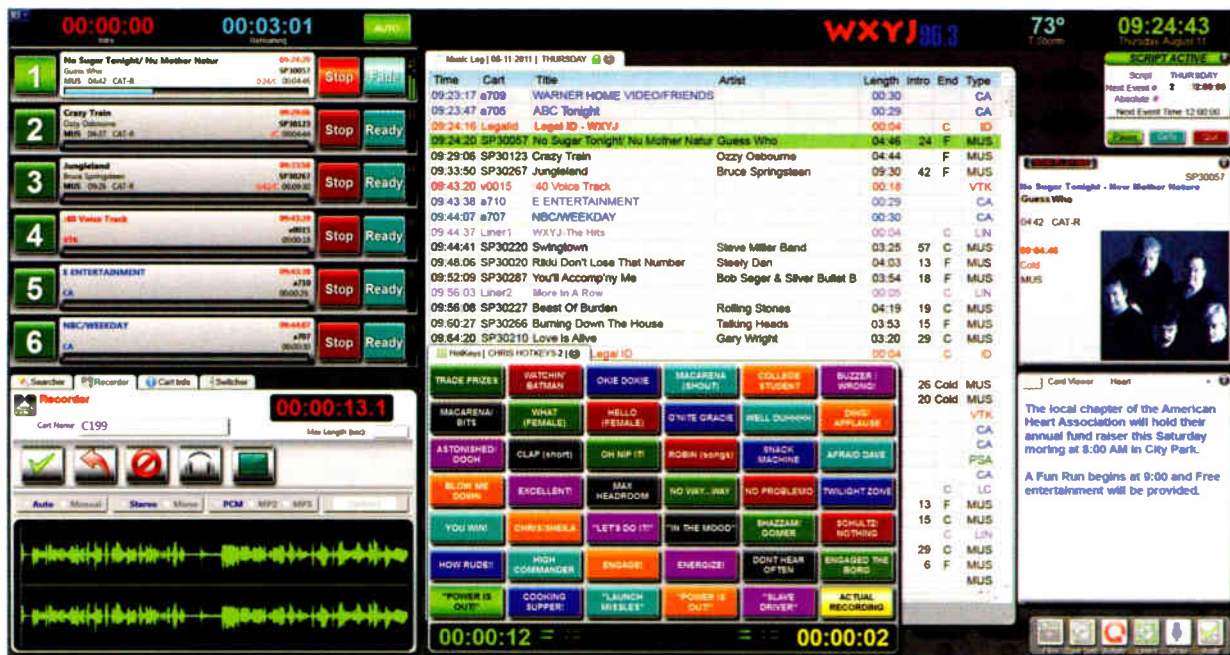
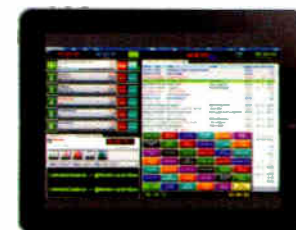
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# RadioTraffic.com Shines From the Cloud

Internet-based traffic & billing system unifies CRC Broadcasting's stations

## USERREPORT

BY BRIAN JEWETT  
Operations Manager/  
Program Director  
CRC Media West

**PALM SPRINGS, CALIF.** — I came into CRC Broadcasting to help train the traffic person and get things ready for the launch of our two new Palm Springs stations, KPSF(AM) and KXPS(AM). It immediately became clear that the traffic system at that time would not be able to handle the company's three stations as well as we wanted. In shopping for new traffic software, I looked for some key components: First, it must be cloud-based; second, it needed to be easy to learn with good tech support; third, it should be cost-effective.

When looking at different solutions many of them were simply more than we would ever use or a little too small — until I found RadioTraffic.com. The price was right and seemed to be the best fit for our needs. Turned out it was definitely the right choice.

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Palm Springs staff seemed to be a daunting task. The thought of learning a new system and re-inputting all of the existing orders was not exciting to us. We worked with the support team at RadioTraffic.com, and in no time had everything converted and the staff trained. Had we signed on a few years ago it would have taken a week to pull everything in, however because RadioTraffic.com is always looking for ways to improve their system much of it was automated and took little effort. This continues to be the case, as Cory Smith (their Chief Geek) is always

working on ways to improve the system based on both experience and the online forum, which a fantastic resource for RadioTraffic.com users.

Price was one of the biggest selling points for us. When comparing RadioTraffic.com to others with similar features, the others didn't even come close. Not only that, the others offered more features than we would ever need.

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WHAT DOES 4G MEAN FOR YOU? — Page 38

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**INSIDE**

**NEWS**  
— There's no sign going in a "Yellowstone" direction — Page 6

**FEATURES**  
— What's the real deal on a "Yellowstone" direction? — Page 16

**BUYER'S GUIDE**  
— Why's going blue in radio? — Page 36

**FCC Is Asked to Okay CAP Converters**  
Some Also Push It To Accept FEMA Conformance Testing

**Sept. 11, 2001. Raised Awareness of Redundancy**  
But a Decade Later, Cost Remains a Real Obstacle to Backup Infrastructure



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*Telos*

[Telos-Systems.com/ProStream/](http://Telos-Systems.com/ProStream/)

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**READER'S FORUM**

**JOIN HANDS, HAMS**

I was very pleased with the feature on the "Hamvention" in the Aug. 1 edition. I am a retired broadcast engineer (40 years in the "biz" as engineer and talent) and a recent ham and ARRL member. The ham community has some fantastic talent, and attracts the kind of people we need in broadcasting.

There are many bright young people who already have experience in AM, FM, satellite and — yes — digital communication plus many other skills.

While the equipment is somewhat different, and the "on the air" methods and goals differ as well, the bottom line is that the technology is not *that* removed from broadcasting. Oriented hams know microphones and antennas, design their own gear and operate with integrity. They follow the rules and understand both new and old technology.

Today's amateur radio operators do far more than just talk on the radio, too. Digital messaging, computers, electronic logging and emergency management — the list goes on. Learning the broadcast side is not a giant step, and you have technical talent that not only can handle IT, but knows a lot about transmitters, antennas and the rest of the old-world stuff.

Take a look at the amateur General and Extra Class tests if you want to see some good electronics training, rules and regulations, and discipline. We should join hands and encourage the

younger hams to explore broadcasting and we all will benefit.

*Dan Thomas  
Retired Broadcast Engineer  
Weatogue, Conn.*

**'NO MORE TRADITIONAL RADIO'**

AM IBOC will never be implemented past the point that it is now ("All-Digital AM Tests Considered," Aug. 15). Absolutely no one is listening to AM, let alone AM IBOC. The broadcast business had a chance to implement an inexpensive but very effective system (DRM), but they chose to get in bed with the devil (Bain Capital/Clear Channel/CBS).

So what we have now is a huge mess, and receiver manufacturers know it. They know that IBOC was a mistake; that's why there are no receivers. By the time there are enough IBOC AM and FM receivers available to the public, terrestrial radio will be all but completely dead.

Sorry, but this is the reality of the situation.

Through Microsoft Sync, I am now streaming stereo Bluetooth audio from my smartphone in my car, and it's not bad. Streaming audio in a vehicle is rather new, but in five years, everyone will have it. Then what?

I'll tell you what: No more traditional radio. There may be a few large-market-

stations left, but most will simply go out of business, because the revenue stream will be so low, there won't be enough cash to operate transmitters. Even fully automated operations will be in big trouble. Sort of a "Catch-22."

If the industry had stood up to the IBOC proponents and rejected the IBOC mess and adopted DRM and DRM+, we would be facing a completely different situation out there now. But they didn't. So now they have to pay for their mistake.

In summary, having ridiculous arguments about hybrid digital radio is a waste of time. The system is already obsolete and in five years radio will be too.

Sorry, but you'd better find a new gig!

*Gary Saber  
President  
GBS Consultants Inc.  
Raleigh, N.C.*

**KAHN HELPED YOUNG ENGINEERS**

Re: "Leonard Kahn Was an AM Advocate," Sept. 1:

The year was 1984. At 18 years old and just barely out of high school, I found myself in the chief engineering position at KKS(N)AM in Portland, Ore. Formerly the legendary "Boss" radio station. KIS(N)AM, the station had been revived only five years prior to my arrival after being dark for several years.

I arrived to find an old facility with an almost-new Collins Power Rock transmitter and a Kahn AM stereo generator. Back in those days, KKS(N)AM was broadcasting in a commercial classical format, a brave thing to do on AM.

Much work had been done to broadband the directional array and make way for a better signal, but in spite of having a new console, Optimod and transmitter, there was always a dirty quality about the station's audio. No matter how carefully I calibrated the air chain to include Kahn's stereo generator, I couldn't make it sound clean.

I found that bypassing the stereo generator cleaned up the audio. I called Leonard Kahn and he was very gracious, telling me that a new card was on the way and I was not to adjust anything. Just plug it in and send an aircheck.

I installed the new card and the sound was so astonishing that I nearly fell over! After making some tweaks to the Optimod, I sent "before and after" airchecks. About a week later, Kahn called me and said, "My God! What did you do? That's the best sounding AM stereo aircheck I've ever heard!" He liked it so much that he wanted to use it as part of a demo tape.

In time, I moved on to other stations and AM stereo fell out of favor; but I'll always remember the passion that Leonard Kahn had for AM stereo, and his willingness to help a young engineer make the station sound great.

*Michael Graves  
TV Engineer  
KOV(R)TV/JKMAX(TV)  
Sacramento, Calif.*

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**Jason Ornellas**  
Station Engineer  
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Morristown, N.J.



# AM: Drop the Gloom and Doom

Saul Levine says let's reinvigorate radio through quality programming

## COMMENTARY

BY SAUL LEVINE

The AM radio band has been serving the needs of the American people for more than 80 years, and remarkably well. The future of AM can continue to be remarkable, but only if those of us in the broadcast industry adopt a new attitude.

Gloom and doom have overtaken our industry.

Even though there are hundreds of millions of radios in service in the United States, and the erosion of listenership has only been slight, many in radio broadcasting have become passive in response to the attempts of outsiders to raid the successful and profitable radio broadcasting industry.

What's more, we allow streaming jukeboxes to call themselves radio, even though they do not operate in the 540–1700 kHz and 88.1–107.9 MHz radio bands and are no more radio than the piano player in the neighborhood bar.

### ON THE SENIOR BAND

These issues apply especially in reference to the AM band. AM radio can become robust again if we overcome the self-doubt and lethargy that is consuming the thinking of radio operators. We have the infrastructure and resources to push back. We must invigorate programming and invest in improvements in the technical side of the AM facilities.

A word about my background so that the reader can better understand my perspective on AM: I helped pioneer FM radio in the 1950s, at a time when there were few FM receivers and almost total indifference to the advent of FM broadcasting by the radio establishment.

Because of my personal passion for broadcasting, I was able to obtain a construction permit for 105.1 (KKGQ) and place it on the air in 1959. I still operate the station. It was a channel that had been licensed to a major Los Angeles broadcaster, and the license was turned back by the operator due to lack of faith in FM. The broadcaster didn't even want to pay the power bill to keep it on the air.

It took more than 10 years for the station to become profitable. Along with a handful of other independent operators,



I steadfastly believed that we would be able to convince the public to invest in FM radio. We achieved this with program content that was not otherwise available — and in mono, too, since stereo had not yet been approved for FM radio.

FM had its signal problems, like multipath and picket fencing while driving (eventually resolved through circular polarization and other technical advances).

My experience makes me think that AM could use the same kind of faith in its potential that my colleagues and I maintained toward FM.

### YOU CAN FIX IT NOW

AM has become a dumping ground for lackluster programming, a lack of investment and a dismal outlook. The good news is that there are immediate steps that AM broadcasters can take to turn this around.

First, get over this belief that everything must be digital, and that analog is a bad word. There are immediately available technical improvements that can bolster the analog AM signal.

AM operators should dump the ancient RF and audio equipment it is using, and replace with state-of-the-art new transmitters, antenna phasing systems, new ground systems, new audio equipment, new processing equipment and anything else that replaces gear producing a negative impact on the signal.

This one change alone will amaze many.

I have operated KMZT (1260) since 1993. Back then, it operated with 5 kW, but I have since replaced all four towers and ground systems and increased power to 20 kW during the day, 7.5 kW at night. And I am playing classical music, which almost everyone warned me could not be done on AM.

There is no real magic here. We are simply supplying program content that people want.

### NO NEED TO WAIT

I reside about 12 miles from the AM transmitter and monitor the station at home with a McIntosh Tuner pre-amp and a 1961 McIntosh tube amplifier, fed into dual Thiel speakers. There are times when I forget I am listening to AM rather than FM transmission because it sounds so good. And that's night-time with reduced power.

My message for the redemption and survival of AM radio is to get the best transmitting and studio equipment that is available, and present programming that is unique, innovative and filling a need for the public.

Just think of this: Taylor Swift releases a new song that can only be heard on AM radio. Suddenly, nearly every young person in the USA is listening to AM radio. The message is obvious. And the next time someone disparages analog technology, remind them that the Big Bang was analog technology. And that was almost 14 billion years ago.

Digital elements will come eventually to AM radio, but that could be years away, and we don't need to wait to improve signal quality and programming vastly.

*Saul Levine has owned and operated radio stations since 1959.*



**KMZT(AM) recently invested in new equipment including Nautel transmitters (a 25 kW main and 12.5 kW aux) as well as a Kintronic Labs phasor. Writes author Saul Levine, 'We put our money where are convictions are for AM.'**

Next Issue of RADIO WORLD October 10, 2012  
Next Issue of ENGINEERING EXTRA October 17, 2012

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## BLUE BELL, PENNSYLVANIA



left:

MCCC's new ON-AIR control room

below:

**Morgan Betz**, Assistant Professor (left)

**Shawn Sealer**, Technical Services (right)

below left:

**Gregg Heimer**, Manager of Media Services

# RADIO MCCC WHAT THEY DID ON SUMMER VACATION



*"At MCCC my department usually does all our own integration. But Radio Systems made our lives so much easier with this install."*

Gregg Heimer,  
Manager of Media Services

Montgomery County Community (MCCC) is never short on media education with real-world training for its students.

Located in Montgomery County just north of Philadelphia, the College is consistently ranked among the top schools in the country for its use of technology by the Center for Digital Education. And Montco Radio is part of the reason why.

Montco Radio serves as both a student club at MCCC and an integral part of the school curriculum via a Campus Radio Workshop focusing on creating and producing original content for radio. As part of this course, students conceive, create, produce and distribute programming about the College and student life for the College radio station, and other community-based media outlets.

This new studio, installed just in time for the new fall semester in the Advanced Technology Center, which also houses a state-of-the-art TV studio, an observatory, and biotechnology laboratories. Radio Systems drew on our own long-term experience (we were founded 35 years ago as a college broadcast company) to specify the gear, install the studio and train MCCC's faculty in its service and use.

below, from left to right:

**Gerrett Conover**  
Vice President

**Daniel Braverman**  
President

**Michael Sirkis**  
Chief Engineer

**Dennis Greben**  
Manufacturing Manager

**Jo-Ann Dunn**  
Sales Manager



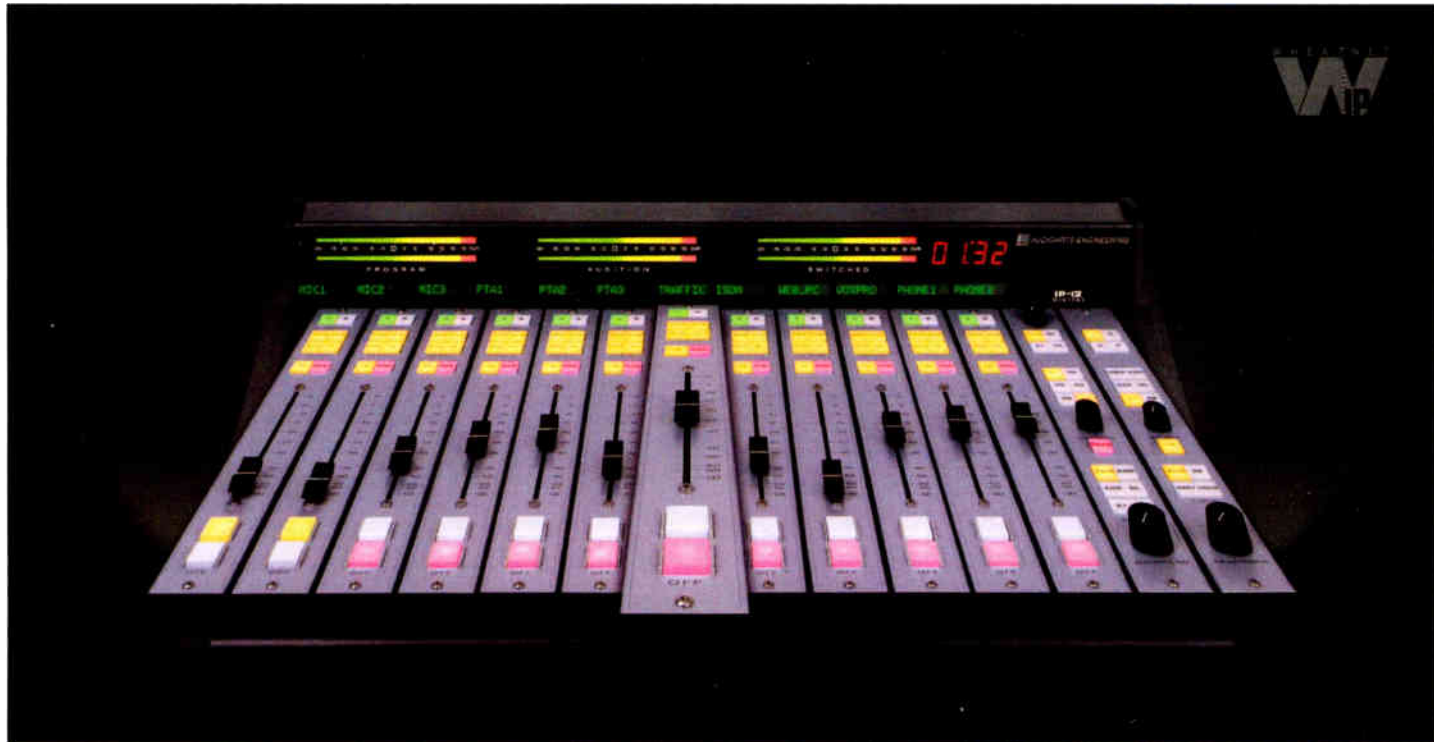
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