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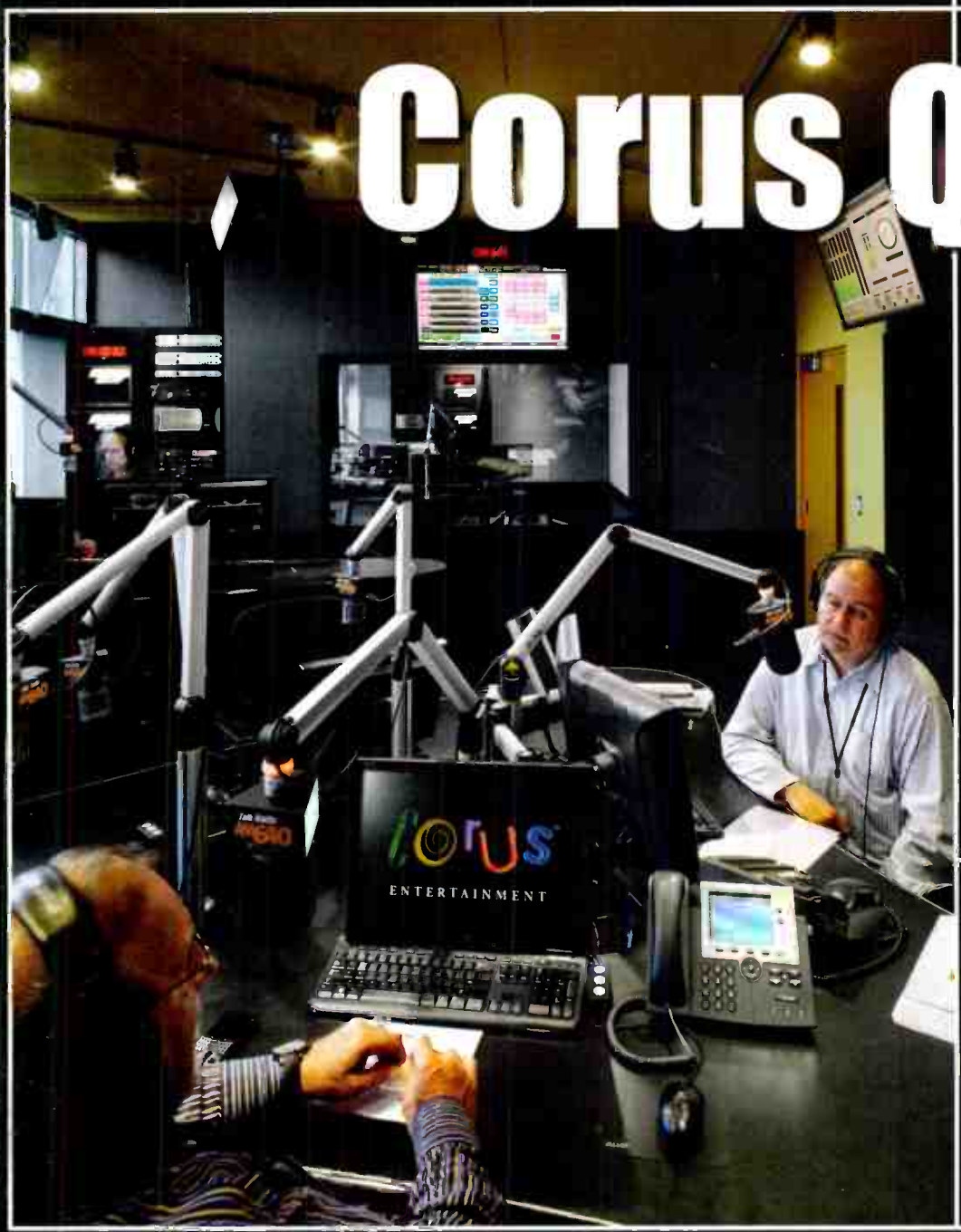

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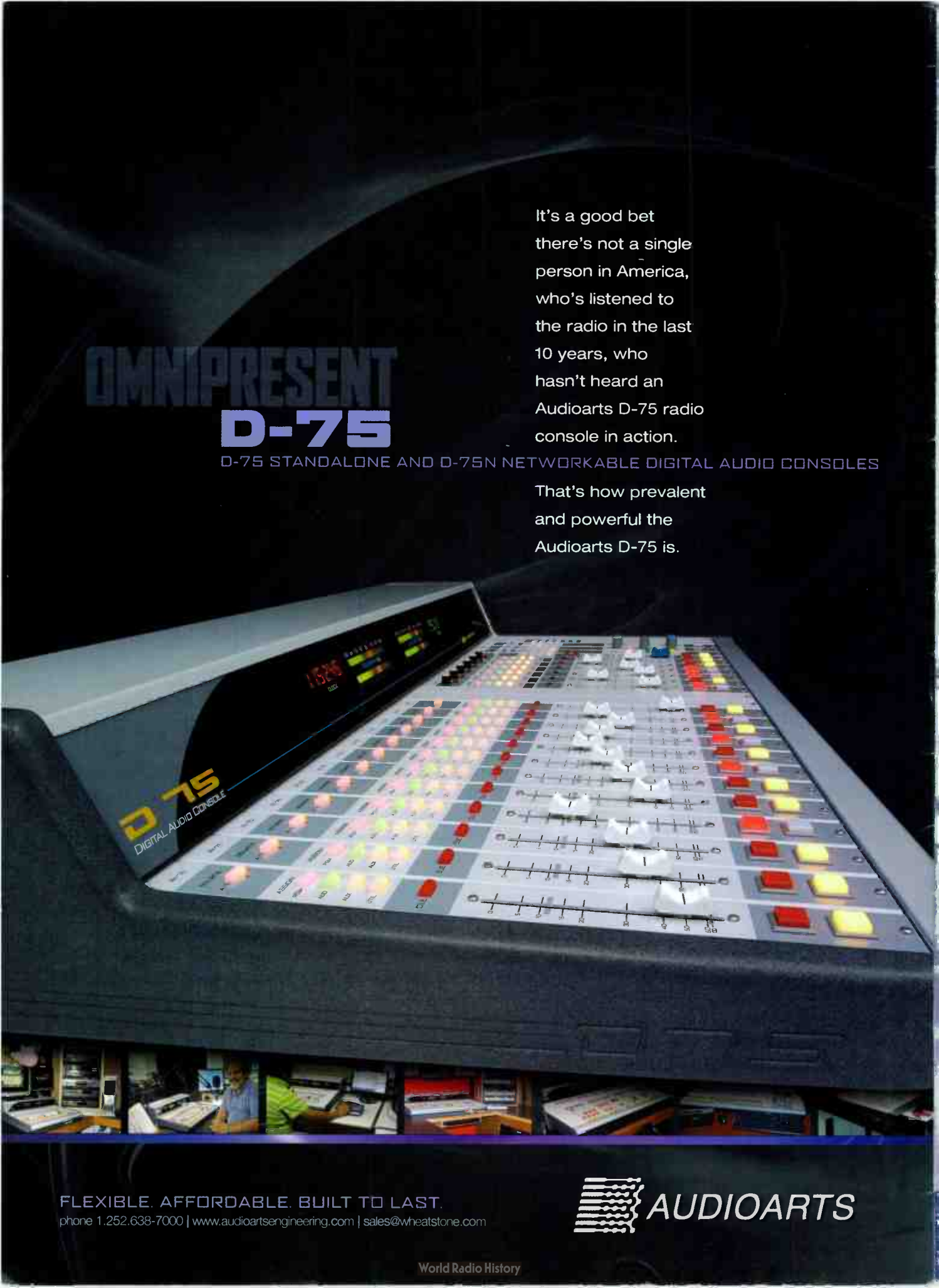
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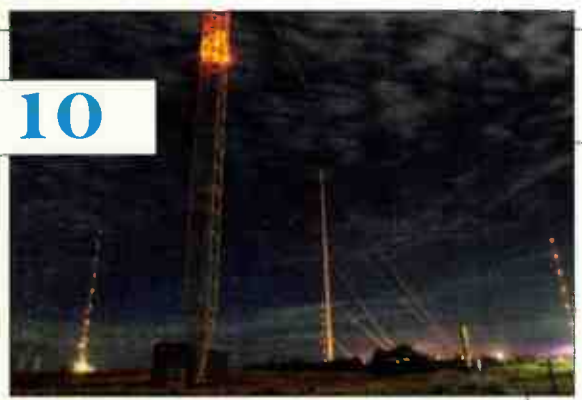

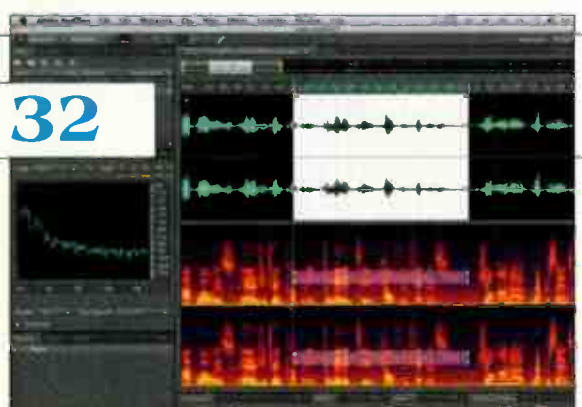

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Corus Entertainment, one of Canada's largest media companies, has a variety of interests from radio to TV and children's programming. Check out Toronto's newest media center on page 20.

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Currents Online

Selected headlines from the past month.

FCC Approves Net Neutrality

The vote followed party lines 3-2.

House Passes Amended LPFM Bill

The bill was amended to include provisions sought by the National Association of Broadcasters to protect full-power radio stations.

New AM Radio Data Concept Developed

Ibiquity and NAB Fastroad cofunded the project to develop a low-rate digital data service concept for AM broadcasters.

Nielsen Drops Radio Ratings

The Fall 2010 survey will be the last offered by the company.

Student Stations Win Copyright Relief Through 2015

The rates and terms of the settlement for educational stations maintain the current $500 minimum annual fee.

NATE Updates Tower Safety Guide

The fourth edition of the Accident Prevention, Safety and Health Program Guide suggests formats and procedures for fall prevention, hazard identification and tower access, and samples of a climber exam and evaluation form.

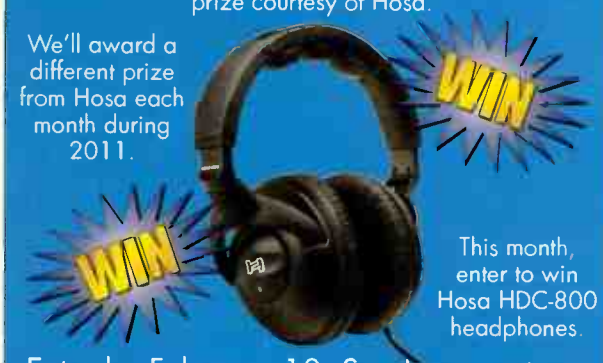
FCC's Copps Proposes Public Value Test for License Renewal

Part of Copps' plan would reduce the license renewal period from eight to four years.

Find the mic and win!

Tell us where you think the mic icon is placed on this issue's cover and you could win a prize courtesy of Hosa.

We'll award a different prize from Hosa each month during 2011.



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Media Rating Council Withdraws Accreditation for Arbitron Radar, Nationwide Services

The increase in unaccredited Portable People Meter markets used to compile notional data lead to the change in accreditation status.

Site Features

Use the QR Codes

See the QR code below? There are more in each issue so you can access information even quicker with your smart phone. Try a link right now.

2011 NAB Show Guest Blogger

Tell us why you should blog from the show and you might go as our guest. More details are on page 40 of this issue.

Most Popular Articles of 2010

We compiled a list of the most popular articles from last year. See what was hot and interesting from the past 12 months.

Desktop Wallpaper Calendar

One of the most popular sections of the *Radio* magazine website is the desktop wallpaper calendar for your computer. We have added pages for 2011, so download yours today.

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In the middle of your busy day...
take a break and install an iQ.

With all that's on your plate, time is precious. Here's a way to get some time back: iQ, the powerful new AoIP console from Axia. So fast and easy, you can unpack it at 11:00 and have audio running by noon. No switch to set up - it's built-in and preconfigured. In fact, everything's built in. Audio. Logic. DSP engine. Power supply. Just plug in power and audio, and you're ready for air. Smart and intuitive, so your jocks will love it. Cost-effective, so your boss will love you. A 16-fader iQ starts at just $9,985.00; 8-faders are only $7,990.00.

iQ. It's about time.

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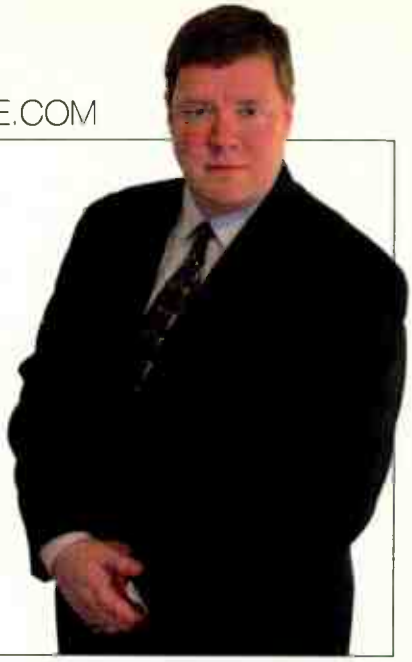

Build the community

How's your elevator speech? When asked, "What does your company do?" do have a concise answer? If you don't, you should. For *Radio* magazine, the concise answer I provide is that we help our readers do their jobs better. That's the primary goal with every article, webinar, posting, blog, forum and other effort that comes from *Radio* magazine.

Of course that's just the start of the elevator speech. It's how we accomplish this that sets *Radio* magazine apart.

I'm fortunate to work with a strong team as well. The names you see in almost every issue – Doug Irwin, Harry Martin, Jeremy Ruck, Kevin McNamara, Chris Wygal, Erin Shipps – are just as involved in radio as you are, and they share their experiences, knowledge and insight to help you. There are many other people who contribute to our goal of shared help. Ron Bartlebaugh, Gil Wilson, Mike Kernen, Tom Atkins, Jeff Smith and Barry Thomas are just some of them.

But even though there's a crowd of regulars, this is an open community. We are always looking for more information from this vast community.

Remote Up in the Air?
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"We were invited to ride along in a hot air balloon to help promote the Grove City Balloons and Tunes Festival near Columbus," says Matt Bruning of WTVN in Columbus, OH. "When I asked about doing a live shot from 2,000 feet up, our engineering department went straight to the shelf with our Comrex ACCESS on it. The unit did a great job...as we expected. Thanks so much for making a GREAT product like the Comrex Access - so easy even a news person can use it!"

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Field Reports are a great example of this. These are equipment reviews performed by and for the industry. They are written to help you learn about the products from an unbiased source: Your peers. Field Reports are written by the users, not the magazine staff.

You likely have some new piece of equipment you like. Share your experience with the *Radio* magazine community. Tell me about what you have and we can get started on a Field Report. (You'll even get paid for your work.)

This helping community isn't limited to equipment reviews. A facility is built on the sum of the individual parts, and the Facility Showcase and On Location articles in *Radio* magazine bring the products and theory together into a working project.

I'm sure you have also noticed that we don't just focus on the large-scale, major-market projects. The large facilities are often marvels of project implementation, but we also look for smaller installations. Quite often the stand-alone stations in the smallest towns have some of the most interesting installations. The Facility Showcase articles let others see your work. There's a good chance someone else is facing a challenge you have already overcome.

Have you completed a new facility? Maybe you pulled off a major live event. Or perhaps you have something in the works. Again, tell us about it and share your experience.

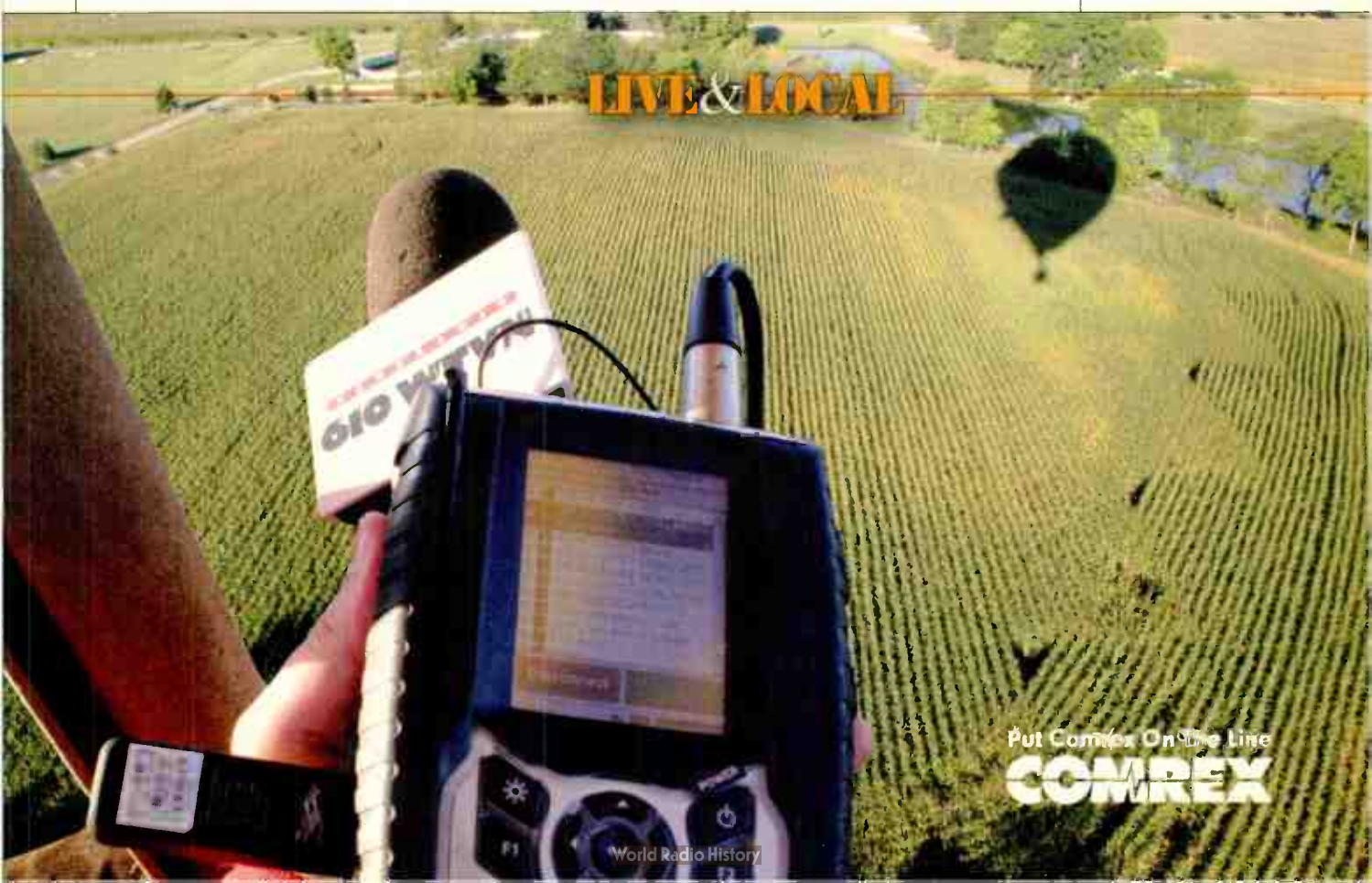
This brings me to a new project we're launching at *Radio* magazine. Now that the new year is here, the plans for the 2011 NAB Show are being set in place. I know lots of engineers who lament that they can't attend the convention. We have a way to help. We are looking for a guest blogger to report on the convention. If you are chosen, *Radio* magazine will send you to the convention. You will be able to attend sessions, see the exhibits and interact with other broadcasters while you learn about the latest technology.

Want more info? Turn to page 40 or visit RadioMagOnline.com/contest.

We're here to help you do your job better, but you can also help build the community.

Chris Scherer

What's your opinion? Send it to radio@RadioMagOnline.com



Translators today

By Jeremy Ruck, PE

The FM translator service, like other communications services, has undergone some profound changes in recent months – well sort of. As it turns out, the FM translator service, since its inception in the very early 1970s, has been subjected to several major technical overhauls.

The most recent of these overhauls came in 1990. Prior to that time, the coverage area resulting from the permissible technical parameters was quite small. Under this overhaul, the FCC started defining power in terms of effective radiated power instead of transmitter power output. The result was a maximum permissible ERP of 250W rather than the previous limits of 1W TPO east of the Mississippi and south of 40 degrees latitude in California, or 10W TPO elsewhere.

If the translator was a "fill-in", there was essentially no limitation on the center of radiation height so long as the translator did not serve to extend the primary service contour of the facility in any direction. The non fill-in facilities, such as those translating NCE stations were subject to two regionally based stair-step tables relating ERP to the center of radiation above average terrain. Intuitively this is quite sensible as it neutered the possibility of an enterprising broadcaster dropping in a translator with a coverage contour not much smaller than a full power station while bypassing the historical allocation mechanisms.

Photo courtesy of fieldtouring.com

Translator variation

The concept of the fill-in translator became very important when the FCC finally got around to modifying the permissible service rules to allow an AM facility to be the primary station for FM translators. It should be noted that during the major 1990 rewrite, the subject of AM translators was discussed, and nixed by the FCC. Around that time significant changes to the AM technical rules were underway, and it was thought that improvements would occur in AM without the use of FM translators. Those improvements did not materialize, at least to the degree originally hoped, and the NAB, which in 1990 opposed the concept of AM translators, reversed course and submitted the petition for rulemaking resulting in the service change we see today.

The change in the rules to permit AM stations to rebroadcast via FM translators made no substantial technical changes. Rather, the modifications revolved around the permissible service sections. Because the 1mV/m contour of the translator had to wholly fit within both the 2mV/m daytime contour of the AM station to be translated and a 25-mile radius centered on that station's transmitter site, the translator would be a fill-in facility. It would therefore not be saddled with the power/height tables previously discussed, but rather would be able to utilize a maximum ERP of 250W, in most cases, as long as interference criteria and the 2/25 coverage limits were met. This is undeniably huge for licensees operating AM stations with minimal or no nighttime coverage or those with very high nighttime interference levels. With some very profound, yet simple changes, the FCC increased the value of many translators and AM stations overnight.

To avoid a takeover of all translators by AM licensees, the FCC imposed a restriction that for a translator to be eligible to rebroadcast an AM facility, it must have been authorized, either licensed or have a valid construction permit, as of May 1, 2009. Although this provision is currently being appealed, as things stand right now, the remaining pending translator applications from the 2003 filing window would not be eligible to be used for AM facilities. Assuming the appeal of this provision is not granted, a situation down the road where swaps are taking place to work around this provision is not far-fetched. Indeed we even see some shades of this right now with stations trading IBOC FM channels and the like.

A cap

In the 2003 filing window, colloquially known in some circles as "the Great Translator Invasion", some 13,000 application were filed. Of those, approximately 7,000 are still pending, which has been the case since about 2007. In December of that year, a cap of 10 pending applications per applicant could remain, with the remainder dismissed, was proposed by the Commission. The thought was this would reduce the processing backlog since

World Radio History

many of the remaining applications were mutually exclusive with others, and were thus subject to a comparative selection process. Although a few applicants were likely engaged in questionable filing practices, many of those affected by the cap had expended time and resources filing for facilities they genuinely intended to construct and operate. No doubt what amounted to an *ex post facto* change in policy, despite the apparent good intentions of the FCC, was received poorly.

Since 2008, when the cap was suspended, little has happened with translators other than the permissible service change. There is no doubt that this realignment has greatly enhanced the visibility and desirability of translators, but it has done little to address the pending applications, the cap, or the conflict between translators and the LPFM service. With finite spectrum availability and the pent up filing demand partially resulting from infrequent filing windows, skirmishes have no doubt resulted.

Fast forward to 2010 where we find a proposal jointly crafted by Educational Media Foundation and Prometheus Radio Project presented to the FCC. The original proposal, which was not well received by the NAB and NPR, recommended that an LPFM window be opened without implementing the cap or dismissing any translator applications. The translator applications would become secondary to LPFM applications, and would be dismissed if found in conflict. An amendment to this proposal, opposed by a whole bunch of commercial broadcasters, recommended that any applicant with fewer than 10 translator applications could select one for grant, then the LPFM window would proceed. The opposition instead recommended opening a settlement window first, which would no doubt eliminate some of the MX problems and avoid the unpalatable cap and related dismissals.

As we begin a new year, there is still no indication from the FCC when or how it will address this issue. Equally unknown is whether any of the compromises will be utilized, or whether the FCC will strike out on its own in a different direction. Over the past couple of years we have seen a simple modification to the translator concept that has greatly aided AM stations. Perhaps there is some irony that those strides have been coupled with nearly eight years of limited movement on half of the originally filed translator applications. Maybe things haven't changed as much as we originally thought.

Ruck is a senior engineer with D.L. Markley and Associates, Peoria, IL.

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Bad economy doesn't mean lax rule enforcement

By Harry Martin

The FCC's Enforcement Bureau has taken an increasingly strident stand against radio stations that violate FCC rules in spite of the difficult financial straits of the industry. But the Bureau has considerable discretion in assessing forfeitures. Here is an instructive case.

EAS violation: The inspection team visiting a Kansas station checked its EAS equipment and found it was not working because the power cord was disconnected. Moreover, the licensee admitted that his EAS system stopped working "sometime between the year 2000 and the year 2006." The owner also said he had no logs indicating when the last EAS test his station had initiated.

Public file: Moving on to the station's public inspection file, the agents found no quarterly issues/programs lists for 2009 or 2010, but did find such lists for other years since the last license renewal.

Tower violations: The inspectors next observed that the tower paint was faded and bare in spots. And the three required beacons were either not flashing or not lit at all. Several of the side lamps on the tower were not working either. The station had no automated system to monitor the tower lights, and the licensee admitted his staff was not checking the lights every day as required by the rules. He also told the inspectors that he had no records of tower observations, although he did recall having looked at the tower a couple of days before the inspection.

Calculation of the forfeiture: The Enforcement Bureau issued a notice of apparent liability for a $25,000 forfeiture for these violations, calculated as follows:

It identified the four rules that had apparently been broken: (a) failure to maintain operational EAS equipment (Section 11.35(a)); (b) failure to make daily observations of tower lighting (Section 17.47); (c) failure to keep the tower painted and cleaned (Section 17.50); and (d) failure to place quarterly issues/programs lists in the public file (Section 73.3526).

It then looked up the "base forfeiture amount" for each of these violations. Those were: (a) $8,000 for EAS; (b) $2,000 for tower lighting; (c) $10,000 for tower painting; and (d) $10,000 for the public file.

Second thoughts: The Enforcement Bureau could simply have added up the base amounts for the violations it had identified, which would have produced a $30,000 fine. But to get to the $25,000 fine it thought appropriate, the Bureau reduced the public file component of the fine from the maximum of $10,000 to a more reasonable $4,000 because the station's public file contained a portion of the items required. That reduced the total to $24,000. But the Bureau then tacked on another $1,000 to the $8,000 EAS violation because the licensee, as it turned out, had a record of violating the EAS rules going back more than 10 years. These calculations demonstrate the subjective nature of the evaluations that lead to the final amount of FCC forfeitures.

The Bureau's adjustments show the forfeiture in this case could have been higher – or it could have been lower. In any event the NAL alone demonstrates that the Bureau's, and ultimately the Commission's, priorities are subject to question. For instance, why is a public file fine, even if reduced from a $10,000 to a $4,000, more important in terms of dollars than a tower lighting violation ($2,000), and why is a tower painting violation ($10,000) worse in terms of liability than having inadequate tower lights? Public safety concerns would seem to dictate different results.

Martin is a member of Fletcher, Heald & Hildreth, PLC, Arlington, Virginia. E-mail: martin@fhhlaw.com

Correction: In last month's FCC Update, we reported that of the 7,000 FM translator applications remaining on file from the 2003 window, 4,000 are attributable to just two applicants. The correct number of still-pending applications attributable to those two applicants is 2,000.

Dateline

For *noncommercial* radio stations in Kansas, Nebraska and Oklahoma their biennial ownership report deadline is Feb. 1.

Feb. 1 is the deadline for radio stations licensed in the following locations to place their Annual EEO Reports in their public files and on their websites: Arkansas, Kansas, Louisiana, Mississippi, Nebraska, New Jersey, New York and Oklahoma.

The radio station license renewal cycle begins again in 2011, with the first batch of renewals being due on June 1, 2011, for stations in D.C., Maryland, Virginia and West Virginia.

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Plan now for capital purchases this year

By Doug Irwin, CPBE AMD

As you are aware, the Federal Emergency Management Agency (FEMA) published the technical standards and requirements for CAP-formatted EAS alerts on Sept. 30, 2010, thus triggering the 180-day window for compliance among broadcast stations. Fortunately, for those of us directly involved in the implementation of the new equipment, the FCC waived part 11.56 of its own rules on Nov. 23, and moved the deadline for implementation back to Sept. 30, 2011. In paragraph 10 of its order 10-191, the FCC wrote "It is in the public interest to provide EAS participants with enough time to correctly and efficiently implement the requirements for a next-generation EAS. We are concerned that retaining the 180-day deadline would lead to an unduly rushed, expensive, and likely incomplete process." The agency goes on to say that while it does not anticipate any further waivers, it reserves the right to extend the deadline yet again.

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Update

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EAS Update

That being said, it is important to note that progress is being made in working out the details of the implementation of CAP, and that the deadline will be here before long. CAP is coming sooner than later, and you should endeavor to learn about it. I'll discuss some of the remaining issues with the implementation of CAP and how they are being addressed.

For starters, let's decode some of the many acronyms that you'll see. CAP stands for Common Alerting Protocol, and version 1.2 of CAP was developed by OASIS (Organization for the Advancement of Structured Information Standards). CAP is the digital messaging format to be used in the implementation of IPAWS (Integrated Public Alert Warning System), which is our nation's next-generation emergency warning and alert system. The most important aspects of IPAWS are as follows:

- It is a comprehensive system enabling the proper authorities (such as federal, state, territorial, local and tribal associations) to alert and warn citizens under any emergency conditions and by way of as many means as possible.
- It will allow the president to speak to the American people during any emergency situation.
- By making use of standards such as CAP, it will create an interoperability framework that will allow a single warning message to be transmitted over different systems.
- It will enable alerts and warnings to those with disabilities and those without an understanding of the English language.

While we all know radio and TV are an important means by which much of the populace can be reached, we also know there are many new means – such as the Internet and more specifically mobile devices – that allow an even greater percentage of the public to be reached rapidly should that need arise. IPAWS is the result of an initiative taken by FEMA for just that purpose – the integration of multiple methods of reaching the public by disparate means.

So just how will it work? IPAWS will accept standards-based (CAP) alert and warning messages from emergency managers using existing state, local, territorial or tribal systems, or by way of an IPAWS Web interface. These messages will be forwarded to the IPAWS aggregator, which will in turn disseminate the messages via IPAWS OPEN (Open Platform for Emergency Networks). The entities (like 14,000 radio stations and 10,000 cable TV systems in the United States) providing that last mile reach to the public will retrieve pertinent emergency messages (formatted in CAP) from IPAWS OPEN by means of IP networks such as the public Internet. I should also note that the methods of receiving EAS tests that we've been using for years now will continue to exist; messages received from IPAWS OPEN will supplement them.

It wasn't clear when I composed my last article about CAP as to whether or not messages from IPAWS OPEN would be retrieved (pulled) or sent (pushed). According to one industry source I spoke with, it has been resolved that messages will be pulled. This makes a lot of

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CC FEMA EAS ASIS P

sense from the aspect of network security; it is much more simple to configure a device to originate communication from the LAN side of a firewall or router than it is to configure that same router or firewall to allow unsolicited messages to come in from the public Internet to reach a host on the LAN. This of course also allows the owner of the CAP-enable device at the radio station to decide how frequently updates will be requested, and so forth. According to this same source, IPAWS OPEN will operate like any other large server, from a large (or many large) data centers and it will be the responsibility of FEMA to build a system large enough to handle the tens of thousands of CAP-enabled devices that will be querying it on a regular basis.

Take off your CAP

So now that you know something about IPAWS, let's take a closer look at CAP. Here are some of its most important aspects.

CAP is a simple, general format for exchanging all hazard emergency alerts and public warnings over all kinds of networks. It features the following:

- Geographic targeting using latitude and longitude shapes and other geo-spatial representations in three dimensions
- Multilingual and multi-audience messaging
- Phased and delayed effective times and expirations
- Updates and cancellations
- Templates for the creation of warning messages

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**. Don't delay - the deadline is just around that corner.

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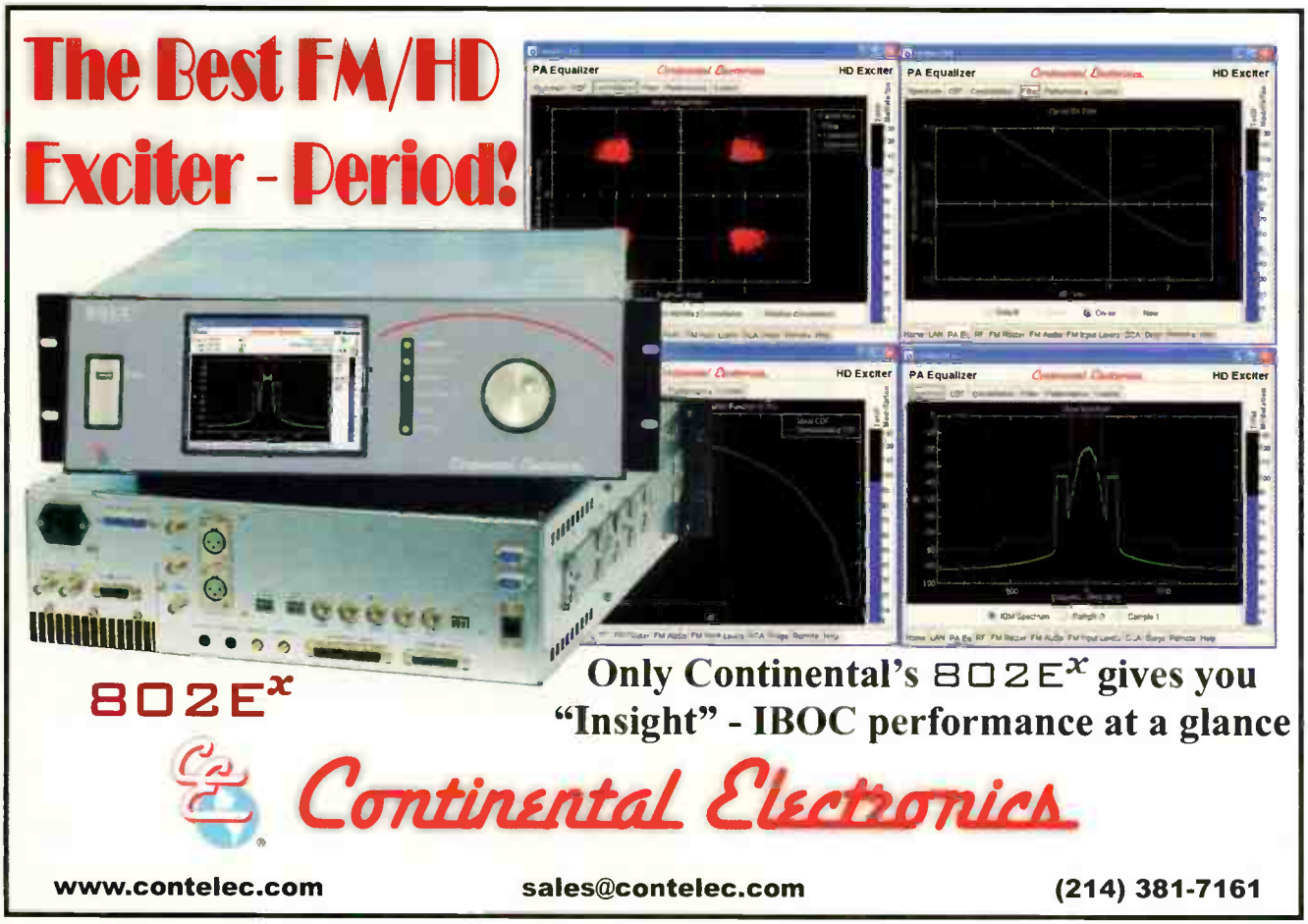
EAS Update

- Digital signature capability
- Facilities for audio and images

In the course of researching this article I read the "Working Group 5A CAP Introduction Final Report" from CSRIC (Communications Security Reliability and Interoperability Council) and found there is more to the story regarding CAP and EAS. (You can see the same document here: www.fcc.gov/pshs/docs/csric/CSRIC%205A%20Working%20Group.pdf).

According to CSRIC: "Adherence to the CAP standard alone does not guarantee that connected systems and equipment will be conformant with Part 11 Rules for EAS activation and display." CAP is a basic container for alert data, and practitioners have increasingly found that additional specificity has been required for the appropriate usage of CAP in various systems, including EAS. To resolve this issue, FEMA issued an IPAWS CAP profile, which describes how to create EAS messages specifically for the IPAWS system. Broadcast equipment manufacturers, as represented by ECIG (EAS-CAP Industry Group) have offered further specificity on how CAP-formatted messages can be used to generate part 11-compliant EAS messages. The IPAWS CAP profile was developed by integrating the requirements related to three federal warning-delivery systems: The broadcast EAS as recommended by the ECIG, the NOAA non-weather emergency message (NWEM), and CMAS for cellular telephones.



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PEN SRIC CIG AWS

Again, referring to the CSRIC document: In May 2010, the ECIG published guidelines "intended to further reduce the areas of uncertainty in how an alert will be presented to the public via CAP/EAS so that originators and distributors of alerts can deliver the intended message to the public, regardless of the vendors or platforms involved." The CSRIC document was published in September 2010, and even at that time, there was still some room for interpretation of CAP messages. From the same document: "Public warnings intended for transmission over EAS can be encoded in CAP messages in various ways. As both CAP v1.2 and CAPv1.2 IPAWS Profile (v1.0) make use of several free-form text elements and several optional elements, there is ample opportunity for a CAP message rendered by one CAP-to-EAS device to differ when rendered by another vendor's device. There can also be a difference between what the originator intended for an alert, and what the alerts contain, when broadcast by CAP/EAS devices."

It is clear there are still issues to be resolved prior to the real implementation of CAP at the end of September 2011. However, according to the same industry source I referred to earlier, the issues are being resolved, and indeed most if not all will be resolved by the end of March of 2011. Manufacturers are working in earnest with FEMA so the new deadline can be met. Broadcasters should plan for capital purchases this year so they can implement CAP/EAS by the deadline.

Irwin is transmission systems supervisor for Clear Channel NYC and chief engineer of WKTU, New York. Contact him at doug@dougirwin.net.

Correction: Last month we incorrectly placed the Western Electric Model 618-A microphone photo. Pictured is actually a Turner dynamic mic. See the correct photo at RadioMagOnline.com.

World Radio History

Waterfront Radio Waves

Corus Entertainment is one of Canada's largest media companies, with interests in local radio, TV, children's animated productions and children's books. It operates nearly 50 radio stations across Canada; each station has a close tie to the community it serves. Its corporate headquarters are in Toronto, where construction of a new facility was recently completed to accommodate the growing needs of its various divisions. The local Toronto stations, CILQ-FM (Q107 Classic Rock), CFNY-FM (102.1 The Edge) and CFMJ-AM (AM640), also have a new home in the facility, but despite the corporate environment, the stations are more involved with their community than ever.

The new office building has approximately 500,000 square feet of space and sits on 2.5 acres of Toronto waterfront. The facility is the anchor project in the revitalization of the East Bayfront, which is designed to bring energy and business opportunities to the waterfront neighborhood.

Flanked by Canada's Sugar Beach on the west side and Sherbourne Common (a 3.7-acre park) and a yet-to-be-built George Brown campus on the east side, the area was previously a warehouse district.

The beachside location provides an ideal opportunity for the radio stations, which have studios at the ground level facing the beach. Each radio station has large windows to allow the public to clearly see inside. Public interaction is an important aspect of the stations' operations. John Coldwell, chief engineer of the stations, says the community presence was a primary effort in the studio design.

The studio for 102.1 The Edge includes a performance space with large doors that open to the beach area.

Bill Waters (left) and Bill Hayes discuss the Toronto Maple Leafs with call-in listeners.

Corus Quay is Toronto's newest media center.

By Chriss Scherer, editor
Photos by Richard Johnson (unless noted)

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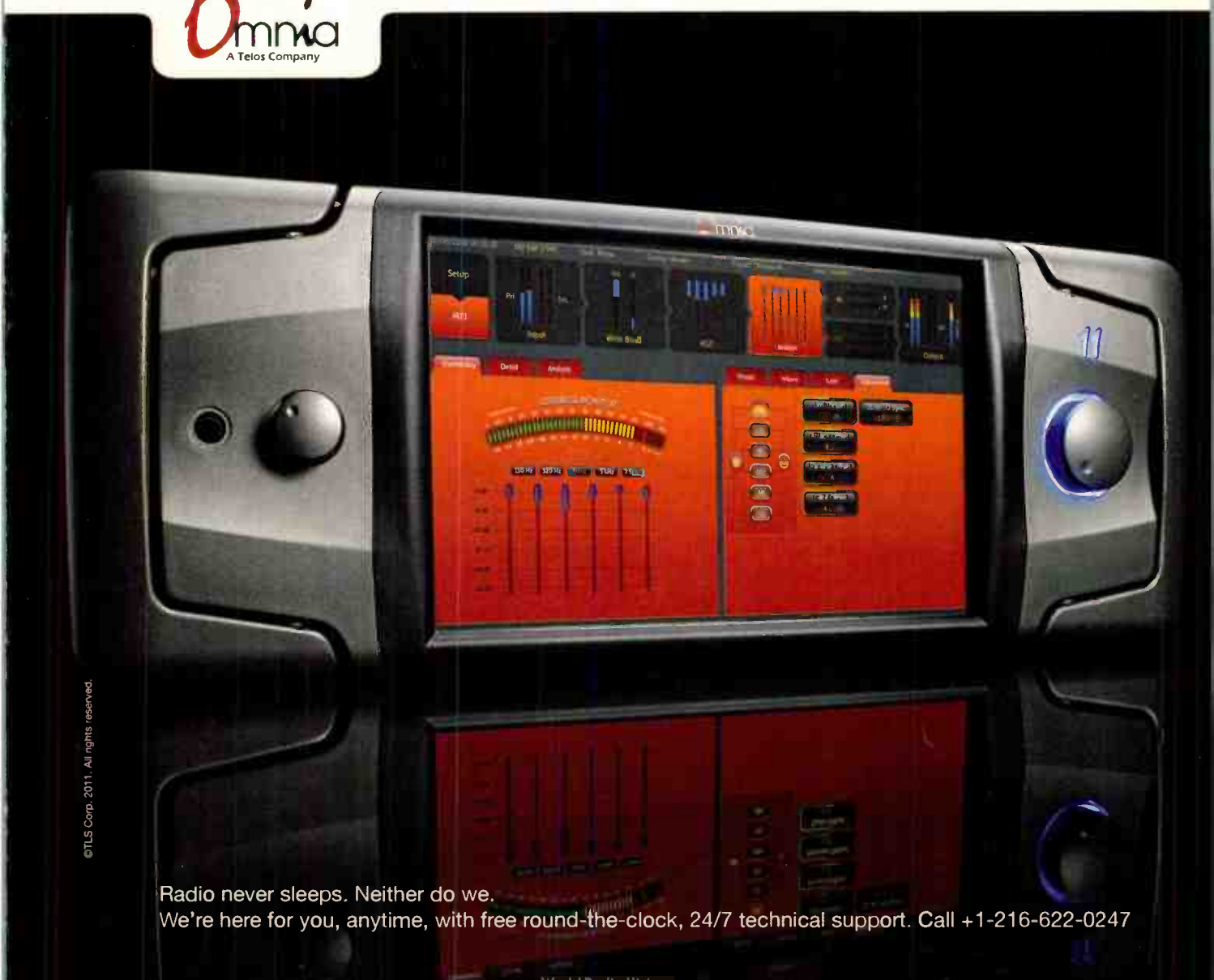

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Public concerts are typical; the station talent can easily walk out to the beach area with wireless mics to further interact with the public.

Big plans

How does a project like this begin? Corus first organized an initial infrastructure/engineering committee to bring together people from all its divisions – TV, radio, IT, etc. – to start planning the building. This committee examined the various needs and inter-workings of all the divisions. While this article focuses primarily on the radio side, this was much more than a radio station project.

The broadcast design was contracted to Siemens Canada. Siemens built a BBC facility in Glasgow, Scotland, with similar integration of various departments. Once the design plans were set and construction began in 2007, the radio integration was handled by the radio group. Later into the project (in 2009), GS Broadcast Technical Services was hired (gsbts.com) for integration services.

The three on-air studios are housed on the ground floor, and the production facilities are on the second floor, adjacent to the sales and traffic departments. There are five Pro Tools production rooms with C/24 control surfaces. Four voice-over booths serve these studios. All the mics in the voice-over booths are tied to the Pro Tools systems and the Wheatstone audio network.

While three stations currently reside here, the plan allowed for a fourth station to be added later. As it is built, the radio facilities can also originate two network feeds as needed.

Each station has a master control room, small voice track room (a smaller control room) and a booth sandwiched between the two.

The Edge studio is very large, but it includes the live performance space. Measuring 30' × 60', the studio has public access – listeners can walk into the studio. It features an elevated floor with small performance stage, a lighting grid and PA. As was mentioned earlier, large doors can be opened to allow visiting bands to play to the beach.

This live interaction approach is not new to the station. Corus' experience with street studio radio began 15 years ago at the previous studios on Young Street.

Q107 is also experienced with street studio radio. It had a facility in the Hard Rock Cafe Toronto. The new studio is also set up for live on-air performances, albeit in a smaller space. A drum set and guitars fit comfortably. The afternoon show, hosted by Kim Mitchell, regularly has live guests. Mitchell is a professional musician as well, working solo and previously with a group called Max Webster. (He had a major solo hit in 1984 called Go For Soda.) Q107 also has a Pro Tools rack system, which Mitchell uses on the air with live bands. He also plays guitar on the air at times.

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Visit these stations online at:
Q107 • www.q107.com
102.1 The Edge • www.edge.ca
AM640 • www.640toronto.com

Live experience

When the Edge studio was rebuilt on Young Street a few years ago, various ideas in studio furniture and rack placement were tried. Much of that experience was applied to the new studios. This approach makes the radio studio look more like a TV set than a radio studio. The visual appeal is part of the stations' efforts in listener interaction. Of course the three permanently mounted HD cameras with pan and zoom controls add to the TV feel. The camera feeds are routed to a mini TV control room on the second floor where the Corus Interactive department uses the feeds extensively.

Each control room has five 46" HD displays that can be fed from anything on the KVM network. These displays serve multiple uses, including digital signage. Common display uses include the console meter bridge, the NewTek Tricaster video output, the Pro Tools system and the automation view.

Networked audio system

When it came time to select the audio backbone of the facility, Corus evaluated many systems. After compiling I/O lists and considering features, Corus chose a Wheatstone Bridge System with E6 consoles. The TDM backbone was chosen over IP because of the size of the facility and the system's low latency. The entire audio router has a physical connection capacity of 1136 x 1072 mono signals.

In all, there are eight consoles in place, but there are many virtual consoles in use. According to Coldwell, Wheatstone created the virtual console for this installation, and they are primarily used in the newsroom. Multiple newsroom mixers tied to the routing system was not a preferred method. Because of this, the newsroom desks can be used to originate program content. Likewise, network feeds can be controlled from a news workstation without tying up a studio control room.

The behind-the-scenes technical facility for Corus Quay is also unique. For most radio-only facilities, it's logical (and easy) to build a central rack room. This was the desire for the radio side, but it was not possible with the other media outlets sharing the facility. Instead, the radio equipment is distributed among three rack rooms.

The first is the main radio rack room – called the Radio Equipment Room (RER) – with 12 racks. This is adjacent to radio engineering and houses all non-server-based equipment, such as ISDN codecs, tuners and other equipment that may need to be accessed directly. All the racks are 51RU. The extra height allots extra rack space that was lost by mounting the Belden GigaBix blocks in the racks instead of on a cross-connect punchblock wall.

Kim Mitchell broadcasts the drive home show from the classic rock studio, which has windows on all sides for views into the studio.

World Radio History

Waterfront radio waves

Every rack has 48-point RJ-45 jackfield. These jackfields are wired to the rack at the end of every row. There are racks adjacent to the end rack, which has system patching. The end racks also house devices with high I/O needs, such as an IT router or switch. Likewise, cross-room patching is done in these racks. The Wheatstone Bridge frames are connected to GigaBix blocks; other equipment ties to the Bridge network via these blocks.

This is a good time to mention facility wiring. All cabling for the radio side is handled by the building's CAT-6 infra-

Making the technical side of radio broadcast visible, the rack room is located within the two-story radio communication stairs and has its own custom radio wave glazing graphic.

Equipment List

Adderlink Infinity IP KVM System
APC AP7750, AP7752, AP7930
Aphex 230
Argosy Mirage NC 24
AudioScience ASI 5111, ASI5044
Belden 3612 enhanced CAT-6, GigiBix, patch panels
Bose Companion 3
Comrex Access
Davicom MAC216
Denon DN-C640
Digidesign C/24, Pro Tools 003, Pro Tools 192, Pro Tools HD2 PCIe Core
Electronic Metal Form racks
Eventide BD600
Fanfare FT-1AP
iMediaTouch automation, Logger
Junger Level Magic LT
Liton LTD-80
Midas Venice 320
Moseley SL9003Q Starlink
NEC P461
Neumann BCM 104, U-87
Neutrik connectors
NewTek TriCaster TCXD300 HD
Omnia 6 EX, One
Omnimount 30.0, SCM-UA
Planar PT1911MX
RVA Canada mic flags
Sennheiser ew-135g3, ew-300IEM
Sony MDR-7506
Tannoy Precision 8D, Reveal 6 Speakers
Telos NX-12, ProFiler, Zephyr Xstream
Torpey GSP-1A
Vaddio HD-18 HD PTZ camera, Precision Camera Controller
Ward Beck POD 6B, QSP2/D
Wheatstone E6 1616, E6 2020, E6 Virtual Mixers, GP8, TDM Bridge, Wheatnet Blade 88ad
Yellowtec Mika

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John Shideler
Mesa, AZ
970-227-1405

Eric Wandel
Newburgh, IN
812-490-7947

www.BroadcastConnection.com

World Radio History

structure. The CAT-6 cables are bundled in groups of 24 and wrapped in a braided sleeve. These cables, which run in trays, terminate to RJ-45 patch panels in the racks.

The entire facility is powered through a dual UPS system. This was designed from the IT side, which works well for equipment with dual/redundant power supplies. But most broadcast equipment has a single power supply. Because of this, APC power transfer switches were installed in every rack to feed the power rails. Some racks have three power rails to maintain the unique A or B UPS and the switched UPS feed.

The second rack room is the Technical Services Room (TSR). This 8,000 square foot room is the central data hub for all of Corus. There are more than 250 racks in this room, which was designed with a 24" pressurized floor. HP, IBM, Cisco and several others were involved in designing this room. One row of racks houses all the radio server-based equipment, including loggers, automation, digital signage and the Burli newsroom server.

The third rack room is the Demarc Communications Room, which houses all third-party equipment. A Wheatstone Bridge frame resides here to tie outside lines to the audio network.

Photos by John Caldwell

Q107's control room racks with doors closed and open

Studio construction

All the radio studios were designed jointly with the radio committee and architects. The base building area for radio has a recessed concrete slab. This allowed a floating concrete floor to be placed without the need to build ramps up to it. Non-studio areas where a concrete floor was not needed have a traditional computer floor. Most of the electrical service is run under the raised floor in the hallway. The studio walls were constructed with typical double-wall construction.

A prime objective in building the radio studios was to have clean desktops with low sight lines. His was mainly to reduce the visual clutter, which is important for the public view and for the video usage in the studios.

FACILITY FOCUS

The technology behind Corus Quay

DAVICOM MAC

DAVICOM, a division of Comlab Inc. manufactures intelligent site monitoring systems that help to reduce operating costs and downtime of almost any type of private or public broadcast facility. The Davicom MAC provides access to real-time site information, like transmitter status, RF power, antenna VSWR, audio/video levels, mains power presence, temperature, tower lighting, fire alarm and building security status. MAC units provide automation with decision-making features and commands that go well beyond conventional telemetry systems. Corus Quay in Toronto use their Davicom MACs to monitor and control studio parameters such as silence sensor, PPM Fault monitoring, selecting sources on backup audio switchers, controlling visual fault indicators and making fault calls to engineering cell phones, pagers and e-mail.

www.davicom.com
877-282-3380

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The ASI5111/ASI5211 are professional PCI audio adapters designed for use in radio broadcast production. The adapters offer two stereo record streams from either a balanced analog input or AES/EBU digital input and four stereo play streams mixed to both a balanced analog output and an AES/EBU digital output. Also included is a microphone input, with low noise pre-amp and a 48V phantom supply. The ASI5044 is a professional PCI audio adapter designed for the broadcast and entertainment markets. The ASI5044 features four balanced analog stereo inputs and outputs and four AES/EBU inputs and outputs. SSX multi-channel mode allows record, playback and mixing of audio streams of up to eight channels.

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Waterfront radio waves

The studios also have odd shapes, which were dictated by the building's exterior.

In each studio, three equipment racks are placed behind the operator. The center rack serves a visual use as well as a practical one, although not for the usual rack use. Two racks house equipment to get it off the counters. The center rack has a clock and display, but its prime function is to provide side access to the other two racks, which are mounted against the wall.

The floor-to-ceiling glass on the exterior studio wall was an acoustical challenge. The glass is sloped to help reduce the prominent reflections. Also, the windows between the studios are oversized to aid in public view to other studios.

The radio production cluster is positioned on the atrium wall. The white ribbon flows from public orientation, past the production rooms, up to the lounge and through the atrium to the slide.

Located in the front northwest corner of Corus Quay, the news room looks out over the city of Toronto and Canada's Sugar Beach. The ceiling features FSC-certified wood and perforated metal panels.

FACILITY FOCUS

The technology behind Corus Quay

Comrex ACCESS

Since 1961, Comrex has been manufacturing the highest quality audio broadcast products used by broadcasters worldwide. ACCESS Stereo BRIC IP codecs provide the perfect solution for facilities like the new Corus Quay in Toronto that demand the best audio quality for their remote broadcasts. ACCESS codecs can deliver 20Hz to 22kHz audio quality over wired and wireless IP circuits like 3G, 4G, Wi-fi, DSL, broadband cable and satellite while offering the most portable and flexible form factor available. The ACCESS Portable is a compact, battery operated, handheld audio codec with built-in mic pre and headphone amp/mixer that can be expanded to a six-channel commentator console with a simple add-on mixer. The ACCESS Rack is the perfect studio compliment to the ACCESS Portable which can also be used for primary and backup STL applications.

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This rack-mount FM tuner offers three audio outputs: hi-level and lo-level unbalanced and XLR balanced, one composite output with level adjust and BNC antenna connection. It is useful for translator/repeater remotes, high level of RF sensitivity (30uv for 50dB quieting in stereo), and first- and second-adjacent rejection (25dB and 80dB respectively). Other features include eight presets with exclusive UNISET programming control, wide and narrow IF band switching for best selectivity and an easy-to-read fluorescent green display. The tuner/monitor offers options such as carrier sense to detect low or no signal at a translator/repeater site, RS-232 data I/O and full-function IR remote control. A battery-backed microprocessor returns tuning to the exact same settings that were in play before the power failure.

www.fanfarefm.com
866-316-1393

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The entire building is LEED certified. As part of this, all the track lighting uses LED fixtures. These are also controlled by a central lighting system, which uses motion sensors to turn lights on and off to save energy. While LED lighting is slowly gaining popularity, John Coldwell noted that finding LED lighting that provided both sufficient light levels and an appropriate color temperature was a challenge.

Like most facility construction projects, Corus experienced some delays as well. While the studio drywall work was being completed, the technical facility was being built. The entire studio cutover date was also in question for some time because of delays in securing the occupancy permit. The permit was issued about one week before the stations went on air from the new facility.

When the studios were completed, all three stations were transitioned on one weekend. The two FMS were switched on a Saturday, and the AM was switched on a Sunday. This meant that Monday morning had three morning shows launching from studios all at once.

The building itself has several unique features. There is a large atrium in the center, which includes a five-storey bio wall. This wall uses plants to naturally clean the air and reduce energy consumption. There is also a three-storey slide that starts at the top of the lounge and runs into the Atrium.

Looking back, John Coldwell says the long time frame from inception to completion (four years) was a challenge. Trying to plan that far ahead was not easy. In some cases, desired equipment was not yet available. As the project progressed, some equipment was updated before it was even purchased. Still Coldwell is proud of what he contributed to the project, and he calls it a once-in-a-lifetime opportunity.

Building at a glance:

Corus Quay is an approximately 500,000 square foot office building located on 2.5 acres of Toronto's waterfront between Jarvis and Sherbourne St.

Corus Quay was developed by Toronto Port Lands Company, formerly known as the City of Toronto Economic Development Corporation (TEDCO) and will be owned and managed by Build Toronto Inc.. It is the anchor project in the revitalization of East Bayfront bringing life, energy and business opportunities to Toronto's waterfront neighbourhood.

Starting in 2007, the building took three years to complete.

The building includes a 100-person theatre on the eighth floor rooftop.

More than 150 meeting rooms located throughout the facility with more than 250 areas for gathering, conversing and meeting in addition to individual workstations. A storage facility for 70 bicycles is designed to encourage employees to use non-carbon generating forms of transportation.

The building is flanked by Canada's Sugar Beach on the west side and Sherbourne Common (a 1.5 hectare park) and a yet to be built George Brown campus on the east side.

To see floorplans and additional photos, visit RadioMagOnline.com.

OMT iMediaTouch

We would like to congratulate Corus on their successful move to the new Quay waterfront location. We have had the privilege of touring the magnificent building and it is truly an industry leading facility. OMT is honored to have been chosen by Corus to be their radio automation system partner at Corus Quay and other locations across Canada. Again congratulations to the entire Corus team – well done!

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World Radio History

Tips, tricks, hints and more

By Doug Irwin, CPBE AMD

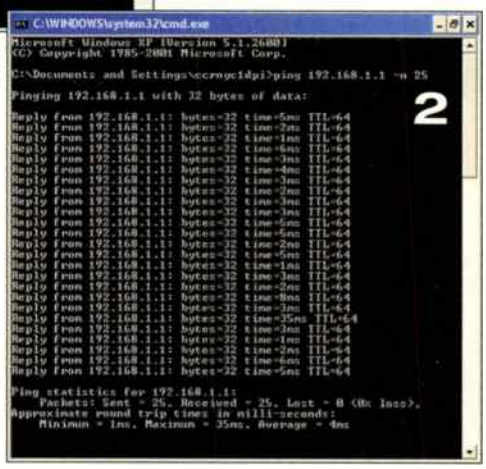
The machine goes "ping"

So you just got Ethernet set up at your transmitter site, and it's working – but maybe not quite as fast as you expected. There are some ways to easily check the speed of the connection, and to tweak it up as a system.

It's likely that your remote network has some sort of connection (either physical or virtual) back to your headquarters. If that connection seems slow or somehow unreliable the first thing to do is a ping test to see how fast the response is. On a PC running Windows, click Start, Run, and type CMD. This brings up a command window with a flashing prompt. At this prompt you can do several things:

Ping your gateway address (see image 1) and you should see a response of less than 10 ms typically. If your gateway is reached via a LAN bridge this time could be longer.

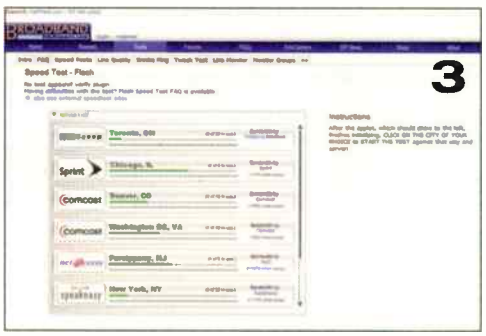
Ping your gateway repeatedly (see image 2) by typing in ping <IP address> -n <number of pings>. For example, if I wanted to ping a gateway address of 192.168.1.1 100 times I would type <ping 192.168.1.1 -n 100> and watch the response I get.



Making use of a LAN bridge of some sort (for example, a Harris/Intraplex DS-64NC) is going to slow your system down somewhat because the bridge takes a little time to decide whether or not to pass frames that your local host is generating on the transmitter site LAN over the connection to the LAN on the opposite side. This is the most likely place to have a bottleneck in terms of network's speed inbound and outbound.

As you look at the results of the ping -n test ideally you'll see that the response time is very consistent. If not, that may indicate a problem with the physical connection, or even the bridge itself.

Assuming you can ping your gateway successfully and consistently then you may want to do a speed test to a server outside of your network. One particular website I've used for years is dslreports.com (see image 3). This test will tell you the latency to the particular site you pick (obviously the smaller number the better) along with the download and upload speed. The typical concern for a home user is mainly with download speed; however, if you intend to have hosts on your remote network that are remotely accessible, then upload speed is just as important (if not more so) then the download speed. Another good site for testing speed is speedtest.net (see image 4), which will also give you upload and download speed along with ping time (basically the roundtrip time for a ping from your test host to whatever site you happen to pick for your test).



In next month's issue, I'll dig into this further with a specific example.

Irwin is transmission systems supervisor for Clear Channel NYC and chief engineer of WKTU, New York. Contact him at doug@dougirwin.net.

We need your tips!
Ideas submitted to Tech Tips may be suitable to earn SBE recertification credits.

Do you have a tech tip? Send it to us at radio@RadioMagOnline.com

World Radio History

- Modular Operation in Op-X allows for a tiered system at a fraction of the cost of it's 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.

OpX
RADIO AUTOMATION

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

World Radio History

Adobe Audition for Mac

By Ed LaComb

Let me say right up front that even though I have been using DAWs since 1992, by far most of my time has been spent in the Pro Tools environment. In fact, I've been using PT since version 2. So, when the opportunity to test-drive the latest Mac-based DAW came to me, I was intrigued and leaped at the chance. Adobe's new Audition for Mac is an outstanding new entry in DAW platforms for the Macintosh user. As a tool that has always excelled in its ability to clean up audio and give powerful mixing and editing tools to PC users, it's nice to see a beautiful new GUI in the Mac world as well. Sure, there has been no shortage of low and mid-range DAWs for Mac users who have been envied for the variety of DAW software choices out there. Of course, it's hard for a Mac user to complain at all since they have the higher end Pro Tools and Logic platforms that have spoiled them for years.

Performance at a glance

- Work on multiple sessions
- Variety of cleaning effects
- History window pane
- Use any audio interface
- Customizable color selection for clips
- BWF metadata entry

However with the release of Adobe Audition for Mac, this opens up an alternative pro platform Mac users haven't seen in some time.

PC users will be familiar with much of the core functionality contained in the Mac version of Audition, but Mac users will find a host of cool new tools that Audition brings to the table, as well as Audition's time-tested features that will make a Mac user feel like a kid on Christmas morning. One very cool feature that caught my attention right off the bat was Audition for Mac's ability to work on multiple sessions concurrently. This ability greatly reduces the time it takes to move elements from one workflow to the next. And, in the broadcast industry, time is everything. I also love the variety of cleaning effects available, such as the de-hummer, de-esser and volume leveler. At our studio, we deal almost exclusively with spoken word projects. The voiceover tracks come to us from a large variety of sources and sadly many of those sources have less than perfect quality. Audition for Mac has the ability to clean up that kind of audio like never before, including a neat Audio Healing "paintbrush" and a spectral editing view that lets you get a visual bead on what's going on with specific frequencies within the audio file. For example, if you have a pop or a click, Audition shows specific frequencies or frequency ranges in a separate spectral-looking waveform file that allows you to go in and alter or remove the offending sound altogether.

Another feature that caught my eye: A history window pane. In this window, you can see the history of your last series of moves. Don't like the move that you made five steps ago? No problem. Simply locate that item and delete it. This is great because unlike Pro Tools, for example, it doesn't require you to undo all of your last five moves to get to that one item. Again, this is a time saving feature that is handy to have in a busy studio environment. There are a handful of other features that I really like as well including the ability to use, or not use, an audio interface. I had a Digidesign DIGI 002 rack on my Mac and Audition saw it and was able to use it for input and output just fine. Just as easily, I was able to use my Mac's built-in audio output.

World Radio History

Customizable

Audition also gives you a choice of different "skins" for determining what the GUI looks like. You can even customize the color scheme and save it as a preset. Personally, I like the Stealth setting as it was easiest on the eyes. Speaking of color, you can choose specific colors for individual clips in a single track, rather than only having one color globally for the entire track. I used this feature a few times for isolating a specific region/clip that I wanted to find easily as I scrolled along the timeline. Here's another great feature: BWF metadata entry. Most DAWs give you ID3 tag metadata entry as an option, but not all give you BWF metadata entry. However Audition for Mac does give you this functionality, as well as metadata entry for RIFF and XMP file formats. Pro Tools users have always had a huge variety of third-party plug-ins to choose from and Audition steps up to the plate as well by allowing users the ability to use VST and AU (audio units) plugs from third-party vendors, so you can grow your capabilities as you need to.

Audition is great for audio production alone, but it really excels as an audio tool for video producers. New, native 5.1 surround support includes quite a few tools for surround projects, like a surround panner in the mixer view and lots of other tweakable parameters for surround files. You can also use the spectral audio tool in 5.1 files just like you can with regular stereo or mono files. So, basically, there's no excuse for not having perfect audio when you use Audition on your video projects.

Overall, I think Adobe has a winner in Audition for Mac. It's everything that a Pro DAW needs to be while giving you some extra candy to enjoy along the way. If you are a PC/Audition user who is looking to migrate over to Mac without having to take on the challenge of a whole new learning curve for your DAW, then Audition for Mac will make your migration that much easier. Audition is currently available as a public beta on Adobe Labs. A final version will be available in the future.

Adobe
P 800-833-6687
W www.adobe.com

LaComb is president of Digital Sound & Video, Ormond Beach, FL.

Editor's note: Field Reports are an exclusive *Radio* magazine feature for radio broadcasters. Each report is prepared by well qualified staff at a radio station, production facility or consulting company.

These reports are performed by the industry, for the industry. Manufacturer support is limited to providing loan equipment and to aiding the author if requested.

It is the responsibility of *Radio* magazine to publish the results of any device tested, positive or negative. No report should be considered an endorsement or disapproval by *Radio* magazine.

World Radio History

Broadcast Tools Audio Sentinel

By Michael Bradford, CPBE

I am an old timer: I started in broadcasting in 1962 working part-time after school and on weekends at WCCW in Traverse City, MI. I was slow to accept the Internet as anything more than a convenient method to find equipment, parts and an occasional article that piqued my interest.

Several years ago, however, I started to realize that the Internet offers an amazing alternative method of program delivery, remote control and monitoring for broadcast. It is reliable. In studying and field-testing IP-based equipment, I found Broadcast Tools has embraced the IP Network and offered many of its famous "tiny tools" that utilize this method of delivery.

I also learned many years ago to approach a project from a "reverse engineering" strategy: study, analyze and determine what one piece of equipment should provide. This is where the Audio Sentinel came to my attention. I had a client with a microwave system for primary program delivery and an ISDN circuit for emergency audio feeds. Ownership decided it wanted the ability to manually switch the ISDN audio feed to on air along with maintaining the automatic changeover via the STL's squelch relay. Access to the Internet was available. However, the ISDN provider was raising its rates and we had an ISDN failure several times during the previous three months where the response was measured in days, not hours. This provider had petitioned the FCC to abandon ISDN service all together. The writing, as they say, was on the wall.

Performance at a glance

Web-enabled

Two-channel silence monitor

Integrated stereo switcher

E-mail logs

Audio switching

Reverse engineering

As I compared my reverse engineering chart and to the Audio Sentinel, the solution became clear. Here is a Web-enabled, two-channel silence monitor *with* an integrated stereo switcher *and* the ability to send logging e-mails, along with up to eight e-mail recipients for alarms. It has three user-programmable internal relays for manual operation and/or automatic sequencing. It can be controlled and monitored locally, remotely over any IP network, including private networks, IP-based industrial control networks or, of course, the Internet.

One SPDT relay is dedicated to indicate which stereo audio source is connected to the main stereo output. Two more SPDT relays can be configured to perform numerous user-defined tasks, including action-sequences related to an alarm situation.

SNMP capabilities provide for multiple units to be monitored with any SMNP manager software. SMTP username and passwords are supported too.

All audio and relay connections are via the Broadcast Tools standard euro-block screw connectors. The Internet NET connector is the standard RJ-45 port, and power is provided by the included 7.5Vdc external power supply. Front panel indicators show valid audio present, while the "PWR/Heart Beat" indicator slowly flashes to indicate processor operation and power. Separate indicators show which input is selected and there is a manual select button for local operation of the Audio Sentinel that duplicates the rear-panel remote/ext connection.

No goody-box required

Because the Audio Sentinel comes with both straight-through and cross-over CAT-5 cables, you don't need to check your goody-box. Connection to a PC and programming the Audio Sentinel is straightforward. Password protection is standard and you can select the level of access for eight users; three levels include monitor only, full remote control or administration. The Audio Sentinel will also generate a show-log to display which input is active, what day and time an alarm was generated, the relative audio level for each input channel and other parameters. You can choose when or if to send show-log reports via e-mail to up to eight recipients.

The audio switcher is programmable for level detection, time delay before switching, alarm gen-

World Radio History

eration and automatic or manual operation. In my case, the out-of-state programmer can access the Audio Sentinel via the Internet, enter the assigned security code and monitor all parameters, check the alarm show-log and manually select the alternate audio source to feed the on air processing.

Each audio source can be labeled as it will appear on the Web page for the Audio Sentinel during initial set-up, so operators can easily identify what they are monitoring. Setting up the e-mail addresses for the alarm notification and show-logs is a one-time event, but you can change data or add data anytime.

Note the warning in the manual about using the Save Settings button when you are done with the various programming entries or you will be entering those settings again.

Also note that your new IP address data will not take effect until the unit is powered down after programming. You can easily make changes and enter new data once you have made the final connection to the Internet.

Now when the STL burps during heavy fog or loss of power at the primary studio location, the switch-over to the auxiliary audio source occurs within the prescribed time and generates an immediate alarm e-mail message to me, the studio *and* the network headquarters in another state. If there is a live, remote broadcast anywhere, it can be routed to the auxiliary source input on the Audio Sentinel and seamlessly switched to on air...all over the Internet. Special announcement during un-manned hours? No problem. This can easily be handled by a single operator at the main ops center located in another state.

I could go on and on with the other features and site-specific programming for my Audio Sentinel, but I recommend you download the manual from www.broadcasttools.com and check it out for your specific needs. You will be pleasantly surprised.

Bradford is the owner of Broadcast/Audio Services, Jackson, MI.

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Broadcast Tools

P 877-250-5575

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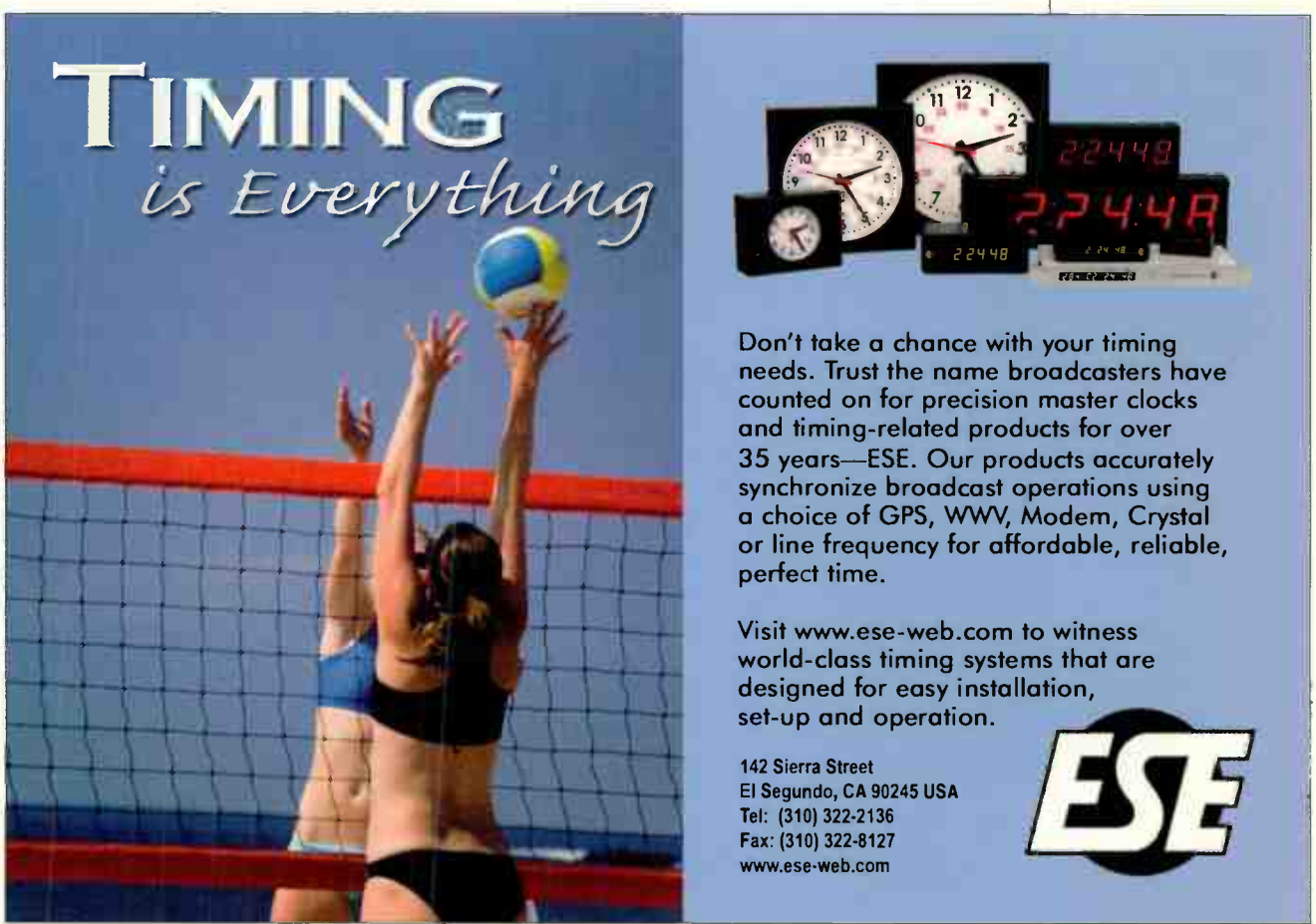


World Radio History

by Erin Shipps, associate editor

Handheld recorder
Samson Technologies

Zoom H1: Weighing about 2oz, the H1 features the same studio-quality microphones as Zoom's H2. Two onboard microphones are configured in an X/Y pattern, for stereo imaging depth and clarity. The pocket-sized H1 delivers crystal clear 24-bit/96kHz stereo recordings. With a newly designed user interface that places all its functions at the touch of a button, Zoom also included access to the track marker, auto record, low cut filter, level and volume controls with onboard buttons and no menus. The H1 can accommodate up to 32GB micro SDHC memory cards, providing more than 50 hours of recording time. An accessory kit includes a windscreen, ac adapter (USB type), USB cable, adjustable tripod stand, soft carrying pouch and mic clip adapter.

631-784-2200; www.samsontech.com
info@samsontech.com

RDS/RBDS decoder reader
Deva Broadcast

DB5000: The DB5000 recovers additional inaudible RDS information transmitted by stations and operates in accordance with all European RDS and American RBDS standards and specifications. The device is made up of two sections: Purely digital RDS demodulator module with cascaded antialiasing and 8th order bandpass filter for precise RDS band selection and a demodulating section that performs the extraction of RDS data stream coming from the MPX composite and direct 57kHz input and built-in FM Stereo tuner module with own RDS/RBDS decoder for off-air reception. The DB5000 can be used like a very simple spectrum analyzer for remote investigating the FM Band via the Internet. The composite port is suitable for connecting to any MPX output of any FM receiver or modulation monitor.

+359 56 820027; www.devabroadcast.com
sales@devabroadcast.com

Headphone amp
Tascam

MH-8: The MH-8 headphone amplifier features eight stereo outputs with 250mW per side and three switchable sources available. Two stereo inputs can be shared to any of the outputs, and individual stereo direct inputs are available for each of the eight channels. A headphone out can select any one of these inputs, or mix several together. A set of foldback outputs allows you to chain other MH-8s into a system.

323-726-0303; www.tascam.com; tascamlit@tascam.com

Headphones
Audio-Technica

ATH-M10: These dynamic stereo headphones deliver exceptional clarity, comfortable lightweight design and a natural frequency response for professional mixing and monitoring. The headphones' closed-back padded circumaural ear cups provide acoustic isolation and long-wearing comfort. Features include: 40mm drivers, lightweight, adjustable headband, dual-sided straight 10' cable, and stereo 1/8" connector with snap-on 1/4" adapter.

330-686-2600; www.audio-technica.com
sales@atus.com

MACXLine rigid transmission line
ERI-Electronics Research

MACX850: ERI has designed a 50Ω version of its 8 3/16" MACXLine rigid transmission line. This large-diameter rigid transmission line is intended for long transmission line runs, where the larger diameter provides for low-power losses from attenuation or for applications where very high peak and average power handling capability is required. MACX850 is particularly suited to large master FM antenna systems that are limited to a single transmission line and for high power AM, SW, and HF applications.

812-925-6000; www.ERIinc.com
sales@ERIinc.com

World Radio History

100W powered subwoofer
Mackie

SRM1801: The SRM1801 delivers 1,000W of Class-D power in a portable design. The 18" woofer delivers high output and active electronics include a precision crossover and tuning filters, providing accurate bass response. The robust, solid-wood enclosure is covered with high-durability textured black paint and includes an integrated pole cup that fits a portable full-range loudspeaker.

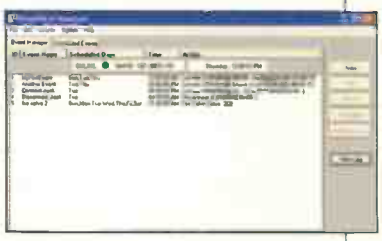
800-898-3211; www.mackie.com
productinfo@mackie.com

Portable field mast
Will-Burt

Expedition Series: The lightest most durable, rapid deploying, single man-portable field mast, the Expedition Series supports a variety of payloads including cameras and antennas. All models are easily transportable. The patented large tripod base allows a single crew member to assemble and extend 4' sections to heights from 8' to 60' with lightweight payloads. The Expedition Series is designed within lightweight high strength carbon fiber tubes.

330-682-7015; www.willburt.com; mastlite@willburt.com

Software
Wheatstone



WheatNet-IP Scheduler: Providing simple audio routing of source to destination and low overhead on the PC, the WheatNet-IP Scheduler allows users of the WheatNet-IP networked audio system to control connections in the system based on time of day. Users can create custom schedules in advance, scheduling crosspoint changes and firing salvos. It can schedule repetitive events or one-shot events, save events to file for off-line editing, and save a map of WheatNet-IP system signals to file for off-line schedule editing or documentation purposes.

252-638-7000; www.wheatstone.com; soles@wheatstone.com

Keylock switches
NKK Switches

SK Series: Offered in either a two- or three-tumbler configuration, SK Series switches are for designs requiring cost effective, space-saving and minimum to medium security switching. In addition to the two- and three-tumbler configurations available for the SK Series, engineers can also specify two or three position models, with keys removable in one, two or all three positions. Additional customization options are also available upon request. These devices feature a 12mm diameter bushing for standard panel openings and a behind panel dimension of 27.0mm. The keylocks have a high dielectric strength of 1,500V between contacts and case. The mechanical life of the SK Series is rated at 30,000 operations minimum, while electrical life at 10,000 operations minimum.

480-991-0942; www.nkkswitches.com
soles@nkkswitches.com

iPad mic stand adapter
IK Multimedia

iKlip: The iKlip multi-angle, adjustable design allows for optimal viewing and access to all an iPad's controls, buttons and connection ports, and allows positioning of an iPad in both landscape and portrait orientation. Its dense thermoplastic lightweight material ensures durability and secure holding of the iPad with most microphone stand types.

+39 059 285496
www.ikmultimedia.com

Ultra-low profile LED beacon
Dialight

D464: This red, medium-intensity beacon features a highly compact flash, which reduces wind load on fixed obstructions. Operating at 20 watts and measuring just less than 8.5" tall, the shock- and vibration-resistant D464 series includes Dialight LED optics to provide a sharp beam cutoff for a lower level of scatter (below 0.1 millifootcandles) over the full distance of one mile, while providing the FAA-required 2,000 candelas to passing aircraft. The lamp design can be retrofitted into existing incandescent fixtures and offers up to 10+ years of life expectancy. The beacon can be set to steady burn or flash.

800-835-2870; www.dialight.com
info@dialight.com

Active monitors
iKey-Audio

Mv-2 Series: These active studio monitors feature a front-firing bass port, soft-domed tweeter, and glass aramid composite woofer. Four models are available: M-808v2 (8" woofer, 100W, 45Hz-20kHz), M-606v2 (6" woofer, 65W, 50Hz-20kHz), M-505v2 (5" woofer, 50W, 55Hz-20kHz) and 10Sv2 (10" subwoofer, 175W, 35Hz-200Hz). The monitors include a volume control and HF adjust control, XLR and TRS balanced and RCA unbalanced inputs, power switch, 110/220 power selector and IEC power connector. The subwoofer has left and right inputs and a TRS left and right output, crossover control, phase switch and auto power switch.

732-346-0061; www.ikey-audio.com
sales@gci-technologies.com

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We spent years designing Skylla to replace older digital automation systems. Skylla can use your existing cart numbering system. Skylla can play back .wav, mp2, mp3 and APT-X audio formats. You can even customize Skylla's keyboard mapping to mimic the keystrokes you use on your current system, so users have a shorter learning curve. Skylla's features come from our most reliable source—you.

Skylla is our second automation system.

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www.smartsbroadcast.com • **info@smartsbroadcast.com**

Microphone to USB interface
Hosa Technology

TrackLink: Providing direct access to software-based audio applications, the TrackLink is a 10', XLR3F to USB Type A interface cable that enables single point-to-point connection between the microphone (XLR output) and a USB port on a computer. It requires no drivers and is compatible with most Windows and Mac audio software. TrackLink simplifies the process of getting audio into the computer for podcasting. It provides visual confirmation of a secure connection and recording status via its onboard indicator lights. Features include 48V phantom power for condenser microphones, adjustable gain for dynamic mics and 16-bit/48kHz sampling rate.

714-736-9270; www.hosatech.com
lee@hosatech.com

World Radio History

Find the mic winner

November issue

Congratulations to

Ray Rouse

of Town & Country Communications, California, MO.

His name was drawn from the correct entries for the November issue. He won a Hosa MSK-41 Musician's Survival Kit

The mic icon was actually a mic on the talk studio desk.

www.hosatech.com

No purchase necessary. For complete rules, go to RadioMagOnline.com.

NEW PRODUCTS

Portable recorder
Yamaha

Pocketrak W24: Compact and lightweight, the W24 features a large dual microphone assembly. A supplied wireless remote control makes recording easy. It features a sensitive X-Y mic, 24-bit/96kHz recording, pocket size (92 grams), onboard speaker, built-in tuner and metronome, peak limiter, 5-band equalizer, and high-pass filter.

714-522-9000; www.yamaha.com/proaudio; infostation@yamaha.com

Dual headphone amp
DM Engineering

Audio-Pod: Model AP-DHA is a high quality stereo headphone amplifier pair for remote and talk studio applications. The two independent amplifiers are fed from a single-ended mono or stereo source either via a Eurostyle rear screw terminal block or a 3.5mm stereo jack. Outputs are designed to feed 16 to 600ohm stereo headphones. Both 1/4" and 3.5mm front panel stereo connectors are provided for each amplifier. Rear panel maximum gain set controls restrict maximum output levels. Power is external through a model AP-PS. One power supply will supply power for up to four Audio-Pod modules, and the modules may include any of the available variety of Audio-Pod types and options. Ten foot power supply cables are supplied.

800-249-0487; www.dmengineering.com; info@dmengineering.com

Mobile broadcast application
Technica del Arte

Luci Live: This professional HD broadcast application offers two-way, live broadcast-quality audio streaming to many types of professional IP codecs. Luci Live allows both recording and playback of pre-recorded WAV files during a live broadcast and supports a number of output codecs including MP2 (48kHz sample rate, 32 to 384kb/s, mono or stereo), AAC-HE (48kHz sample rate, 24 to 64kb/s, mono or stereo) and 24-bit ULCC audio codec (44.1 to 48kHz sample rate). The app is compatible with iPhone 3GS and iPhone 4 versions, iPod Touch (3rd and 4th generations) and iPad. MCA3 cables are required for connecting a professional microphone and headset.

+31 43 32 19 499; www.technicadelarte.com
sales@technicadelarte.com

Wireless headphones
Sennheiser Electronic

RS 160, RS 170, RS 180: Equipped with dynamic transducers, the RS 160, RS 170 and RS 180 feature soft padded ear cups and adjustable headbands, and are specifically designed for hours of use. The frequency response reaches from 18 to 21,000Hz, with a sound pressure level of up to 110dB. If the transmitter is connected to an audio or video device, it automatically transmits the audio data to the headphones. The 2.4GHz digital radio transmission ensures smooth transmission with a high signal-to-noise ratio of 85dBA. The Kleer technology even allows the listening pleasure to be shared as up to four headphones can receive radio signals via one transmitter.

860-434-9190; www.sennheiserusa.com
lit@sennheiserusa.com

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SCMS 800-438-6040
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Radio magazine's NAB Show Guest Blogger Contest

Enter Now!

We've been teasing you for months, but the time is here to enter to win a trip to the 2011 NAB Show courtesy of *Radio* magazine. What do we get out of this deal? You – blogging show coverage for us all week long. Visit RadioMagOnline.com/contest to enter.

We look forward to hearing from you!

NO PURCHASE NECESSARY. A purchase does not improve your chances of winning. Contest open to legal residents of the United States and the District of Columbia, who is 21 years of age or older and a terrestrial radio engineer currently employed by a terrestrial radio station as of January 1, 2011. To enter *Radio* magazine's NAB Guest Blogger Contest visit RadioMagOnline.com and tell *Radio* magazine why you want to represent *Radio* magazine as a Special Correspondent at the 2011 NAB Show in Las Vegas. All entries must be received by February 18, 2011. Entries will be judged on the basis entries submitted between January 1, 2011 and February 18, 2011, as judged by Radio magazine Editors and/or their Sponsors. Void outside of the fifty (50) United States and District of Columbia and where prohibited by law. Full Contest Rules are available at RadioMagOnline.com/contest/rules.

World Radio History

Audio production software
Steinberg

Nuendo 5: The latest version of the editing software features an ADR toolset, new sound design features such as the unique Clip Packages system, new plug-ins and a range of mixing, routing and automation enhancements. The software operates on Mac OS X 10.5, 10.6, and Windows 7, Vista and XP. Clip Packages are designed for sound editors as a new way of organizing and handling audio as clusters of files across multiple tracks that can be archived, previewed and retrieved using the upgraded Nuendo 5 MediaBay. A new plug-in set with the Surround Panner and a surround bus Patch Editor further add to the advanced feature set for surround. Additional features include a waveform display in the mixer, improved compatibility with Pro Tools audio files and automated batch export functions.

818-998-4033; www.steinberg.net
info@steinberg.net

Free streaming app
iApps

Radio App: A live streaming radio app, Radio App from iApps, is free to stations. This app turns iPhones, iPads and iPod Touches into Internet radio receivers, wherever 3G or Wi-fi is available. There is a small monthly charge for a 12-month period for the associated streaming graphic advertising. This graphic advertising space is on-sold to advertising clients and therefore a revenue stream is created for the station. Listeners with iPhones have ability to direct dial to a station or straight through to an advertiser from within the app.

+61 7 5450 2676; www.iapps.net.au; info@iapps.net.au

Portable recorder
Roland

R-05: This 24-bit/96kHz audio recorder has a built-in stereo mic, but it can also record from the external input. It records directly to an SD card with a battery life of more than 30 hours continuous playback, and 16 hours continuous recording time. It includes onboard editing functions, built-in reverb, auto record start, auto song split, auto level adjust and a pre record function. The recorder includes a windscreen and tripod mount. Files can be transferred via the USB 2.0 port. It records in WAV and MP3 formats. The unit operates on two AA batteries.

800-542-2307; www.rolandus.com

Advanced Wattchman Monitor®/Alarm

For Analog and Digital Broadcasting

The Model 81094 is the first in a series of Internet/Intranet accesible Advanced Wattchman® Wattmeter/Alarm systems that will monitor both forward and reflected power in two transmission lines with only one controller. Unlike previously available systems that needed one controller for each transmission line. the Advanced Wattchman® will monitor two lines (4 ports). The front panel display shows power on both systems simultaneously. Operating conditions may also be displayed on a PC from any location on the Internet/Intranet.

It is designed to work with a series of specialized line sections from 7/8" to 6-1/8" and standard Coaxial Dynamics elements for either analog or digital applications.

Coaxial Dynamics 6800 Lake Abram Drive • Middleburg Hts, OH 44130
Phone: 440-243-1100 **Toll Free:** 800-COAXIAL **Fax:** 440-243-1101
sales@coaxial.com • www.coaxial.com

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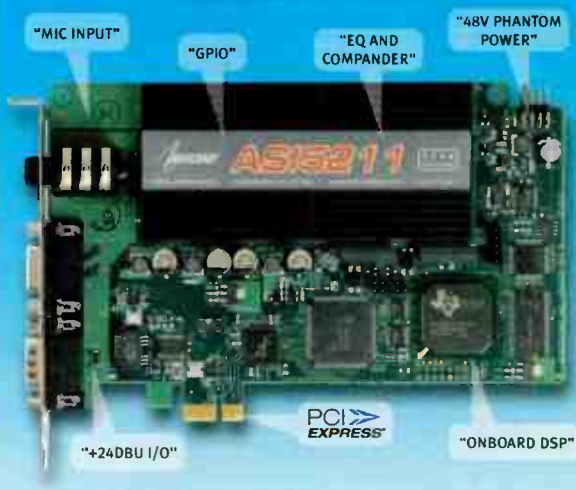

The ASI5211. Not another dumb card. With a microphone input, including a low noise pre-amp and 48V phantom power supply, on-board DSP, increased analog I/O level of +24dBu and a new GPIO that adds two opto-isolated inputs and two normally open relay outputs, the ASI5211 is one smart card. And considering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

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PCI Express AM/FM/RDS tuner card

AudioScience

ASI8821: This PCI Express (PCIe) card joins the Audio Science broadcast tuner line. The ASI8821 has the same functionality as its existing cousin, the ASI8921, including half-length PCI size, AM and FM de-emphasis, and RDS/RDBS metadata monitoring. An F connector feeds RF signal from an external antenna to all tuners on the ASI8921. On the AM/FM module, each tuner may also be fed from an external antenna input per tuner. An HD50 connector makes available the mono or stereo line level audio of each tuner output. Drivers are provided for Windows 7, XP, Server 2003/2008 and Linux. 64-bit drivers are available for Windows 7 and Linux. SDKs are available for Windows and Linux using standard APIs such as DirectSound or ALSA, or the proprietary AudioScience HPI and ASX interfaces.

302-324-5333; www.audioscience.com
sales@audioscience.com

Audio repair suite

iZotope

RX 2, RX 2 Advanced: Updates to the audio repair software suites, RX2 and RX2 Advanced are designed to repair common and uncommon audio problems like tonal and broadband noise, hiss, buzz, hum, clicks and crackle, distortion from clipping and interfering sounds like cell phone rings, dogs barking, car horns, string squeaks, dropped drumsticks and just about anything else. RX 2 Advanced extends the standard RX with an adaptive denoiser mode, a deconstruct module, third party plug-in hosting, iZotope 64-bit SRC resampling, MBIT+ dither, iZotope Radius time and pitch control, ability to export an edit history, multi-resolution mode for Spectral Repair and automatic azimuth correction. New visual editing features are also featured.

www.izotope.com; izotope@izotope.com

Dual microphone preamp

RDL (Radio Design Labs)

HR-MP2, HR-MP2A: The HR-MP2 is a dual channel microphone preamplifier with line-level outputs. Each section provides identical rear-panel signal connections and front-panel controls. Each preamplifier is equipped with a front-panel filter switch to enable or disable a 6dB/octave low-cut filter with a -3dB cutoff at 80Hz. Two additional switches on each input select 24V or 48V phantom if the master phantom power selector is on. The input pad switch allows the operator to attenuate the input signal by 15dB prior to the preamplifier input stage, increasing the maximum input level from +5dBu (attenuator out) to greater than +20dBu. A polarity switch provides signal polarity reversal if needed. The gain control provides continuous adjustment between 20dB and 60dB.

800-281-2683; www.rdlnet.com; sales@rdlnet.com

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4-port USB 2.0 hub
Gefen

USB-400 Fiber Optic: The USB-400 FO is a fiber optics-based extender. This long-range 4-port USB 2.0 hub powers multiple hi-speed peripherals at distances up to 1,640' from the computer. The extender provides a high-bandwidth method of extending up to four USB 2.0 devices, including printers, keyboard/mouse, cameras, hard drives and DVD burners, enabling complete connectivity when operating in the field. It operates through compact sender/receiver units, with the sender connecting to the computer, and the receiver connecting to four remote USB devices. Two multi-mode fiber optic cables terminated in LC connectors connect local and remote locations; both sender and receiver are individually powered. Local connection cables are included.

800-545-6900; www.gefen.com
gsinfo@gefen.com

Optical test set
Fluke Networks

Fiber OneShot: Fiber OneShot is a pocket-size fiber optic test set that simplifies the traditionally complex task of fiber testing at the telecom central office, node, hub, residence or business. Designed with an intuitive one-button test capability that presents results in simple to understand numbers, users can accurately verify if a fiber is active or find the distance to a break, end, dirty end face/bulkhead or reflective event in just seconds. Additionally, the Fiber OneShot has no dead zone, delivering results on fiber links from zero to 9,999'.

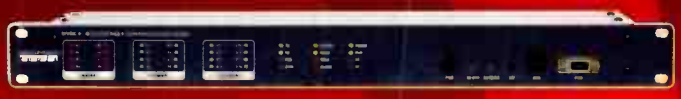
800-28-FLUKE; www.flukenetworks.com; info@flukenetworks.com

Enhanced mobile recording
McDSP

Retro Recorder: Retro Recorder is an iPhone recorder application with audio zoom-in capability. Its patent-pending Audio Level eXtension (ALX) technology improves recording quality. Recorded files can be exported individually or in batches. Exported files may then be downloaded to a PC or Mac, using a Wi-Fi network. Retro Recorder supports the iPhone and second-generation iPod Touch (which requires a external microphone). Features include up to 30dB more signal level, mono and stereo inputs, 22.05kHz/44.1kHz sample rates, export to WAV format, user interface rotates 180 degrees, external microphone support, pause, fast forward or rewind during playback, and filter list by keyword.

650-318-0005; www.mcdsp.com

Site Control



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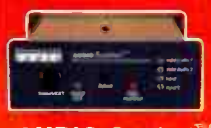

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Web*Switch™* (not shown) Web Remote Power Switch

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Encoder/decoder
Monroe Electronics

One-Net: The R189 One-Net SE EAS encoder/decoder is the second generation of Monroe's IP-based emergency messaging platform. New features include an option for up to four independent network connections, better security, faster processing and flash memory. These will prove valuable as FEMA and the FCC move into the Next Gen EAS, and as cable systems move toward a more IP-centric head-end design. With a standard 10/100 BASE-T Ethernet connection this device can communicate via a network with new digital platforms or be accessed via the Internet for monitoring or downloading upgrades.

585-765-2254; www.monroe-electronics.com
eas@monroe-electronics.com

Interconnect boxes
Altinex

TNP125, TNP126: Available in two form factors to seamlessly blend into a variety of space decors, the Altinex TNP125 and TNP126 interconnect boxes offer one-touch access. The TNP125 is rectangular and the TNP126 is round. Push down on the front of the top cover and the TNP's latching mechanism releases, enabling the pneumatic spring to raise it into position. Connections include HDMI, Ethernet CAT-6, USB and TRS Stereo 3.5mm minijack.

800-ALTINEX; www.altinex.com
solutions@altinex.com

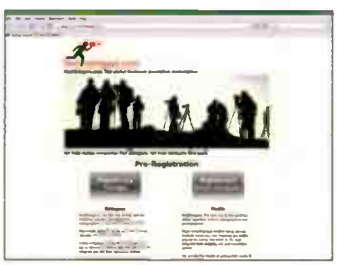
GALLERY

UPGRADES and UPDATES

Telos has updated the Zephyr iPort software to version 1.5.1b, which enables new functions such as setting up a 16-decoder iPort, GPIO tied to MPEG audio streams and Shoutcast support. (telos-systems.com)...**Tieline** has added Enhanced Apt-X and IP multicasting to the Bridge-IT. Both are are offered as license options in addition to the AAC algorithm suite. (tieline.com)...**Korg** has released the free Audiogate conversion software to everyone, and not just Korg users. (www.korguser.net/audiogate)...**Zoom** has updated the H4n firmware to allow independent level controls on the unit's two XLR inputs. (www.zoom.co.jp) ■

Freelance journalist service
VeriCorder Technology

FindStringers: VeriCorder Technology is combining its mobile journalism technology with a service for freelance journalists. FindStringers is a system designed to connect media companies with freelance journalists.



The service allows companies to locate stringers on a map, hire them, and integrate them instantly into their newsroom system. The site also gives stringers a place to sell their work, and an easy, effective way to pitch stories to news directors around the world. The system includes VeriCorder's mobile reporting system for iPhone and iPod Touch, called 1st Video. VeriCorder is offering free one-year subscriptions to its service during a pre-registration period, until Sept. 30, 2010.

250-448-4954; vericorder.com; info@vericorder.com

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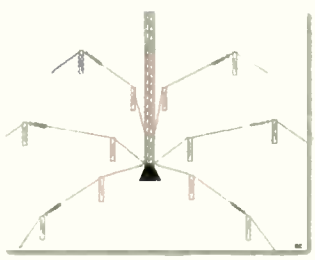

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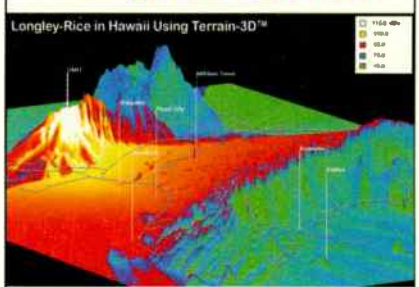

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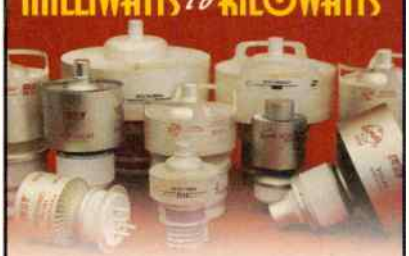

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Contributor Pro-file

Meet the professionals who write for *Radio* magazine. This month: Field Report, page 32.

Ed LaComb
President
Digital Sound & Video
Daytona Beach, FL

Digital Sound & Video specializes in radio imaging. Prior to opening shop in 1998, LaComb was program director at Cox Radio's WWHT Hot 107.9 in Syracuse, NY. His radio career has spanned several states, many positions from sales to marketing to programming to production. To date, Digital Sound & Video has created the imaging for more than 300 radio stations in 40 states and six countries.

Radio
THE RADIO TECHNOLOGY LEADER

Written by radio professionals
Written for radio professionals

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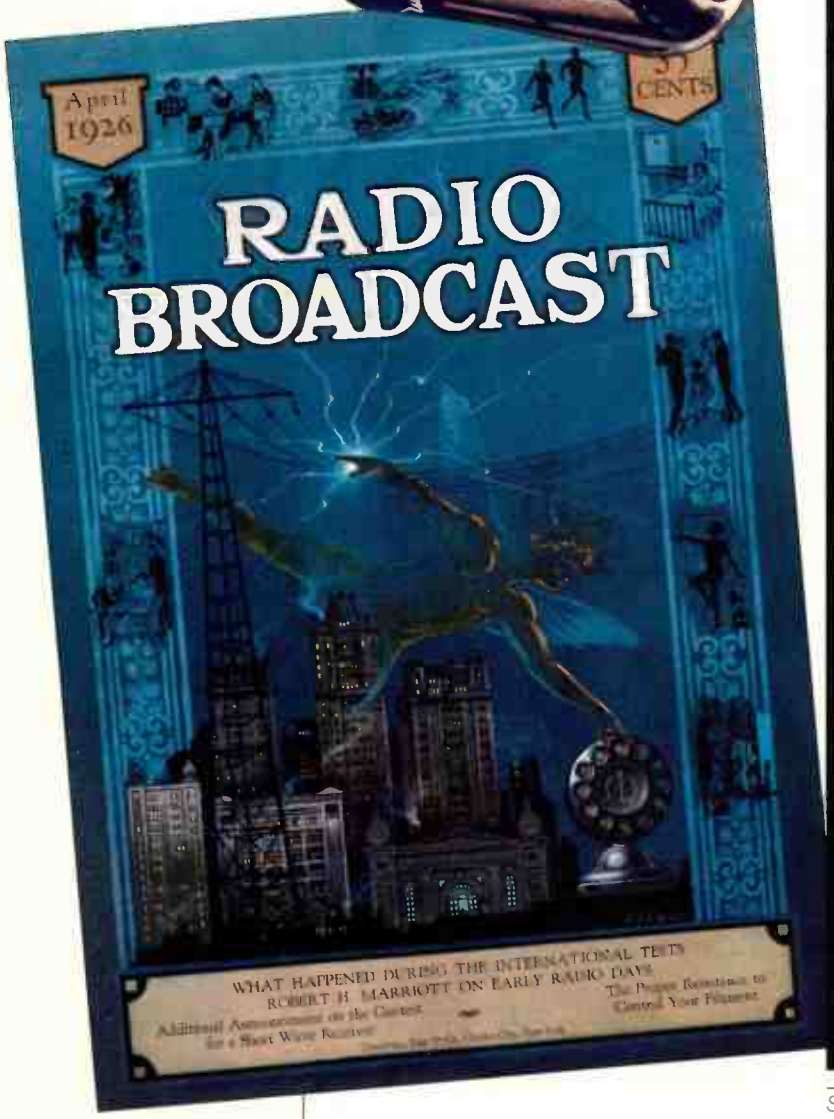
This index is a service to readers. Every effort is made to ensure accuracy, but *Radio* magazine cannot assume responsibility for errors or omissions.

World Radio History

by Erin Shipps, associate editor

Do you remember?

We found Art Weinerman's wonderful vintage radio art on his website: www.fyrbotlz.com. Here are a couple of his favorites. The *Radio Broadcast* cover below was from a magazine produced in the mid- to late 1920s about all things radio. The Cunningham tube picture (at right) was taken from a magazine advertisement in the early 1930s for the product. Visit Art's Web page for many more pieces of beautiful radio artwork.

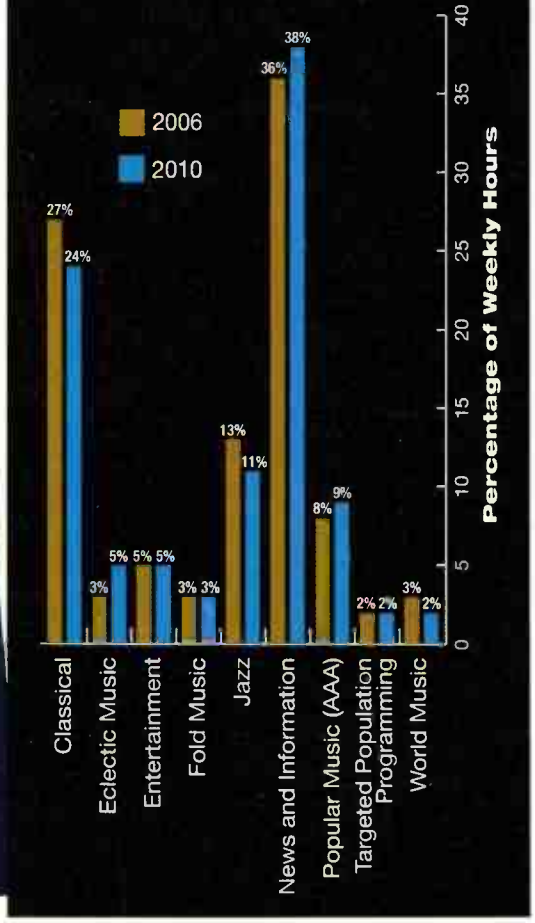


Sample and Hold

Station Music Format Trends

In a response to National Public Radio's submitted statistics in October 2010 (see below), the Federal Communications Commission wrote: "Looking at the same 505 public radio stations in 2001 and in 2010, we see several overall program format shifts. During this time, we saw decreases in classical music (down 20 percent), jazz music (down 15 percent), and world music (down 30 percent) and increases in eclectic music programming (up 54 percent), popular music (19 percent) and news programming (up 27 percent).

"Taking a shorter view, over the past five years looking at all stations in 2006 (968) and in 2010 (1057), the story is similar but less dramatic. The amount of classical music on public radio as a percentage of total weekly hours or programming has declined with smaller increases in eclectic and popular music and news & information."



Source: National Public Radio

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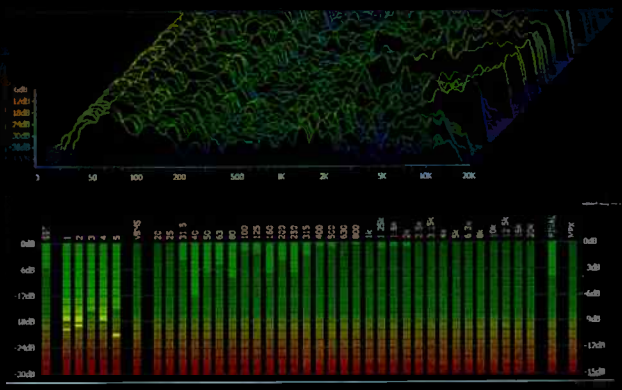

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"I am giving the Vorsis development team a BIG thumbs up as this product stands out as a very SUPERIOR audio processor design."

"This processor is amazing!"

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

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

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

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

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

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

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

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

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

"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!!"

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

"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?"

"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 multiband 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.

World Radio History