



RADIO WORLD

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Benoit Chartrand of CBC in the Cobalt Digital booth. Photo by Bob Kovacs.

Advanced EAS Gains Fresh Momentum

Common Alerting Protocol Version 1.2 Could Be Adopted in Early 2010

BY RANDY J. STINE

WASHINGTON — The process of drawing a roadmap to develop an enhanced public

warning infrastructure is gaining momentum thanks to a renewed collaboration among stakeholders in the new Emergency Alert System.

And for the first time, FEMA officials have acknowledged they will not implement any new system that will require broadcasters to purchase new gear until enough updated equipment is available from suppliers to meet demand.

The Federal Emergency Management Agency is implementing several projects simultaneously to modernize and inter-

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Could IBOC Help Revive The Zune?

Believers Say Zune HD Opens a New Category of Radio Listening

BY LESLIE STIMSON

REDMOND, WASH. — HD Radio will be a feature in the next iteration of Microsoft's Zune portable digital media player. Will this help the digital radio technology reach more listeners?

IBOC proponents say yes and call HD Radio's inclusion in Zune HD a milestone. Critics minimize the likely impact.

Wanting to quell rumors and let customers know its Zune HD really is pending, Microsoft Corp. confirmed the new model will be out this fall and said that among its features will be built-in FM HD Radio reception capability. Users will have access to multi-cast channels as well.

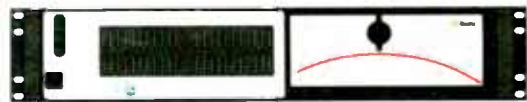
The "HD" in the product name apparently refers to both HD Radio and the unit's HD video output.

Microsoft research has shown that current Zune owners use the analog radio feature an average of twice a week; the company hopes to capitalize on that by adding support for FM HD Radio.

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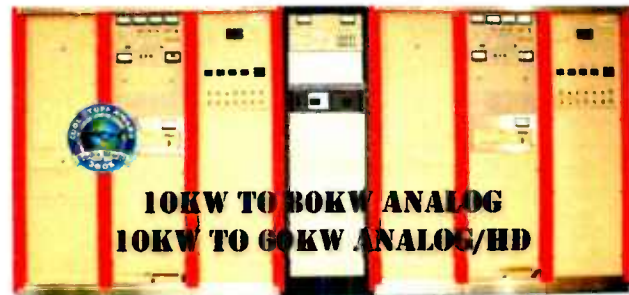
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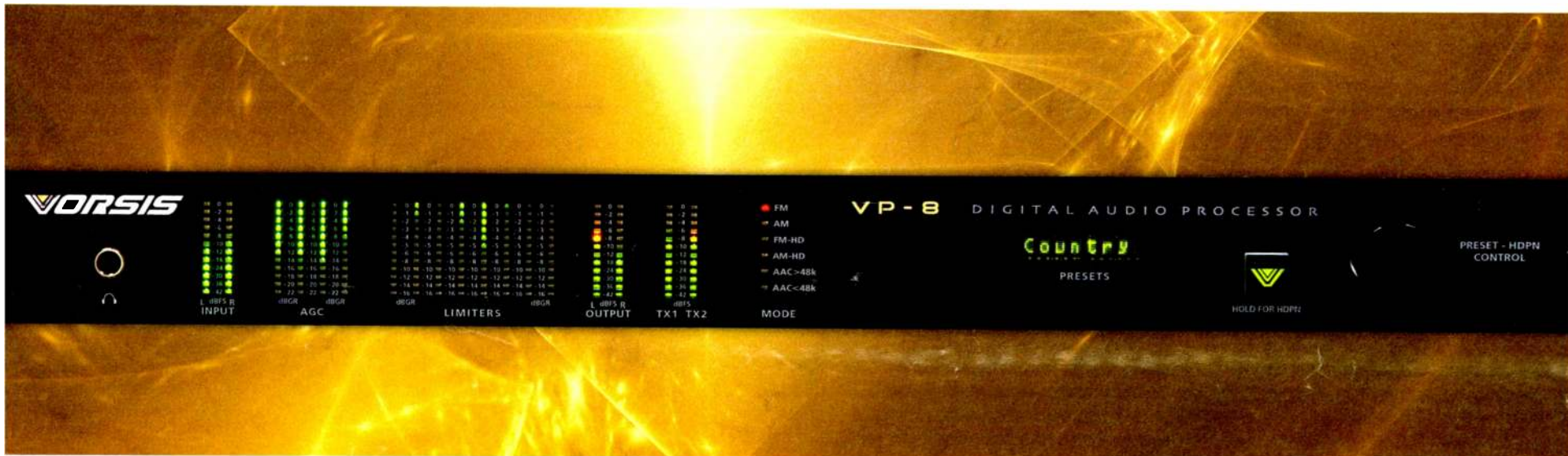
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ZUNE HD

(continued from page 1)

Sources believe the product will be available in September and bring the Zune brand to "millions" of customers.

Zune HD is the first announced portable product for HD Radio. iBiquity Digital President/CEO Bob Struble confirmed to Radio World. RW has reported on the development of the KRI armband portable HD Radio receiver, which, when officially announced for retail, will be sold under another name.

Struble said getting onto the Zune platform opens a new category of listeners to radio. iBiquity is especially pleased that IBOC will be built into the device because its research shows people buy more devices than they do accessories.

The product includes high-definition video output capabilities, an organic LED touch screen and an Internet browser. Zune HD is Wi-Fi enabled, allowing for streaming to the device from the Zune music store.

The radio portion of the device also



broader than just giving Microsoft an HD Radio chip to work with.

An embedded antenna will help the Zune HD with reception, he said. Microsoft didn't have a ready answer when Radio World asked whether the unit includes diversity antennas.

and Zune thus brings together two market failures.

HD Radio — indeed, radio in general — has yet to make it into the standard feature set of Apple iPods and their sister portable products. Radio was omitted again when Apple recently introduced its

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features analog FM RDS and digital FM HD Radio song tagging capability. Current Zunes include analog FM radio, unlike many other portable media devices of their class.

'MULTIPLE PORTABLES' COMING

Radio World has reported that the upcoming Zune release is the first of several expected announcements regarding HD Radio portables.

"We've consistently said we've been working with other companies. You will see multiple portable products" and multiple price points, Struble said. Expect more announcements, hopefully before the upcoming NAB Radio Show in Philadelphia, regarding accessories and radio-only products that are portable, he said.

iBiquity has been working with Microsoft for "at least" a year, coordinating the designing and testing of the new Zune. Though he couldn't reveal specifics, Struble said this effort was

A BITE OF APPLE

Microsoft said it's targeting higher-end Apple iPods with the new device — and therein lies the biggest objection among those who are lukewarm to the HD Radio/Zune news.

The current model of Zune has seen only a fraction of the success of its iPod competitors and its sales have dropped substantially.

Critics call the Zune a flop and say the new model may be Microsoft's last chance to pump some energy into the Zune brand. Because of low sales, Zune recently landed on a list of the worst tech failures of the last decade by investor blog 24/7 Wall Street. That list received national attention through Time magazine. Some IBOC critics complained online that the combination of HD Radio

iPhone 3G S (see sidebar, page 5).

Certainly Microsoft and the HD Digital Radio Alliance will need to promote the release heavily if it hopes to put a dent in Apple's slice of market pie.

The iPod enjoys the biggest share of

the portable digital music player market. According to NDP Group's Retail Tracking Service, for the first nine months of 2008, Apple iPods made up about 71 percent of portable digital music player sales in the United States, while Microsoft had about 3 percent. Microsoft said those are the latest figures available.

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Radio World Gets a Brand New Look



One change in particular was not made lightly: the retirement of the familiar classic RW logo. I am as fond of it as many readers are and I'll miss it. I estimate that I've overseen approximately 350 issues of Radio World and RW Engineering Extra since I started with this company: some version of that logo has been on every one. But an image that served RW well in the late 1970s no longer



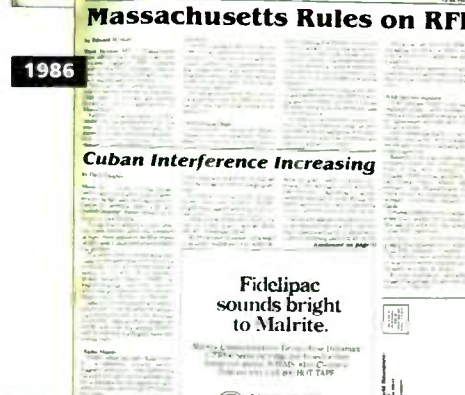
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does. The publishing team and I felt that our "young lady" — RW is only in her early-30s, after all — deserves a look that reflects what we and the industry are becoming, not what we were 20 or 30 years ago.



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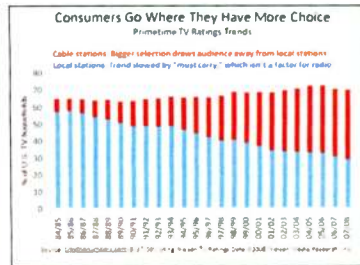
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ZUNE HD

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The Wall Street Journal reported that the poor economy has affected sales; Zune sales dipped for the Christmas 2008 season vs. a year earlier by some 54 percent, from \$185 million to \$85 million, attributable in part to lack of upgrades or new models.

Though iPod sales in the fourth quarter were up a bit from a year earlier, Apple saw a 16 percent decline in iPod revenue because consumers now are buying lower-price units.

Consumer electronics and tech industry observers recognize the long haul Microsoft has in front of it.

For example, a CNET blogger opined that "Microsoft's Zune HD, if as advertised, could supply some real competition for my iPod Touch."

But he also noted the advantage Apple has in the huge number of applications that are readily available for its devices and the fact that the term iPod itself "has become synonymous with portable music devices."

Still, he said, "I think that [the Zune HD] has the potential to be the iPod Touch's most capable competitor."

... AND EXPECT A BIG PUSH

A Microsoft spokesman told Radio World the company will promote the HD Radio feature as well as the fact that Zune will occupy the first slot within the Xbox video game platform user interface.

The HD Digital Radio Alliance will incorporate the Zune HD into its marketing when the product is ready for retail. Alliance President Diane Warren said the marketing will really be triggered when the product is ready for consumers to purchase online and at big box retailers.

Moving into the portable environment "is a complete game-changer" for HD Radio, she says. The fact that Microsoft made an announcement early is like a salute from them, showing how that company feels about the product, according to Warren. She'd been talking with Microsoft for some two months about promoting the Zune HD before the May 26 announcement.

When asked if Microsoft would contribute funds to promote the product, she said plans were still coming together about what will be said on the radio, online and in stores. However, Microsoft is "very serious" about marketing the player so consumers will know what to expect, she said. "They do things in a big way."

Microsoft had not announced price and storage capacity for the device by mid-June, though Zune Internet blogs speculated that 16 GB and 32 GB storage capacities would prevail.

AND BEYOND ZUNE?

iBiquity and Apple have discussed including HD Radio in iPods; however nothing has been announced on this issue. Meanwhile the radio industry in general has had no more luck with Apple.

Radio is not included in the iPhone 3G S. In May, before the Apple announcement of that new product, Anne Schelle, executive director of the Open Mobile Video Coalition, was asked at a BIA conference whether Apple planned to include FM radio — in any form — in its iPhones.

"They'd be interested, I think, in an accessory you plug in. I don't they're necessarily interested in incorporating a chip," she said, citing battery power issues. She was referring to an FM analog chip.

As for digital: "Over time, we'll see the FM HD chip — these things will get less expensive over time."

Schelle was piggy-backing on remarks by Emmis President/CEO Jeff Smulyan at the conference earlier. Smulyan heads a coalition comprising NAB, RAB and several radio broadcast groups leading the effort to convince wireless phone manufacturers to include an FM analog chip in cell phones, and updated attendees on that effort.

Why push for analog FM first? FM analog chips cost about 40 cents while HD Radio chips are about \$12 each, according to Smulyan.

"The wireless companies are already fighting the concept and we don't want them to say it's too expensive."

He implied that the group would push for inclusion of HD Radio chips next. "We know HD is coming," he said.

— Leslie Stimson

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EAS

(continued from page 1)

grate EAS and National Alert and Warning System (NAWAS) programs into a national-level all-hazards warning system. Collectively these systems will constitute the Integrated Public Alert and Warning System, or IPAWS.

Meanwhile, FEMA's adoption of the Common Alerting Protocol standard — a text-based, detail-rich system that local and state emergency managers will use to generate public warning messages — appears to be getting closer.

CAP permits a warning message to be disseminated simultaneously over many different warning systems and ultimately allows the president of the United States to address the nation during a national emergency.

FEMA has yet to settle on what the final CAP architecture will look like, but it's nearing a process to migrate EAS to become CAP-capable, said Wade Witmer, acting director of the IPAWS program management office at FEMA.

"We intend to adopt the OASIS CAP v1.2 when OASIS finishes its work," Witmer said.

OASIS — the Organization for the Advancement of Structured Information Standards — is seeking public review and comment on CAP Version 1.2.

OASIS was founded in 1993 and has more than 5,000 participants representing some 600 organizations in 100 countries. The not-for-profit consortium helps drive development, convergence and adoption of open standards.

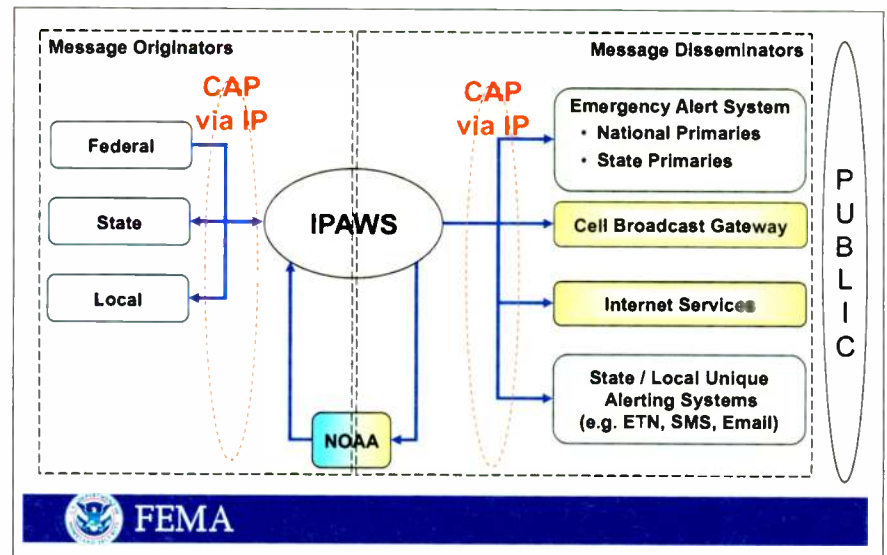
Its Emergency Management Technical Committee received 75 comments from a public review earlier this year. The group discussed and categorized those comments before launching a second public review period in May that continues through July 27.

FEMA hopes to adopt CAP v1.2 sometime during the first quarter of 2010, Witmer said. The agency had originally hoped to adopt and publish a CAP profile sometime in the first quarter of this year.

"There has been so much work done already. We are not that far from pushing it over the edge and getting it to work," said Witmer, who was named acting director of IPAWS in January.

Witmer has set clear milestones to be achieved before the agency will adopt a final version of CAP. Those include establishing conformance labs to begin CAP testing, demonstrating the delivery of a federal message in CAP to a national Primary Entry Point station and starting the OASIS process for a CAP security profile.

FEMA expects soon to choose a contractor to run lab testing this summer, to



FEMA officials provided this illustration of how IPAWS is intended to enable alerts to reach the public through as many means as possible.

examine manufacturers' equipment and determine how close the gear is to the desired profile. Witmer said. He expects equipment trials to begin in August.

Diversification of EAS to include multiple communication media is at the heart of the EAS upgrade, Witmer said. Capability to interact with highway reader boards, the Internet, cell phones and other electronic devices is a top priority of FEMA.

"We need to integrate multiple path-

ways for emergency managers to communicate information."

Federal agencies involved in public alerting, including the Federal Communications Commission and National Weather Service, are moving forward through the CAP adoption process, according to sources familiar with recent developments.

National Weather Service offices nationwide have begun a phased implementation of text markers within their alerts to indicate the "call to action" statement that allows downstream CAP application software to extract information for their instruction fields, they said. NWS officials expect to begin generating full CAP messages by late 2010 or 2011.

The FCC is ready to rewrite Part 11 of its rules but doesn't want to do so until FEMA is about 60 to 80 percent through the CAP technology and implementation process, Witmer said.

"They do not want to write policy that will drive implementation or drive us into something we do not want to implement."

SOME TIME ON GEAR

Much has been made of the FCC's 2007 Second Report and Order on an improved EAS, which stipulated that broadcasters must have the ability to accept a CAP message within 180 days of FEMA officially adopting an enhanced EAS protocol. Some manufacturers and broadcasters have questioned equipment availability in such a short time frame.

Darryl Parker, senior vice president of TFT Inc., said, "We are working towards that goal (of early 2010) and will do our best to produce enough equipment to satisfy demand."

TFT participated with other manufacturers in an ad hoc working group that published a CAP profile that was largely

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A RENEWED TRUST

CAP appears to have won ample support among public warning professionals.

"I have great hopes for CAP. It's been about 10 years since I first heard Art Botterell explain CAP and its potential," said Adrienne Abbott, chair of the State Emergency Communications Committee for Nevada.

Botterell is considered to be the architect of CAP Version 1.1 and is manager of a community warning system for the Sheriff's Department of Contra Costa County in California.

Abbott said CAP seems to be the ideal solution to the problems an emergency manager encounters when faced with sending urgent notifications.

"CAP messages can come with maps for evacuations routes (on TV) and messages in various languages. It can spread information across many platforms."

Also clearly visible is a renewed sense of trust between EAS stakeholders and FEMA now that Wade Witmer is acting director of the IPAWS program management office there.

"FEMA is being diligent in soliciting the best data and best ideas available," said Gary Timm, broadcast chair of the Wisconsin SECC. "It's a new direction in the IPAWS mission for them to be considering the needs of state and local emergency managers."

Most EAS experts contacted by Radio World see another positive in President Obama's choice of Craig Fugate as the



Wade Witmer is acting director of the IPAWS program management office at FEMA.

next director of FEMA.

Fugate is considered to be a "public warning professional," said those interviewed for this story. He spent 15 years as assistant director and director of the Florida Division of Emergency Management.

With new leadership in place at FEMA, the agency can now focus on CAP, which is seen as a "hugely integral piece" to IPAWS, said Clay Freinwald, chairman of the SBE EAS Committee.

"I've never seen so many moving parts in motion at one time as I do right now," Freinwald said. CAP, he said, "is the common language that solves a myriad of issues and problems with the current EAS. Think of CAP as a big database that allows people to pull out fields of information they need and plug it into their system to create a message."

Some emergency alerting experts, because of FEMA's previous reluctance to release details, have referred to CAP as "vaporware." That attitude is changing, Freinwald said. "We can tell that CAP is clearly taking shape now."

A CAP roadmap is coming into view, concurred Suzanne Goucher, president of the Maine Association of Broadcasters and the state's EAS committee chair. "What it will look like and how the message will be distributed and authenticated is becoming clearer," she said.

— Randy J. Stine

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EAS

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accepted by FEMA. TFT already has a device for translation of CAP messages into EAS protocol, Parker said.

"The item can be added to an existing EAS system in much the same fashion additional receivers are now," Parker said.

Some EAS experts speculate that broadcasters and manufacturers will not hesitate to ask FEMA and the FCC for more time if it's needed to develop CAP-compliant equipment for the next generation of EAS.

"I hope to see everything up and running only after all the issues related to the new EAS are resolved so that we don't end up with a product that still needs to be baby-sat for 24/7," said Adrienne Abbott, chair of the State Emergency Communications Committee for Nevada and a field engineer for the Nevada Broadcasters Association.

Broadcasters, Abbott said, "will be spending a lot of money on new equipment and the last thing our stations need is a \$5,000 dinosaur trampling through our new and improved high-tech world."

Witmer said FEMA will not start the 180-day clock with formal adoption until it is convinced broadcasters will be able to comply and purchase the new

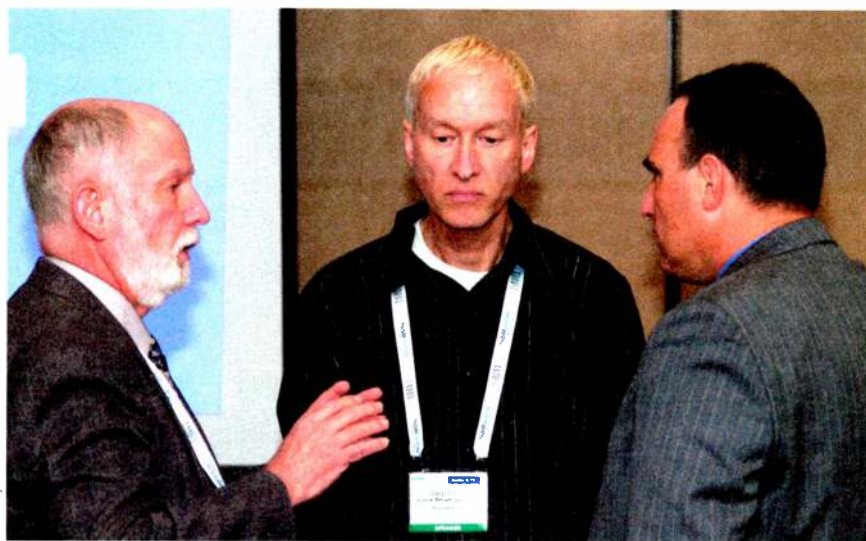


Photo by Leslie Stimson

Clay Freinwald, Gary Timm and Wade Witmer talk during the EAS meeting at the NAB Show in April.

equipment required.

"The FCC has also plainly stated that any broadcaster not ready (for CAP) can apply for a temporary waiver," Witmer said.

A more economical solution to CAP compliance could be found in a radio station's studio automation system. A person familiar with recent CAP developments said at least two radio automation equipment manufacturers are working to develop a software upgrade to

allow automation systems to import and forward CAP alerts.

"These systems use XML [Extensible Markup Language] files all the time. A system could accept a CAP message and create a program on the fly," the source said. "It could be a \$500 fix instead of \$2,500."

RBDS AND MORE

FEMA's roadmap to a new EAS, Witmer said, will include multiple path-

ways to reach more people using the latest technology. He specifically mentioned studying radio broadcast data system technology for alert and warning integration into IPAWS.

Officials for manufacturer Global Security Systems have been pushing for just that. They say they are making steady progress in their effort to encourage adoption of their FM-based digital alert and messaging system, which uses the RBDS system.

The company's Alert FM datacast technology is used in parts of 14 states and could serve a role in the new EAS platform eventually rolled out by FEMA, according to GSS. The system uses RBDS subcarrier frequencies to transmit text data to Alert FM receivers or specially equipped mobile cell phone handsets and other portable devices.

GSS debuted FM radio data chips plus RBDS-based protocol for cell phones and other consumer electronics at the NAB Show in April.

FEMA's Witmer said the agency would hire a contractor to explore the further possibilities of using RBDS for EAS alerts.

Radio World has reported that several other companies, including SpectraRep and Trilithic, are selling EAS-complementary systems that rely on IP-based technology.

NEWSWATCH

CONGRESSIONAL PUSH TO EXPAND LPFM SERVICE

WASHINGTON — The push by low-power FM proponents to convince regulators to drop third-adjacent-channel protections for full-power stations is gaining more attention from Congress.

LPFM proponents said at a House subcommittee hearing in June that thousands more of their outlets could be on the air if H.R. 1147, the Local Community Radio Act, passes.

Rep. Greg Walden, R-Ore., who owned radio stations for 21 years, said he's received letters from public radio stations concerned about displacement of translators given how the bill is written — language he says would give the FCC authority to make changes beyond third-adjacent full-power protections.

The FCC wants to drop the third-adjacent protections. Chief of the FCC Audio Division Peter Doyle said 859 LPFMs are licensed and on the air.

At the same time, he said, the agency has licensed more than 4,000 new translators with no impact from LPFMs. "There's been no discernible increase of interference during this licensing process."

The FCC remains convinced the impact from dropping third-adjacent channel protections to translators or full-power stations "would be extremely modest," Doyle said.

Cheryl Leanza, representing the United Church of Christ and speaking for LPFM proponents, said the LPFMs now on the air don't cause interference.

Testifying for NAB was Beasley Broadcasting

Executive Vice President/Chief Financial Officer Caroline Beasley, who said full-power stations and LPFMs can co-exist but that it's important to maintain interference guidelines.

Rep. Rick Boucher, D-Va., chairman of the Communications, Technology and the Internet Subcommittee, said while expanding options for more LPFMs is desirable, Congress must be certain it would be implemented in a way that would not jeopardize full-power stations, emerging HD Radio and radio reading services.

PERFORMANCE ROYALTY FIGHT SPREADS TO FCC

WASHINGTON — The battle over whether terrestrial radio should pay a fee each time a song is aired has now spread to the Federal Communications Commission. Meanwhile, lobbying ratcheted up a notch in both sides of the debate as bills for and against the fee remain pending.

The MusicFirst Coalition, the record-label-backed group, asked the commission to investigate what it says is a pattern of retribution by stations against artists who have spoken out in favor of performance rights. The group told the FCC that some stations are refusing to air ads from the coalition and have told some artists they will not play their songs.

Coalition representatives have not named the artists allegedly affected by the boycott, so as "to protect" them, MusicFirst Coalition Executive Director Jennifer Bendall said; the group would give that information directly to the commission instead.

MusicFirst says the actions are part of a nationwide campaign coordinated by the NAB and cites its

noperformancetax.org Web site. NAB says the fee would bankrupt stations and that artists should ask their record labels where their money is going.

NAB spokesman Dennis Wharton called these allegations "an act of desperation by a record lobby losing on Capitol Hill and in the court of public opinion." NAB recently noted that more lawmakers have signed on to a resolution opposing the imposition of the performance fee on radio stations, bringing the House opposition to 232, more than needed to block the legislation.

WARFIELD IS NEW NAB RADIO BOARD CHAIR

WASHINGTON — The NAB Radio board has a new chair; several other panel changes were made as board members gathered in Washington in June.

Commonwealth Broadcasting President/CEO Steve Newberry was elected chair of the NAB's Joint Board, succeeding Jack Sander, who is a senior adviser to Belo Corp.

ICBC Broadcasting Holdings President/COO Charles Warfield is the new radio board chair, replacing Newberry. Beasley Broadcasting EVP/CFO Caroline Beasley is now radio board first vice chair and Tri-State Communications President/CEO Randy Gravelly is second vice chair on the radio board. Emmis President/Programming Rick Cummings was elected major group representative on the NAB Executive Committee.

Bonneville's Bruce Reese is stepping down from the joint board but will remain chair of the search committee to find the association a new president/CEO. The committee is working with search firm Russell Reynolds Associates.



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World Radio History

A Listening Test in the Finger Lakes

When We Drive Around the Area, What HD Radio Do We Hear?

FIRSTPERSON

BY AARON READ

Radio World asked me to drive around the Finger Lakes area to report on my HD Radio experiences and to compare station lists on the HD Radio Web site — www.hdradio.com/find_an_hd_digital_radio_station.php — with what I heard. The goal: to gather an overall impression and learn what a consumer who starts fresh, with a radio and this Web site list, might encounter. My results are seen on page 12 in chart form.

The Finger Lakes is the region between central and western New York State, bordered and including Rochester to the west, Syracuse to the east and Ithaca to the south. My town, Geneva, is roughly in the center among these cities.

I made my first test run on March 1 and repeated the test two weeks later from slightly different locations. I drove a 2001 Honda Accord with the stock antenna and an aftermarket JVC KD-HDW10 in-dash HD Radio tuner.

HD Radio in this area generally sounds good and stations are easily found. I discovered that the Web list, which is supposed to help consumers, generally seems accurate. But I was mildly disappointed that multicast formats weren't more inspired, and frustrated with what appears

to be a lack of care to certain technical aspects.

Surprisingly, there were more changes than I expected between the first and second run. The chart includes changes during the second run on March 15.

FINDINGS

Overall the market has pretty good HD Radio coverage. Listeners will find several stations offering it. Many offer formats on HD multicast channels not found on regular analog radio, too.

The iBiquity Web list is reasonably accurate, although some stations aren't easily categorized and formats are notoriously pliable. So the list isn't perfect, but it's pretty good for your average radio listener.

On the flip side, I was mildly disappointed with the lack of care with which many stations appear to treat their HD-R.

Six stations had misaligned analog time delay or no delay at all. Some were indicated as multicasting but weren't when I listened. One AM had no HD Radio when I made my first run but was back up two weeks later.

Another FM had a serious problem with HD Radio; my radio flashed the "HD" light but could not lock, even when less than a mile from the transmitter. Two had exporters set up incorrectly to force receivers to "Hold" on digital. And one HD2 channel had a serious programming problem; the CD feeding it was skipping,

for at least an hour. Ugh.

Audio quality also was a mixed bag. The AM station that returned to digital broadcasting in time for my second pass had fabulous-sounding HD Radio audio. However, Rochester's other two AM stations sounded "crunchy" and sibilant.

The "main channel" HD1 on most FM stations sounds fine. Some FM HD multicast channels sounded fine, too, but others sounded like bad Webcasts.

The quality control for Program Service Data (a.k.a. Program Associated Data/PAD, or just "artist / title") also was decidedly mixed.

Eighteen channels — counting HD1 and multicasts as separate channels — had well-synchronized PAD to their music. Three had PAD stuck on the wrong song and none had completely fixed it by the second test run. Eleven stations had just a text loop, and 17 had no PAD at all.

FORMATS

There weren't any major format changes that I noticed in the weeks between test runs. The only noticeable change was that WLGZ(FM) HD2 wasn't simulcasting WDCX(AM) anymore; but it's entirely possible that the simulcast wasn't 100 percent of the time to begin with.

On a related note, only two outlets had HD3 channels; both were public radio outlets. Unfortunately, neither had allocated much bandwidth to the HD3 channel, judg-

ing by the "bad Webcast" sound.

In terms of content, unless it was a simulcast of another station, all of the multicast channels seemed to be fully automated. Most, in my judgment, were variants of formats found on any non-HD Radio station across the country.

Some AM stations (WXXI, WDCX) were using HD2 on co-owned FMs to overcome day/night signal issues, a solid if unadventurous choice. Similarly, most public radio outlets were using HD2 or HD3 to offer more news/talk programs in some manner. In my view, only WWHT-HD2's Spanish format and WBEE-HD2's all-comedy format were real departures from the norm.

SIGNAL

Most of the stations in the Finger Lakes transmit from fairly tall towers on top of major hills. This tends to make for excellent HD Radio coverage; and with one exception, I was able to receive digital signals noticeably outside of the protected service contour. The holdout was WDV1 during my second run, which apparently was having problems transmitting HD Radio at all that day.

It's worth pointing out that I was able to receive all the Ithaca stations, and most of Syracuse's, while in Geneva ... a town nearly 40 to 50 miles away from both. However, it's quite hilly in Ithaca proper, and while in that region I have noticed that HD signals do drop out about where one would expect. But overall it's pretty good.

However, virtually every station would have short dropouts (less than 5 seconds) on its multicast channels when listened to for more than 15 or 20 minutes. Given the apparent universality, though, I suspect this might be a problem with my receiver instead of the stations themselves.

(continued on page 12)

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NOTES

The Web site lists two HD Radio-equipped facilities in Ithaca, 18 in Rochester and 11 in Syracuse.

The list puts WDVN-HD in Auburn but it's really a Syracuse-market station so I included it. Also, the site lists WVOR, WCRR and WEOS as being Rochester stations. None of them really are; you cannot receive any in HD in Rochester, although admittedly all three are closer to Rochester than to any other city. (Stations provide iBiquity with the market information that appears on the list.)

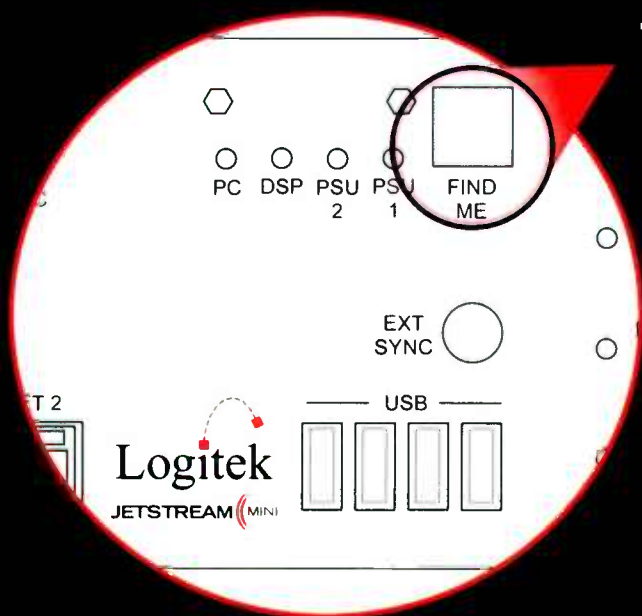
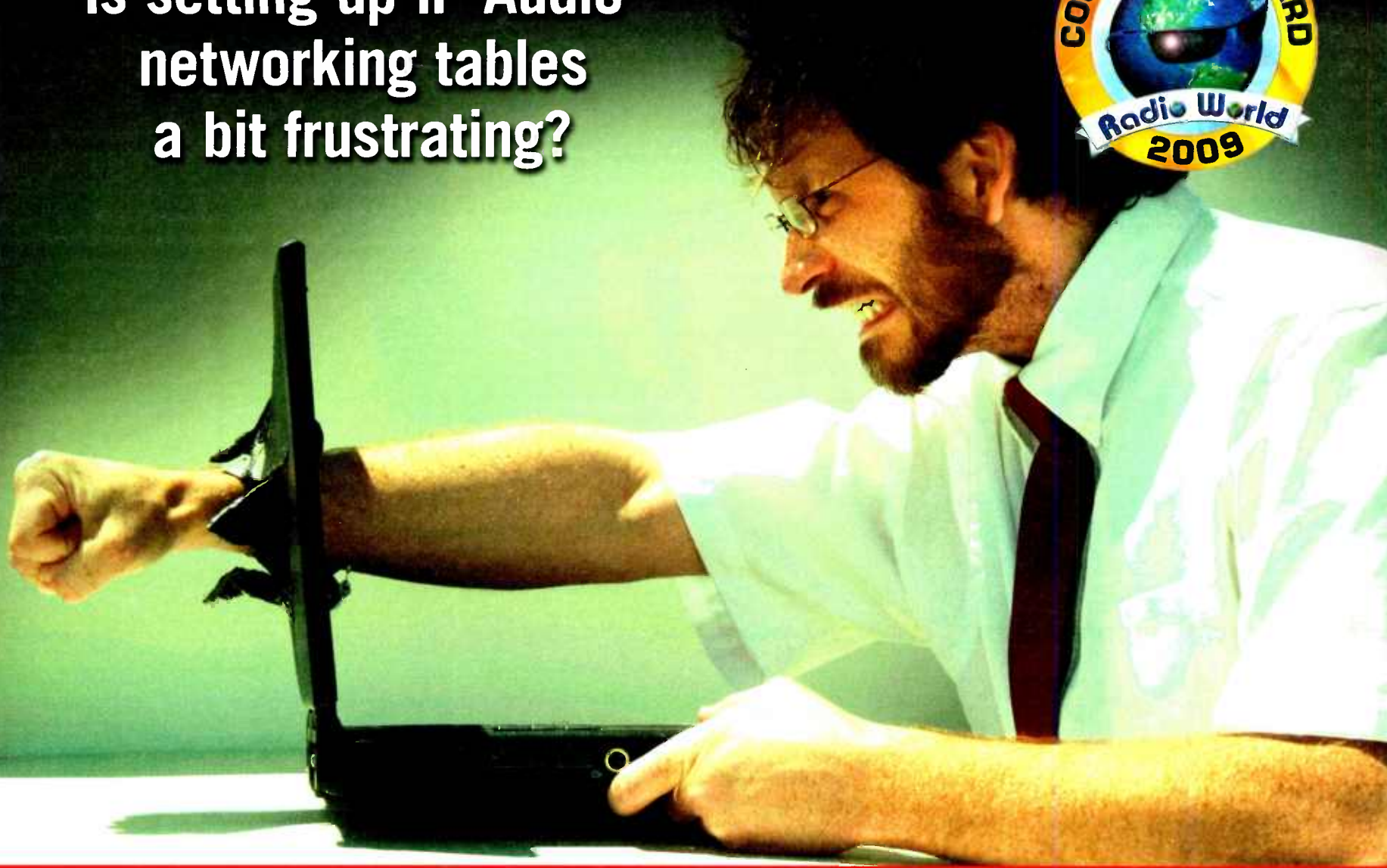
Since my drives, WCRR has changed calls to WROO; it keeps the country format on the main 107.3 frequency but changes from a rock format to mainstream country on its HD2 channel.

The Rochester list mentions "WLGZ(AM)." The station has changed call letters to WDCX. Further, the listed simulcast of AM on WLGZ(FM)'s HD2 in Rochester is not complete, as during my second run the HD2 and the AM had different programming.

Finally, the Rochester list indicates WCMF-HD2's format is the "Brother Wease Music Show." Wease is a popular morning host who was on WCMF(FM) for many years, but in 2008 moved to WFXF so I find it unlikely he has anything to do with WCMF anymore.

In Syracuse, WCNV(FM) was not listed as having an HD3 channel; I found that it does.

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Market listed	Freq	Station	HD Present?	PAD/Text (A/T=Artist/Title)	Aaron Read's Notes	Format listed	Licensee
Ithaca, NY	97.3	WYXL-HD	Y	none	Analog time delay was approx. one half-second off.	AC	Saga
Ithaca, NY	97.3-2	WYXL-HD2	Y	none	Feeding xlator W277BS, branded as "Hits 103.3"	CHR	Saga
Ithaca, NY	99.9	WIII-HD	Y	none		Clsc Rock	Saga
Rochester, NY	990	WDCX-HD	Y	none	HD audio sounds weird, poor processing?	Relgn/Talk	Crawford Broadcasting
Rochester, NY	1180	WHAM-HD	Y	Text loop		News/Talk	Clear Channel
Rochester, NY	1280	WHTK-HD	Y	Text loop	HD sounds remarkably good for AM	Talk	Clear Channel
Rochester, NY	89.7	WEOS-HD	Y	Text loop	This is a Geneva station: HD is on but not receivable in Rochester	Alt/AAA/Nws	Colleges of the Seneca
Rochester, NY	91.5	WXXI-HD	Y	none	Analog time delay was approx. one half-second off.	Classical	WXXI Public Broadcasting
Rochester, NY	91.5-2	WXXI-HD2	Y	none	HD2 is simulcast of WXXI 1370AM	Talk / News	WXXI Public Broadcasting
Rochester, NY	91.5-3	WXXI-HD3	Y	none	HD3 is separate NPR news/talk	WXXI-AM	WXXI Public Broadcasting
Rochester, NY	92.5	WBEE-HD	Y	Text loop		Country	Entercom Communications
Rochester, NY	92.5-2	WBEE-HD2	Y	Text loop	Audio feed bad - sounds like a CD skipping (lasted for at least 1 hour)	Comedy	Entercom Communications
Rochester, NY	93.3	WFKL-HD	Y	none		AC	Stephens Media Group
Rochester, NY	94.1	WZNE-HD	Y	none		Alternative	Stephens Media Group
Rochester, NY	94.1-2	WZNE-HD2	Y	none		Indie Rock	Stephens Media Group
Rochester, NY	95.1	WFXF-HD	Y	A/T	Analog/digital time-alignment was 0.5 sec off. HD "hold" light lit automatically.	Clsc Rock	Clear Channel
Rochester, NY	95.1-2	WFXF-HD2	Y	A/T	A/T - wrong song/stuck	Rock - Deep Rock Tracks	Clear Channel
Rochester, NY	96.5	WCMF-HD	Y	A/T		Clsc Rock	Entercom Communications
Rochester, NY	96.5-2	WCMF-HD2	Y	A/T	Brother Wease Music Show - unable to confirm	Rock	Entercom Communications
Rochester, NY	97.9	WPXY-HD	Y	A/T		CHR	Entercom Communications
Rochester, NY	97.9-2	WPXY-HD2	Y	A/T		AC - Modern AC	Entercom Communications
Rochester, NY	98.9	WBZA-HD	Y	A/T		Clsc Hits	Entercom Communications
Rochester, NY	98.9-2	WBZA-HD2	Y	Text loop		Blues	Entercom Communications
Rochester, NY	100.5	WDVI-HD	Y	n/a	no HD lock, even very close to xmitter	Hot AC	Clear Channel
Rochester, NY	100.5-2	WDVI-HD2	Y	n/a	HD2 unavailable	Off air	Clear Channel
Rochester, NY	101.3	WRMM-HD	N	none	HD listed as "coming soon" on Web site	AC	Entercom Communications
Rochester, NY	101.3-2	WRMM-HD2	N	none	HD listed as "coming soon" on Web site	Oldies - 60's and 70's	Entercom Communications
Rochester, NY	102.3	WVOR-HD	Y	A/T	This is a Canandaigua station: HD is on, but not receivable in Rochester	Soft AC	Clear Channel
Rochester, NY	102.3-2	WVOR-HD2	Y	A/T	This is a Canandaigua station: HD is on, but not receivable in Rochester	AC - All 70's	Clear Channel
Rochester, NY	102.7	WLGZ-HD	Y	A/T		Adlt Stndrd	Crawford Broadcasting
Rochester, NY	102.7-2	WLGZ-HD2	Y	A/T	WLGZ(AM) is now WDCX(AM) but WLGZ-HD2 was not simulcasting it when sampled.	WLGZ-AM	Crawford Broadcasting
Rochester, NY	106.7	WKGS-HD	Y	A/T	No analog time delay.	CHR	Clear Channel
Rochester, NY	106.7-2	WKGS-HD2	Y	A/T		CHR - All New	Clear Channel
Rochester, NY	107.3	WCRR-HD	Y	Text loop	This is a Canandaigua station: HD is on, but not receivable in Rochester	Country	Clear Channel
Rochester, NY	107.3-2	WCRR-HD2	Y	n/a	HD2 missing	Off air	Clear Channel
Syracuse, NY	1490	WOLF-HD	?	?	Couldn't get clear reception	Children	WOLF Radio, Inc.
Syracuse, NY	88.3	WAER-HD	?	?	Couldn't get clear reception	Jazz/News	Syracuse University
Syracuse, NY	89.1	WDWN-HD	Y	none	No analog time delay. HD "hold" light lit automatically	Altve/Varty	Cayuga Cty Comm. College
Syracuse, NY	89.1	WJPZ-HD	Y	?	(confirmed HD, no multicast, on Tues. Mar. 24, 10pm at Syracuse Carrier Dome facility)	Rhyme/CHR	WJPZ Radio Inc.
Syracuse, NY	89.9	WRVO-HD	Y	Text loop		Nws/Tlk/Inf	State University of NY
Syracuse, NY	89.9-2	WRVO-HD2	Y	Text loop		NPR	State University of NY
Syracuse, NY	91.3	WCNY-HD	Y	Text loop	HD "hold" light lit automatically	Classical	Public Bdcsting of Cen.NY
Syracuse, NY	91.3-2	WCNY-HD2	Y	none		Oldies 50's and 60's	Public Bdcsting of Cen.NY
Syracuse, NY	91.3-3	WCNY-HD3	Y	Text loop	Not listed on HDRadio.com	Talk	Public Bdcsting of Cen.NY
Syracuse, NY	93.1	WNTQ-HD	Y	A/T		CHR	Citadel
Syracuse, NY	94.5	WYYY-HD	Y	A/T		AC	Clear Channel
Syracuse, NY	94.5-2	WYYY-HD2	Y	A/T		Pride Radio	Clear Channel
Syracuse, NY	95.7	WAQX-HD	N	none	HD listed as "coming soon" on Web site	Active Rock	Citadel
Syracuse, NY	95.7-2	WAQX-HD2	N	none	HD listed as "coming soon" on Web site	Rock - Active	Citadel
Syracuse, NY	104.7	WBBS-HD	Y	A/T		Country	Clear Channel
Syracuse, NY	104.7-2	WBBS-HD2	Y	A/T		Christian - The Walk	Clear Channel
Syracuse, NY	105.9	WLTJ-HD	N	none	HD listed as "coming soon" on Web site	AC	Citadel
Syracuse, NY	105.9-2	WLTJ-HD2	N	none	HD listed as "coming soon" on Web site	Rock - Adult Alternative	Citadel
Syracuse, NY	106.9	WPHR-HD	Y	A/T	Analog time delay was approx. one half-second off.	Urban AC	Clear Channel
Syracuse, NY	106.9-2	WPHR-HD2	Y	A/T		Smooth Jazz	Clear Channel
Syracuse, NY	107.9	WWHT-HD	Y	A/T	Analog time delay was approx. one half-second off.	CHR	Clear Channel
Syracuse, NY	107.9-2	WWHT-HD2	Y	A/T		Spanish - La Bomba	Clear Channel

Rochester measurements made March 15 between 5 and 6 p.m. at 280 State Street in downtown Rochester. Ithaca and Syracuse measurements made March 19 between 3:40 and 4 p.m. at corner of Turk Rd and West Lake Rd. in Geneva. All were made in a 2001 Honda Accord with the stock rear-window antenna & a JVC KD-HDW10 receiver.

FINGER LAKES

(continued from page 10)

The AM stations all had noticeably reduced range after dark, but if you were within the 1 mV/m service contour, it worked well enough.

Also worth noting: local to Rochester is WYSL(AM) at 1040 kHz. Owner Bob Savage has complained of HD Radio interference from WBZ(AM) in Boston operating on 1030 kHz, even during daytime. I can't speak to Bob's specific case or in regards to HD-induced interference in general. Certainly the AM band is a mess of static and hash in the Finger Lakes, especially after dark. But HD alone cannot be blamed for that, I think; there are known

instances of AMs staying on daytime patterns and powers after sunset, there's a lot of noise coming across Lake Ontario from Canada that is allowed but still clutters the band, and the AM band just gets a lot of interference in general from electronics and whatnot.

I have not personally observed significant interference inside a given station's service contour that was obviously attributable to HD Radio. But the AM band is so noisy already, and the FM band, especially the NCE portion, is so cluttered with stations, it'd be hard to tell.

Further worth noting is that Geneva is home to the first FM translator that broadcasts in HD Radio: W212BA, which is WEOS, the station where I am GM. Its reach is limited to Geneva, which is 50

miles from the Rochester market. It's not in the iBiquity list yet, but it's also brand-new as of Nov. 2008.

W212BA did seem to cause some difficulty in receiving WEOS in Geneva proper, but W212BA covered that same area well enough. And in a related translator note, Ithaca's WYXL-HD2 is apparently being simulcast on W277BS, also in Ithaca, based on the programs I heard.

IN SUM

Unfortunately HD Radio barely registers a blip in retail outlets in the Finger Lakes. Most stores don't carry any receivers at all. The few that do, like RadioShack and Best Buy, often "hide" them in a distant corner and don't hook up the antenna to the display unit.

Anecdotally I've heard that public radio outlets do have some loyal fans of their multicast offerings, but that's mostly it.

Beyond specific cases like that, and given the overall lack of originality in the formats, I fear there is little compelling reason for a listener to invest the \$100+ for an HD Radio in our area.

Aaron Read is GM of WEOS(FM), Public Radio for the Finger Lakes from Hobart & William Smith Colleges.

The author used a list posted at HDRadio.com of stations believed to be on the air; the list is maintained by iBiquity based on info from stations and its own listening posts. It invites updates to stationoperations@ibiquity.com.

Wish to do a drive-around in your market? Write to Lstimson@nbmedia.com.



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Know Who Owns That Site You're On

Taking care of a new transmitter site? After you survey the equipment, also find out who owns the property and write down the contact info.

Here's an example of why that's a good idea.

Contract engineer Ron Gnadinger tried to access a site recently only to be denied by this rock in Fig. 1.

Where the boulder came from is anyone's guess, but it wasn't the tenant's responsibility to remove it.

Ron started in broadcasting back in 1987 and now does contract work for a handful of stations in Michigan. His credo has been to find problems before they become serious and cause long off-air outages.

He spotted the boulder during a routine maintenance session. By making that discovery and then by notifying the property owner, he solved a problem that otherwise could have turned into a disaster during an emergency.

By the way, Ron's contribution qualifies for SBE recertification credit. You can benefit by sharing your tips too. Why not e-mail me your ideas, along with high-resolution pictures, and earn some SBE recertification credit yourself?

Ron always travels with his camera; he finds a picture truly is worth a thousand words. In fact, a digital camera came in first place a year or so back when we queried readers to name the most valuable piece of equipment for a contract engineer.

He adds: Make sure your camera has batteries or is charged.

In addition to explaining findings to a manager or owner, pictures can document vandalism or insurance claims and speed up processing. If lightning takes down a transmitter, take a few photos before you begin work to get back on the air. They can be precious when you are filing a claim.

Ron Gnadinger can be reached at rong@up.net.

Tom Taggart is CE for WRRR(FM) in St. Mary's, W.Va. Recently, a raccoon taught him and a colleague a valuable lesson: After you've entered transmitters hundreds of times, it's easy to forget to check that the power is off. After all, you're just going to peek inside for a moment.

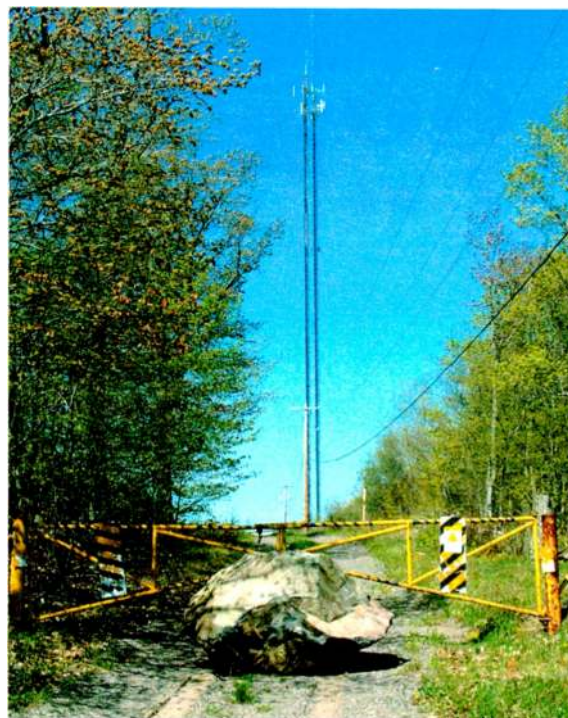


Fig. 1: Know who owns your site — and let them move the boulder.

In Tom's case, the station has three-phase power for their combined studio-transmitter operation. They use a Harris 10K as the main transmitter with a Harris 2.5K as the backup. For the occasional power outage, a 20 kW generator runs both the studio and the 2.5K through a sub-panel.

Early one morning, the raccoon decided to climb a power pole feeding the site and got across one leg of the three-phase. When Tom arrived, the studio was running on the generator but the 10K was still on the air, albeit around 3,000 Watts. (The blower is on one phase, the control ladder on the second phase and the third phase was the dead leg.)

Tom switched to the backup transmitter. While wait-

ing for the power company, he figured it would be a good time to inspect the 10K.

A three-pole spring-loaded knife switch is the main disconnect for the 208 Volt feeds. There is another disconnect switch for the transmitter's 110 circuit.

Tom threw both disconnect switches while Bob Eddy pulled the back off the transmitter. Bob grabbed the shorting stick and tapped the capacitors, then the incoming 208 Volt terminals.

Ka-pow! Apparently the three-phase disconnect switch didn't completely open the remaining active phases.

No damage to the transmitter; they just needed to replace a couple of big cartridge fuses and reset the breaker on the main panel.

This is a rather conventional disconnect switch, installed in 1988 along with the transmitter. In the "up" position, three knife-blade switches keep the circuit closed. Pull the handle down, and a spring is supposed to disconnect the three ganged busses.

Bob Eddy commented that he usually checks each leg with a DVM.

Either way, don't assume. Check the voltage twice — and avoid ending up like the raccoon!

Tom Taggart can be reached at tpt@literock93r.com.

Having recently retired as a chief engineer, Phil Joiner is now with RF Specialties of Pennsylvania, running its Philadelphia office.

Like many, Phil had been a customer of the late Harry Larkin, who held that post until he passed away. Phil will be the first to admit he's got some mighty big shoes to fill. But like Harry, he understands engineers want service.

A case in point is bringing to *Workbench* readers' attention the custom jacket color options on Cellflex A Series 7/8-inch and 1-5/8-inch foam coaxial cable. A light blue or a light gray is available, with the same UV rating as the black jacket. These often are used on water towers.

If you are looking for a means of hiding your STL or RPU line runs, drop Phil a line and ask for a PDI data sheet.

Phil Joiner can be reached at rjphila@verizon.net.

Tom Atkins is the vice president of engineering for Backyard Broadcasting and a frequent *Workbench* contributor.

(continued on page 20)

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Just how good (or bad!) does your AM signal really sound?

qualify modulation readings.

Two sets of peak flashers indicate both absolute and user-programmed modulation limits, and programmable front-panel alarms (with tallies) give overmodulation, carrier-loss and program audio-loss warnings. The 525 is supplied with a weatherproof loop antenna at no extra cost.

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Can a radio console be over-engineered?

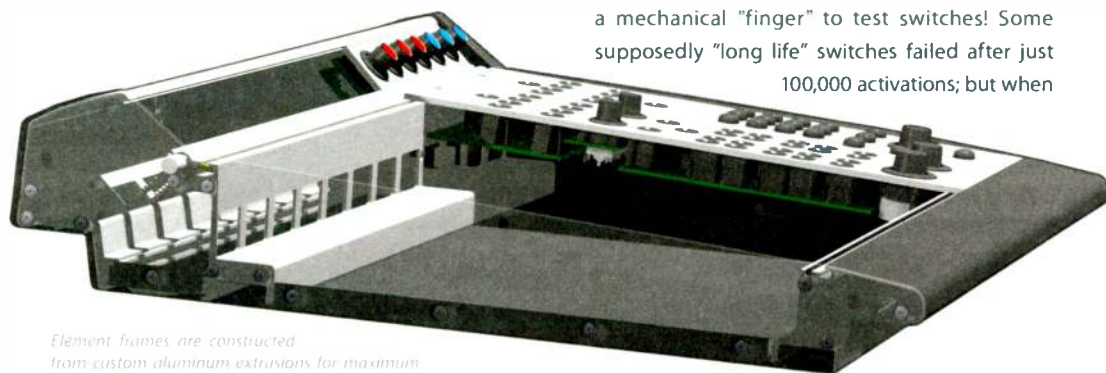
(Only if you think "good enough" really is good enough.)

The radio console, redefined.

Building a great console is more than punching holes in sheet metal and stuffing a few switches in them. Building a great console takes time, brain-power and determination. That's why Axia has hired brilliant engineers who are certified "OCD": **Obsessive Console Designers**, driven to create the most useful, powerful, hardest-working consoles in the world.

Beneath the surface

There's more to a great board than just features. **Consoles have to be rugged**, to perform flawlessly 24/7, 365 days-a-year, for years at a time. So we literally scoured the globe for the absolute best parts — hardware that will take the torture that jocks dish out on a daily basis.



Element frames are constructed from custom aluminum extrusions for maximum rigidity. Module and console side panels are made from thick plate aluminum for the hardest-to-breach intrusion. The heavy-duty, even more than you could expect.

First, Element is fabricated from thick, **machined aluminum extrusions** for rigidity and RF immunity. The result: a board that will stand up to nearly anything.



With so many devices in the studio these days, the last thing anyone needs is gear with a noisy cooling fan. That's why Element's **power-supply is fanless**, for perfectly silent operation inside the studio.

Element modules are **hot-swappable**, of course, and quickly removable. They connect to the frame via CAT-5, so pulling one is as simple as removing two screws and unplugging an RJ — no motherboard or edge connectors here.

Faders take massive abuse.

The ones used in other consoles have a big slot on top that sucks in dirt, crumbs and liquid like the



Here's the best part about the console: it's in the studio and the host and producer are smiling. A lot.

government sucks in taxes.

By contrast, our silky-smooth conductive-plastic faders activate from the side, so that

grunge can't get in. And our rotary controls are high-end optical encoders, rated for more than **five million rotations**. No wipers to clean or wear out — they'll last so long, they'll outlive your mother-in-law (and that's saying something).

Element's **avionics-grade switches** are cut from the same cloth. Our design team was so obsessed with finding the perfect long-life components that they actually built a mechanical "finger" to test switches! Some supposedly "long life" switches failed after just 100,000 activations; but when



sticking the Lexan to the top of the module like some folks do, our overlays are **inlaid on the milled aluminum module faces** to keep the edges from cracking and peeling — expensive to make, but worth it. For extra protection, there are **custom bezels** around faders, switches and buttons to guard those edges, too. Which means that Element modules will **look great for years**.

By the way, those on/off keys, fader knobs and bezels are our own design, custom-molded to give **positive tactile feedback**. The switch is flush with the top of the bezel, so it's easy to find by touch. But if something gets dropped on it, the bezel keeps the switch from being accidentally activated.



More than just products

Even the best products are nothing without **great support**. So Axia employs an amazing network of people to provide the best support possible: Application Engineers with **years of experience** in mapping out radio studios... the most knowledgeable, **friendly** sales people in the biz... Support Engineers who were formerly broadcast engineers. Plus a genius design team, software authors who dream code... one of the **largest R&D teams** in broadcast.

our guys found the switches used in Element, they shut off the machine after **2 million operations** and declared a winner. (The losers got an all-expense-paid trip to the landfill.)

Element's individual components are **easy to service**. Faders come out after removing just two screws. Switches and rotary volume controls are likewise simple to access. And all lamps are LEDs, so you'll likely **never need to replace them**.

Engineers have said for years that console finishes don't stand up to day-to-day use. Silk-screened graphics wear off; plastic overlays last longer, but they crack and chip — especially around switches and fader slots, where fingers can easily get cut on the sharp, splintered edges. We decided that we could do better.

Element uses high-impact Lexan overlays with color and printing on the back, where it **can't rub off**. And instead of just



And now Axia has become radio's **first console company to offer 24/7 support**, 365 days a year. Chances are you'll never need that assistance, but if you do, we'll be ready for you. Our 'round-the-clock help line is +1-216-622-0247.

Proudly Over-Engineered

Are Axia consoles over-engineered? **You bet.** If you're looking for a cheap, disposable console, there are plenty out there — but this ain't it. Not everyone appreciates this kind of attention to detail, but if you're one who seeks out and appreciates excellence wherever you may find it... Axia consoles are built **just for you**.



www.AxiaAudio.com

PowerStation: the new console system from Axia.



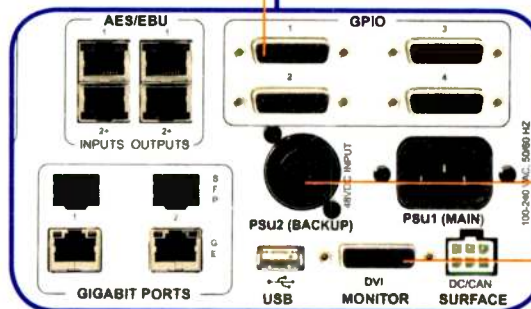
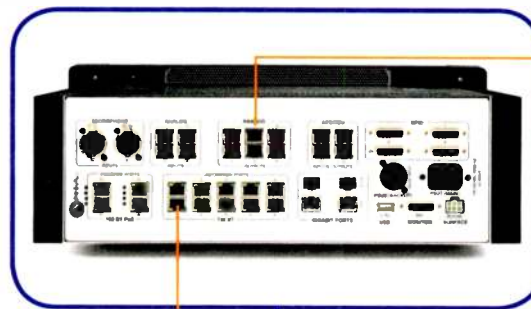
Because there's no such thing as too much uptime.

All stops removed • Twenty years from now, you'll have forgotten this ad. But you'll still have your PowerStation, the full-featured one-box IP-Audio console/router system hardened with **industrial-grade components** and redundant power capabilities. Tough enough to take a football to the groin and keep on going. PowerStation **minimizes setup** and **maximizes "bang for the buck."** Engineered without compromise for broadcasting without interruption.

Easy as π • PowerStation combines a console DSP engine with audio and logic and a network switch, **all in one box**. As its name implies, there's a whole lot o' muscle inside that burly frame, but that doesn't mean it's complicated. In fact, setting up PowerStation **couldn't be easier**: connect your studio gear with standard CAT-5 cables, connect your console with just one cable, name your sources and set preferences with a browser, and you're ready to rock. PowerStation makes building studios about 3.14 times easier than ever.

GPI Oh! • **GPIO ports are built in** to PowerStation — no breakout boxes or add-on converters needed. One day, you might not even *need* logic ports: more and more products from companies like 25-Seven Systems, Audio Science, ENCO, Google Radio Automation, International Datacasting, Omnia Audio, Radio Systems and Telos (to name just a few) use the Livewire™ standard to send their audio and logic control directly to Axia networks over a **single CAT-5 connection**.

Everything's included • Yeah, we said *everything*: PowerStation combines half-a-dozen essential tools into one compact unit. No hidden extras to buy, no "gotchas" after purchase. Inside that muscular chassis you'll find a **bulletproof mixing engine** capable of handling consoles up to 40 faders, a beefy power supply (with optional **redundant power**), machine control ports, and **audio I/O**, all in one box. And of course, since it's from Axia, the IP-Audio experts, a studio built with PowerStation can stand alone — or it can become a part of a large network quite easily. Thanks to **PowerStation Simple Networking**, you can daisy-chain up to 4 PowerStations directly for easy multi-studio installation without the need for a separate core switch. Just another way Axia makes IP-Audio easy.



You're covered

Axia has the most comprehensive warranty in the industry — **5 years parts and service**. And (not that you'll need it), **free 24/7 technical support**, 365-days-a-year. We've got your back, my friend.



E-I-E I/O • Finding space in the equipment racks is like living in a barnyard: too many chickens, never enough coops. So our team of obsessive designers fit **an entire studio's worth of inputs, outputs, logic and network connections** — plus an advanced DSP mixing engine and a massive console power supply — into just 4 RU. There's inputs for 2 mics, 4 analog inputs and 2 AES/EBU inputs, with 6 analog and 2 AES outputs. 4 GPI/O logic ports round things out. Want even more? Just connect the PowerStation Aux to instantly *double* the I/O — or plug some Axia Audio Nodes into its **built-in Ethernet switch**.

Fan free • PowerStation is **silent and fanless**. Because studios today are already full of PCs, laptops and playout servers clicking, whirring and generating heat — who needs more of that? Not only is there no in-studio noise with PowerStation, those **big extruded heat sinks** are just plain cool. No pun intended (or maybe it was. We're like that, you know).

Built like a tank • Remember when consoles were built to last? We do. At Axia, we're all about the long haul. **There are no compromises**: PowerStation uses only best-of-the-best components. Like studio-grade Mic preamps and A/D converters. A rigid, steel-framed, EM-tight chassis that shrugs off RF like Walter Payton brushing off tackles. An industrial CPU designed for high reliability in harsh environments. Beefy extruded heat sinks. Big, brawny handles to make rack-mounting easy. (And it looks cool, too.)

Redundant power redundancy • The power supply is the heart of any broadcast equipment, right? That's why PowerStation is **hardened against failure** with a **super-duty power supply** that sports enough amps to power an arc welder. And for those of you who like to wear a belt *and* suspenders, there's even a connection for **redundant auxiliary backup power** — with automatic switchover, naturally — that kicks in if it's ever needed.

Screen play • Yep, that's a DVI connector. **Your favorite monitor** — standard or widescreen — plugs in to present the console operator with Axia's "so easy an overnight jock could do it" **info-center display**. Meters, timers, fader assignments, mix-minus settings and more, all on-screen, on-demand.

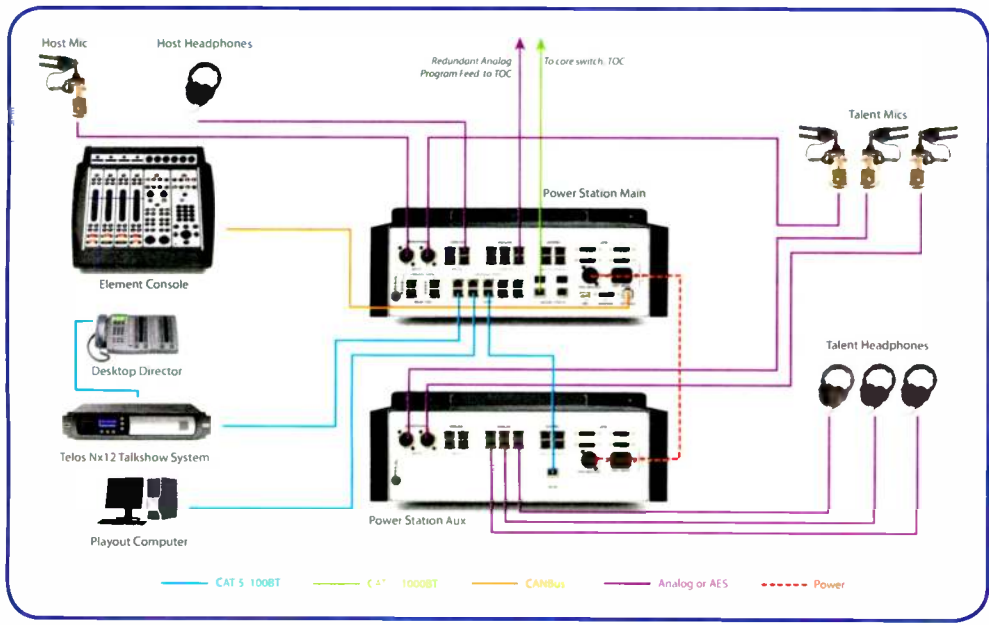


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Element 2.0 • With more than 1,000 consoles already on the air, Element is a huge hit. And now, thanks to suggestions from our clients, it's better than ever. Element 2.0 has cool features like Omnia™ **headphone processing** presets to give talent that “air sound”; **super-accurate metering** with both peak and average displays, **one-touch phone recording** with automatic split-channel feed, **automatic mix-minus** for every fader, an eight-channel **Virtual Mixer** that lets you combine multiple audio streams and control them with a single fader, and metallic bronze or silver module overlays. And we haven't even begun to tell you about Element's **Show Profiles** that instantly recall talent's favorite settings, its **built-in Telco controls**, fully-integrated **talkback/IFB** and **Mic processing** by Omnia. And durable? Element is nearly indestructible, ready to take whatever pounding ham-fisted jocks dish out and keep going. You want examples? Element's **avionics-grade switches** are rated for more than two million operations. What look like ordinary rotary controls are, in reality, **bullet-proof optical encoders** — no wipers to wear out or get noisy. The silky-smooth **conductive-plastic faders** actuate from the side, not the top, so dirt and grunge stay out. The **high-impact Lexan** module overlays have their color and printing applied on the back, where it **can't wear or chip off**. The frame is made from **thick aluminum extrusions** that are stronger than truck-stop coffee. To find out even more about Element, visit AxiaAudio.com/Element/. Grab some coffee and prep for a good, long read — remember, our marketers get paid by the word.

Come together, right now • Now that you know what you can do with PowerStation, let's build a studio. The diagram below shows how a typical Talk Studio might look. Mics and headphone feeds plug into the built-in Mic inputs and Analog outputs... your playout PC, using the **Axia IP-Audio Driver** for Windows®, connects to a built-in Ethernet port... and so does the Telos Nx12 Talkshow System (which sends 12 lines of caller audio, mix-minus and take/drop/next commands over **one skinny CAT-5 cable**). Send a **backup audio feed** to your TOC for extra peace of mind. And after all that, there's still plenty of I/O left to plug in the turntables for the Saturday night Oldies show.

The standalone network • You want your console to be more than just reliable — you want it **built like a battleship**. You want the absolute peace of mind that comes from knowing your gear will **never let you down**. And if you take one studio down for maintenance, you want the rest to be completely unaffected. So we designed PowerStation to be the world's **first networked broadcast console that doesn't need a network**. It's completely self-contained: sure, it plays nice with others, but unplug its network cable and it keeps right on truckin'. Build just one studio, or a dozen, at any pace you choose — your PowerStation network is ready to expand when you are.



AxiaAudio.com

Radio Royalty Re-dealt

Wherein We Put on Our Best Poker Face
And Flush Out the Arguments of Both Players

Last time we set the stage for the battle royal — make that the royalty battle — that is playing out in Washington over whether radio broadcasters should pay performance rights for recordings of music that they play over the air.

Since then, we've heard even more rhetoric on both sides of the issue. How these arguments ultimately settle will determine which side gets the most traction and prevails.

Let's run through a few of these points and play devil's advocate to test their merit.

IS IT EVEN COPYRIGHTABLE?

Fundamentally, a few still question whether the recording of a song is actually a copyrightable work in itself.

After all, it wasn't until the early 1970s that a special form of copyright — called the phonogram, © — was even created for such works. This distinguished the recording from the underlying song and made the individual instance of the original composition a copyrightable, artistic work of its own.

Prior to that time, recordings had been simply considered a necessary or convenient vehicle, often referred to in legal parlance as "mechanicals." While this concept remains, along with a similar right for "ephemeral recordings" required for the convenience of broadcasters (originally for carts or tape automation systems, now for hard-disk copies), the phonogram elevated the published musical recording to a stature roughly equivalent to the original song.

Most legal scholars today consider this water under the bridge, but the distinction remains in some memories, and is still considered a "recent" change by legislative standards. It generally resurfaces whenever these royalty issues are on the table.

A more current matter along these lines came up a few years ago when the World Intellectual Property Organization considered a "Treaty on the Protection of Broadcasting Organizations," which would have created a new copyright for broadcasters on the programs they aired, even if they did not contain original content.

Note the similarity here to the phonogram right, whereby one is granted a copyright for the performance of a work in which he/she has no rights to its orig-

inal creation. The treaty has been proposed and deferred several times, most recently in 2008, and it could be back on WIPO's table again anytime.

The point here is to show just how arguable (and re-arguable) copyright issues are, particularly for the kinds of



Playing Card iStockphoto/Kasia Biel; Knight iStockphoto/bubaone

"nested" rights that come up in the context of distribution or derivative-works discussions. The Internet and today's culture of sampling, mash-ups and YouTube are only deepening this debate, and keeping the entire area quite legally fluid.

Thus these royalty questions indeed are built upon a house of (face?) cards, and a single court decision or new law could substantially reshuffle the deck at any time.

FOR THE PLAINTIFF

Moving to the arguments, the music industry's position is fairly simple and consistent, essentially stating that all forms of music performance/distribution should be subject to some form of statutory royalty.

Occasionally, precedent also is cited, given that other media in the United States — and broadcast radio in most other countries — already pay these royalties. Just how fees for the various platforms are determined and collected is where things get more complicated, but

those are details for another day.

The traditional defense to this argument by broadcasters is that radio airplay stimulates record sales, so a quid-pro-quo inherently exists, and no further compensation should be required.

Some broadcasters even feel payment should go the other way, with record companies compensating broadcasters for their promotional efforts (see the Guest Commentary by Tony Coloff in the May 20 RW); but, of course, there are other statutes on the books regulating this, as we discussed last time.

The music industry's rebuttal: Even if radio airplay does stimulate record sales, this does not eliminate the requirement for equitable royalties to be assessed.

Music proponents stress something that seems to have escaped many broadcasters (Tony Coloff apparently among them): Without the free and unfettered access to broadcast music that stations enjoy, they would have no audience. As the primary audi-

ence attractor for most U.S. radio stations, these music recordings are the foundation of music-radio's business model. This should be worthy of some direct compensation, the music industry opines.

And what of non-music stations — sports and news formats, primarily? Their content is *not* acquired freely, nor is it available via compulsory license. The bilateral negotiations these stations undertake to obtain their content generally results in exclusivity clauses and significant cost (in cash or barter). And this is notwithstanding the promotional value that the content originators (sports figures, network personalities, syndicated talk-show hosts, etc.) might accrue from the stations' broadcasts.

So the argument comes down to a kind of détente over who needs whom more: Record companies or radio stations? And since radio pays for the acquisition of broadcast rights for *other* audience-attracting content it doesn't own, why not do the same for music?

FOR THE DEFENDANT

In contrast to the relatively focused music industry argument, U.S. radio broadcasters' positions against paying these royalties are diverse, and continue to take on new directions as the debate ensues.

THE BIG PICTURE



Skip Pizzi

Over the course of recent discussion, these arguments have included the following, distilled to their essentials:

- Radio airplay sells records, as discussed above;
- Any new royalties assessed won't go to the artists — it will just line the pockets of record labels; and,
- Radio can't afford this right now; small and minority stations will be hardest hit.

Let's examine these a bit further — individually first, and then in combination.

On point #1, beyond the counterpoint presented above, broadcasters also observe that record companies spend good money to promote their records in the hope of airplay, so that proves its effectiveness.

These royalty questions are built upon a house of face cards. A single court decision could reshuffle the deck.

To that, however, music industry experts often respond that they sell a lot of records and fill a lot of halls for artists that get little or no radio airplay. So whatever the value of airplay, they argue it is declining in terms of its relative impact to overall music industry revenues. Deeper discussions also present data showing how the relationship between airplay and sales is not always as straightforward as radio broadcasters might think.

Next, NAB's recent premise that new royalties would not actually benefit artists much is a curious one. First, it seems intrinsically contrary to broadcasters' first point, to wit: If royalties will be siphoned from artists by labels, doesn't the same nasty practice apply (potentially even more so) to revenues from record sales?

Music industry representatives generally respond here that record deals are individually negotiated by labels and artists, and the most candid among them will admit that some deals are better than others, occasionally producing disproportionate profit to labels at the expense of the artists involved.

They will then argue, however, that the current structure for U.S. statutory broadcast-performance royalties (i.e., those collected today from satellite and

(continued on page 20)

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World Radio History

WORKBENCH

(continued from page 14)

Seeing the building lightning damage we showed in the March 11 issue, Tom wanted to share what a few drunken hunters did to one of his sites. They apparently decided to hot-wire a log skidder truck and go for a joyride.

Tom didn't say; but after looking at Figs. 2 and 3, I hope these guys got caught and did some serious jail time as well as having to pay for the damage.

Tom Atkins can be reached at tatkins@bybradio.com.

His photos remind me of an incident related by Kindred Communications DOE Cameron Smith. In Cameron's case, a ground system was vandalized.

Cameron said the FBI was invaluable in bringing the perpetrators to justice.

Because broadcast stations operate under a federal license, vandalism or damage to their facilities elevates the incident to a federal offense. Add to that the station's responsibility of relaying emergency messages, and Homeland Security can get involved, too.

John Bisset has worked as a chief engineer and contract engineer for 39 years. He now is international sales manager for Europe and Southern Africa at Nautel. He is a past recipient of the SBE's Educator of the Year Award. Reach him at johnbisset@myfairpoint.net. Faxed submissions can be sent to (603) 472-4944.

Submissions for this column are encouraged and qualify for SBE recertification credit.



Fig. 2: No, this isn't a new method of ventilation. Drinking and hunting don't mix ...

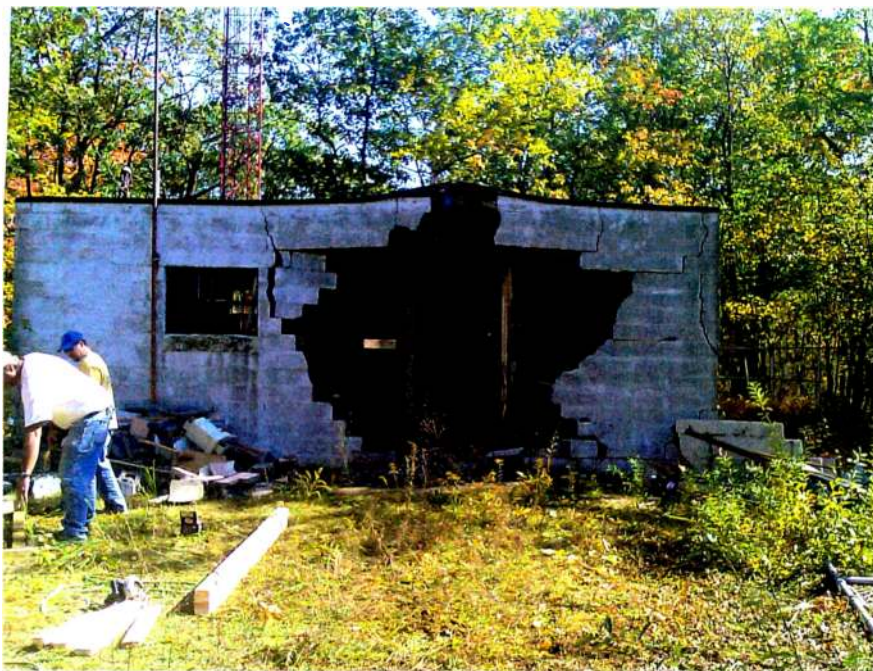


Fig. 3: ... and neither do transmitter sites and joyrides in log skidders.

ROYALTY

(continued from page 18)

Internet radio by Sound Exchange) explicitly addresses this issue by stipulating that 50 percent of a recording's royalty goes *directly to its performers*, regardless of who owns the rights to the recording (typically the record company). The latter party gets the other half.

Since performance royalties for on-air broadcast probably would be collected by similar means, broadcasters' argument here is weakened. In fact, when fully laid out, this point oddly strengthens the opposition on item #1, in that the new royalty would at least partially redress the grievances that exist under the assumption that artists benefit from the record sales generated by airplay. Put together, this seems to be an argument that you can't have both ways.

Broadcasters' third point above, also made recently by NAB, seems even more vulnerable to attack. The fairly obvious counterargument states that radio stations' current financial conditions have no bearing whatsoever on the merits of a royalty. Critics would argue that the ability to pay rarely obviates such assessments, and broadcasters may not want to risk opening their books to any further scrutiny right now, anyway. Further, if this were a viable argument, it would certainly apply far *more* to independent Webcasters, many of whom are far less able to afford the royalties they already pay for online music streaming, so they shouldn't have to pay it either.

Another reaction to #3 above that is gaining momentum among lawmakers involves the platform inequity issue: If broadcast radio can't afford to pay these royalties, why should Internet and satellite radio have to? Doesn't airplay on the latter forms generate record sales, too? And does it make sense that the only currently profitable sector of the industry is exempted from these royalties, while the emerging components are not? Arguments that the technologies are different enough to warrant separate compensation schemes have been lost on many legislators.

But it *can* be plausibly argued that if on-air radio airplay generates its own reward from record sales, then satellite and especially Internet radio could generate even *more* such sales per capita, given the latter media's richer and more consistent metadata that better identifies artists, song titles and albums — even with direct click-throughs to online sales venues on some Internet radio sites.

And if you want to compare business impacts, consider the fate of the music industry due to the precipitous decline in record sales. This is not radio stations' fault, of course, but neither can one blame the music industry for seeking alternative shelter in a rapidly changing environment.

Finally, there is the slippery slope that radio has already entered: If it's acceptable to broadcasters to pay royalties to songwriters for airplay, why not to recording artists? And if it's OK for broadcasters to pay royalties for online streaming, why not for on-air broadcasts?

All this contributes to the overt posturing that much of the radio industry has maintained throughout this process, which some observers feel has been disingenuous and counterproductive to reasoned debate. The NAB's labeling of the proposed on-air royalty as the "Performance Tax" is one good example — although the term seems to have gained traction only within the radio business itself. Another is the naming of proposed legislation banning new royalties as "The Local Radio Freedom Act." Some critics feel this may not be the best strategy to garner allies and build sympathy for the cause.

HANDICAPPING THE OUTCOME

Parsing the arguments shows how difficult the broadcasters' position is to defend on this matter. Their highly nuanced positions are open to easy attack, and the frequently changing (and sometimes self-defeating) arguments raised by the industry have presented the appearance of desperation to some observers.

So far, music industry forces indeed appear to be winning the day. It seems about the best broadcasters can hope for is keeping the issue off the table this session, but that would likely be only a temporary reprieve. Recent moves toward compromise — such as proposed annual flat-rate caps on the fees assessed to small and minority broadcasters — may thwart even this result, however.

If I were a betting man, I'd put money on legislation that levies these new royalties on over-the-air radio broadcasts becoming law within the next three years (maybe much sooner) — perhaps with a phase-in, and likely with caps on certain parties' assessments (which might be periodically revisited).

But it's never a good idea to mix gambling with politics — or are they synonymous?

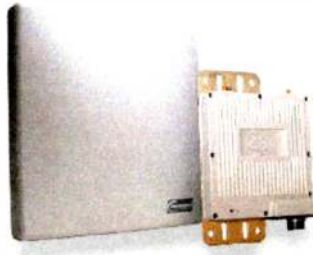
Skip Pizzi is contributing editor of Radio World.



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Hardware Galore!

ABOUT THIS SECTION

Here's a roundup of recently introduced new equipment and services for U.S. radio broadcast stations, compiled by Paul McLane, Brett Moss, Harold Hallikainen, Paul Kaminski, Thomas Osenkowsky and Tom Vernon. Most of these offerings were shown at the spring NAB Show or other conventions; others have been introduced elsewhere. RW welcomes news of new products via e-mail to radioworld@nhmedia.com.

AEQ Celebrates 30th With New Gear

The Titan BC 2000 D Router/Concentrator is a high-speed, high-capacity (5,120 x 5,120 audio channels) digital audio router and concentrator. Titan is designed to



serve as the audio switching "core" in critical systems. It is equipped with five bidirectional optical fiber ports that use "non-blocking" architecture. Each port is capable of connecting up to 1,024 channels.

The AEQ Opera Analog Console can handle up to 17 channels. In standard configuration, its mic/line modules are equalized, and can be upgraded by adding new modules. Of note is the dual digital telephone hybrids and its frequency extension

and multiplex functionality.

The AM-04 Audio Monitor accepts four analog audio signals, and has two pairs of AES digital audio outputs, with an additional analog audio signal. The AM-04's control system is simple, with no menus to navigate.

Phoenix Studio is an IP audio codec in a 1 RU chassis, with stereo analog and digital inputs and outputs and universal power supply (90-250V AC). The Phoenix Studio also has two slots for optional communication modules: POTS/PSTN, ISDN/RDSI, X.21/V.35 interfaces are included in the standard configuration, and the USB port allows connection with an external cell phone and using it as a gateway for 3G/GSM communications.

Info: www.aeqbroadcast.com

AETA Scoopy Is Improved

The Scoopy battery-operable portable codec from France's AETA Audio has received a promotion to Scoopy +.

New Scoopy addresses the latest and

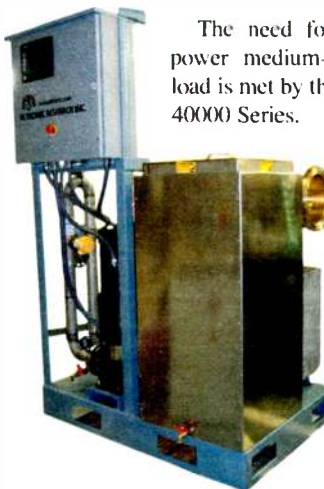


near-term future audio-over-IP connection schemes such as SIP (EBU Tech 3326) and NGN. It can handle WiMAX, BGAN, 3G, GSM and UMTS. AETA has long been involved in the Audio-Over-IP Experts Group. AETA plans to add an SD card interface soon.

The rackmountable Scoop 4+ carries most of the same features.

Info: www.aeta-audio.com

Altronic Debuts High-Power Medium-Wave Load



The need for a high-power medium-wave RF load is met by the Altronic 40000 Series.

These soda water-cooled loads are available in three versions: soda water with air heat exchanger; glycol water/air heat exchanger; and water heat exchanger.

Continuous RMS power ratings from 300 to 1500 kW are available. Frequency range covers the medium-wave band from 500 kHz through 2 MHz with full load for second and third harmonics and 1.05:1 or better stabilized VSWR. The load features full radiation screening with remote control and monitoring capability.

Accurate measurement of dissipated power is possible with a 50 ohm load impedance.

Info: www.altronic.com

Newly Acquired, APT Grows

APT Ltd., now part of the Audemat Group, won a Radio World "Cool Stuff" Award for its new WorldCast Equinox codec, as reported in the previous issue.



Also, the company launched a video module for its WorldNet Oslo, thus adding the ability to transport high-quality JPEG2000 content for video over IP applications.

And it showed WorldCast Voyager software, shown, to transform any laptop into a professional IP codec for remote contribution over IP links.

Info: www.aptx.com

Armstrong Offers New Transmitters

Armstrong Transmitter had both sides covered for the NAB Show, with AM and FM transmitters.

At 35 kW the FM35000T2 is the latest and strongest of Armstrong's T2 line of FM transmitters. Features include single-tube oscillation-free, neutralization-free, long-life operation, power amp arc detection and temperature sensors in the power supply. The T2 range goes from 10 kW to 35 kW.

The X1000AM is a 1 kW member of the X family of solid-state low-power AM transmitters. Designed for low maintenance, the X series claims 80 to 90 percent efficiency and can be mounted in only seven rack spaces. It is also HD Radio-compatible.

Info: www.armstrongtx.com

Arrakis Systems Expands Console Line

The MARC-15 is a modular analog console that is designed for on-air, production

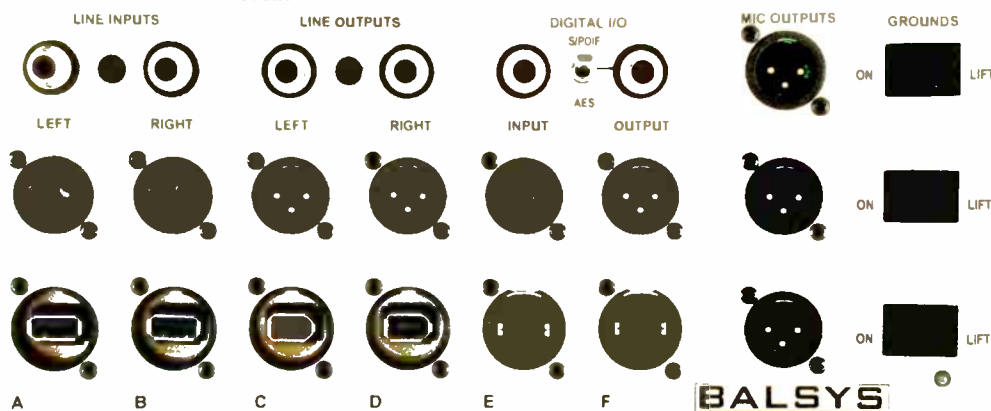
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Global Distribution Portal



6 Utility Feedthrough Connectors. Standard configuration is 2 each USB, Fire Wire, and RJ-45, but all are interchangeable and can easily be field configured as desired. 3RU High - Rackmount Adapters optionally available.

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and news applications.

Maximum capacity is 15 channels with up to 30 source inputs. Three output busses are provided, while the mainframe supports up to two phone modules. The provided RJ-45 terminated



cables make for a fast installation.

The console features a PC-USB input module so that the console can play from and record to a Windows PC in digital. An optional Studio Monitor module facilitates control room-talk studio applications.

Info: www.arrakis-systems.com

No Jitters With ATI

Audio Technologies Inc. introduced the MCDA-112 ultra-low jitter digital audio clock generator and distribution amplifier.

The unit (rear view shown) provides 12 word clock or super-word clock outputs at commonly used sample rates. It can also serve as a clock distribution amplifier, accepting AES, word clock or super-word clock as an input.



ATI also introduced the Series 2 line of digital audio distribution amplifiers. They support sample rates of 27 to 192 kHz with word lengths of 16 to 24 bits. Inputs loop through and have switchable termination. The inputs also have automatic equalization to deal with long signal lines. The front panel indicates sample rate, word length, digital errors and pro or consumer mode. Clock regeneration can be enabled or disabled as desired.

Each DA in the series has two inputs. On 12-channel models, one input can drive half the outputs, while the other drives the other half. On six-channel models a selectable input drives all the outputs.

In addition, the DM500 portable digital audio monitor, introduced last year, is now shipping. The battery (or AC) operated DM500 tells you pretty much everything you'd ever want to know about a particular digital audio stream (AES/EBU, S/PDIF) and drives a stereo headphone and balanced analog line outputs.

Info: www.ataudio.com

Audemat Shows ScriptEasy, Broadens Navigator Line

The Audemat Group made headlines with its acquisition of the codec business of APT, as RW has reported.

Following that, Audemat announced a reorganization of its sales and support structure, grouping the sales teams of Audemat and APT into four territories, with all staff able to offer solutions from the Audemat, APT, Ecreso and Nortek lines.

The company also introduced the Navigator HD AM/FM. The FM/HD version had been introduced earlier; now Audemat has added AM analog and HD measurement capability. It is a free release that requires the unit to be sent back to the factory; future units will include AM/FM/HD capabilities standard.



It also showed ScriptEasy facility control software, which can operate in a range of the company's equipment; it is capable of autonomous operation, multi-site communication and control and connection methods

such as SNMP and the company's Advanced Programming Interface.

Prewritten EasyLink API applications are available including versions written for Ecreso and Harris Z transmitters, with more planned; users can write their own interfaces using Javascript.

Ecreso introduced a new FM transmitter line to replace its 1 kW to 10 kW line. New 3U power amplifiers are more space efficient, producing 1 kW instead of 500 W. The line consists of modules that are hot swappable. The line can be controlled by RS-232 local interface or TCP/IP.

Info: www.audemat.com

**MATCHBOX IS A SONG,
A TOY CAR AND A PIZZA CHAIN.
BUT THIS ONE HAS A USB PORT.**

THE NEW BLUE BOX THAT DOES IT ALL!

The USB Matchbox II is the premier USB audio interface for broadcast station and professional audio installations. Used instead of a common PC "sound card", the USB Matchbox II eliminates common PC interface problems of buzz, noise, insufficient headroom and incorrect levels.

The USB Matchbox II provides both analog and digital interface with stereo analog I/O on XLRs at pro levels as well as an AES/EBU digital output. Plus, there's a headphone output for critical monitoring. We've utilized Burr-Brown's new-generation phase coherent ADC/DAC, in addition to advanced audio circuitry, to yield exceptional sonic performance. The unit supports 32, 44.1, and 48 kHz sample rates and is plug-and-play compatible with Windows, Mac, and Linux operating systems. The USB Matchbox II also features a built-in AC power supply to ensure operation at true professional audio levels with exceptional headroom.

So, dust off that die-cast car, grab a tasty slice, and punch up Carl Perkins on your computer with the USB Matchbox II to hear him like you've never heard him before!

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ASI564x Is Focus for AudioScience

Showing at AudioScience at the spring NAB Show were ASI564x series linear PCI Express sound cards. The company said this makes PCI Express more accessible via a lower price point.



The manufacturer described the ASI564x series as "junior partners" of its ASI6600 series of PCI Express sound cards, used in radio station automation.

Features include +24dBu balanced analog audio with 110dB dynamic range, AES/EBU digital I/O with hardware sample rate converters on all inputs. Multi-channel support is standard.

Using the surround sound extensions (SSX), streams of up to eight channels may be played, recorded and mixed. These cards are suitable for radio production and automation systems that do not require DSP-based MPEG compression.

The ASI5640 version provides four stereo/eight mono I/O with balanced analog interfaces. ASI5641 has four stereo/eight mono I/O with AES/EBU interfaces. The ASI5644 has four stereo/eight mono I/O with both balanced analog and AES/EBU interfaces.

Info: www.audioscience.com

Axia Puts a 'Studio in a Box'

Axia Audio earned a Radio World "Cool Stuff" Award for its PowerStation integrated console engine for IP audio, as noted last issue.

There are two products in the PowerStation family. PowerStation Main combines audio I/O, console CPU, logic GPIO, mixing engine and Ethernet switch into a single 4RU chassis; PowerStation Aux doubles the Main's audio I/O and



Photo by Jim Peck

GPIO capacity, while adding a redundant power supply with automatic switchover, all via a simple two-cable connection.

In addition, PowerStation can be networked; up to four can be daisy-chained without the need for an external core switch. Or it can be deployed to power standalone studio consoles.

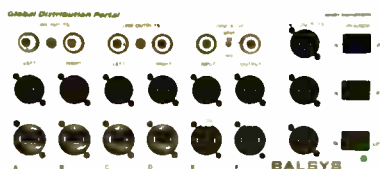
Axia also debuted four additions to its line of rack- and turret-mounted routing control panels: a user-programmable SoftSwitch studio control panel with OLED displays, and a threesome of X1, X2 and XY Router Control panels.

Shown, Martin Stabbert and Ian Perry of Citadel Broadcast visit Marty Sacks and Mike Dosch of Axia.

Info: www.axiaaudio.com

Balsys Goes Global

SystemsStore recently introduced the Global Distribution Portal.



It provides handy two-way interface between any studio or central audio system and external equipment. Standard configuration is two each USB, FireWire and RF-45, but all are interchangeable and can be field configured.

Active circuitry supports both analog and digital stereo I/O in professional and consumer formats using common audio connectors.

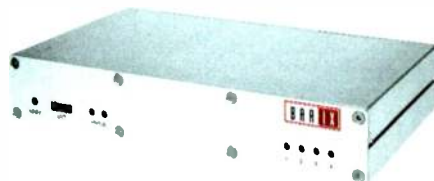
Features include three mono summed output feeds at mic level; independent ground lifts; spacing of connectors to allow use with wireless "butt plug" transmitters; and six utility feed-through connectors. The box is 3 RU, with rack adapters available.

Info: www.systemsstore.com

Barix Plays Up Its 'Swiss Broadcast Knife'

Barix said Standard Media Group is the first U.S. user of its Exstreamer 1000.

Standard, based in California, is sending its "Martini in the Morning" program to



affiliate KPHX(AM) in Phoenix for air, as an alternative to satellite distribution.

The Barix Exstreamer 1000 is an audio over IP system designed for radio broadcast applications. The one-half, 19-inch rack-mount product combines Barix

Instreamer and Exstreamer functions in one device. This is also the first Barix Instreamer or Exstreamer device to include contact closures to trigger and control local announcements.



At the NAB Show, Barix emphasized the many uses of the Exstreamer 1000, with application notes showing how it can be used as an STL, confidence monitor, AES/EBU-to-balanced audio converter, digital message repeater, silence detection and other uses.

Info: www.barix.com

Bext Debuts FB5000 Solid-State Amplifier

Radio equipment maker Bext is offering the FB5000, a new solid-state FM amplifier with up to 5 kW of power.

The whole unit is designed to fit into 4 RU. The company touts it for its high-efficiency Mosfet design, automatic gain control for fixed output power even when drive power fluctuates, and its reliability and easy handling.

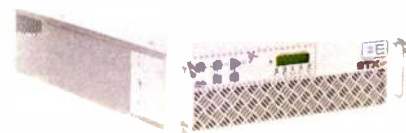
The amplifier is broadband, so no tuning is required. Other features include proportional auto-foldback of output power in the case of excessive VSWR; protection against excessive temperature and drive power; and modular construction. Remote control and telemetry capability is built in, with main parameters on rear contacts.

Also new is the latest member of the Lex family of FM exciter.

Info: www.bext.com

BE: Even a 50-Year-Old Can Twitter

Broadcast Electronics, noting its 50th anniversary, rolled out the STX LP, a line of solid-state low-power FM transmitters. It



also exhibited a Twitter plug-in for The Radio Experience.

The STX LP line has models in 1 kW, 3 kW and 5 kW power. Power output is field-upgradable. An exciter is included, upgradable to a digital model and compatible with HD Radio. The STX LP is remote-operable via IP connection.

Tim Bealor, VP for RF products, said in the announcement: "If you need a 1 kW backup now but want to upgrade to 3 kW or 5 kW later for, say, an HD Radio signal, you can do so easily. No need to go back again

and ask for another transmitter when it's time for HD Radio."

BE also developed a Twitter plug-in for use with its TRE (The Radio Experience) "messagecasting" suite.

The plug-in is designed to allow stations to contact listeners (or anyone signed up to receive the station's "tweets") with news, sports scores, contest info and other info. Twitter users will be able to respond, offer music request or "tweet" about songs heard, etc.

And BE offers Last.FM, a plug-in also for the TRE suite. It is a Web 2.0-technology application that tracks listener station listening preferences, down to individual listener preferences. Data can be compiled in a number of ways along with making some data usable for public consumption while keeping other data proprietary.

Info: www.bdcast.com

BSI Shows Op-X

Many NAB Show attendees got their first look at the most recent iteration of Broadcast Software International's Op-X automation package.



Op-X handles most automation aspects including production, scheduling, content management, engineering and maintenance.

Op-X is designed for use with touchscreens though it can also be used with a traditional keyboard/mouse pairing. A single server package can service multiple stations. Op-X also works for voice-tracking operations.

Info: www.bsiusa.com

Broadcast Tools Rallies the Sentinels

If there was one word popular at the Broadcast Tools section of the Broadcasters General Store booth, it was "Sentinel."



The Sentinels are a line of IP-based products, many of them monitors of one kind or another.

The Audio Sentinel is a silence detector that will respond with an e-mail or prede-

SUMMER PRODUCT PREVIEW

mined sound alarm. The Schedule Sentinel is an IP-based event scheduler that works with an NTP time server and can schedule up to 100 events. The Temperature Sentinel is an IP-based relay and monitor of temperature monitoring equipment. The Relay Sentinel is an IP-based monitor for relays. It can work with the new Status Sentinel, which monitors digital "status" inputs.

Also new was the latest Site Sentinel, number 4. As with all Sentinels, it is IP-based. Its job is to remotely control remote site equipment such as silence sensors, temperature sensors, etc.

The WebSwitch was another new product. The WebSwitch features IP-controlled outlets.

Info: www.broadcasttools.com

Burk Provides IP-Based Remote Control

Burk Technology offers the ARC Plus SL IP-based remote control, which provides affordable IP-based broadcast remote control with real-time telemetry, alarms and events shown on an embedded Web server or viewable using optional AutoPilot Plus software.

Mobile Web browser compatibility makes on-the-go access convenient. The ARC Plus SL supports I/O connections for up to 256 metering, status and command channels using Burk's Ethernet-based Plus-X I/O modules. It's compatible with all ARC Plus systems.

ARC PLUS ▼



PLUS-X 300 ▼



Also new from Burk are direct transmitter interfaces for the Burk ARC Plus and ARC Plus SL broadcast remote controls that bring TCP/IP connectivity to Broadcast Electronics 4MX transmitters and an easy serial connection to Nautel V-series transmitters that eliminates external parallel wiring to the transmitter.

Burk also has released the Plus-X 300 Ethernet-based I/O for the ARC Plus. And it unveiled PPM Assurance, an automatic recovery solution for stations' Arbitron PPM encoding, taking home a Radio World "Cool Stuff" Award, as we noted last issue.

Info: www.burk.com

Burli Displays Latest in Newsroom System

Canada's Burli Software is promoting

the latest version of its Newsroom news production system.

The networkable Newsroom features ingest, editing and content management modules. The system also handles the latest in new media, such as one-click podcast creation, interfacing with Internet Web sites and RSS.

It also offers a prompter module for reading finished copy.

The ingest module has been enhanced to accept many different media formats such as newswires, FTP files, MP3, XML, RSS, e-mail and faxes.

Info: www.burli.com

Coaxial Dynamics Monitors Analog and Digital Power

New at Coaxial Dynamics is the Model 81094 "Advanced Wattchman" Monitor/Alarm for analog and digital broadcasting.

Using specialized line sections ranging in size from 7/8 inch to 6-1/8 inches, it will monitor two transmission lines at the same time and is designed to measure analog (FM, CW) and digital (IBOC, HDTV, DTV, CDMA) from 1 Watt to 100 kW. The Model 81094 can span from 2 MHz

through 2300 MHz.

A single rack unit controller/monitor features three sets of alarm dry contacts as well as a local audible and visual alarm. An alarm condition may be activated to send an e-mail alert.

It allows monitoring of two separate transmission lines, i.e. driver/final output, two stations at one location, etc.

Monitoring and control is possible via intranet/Internet.

Simultaneous display of power levels on both transmission lines is shown on the front-panel fluorescent display.

Info: www.coaxial.com

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BRIC Remote Control Is Free Utility From Comrex

Users of Comrex BRIC and Access codecs have a new software tool for remote control.



BRIC Remote Control is a free utility that allows BRIC and Access users to locate other BRIC and Access codecs within a network and address them as well. The software also creates address lists of the units. It is a Windows-only utility.

Comrex Technical Director Tom Hartnett said, "Many of our existing Access customers were looking for an effective way to manage multiple Access devices from a single interface for simple broadcast network applications."

The company also has set up "Comrex Fan" pages at the Facebook and Twitter social networking Web sites; and it created video updates from the NAB show via an IPTV service.

As reported last issue, Comrex took home the Radio World "Cool Stuff" Award for its BRIC-Link codec.

Info: www.comrex.com

Continental Shows Next-Generation Importer

Continental Electronics has introduced its next-generation HD Radio importer, the 800i, shown, which compliments its 800Exp Embedded Exporter and 802Ex Digital FM/HD Radio Exciter.

At the NAB Show the company highlighted its line of FM transmitters including single-tube models ranging from 11 kW to 70 kW and its 802B analog exciter.

The CEC 816HD single-tube analog+HD



FM transmitter has been renamed the 816HD-20 to differentiate it from the new 816HD-25, a 28 kW box, and the 816HD-28L, a 30 kW liquid-cooled system. Continental can now provide TPOs now up to 30 kW in a single transmitter and up to 60 kW in combined systems.

And CEC partnered with the DRM Consortium to tell attendees about developments in Digital Radio Mondiale, a "universal" digital system for the broadcast bands below 30 MHz. It is an open standard for short-, medium- and long-wave and has been endorsed by the ITU and ETSI.

DRM+ will offer regional and local broadcasters a digital solution at higher frequencies including FM.

Info: www.contelec.com

Davicom Goes Mod

Davicom has added a Modbus interface to its MAC series of transmitter control systems.

Modbus is a popular EIA485-based industrial bus. The addition of Modbus to the MAC makes a variety of industrial I/O devices available for use with the MAC.

Davicom has also added EAS logging to the MAC. The EIA232 output of EAS decoders can drive the MAC, which will log EAS activity, send e-mail alerts or whatever the user has configured the system to do.

The company also is promoting its new



MicroMAC, designed to handle small-budget remote-control and monitoring needs. I/O capability includes eight metering, eight status and eight relays, and communications is achieved over dial-up or IP networks. It operates with the same GUI as other MAC products.

Info: www.davicom.com

Dawnco Amplified Splitters Drive More Receivers

Dawnco came to the spring NAB Show with its line of amplified splitters.



These splitters power the LNB and split the received signal to drive up to 16 receivers. Each output is at the same level as the input, so receivers perform better than they would with passive splitters.

The Michigan-based company offers a line of LNBs, satellite antennas, receivers, tools and cable.

Info: www.dawnco.com

DaySequerra Aligns Digital Time

DaySequerra introduced the M4DDM Diversity Delay Monitor with TimeLock, to address analog-digital audio synchronization issues in the HD Radio main program audio. It earned a "Cool Stuff" Award.

The monitor contains an AM/FM/HD tuner to receive the analog and digital broadcast signals. Using DaySequerra's proprietary TimeLock algorithm, any time difference between the HD Radio HD1 analog and digital audio is determined. The required correction is sent to compatible audio processors and those newer IBOC

exciters that support the correction signal over Ethernet.

For older systems, the M4DDM includes a digital audio delay. The HD audio is run through this delay, which the M4DDM then adjusts to give proper time alignment.

The M4DDM Ethernet port also allows the system to communicate with Remote Dashboard software, which provides extensive monitoring of the system. The M4DDM can also send e-mail or text alarm messages. The TimeLock feature has also been added to the new M2HDS.

Info: www.daysequerra.com

Digigram Focuses On Transport

Digigram is promoting its IQOYA V*CALL, an IP-based software codec intended to help broadcasters make the move from ISDN to IP audio with confidence.



The company calls it a suitable choice for users who are running a PC-based application on an existing computer and need a codec to plug into an IP audio infrastructure. It is compatible with Digigram sound cards and is RTP/UDP IP audio, SIP/SDP, VoIP phone compatible and EBU Tech-3326 (N/ACIP) compliant.

The system can bring IP codec functionality to a PC-based radio automation or logging application. It has a simple, optimized GUI and allows application developers to bridge any DirectSound application to IP infrastructures. The codec interacts remotely with other IQOYA software such as V*MOTE for status checks, AGC control, on-air and talk signals.

Also featured is IQOYA V*MOTE, a broadcast software application that turns any laptop into an IP codec for reporter contribution or remote voice-over. It can be remotely controlled, providing assistance when used with other IQOYA codecs, to include on-air signal light, talkback signal light, audio settings such as AGC, and automatic local backup recording. It incorporates EBU Tech Spec 3326 (N/ACIP) interoperability standards for ease of calling any studio or receiving a connection without having to know network or audio format parameters.

"Just add a small audio interface such as the Digigram UAX220-Mic and the solution is complete," the company promises.

Info: www.digigram.com

DSI RF Systems Adapts TheCue for 3G Remotes

DSI RF Systems' TheCue, designed for television on-scene news reporting IFB

applications, is being adapted for radio remote broadcasting via 3G networks.

TheCue has the capability for bidirectional 15 kHz stereo audio, auto connect



from the field, two open collector outputs for remote control and balanced audio input/output. It allows a single person in the field to trigger an automation system or other program source, eliminating the need for a person at the studio. Optimum transmission is achieved by the use of diversity antennas. Control, diagnostics and setup are achieved by using the front-panel LCD screen. Password protection protects sensitive parameter adjustment by unauthorized personnel.

Info: www.dsirf.com

Presenting ENCO's Presenter

ENCO Systems has debuted Presenter, a new radio automation system.

The single-screen interface features a panel design with tools including voice



tracking, hot buttons, recording, database and search. Features include cut, paste and block move of playlists elements, user tabs, backsell log and new or updated tools for live assist and voice-tracked operations.

"Presenter, like its counterpart DAD, supports all forms of audio technologies including IP audio, traditional sound cards, audio router control, console interfaces, and general purpose I/O, touch screens, etc.," ENCO states, while emphasizing the "look and feel" of Presenter as being particularly notable.

The company also announced a partnership with Dave Scott called Scott-ENCO, a company to service legacy SS32 systems.

Info: www.enco.com and www.scottenco.com

ERI Looks Toward Higher IBOC Power

ERI unveiled two products this spring in anticipation of higher-power IBOC digital power.

The Shared Aperture FM Antenna uses Rototiller Series elements to achieve analog to digital isolation of -40 dB for single-frequency applications. This design consumes little or no additional tower space and preserves analog/digital coverage symmetry. The system may be configured for non-directional or directional FM service, combined stations service, at a wide range of

power levels using high- or low-power Rototiller bays.

Shown, Bob Groome, left, shows off the Rototiller shared aperture antenna to Adib Eden of WURN.



Photo by Bob Kovacs

If increased digital sideband power is approved by the FCC, the requirement to protect the analog signal will be forefront. The ERI 970/973-iBOX Series FM Mask constant impedance filters meet this need, the company said.

By employing additional non-adjacent coupling loops, tighter skirts provide analog protection with spectral regrowth exceeding FCC limits at increased -10 dBc digital power levels. Analog power of 60 kW plus digital power of 6 kW are accommodated by this new series. Mounting may be configured for floor or vertical racks to maximize space efficiency in transmitter rooms.

Info: www.eriinc.com

From ESE, an Economy GPS-Based Master Clock Gen

ESE calls its ES-101 a low-cost yet very accurate GPS Master Clock/Time Code Generator.



The unit receives time and date information from GPS satellites and supplies this data to the user in the form of three types of time code: ASCII (RS-232C), ESE-TC89 and ESE-TC90.

Two one-pulse-per-second outputs and a GPS "Lock" output are standard features. A 12-channel receiver is employed that is capable of tracking up to a dozen satellites simultaneously, although reception of only one is required for time data to be output.

Several options are available that allow the unit to meet most any requirement asked from a master clock or time code generator.

Info: www.es-web.com

Google Upgrades Radio Automation

Google seems to be paraphrasing Mark Twain these days: Rumors of their demise are greatly exaggerated.

So exaggerated in fact that Google

showed a new, upgraded Google Radio Automation package at the NAB Show.

Version 1.1 has several enhancements including a segue editor and a waveform editor for taking a knife to unruly audio clips. Google has added several "widgets" as well.



One interesting widget works with the Sage Endec to make EAS tests easier. Another widget helps cue files for specific outputs. There is also an Axia VMix widget for controlling VMix audio levels.

Axia's Pathfinder application is fully accommodated in Google too; as is Wide Orbit traffic data.

Info: www.google.com/radioautomation/products.html

Graham Studios Highlights Quality Cabinetry

Graham Studios offers cabinetry, studio design, systems integration and Rivendell automation systems, among other services.



Its best-selling furniture is the Modulux line, design for ease of assembly in minutes. The furniture can be assembled in dozens of ways, left- or right-handed, stand-up and sit-down, as well as in all of the company's basic configurations.

Pedestal returns have optional front equipment racks and rear access doors. Table pedestals also have options for both inside and outside access doors. The table-top pod provides rack space and is available in several heights with and without risers. Interview tables can be added to any table-top configuration. The console table size can be selected to fit any console size.

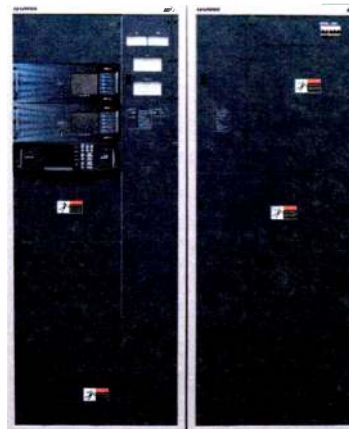
Options such as copy stands, mic risers, headphone and turret control placement and media storage cabinets tailor the studio furniture. Modulux furniture uses solid oak trim, high-pressure laminate table surfaces and a laminate finish.

Info: www.graham-studios.com

HPX Series Is High-Powered Tube Line From Harris

Harris has introduced the HPX Series, a range of high-power tube transmitters designed for HD Radio broadcasting.

HPX transmitters provide a high-power



solution in a compact, power-efficient and cost-effective package. HPX transmitters are also available in analog FM-only or common amplification HD Radio versions, and incorporate an advanced transmitter control system.

Harris said these transmitters use the company's experience with HDTV tube technology to provide a compact and efficient radio broadcast transmitter.

And Harris showed the Intraplex NetXpress LX IP codec, a rackmounted codec in a single RU that can carry up to four bidirectional stereo audio streams. The unit promises low delay, adjustable packet sizes, programmable jitter buffer depth and Intraplex forward error correction among other features.

Harris also expanded its PR&E VistaMax line of audio management systems. The company showed VMQuadra, an interface between VistaMax digital studio networks and radio automation systems, and VistaVue, a software application that gives air and production personnel more control and visibility of the VistaMax network operation.

Info: www.broadcast.harris.com

Henry Engineering Throws the Switch

Engineers needing a way to switch power from main equipment to backup will be interested in Henry Engineering's PowerSwitch.

The unit was developed for use with the Arbitron PPM Encoder and PPM Monitor system. If the PPM Monitor detects an encoding error or failure, the Powerswitch will switch AC to the backup encoder, so no data (or ratings) would be lost.

But the PowerSwitch also can be used to remotely "reboot" other AC-powered equipment, such as a PC at a transmitter site and where AC power must be remotely turned

off and on.

Also: Henry's USB Matchbox II combines features from earlier generations of USB Matchbox products. The unit provides

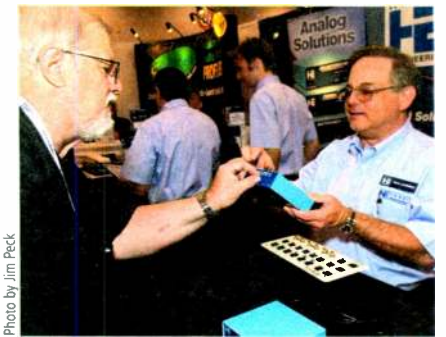


Photo by Jim Peck

analog inputs and outputs on XLR connectors (line level), an AES/EBU digital output and a headphone output for monitoring. It is plug-and-play compatible with Windows Mac and Linux operating systems and has built-in AC power to allow operation at true professional +4 operating levels.

Shown: Chris Compton of KMRO(FM) hears about the USB Matchbox II from Hank Landsberg.

Info: www.henryeng.com

Inovonics 703 Is a Tiny Handful

The first member of a new line of 1/3 RU utility widget boxes, the 703 from Inovonics is an RDS/RBDS encoder. As detailed last issue, it earned a Radio World "Cool Stuff" Award.



Photo by Bob Kovacs

The 703 is designed to insert up to 128 characters of scrolling text into the FM broadcast signal. Suggested uses are for station ID, commercial messages or program promos. Messages are static rather than dynamic but can be updated frequently. Shown, Charlie Dozier of Legend Communications takes a closer look at the 703 with Jim Wood.

The company is also promoting its Model 718 DAVID-III all-analog processor, which provides aggressive three-band processing for contemporary FM music formats. It offers slow, "gain-riding" AGC and three bands of compression and limiting. Front-panel controls allow the user to tailor the sound "signature" over a considerable range and help maintain a consistent balance between program midrange and the frequency extremes.

Info: www.inovon.com

JK Has the Blues

JK Audio showed its BlueKeeper Wireless Audio Gateway, a desktop hybrid for a cell phone.

The BlueKeeper is designed to pair to cell phones like a common Bluetooth headset. It will also pair to Bluetooth sound cards in stereo A2DP mode. The BlueKeeper has



two input channels, one for XLR mic/line level signals and another for a headphone level output from an audio device. The XLR output jack has caller only audio; a 3.5 mm stereo jack has the host and caller audio on separate channels at line level and a third 3.5 mm jack has both the host and caller in a mono mix at microphone level.

Sister product the BluePack earned a Radio World "Cool Stuff" Award.

The company also debuted its innkeeper LTD digital hybrid. It has the ability to send line-level signals through the XLR input jack; its XLR output jack feeds caller-only audio to systems. Published specifications suggest a 50 dB null between send and receive audio. The unit also has auto answer and disconnect features, and connects to the JK Audio Guest Module for remote control.

Info: www.jkaudio.com

LBA Introduces Antenna Installation Tester

LBA Technology displayed the Model FIT-70 Antenna Installation Tester. It measures actual forward and reflected power in the 70 to 1000 MHz range with power levels up to 100 Watts, with applications for translators, RPU and STL installations. The FIT-70 is battery operated.



For engineers wanting to analyze a VHF/UHF 50 ohm transmission system using a portable, lightweight, battery operated analyzer, LBA introduced the FAT 2710. With a frequency range of 30 through 2700 MHz, it analyzes VSWR, frequency and bandwidth by spot frequency or sweeping the band of interest. Storage of results using internal or external media for later analysis is possible. A USB connection to a laptop is provided for data analysis and alternate con-

trol. Tuning and checking of FM broadcast, STL, RPU and other antennas is possible.

Personnel working around towers with antennas operating in the 10 through 10,000 MHz range can benefit from the SafeOne Personal Monitor to ensure they are not exposed to fields that exceed FCC RFR guidelines. The SafeOne is worn using its belt clip or ballistic nylon padded riggers holster and provides visual and audible alerts when radiation exceeds FCC, OSHA or ICNIRP limits.

And LBA offers the Schomandl 3024 VHF-UHF Power Monitor. Featuring a wide dynamic range of 1 Watt through 1 MW the 3024 monitors forward and reflected power as well as VSWR between any probes in the system.

Info: www.lbagroup.com/test

Logitek Takes Us To the Pilot

Logitek Electronic Systems introduced the Pilot, an inexpensive router-based audio control surface for radio broadcasting.

It is designed to complement the JetStream Mini IP audio router, which earned a "Cool Stuff" Award and was described last issue (shown, Brian Krep of Maple Audio Technology hears about the system from Elaine Jones).



Photo by Bob Kovacs

The Pilot surface, coming this summer, is a modular system that provides up to 24 faders. Audio sources may be routed as desired to each of the faders; change buttons above each fader work in conjunction with a Select knob to the side. Each fader may be independently assigned to a Program bus or any of three Aux busses. A cue switch above each fader will route that fader's source to a built-in cue speaker.

The company calls the Pilot a solution for stations that want IP audio routing and mixing at an entry-level price. A Pilot starts at \$2,600.

Info: www.logitekaudio.com

Mayah Adds Three Products

Mayah's Sporty Portable Reporter Codec, shown, can transmit over ISDN, IP, 3G and POTS while simultaneously recording to USB sticks or SD cards. Sporty adds two new audio formats, MPEG 4 HEV2 and

MPEG 4 AAC ELD, providing one-touch high quality and low latency. Also available is an apt-X option on all Mayah codecs.



The company's new C11 codec models feature compact dimensions, fan-less operation and low power consumption. They offer a range of redundancy and monitoring/control concepts, with advanced models supporting logging of outgoing and incoming signals and offering additional storage as well as optional POTS and 3G/UMTS. Compliance is provided to EBU N/ACIP, including Mayah's enhanced IP features.

Flashman II is Mayah's second-generation portable recorder codec. It adds the ability simultaneously to record and transmit the audio back to the studio over IP/3G. Flashman II records to SD cards and USB sticks; it supports most modern networks and interfaces: WLAN, UMTS/3G and Ethernet, plus the new state-of-the-art audio formats MPEG 4 HEV2 and MPEG 4 AAC ELD.

Info: www.mayah.com

Moseley Solves Your Bit Transport Problems

Moseley Associates Inc. introduced the Event 5800, a high-capacity bidirectional studio-to-transmitter link that can operate over paths of up to 26 miles.



The capacity can be configured to handle a combination of T1, E1 and Ethernet circuits. It can handle up to nine T1 circuits, eight E1 circuits or 27 Mbps Ethernet, or divide bandwidth between the various circuit types.

Event will transport nine linear uncompressed stereo audio streams and 5 Mbps Ethernet traffic. The system operates in the unlicensed 5.8 GHz ISM or 5.3 GHz U-NII bands. The system includes a Web server and SNMP software for system configuration and monitoring.

Info: www.moseleysb.com

Musicam USA Hits the Road

Musicam USA offers the RoadWarrior LC, which is a two-channel portable IP/ISDN unit.

The RW LC supports multiple algorithms including AAC-HE over IP and ISDN, FEC (Forward Error Correction) supported for reliable IP remotes and battery back-up.



Included is a built-in two-channel mixer to route and mix input and output sources. Audio and communication parameters, including input/output signals and audio levels, are configurable remotely and can be stored in presets to assist non-technical users with setup.

RoadWarrior LC is based on the Suprima IP/ISDN dual audio codec and can send and receive simultaneously via IP through its Ethernet port (10/100BaseTX), and can also connect to ISDN codecs through its built-in I-BRI terminal adapter.

Info: www.musicamusa.com

Nautel Builds HD Radio Coverage

Nautel showcased products, technologies and research projects at the NAB Show to address HD Radio coverage. Included were solutions that permit higher digital power such as the NV Series transmitters and Nautel's HD Power Boost, which earned a "Cool Stuff" Award from Radio World.

The company introduced the Importer



SUMMER PRODUCT PREVIEW

Plus, to be used to add two programming channels and other supplemental audio and data services to HD Radio transmissions. It codes the secondary program services of an IBOC transmission including digital channels two and three. A user interface permits selection of service modes and partitioning of signal bandwidth for a variety of audio and data services including multicasting.

Nautel demonstrated a concept called IQ over IP which simplifies deployment of cost-effective boosters as part of an IBOC infill strategy.

It rolled out the NX25 AM transmitter, shown, offering a next-generation option for HD Radio and DRM operation at a 25 kW power level. It offers digital precorrection, 2.7 MHz Direct Digital Modulation and 88 percent efficiency, which Nautel says is best in the industry.

The company's customers had their first chance to put hands on seven new transmitters in the NV FM line: the NV3.5, NV7.5, NV10, NV20, NV30 and the original NV40.

Nautel also took part in what was described as the first commercial-grade DRM+ live transmission system. Fraunhofer's DRM+ ContentServer, Rfmondial's DRM+ Modulator and Nautel's DRM+ Exciter were combined in the demo, which included a real-time encoded audio program with surround option, DRM text messages, a textual information service called Journaline and DRM+ signaling.

Info: www.nautel.com

Create and Stream Live Video With NewTek TriCaster

NewTek Inc. offers the TriCaster portable live production system.



The company says that with TriCaster, "anyone can simultaneously produce, live stream, broadcast and project a network-style production." One operator or a small team can produce a live show while switching between as many as six cameras with two DDRs, multi-channel effects and NewTek's LiveSet virtual sets.

It says TriCaster is used by broadcasters, sports organizations, schools, government agencies and others. The TriCaster family of products in NTSC is available in North America starting at \$3,995.

The company said CBS station WXKS(FM), otherwise known as KISS 108

in Boston, used TriCaster in May to stream its annual concert for the second year. That included 10 hours of live music performances and interviews with Black Eyed Peas, The All-American Rejects, Flo Rida, Jesse McCartney, Ciara, Akon, Soulja Boy, The Veronicas and The White Tie Affair.

Info: www.newtek.com

NPR Satellite Sends HD Bit Stream

NPR Satellite Services has found another application for its "big pipe in the sky."

A satellite, of course, is an excellent way to deliver a high-bitrate data stream to a lot



of places. The most recent application of this capability suggested by NPR Satellite Services is delivery of the entire HD Radio stream to distant stations.

This would most likely find application in state-wide educational radio networks where transmitters throughout the state transmit the same program.

NPR Satellite Services is a full-time C Band satellite space segment provider, specializing in building and designing radio and video networks. Services include space segment, system design, engineering, equipment, uplink services and 24/7 support; clients include broadcasters, network operators and other businesses that require a reliable platform for distributing video, audio or data content.

Info: www.nprss.org

Omnia Gives You the A/XE

Omnia Audio debuted Omnia A/XE Processed Audio Encoding for Windows.

This is the company's next generation of PC-based audio processing software. It can process audio for a variety of applications,



bitrate-reduced and linear, and runs silently as a background service. It can be managed and configured remotely with a browser and can process and encode multiple streams in various formats simultaneously.

Omnia also highlighted its new Omnia One Studio Pro Studio Processor, calling it the first studio processor to include a four-band compressor/limiter. The resulting flexibility provides precise and accurately defined individual control while pre-processing music, commercials, remote feeds or sweetening audio.

Several Omnia products were part of the Telos/Omnia/Axia "Streaming Solution Center" at the NAB Show including the Omnia One Multicast, Onia A/XE and Omnia 8X.

And Omnia and Telos clients now have 24/7/365 support. The company launched similar support earlier for its Axia brand.

Info: www.omniaaudio.com

Omnirax Knows Technical

Omnirax was at the NAB Show promoting its lines of technical furniture for broadcast, music production, education and even home environments.

The Innova line combines modular components with custom-tailored shapes to fit particular requirements of air, production and



imaging studios. Cable raceways are integrated into the design to facilitate wiring and create logical access points. Conventional casework and cabinetry can be provided so that a facility has a unified look and feel.

Shown, a studio at Clear Channel's new facility in New York City.

The company also offers the Quantum Series, combining signature curved work surfaces with newly designed metal legs and riser posts, curved modesty panels and a new 3D wraparound laminate.

Info: www.omnirax.com



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—Rod Graham, President



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OMT Shows Off Sixth-Generation iMediaTouch

OMT showcased the latest generation of its iMediaTouch Radio Automation.

Enhancements include a new on-air screen, increased flexibility including adjustable visual display and other additions.



The company also is promoting a new iMediaTouch video along with customer video testimonials shot at the NAB Show. It's available via YouTube or visit www.imediatouch.com.

Additionally, Websecure+ was showcased at the NAB show; this is a standalone Web server for OMT's digital logger the iMediaLogger.

"When combined with iMediaLogger, WebSecure+ provides a very powerful media recording and distribution center for audio asset storage, secure access and centralized content management and dis-

tribution of logged content to share with internal personnel and offer to public radio listeners through podcasts and iTunes," it stated.

Info: www.imediatouch.com

Orban: Broadcast Quality on Board

Orban has introduced the Optimod-PC 1101 card to process Windows audio for professional broadcasters and netcasters. It offers broadcast-quality digital signal processing on-board suitable for both live streaming and on-demand programming.

Three on-board Freescale DSP56367



DSP chips provide loud, consistent sound to the consumer by performing stereo enhancement, AGC, equalization, multi-band gain control, peak-level control and subjective loudness control.

Balanced analog inputs and outputs can

operate at professional +4 dBu reference levels while resisting pickup of hum and noise.

Optimod-PC is available in two versions; the 1101 is for PCI bus systems and the 1101e is for PCIe (PCI Express). Applications include audio netcasting, HD Radio (primary and multicasts), DAB, DRM and other dedicated digital radio services, FMExtra and other digital subcarriers, mastering, audio production and many others.

The company also promoted Orban Optimod 8585 for 5.1 and 7.1 Digital Surround Sound.

Info: www.orban.com

Pristine Adds RBDS Data Monitoring & Logging Software

Pristine Systems has introduced RBDS Capture, a software plug-in that will monitor and capture RDS data for its Black Box digital audio logging, monitoring and alert software.

BDS Capture continuously displays and logs up to 16 channels of RBDS data (PS and RT) from FM broadcast stations. RBDS data normally includes station call letters, artist, title, sponsor and other content related messages.

The company says the "text alert" is a unique feature that monitors all of the RBDS data streams in search of user-defined words. An alert window will pop up and notify users whenever incoming text matches are found.

Pristine Systems provides digital audio delivery and radio broadcast automation systems.

Info: www.pristinesys.com

PSI Puts Broadcasters In the Slot

The UHF Slot Antenna from Propagation Systems is available in low (PSILP), medium (PSIUSM) and high power (PSIUSH). Version PSIVLP is available for low-power VHF.

The traveling wave antenna uses reliable technology for optimum performance and reliability. Rugged construction using marine brass and copper and covered in either slot covers or a full fiberglass radome, this antenna is suitable for maximum horizontally polarized coverage.

The antenna features pressurized feed lines for protection and radome sealed slots to protect the antenna from the environment. Another feature is its ability to be directionalized. Single-lobe, peanut and cardioid patterns are a few of the patterns available. In addition to non-directional pattern, there are 12 standard directional patterns. Other patterns and variations are available.

The antenna is factory tested and optimized prior to shipping.

Info: www.psibroadcast.com

FM Line Grows at PTEK

PTEK is offering a new FM transmitter, the Gamma 3000. The system features 1,250 watt power amp modules and hot-pluggable power supplies.

"The power amplifiers and power supplies are independently operated and removable from the front of the unit while it is installed," the company states. "They are load sharing so whether you remove a power amplifier and/or a power supply, the unit is still operational at reduced power." The California-based company also highlights an "extremely compact" footprint.

Features include remote control interface, LED status on each PA, VSWR foldback, harmonic filter and wide-range, single-phase design. It is available with optional PTEK FM25ES exciter. The 3 kW unit occupies four rack units and weighs 88 pounds.



Photo by Bob Kovacs

The company also promotes its Smart Series Transmitters as the smallest high-power, hot-pluggable units on the market and the simplest to install. Shown, Peter Forth slides an RF module into a Smart 5 transmitter, while visitor Richard Schutte examines another module.

Info: www.ptekpower.com

Aqira Takes to the RCS Airwaves

Beefing up its radio business lineup, RCS has a new traffic offering, Aqira.

Building upon the Airwaves platform, Aqira is designed to be a scalable application, for small and single-station as well as large multi-station operations.

It manages ads and monitor ad schedules, air logs, sales and sales staff performance along with account and contract manage-

Customer	ID	Product	Start Date	End Date	Rate	Spots	Total Spots
Advertiser	Logo on	Top Level	7/1/2009	7/1/2009	\$1,200.00	1	\$1,200.00
Product	Logo on	Top Level	7/1/2009	7/1/2009	\$1,200.00	1	\$1,200.00
Station	Logo on	Top Level	7/1/2009	7/1/2009	\$1,200.00	1	\$1,200.00
Order Number	1000						

ment, invoicing and reporting. From a single database, users can schedule, bill, report and manage their enterprise. "No longer are multiple software packages with multiple hardware configurations needed to earn and manage revenue," the company states.

Aqira offers differing levels of security as well to control access. Australian broad-

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caster Austereo chose the new system as its traffic solution.

RCS HD Importer has been retooled to match the latest software release from iBiquity. The iBiquity 4.2 code core update enables the RCS HD Importer to send information to the latest exporters available in HD technology. Conditional access is also enabled which allows listeners to gain access to specialty content and programming.

Spot monitoring division Media Monitors, meanwhile, opened for business in London. President/CEO Philippe Generali stated: "Unlike in the U.S., four out of five spots in London radio come from a national agency. Media Monitors will provide the local sales staff with competitive information not available in the market."

Info: www.rcsworks.com

Radio Design Labs Makes the Conversion

RDL is featuring its newest analog-to-digital audio converter, the HR-ADC1.

The unit has published specifications of .00006 percent distortion, -135 dB noise floor and virtually flat frequency response +/- .05 dB. The HR-ADC1 has average peak level monitoring, peak value storage,



external sync capability and front-panel settings for up to a 24 bit, 192 kHz sample rate. The unit has balanced and unbalanced audio inputs on a detachable terminal block through RCA and XLR connectors.

It allows adjustments and settings including input level, 0 dB metering reference, number of bits, sample rate, peak hold and storage modes, meter ballistics, display brightness and internal and external sync selection.

The unit allows external sync through AES/EBU, coaxial S/PDIF or AES-3ID connectors. Digital audio connections are available in transformer isolated AES/EBU, coaxial S/PDIF and AES-3ID formats.

Info: www.rdl.net

Sabre Highlights Breadth Of Offerings

Sabre Towers and Poles, the tower division of Sabre Industries Inc., was at the NAB Show promoting its services. It designs, manufactures and installs towers for nearly all AM, FM and TV applications.

The company said its



guyed towers are available in knock-down or welded designs and in face widths from 18 to 84 inches wide.

"We also manufacture self-supporting towers with either solid or tubular legs," it states. "Installation services include foundations, AM ground systems and FM/TV antennas."

Sabre Site Solutions, Sabre's catalog division, offers pre-engineered lightweight towers and a selection of tower components. Sabre Industries' shelter division, CellXion, supplies pre-fabricated buildings suitable for transmitter facilities.

Info: www.sabreindustriesinc.com

Sage Puts a CAP On Its Endec

In anticipation of FEMA adopting the Common Alert Protocol and the FCC requiring stations to have EAS equipment to handle it, Sage Alerting Systems redesigned its widely used EAS unit to become the Sage Digital Endec. It earned a "Cool Stuff" Award.



Through a combination of hardware and software, the Digital Endec drops in where the original unit was installed and adds CAP capability, Ethernet connectivity and a Web server for system configuration, monitoring and alert generation. Instead of using an internal printer, the new unit stores logs in memory for recovery through the browser.

In addition to the original stereo analog loop-through, an AES/EBU digital audio loop-through has been added. One of the two USB ports may drive a log printer, if desired.

The system includes a text-to-speech converter to voice CAP-delivered text messages. Alert audio and receiver audio can be streamed to the user through the Web server, allowing control and monitoring from anywhere. The system can send e-mails on EAS activity, such as sending and receiving alerts, loss of receiver input, etc. Firmware upgrades can be done over Ethernet or USB.

Info: www.sagealertingsystems.com

Shively Introduces New FM Antennas

Shively Laboratories is promoting two new antenna models, a medium-power dipole (6514) and a broadband panel (6018-V, shown), as well as an improved high-power broadband Lindenblad (6017B).

The 6514 dipole is a rugged medium-power stainless steel construction element



intended for easy installation on tower legs from 1.5 to 3.75 inches in diameter. This dipole is designed for quick deployment in emergency or standby situations either singly or as a branch-fed array; and operates with a VSWR <1:1.35 from 88-108 MHz.

The 6018-V series broadband panel antenna is suited for single- or multiple-frequency application. The panel may be installed according to the desired polarization. These face-mount panels can be arranged for omni-directional or custom patterns.

The Lindenblad has been modified to provide a VSWR <1.15:1 from 92-106 MHz. This low wind-load, pole-mounted antenna is suitable for single-frequency medium- to high-power applications, or multi-station low-power applications.

Info: www.shively.com

SAS Uncovers an M Class

M Class consoles run on the same RIO as SAS Rubicon consoles, but at a lower price point. Prices start at \$11,000, with typical packages running around \$13,000 per studio including the RIO.

Consoles include A/B inputs for faders, three user-configurable output busses, unlimited number of auto-configuring mix-minus busses, up timer, IFB functionality,



intercom capability and eight custom-programmable buttons. These consoles can run stand-alone or communicate with SAS 32KD, RIO or 64000 routers.

The TP-USB turret provides a location for guests to plug in Mac and PC laptops into the SAS routing infrastructure. It provides a bidirectional audio interface of analog and digital signals via RJ-45 connectors.

The KEL-16 is a bridge between TDM and IP audio routing; SAS says it is now possible to build a high-capacity, zero-latency, multi-zone routing system using a TDM backbone and still be able to enjoy the benefits of an audio over IP interface to connect devices, locations or additional systems. The KEL-16 provides a NACIP compliant, bidirectional, 32 channel AoIP link from the SAS 32KD to other SAS 32KD systems or any other compliant audio sources/destinations.

The RJ-45 RIOlink is available for customers who want a direct-wire approach to interfacing. RIOs can be ordered with all the connections as RJ-45, or only the I/O connections, leaving the control functions brought out to blocks.

Info: www.sasaudio.com

Sierra Multimedia Specializes In Integration, HD Radio

Sierra Multimedia Inc. is a radio system

integration and technical services company based in Bella Vista, Ark.

"Based on the simple fact that most radio stations today do not have engineering staffs or in many cases use only part-time contract engineers, Sierra Multimedia fills the void by providing complete studio or transmitter



site upgrades and installation as well as all test and certification measurements required," the company states.

Sierra Multimedia is an HD Radio specialist providing installation, certification and re-certification. To provide clients with turnkey installations, Sierra Multimedia also sells all necessary equipment. The firm is also distributing the Microgen TS9080 FM Modulation Analyzer in the United States.

The company formed in California in 1996, was incorporated in Oklahoma in 2001 and relocated to Arkansas in 2008.

Shown is a studio at Journal Broadcast Group in Tulsa, Okla.

Info: www.sierramultimedia.com

Sonifex Explores the Sound of Silence

The Redbox RB-DSD1 digital silence detection unit from Sonifex is designed for master outputs and transmitter sites. The unit switches between two digital inputs on loss of audio.



It will work with AES/EBU, S/PDIF and TOSLink digital inputs and outputs, and will sync on TTL, wordclock and AES/EBU inputs.

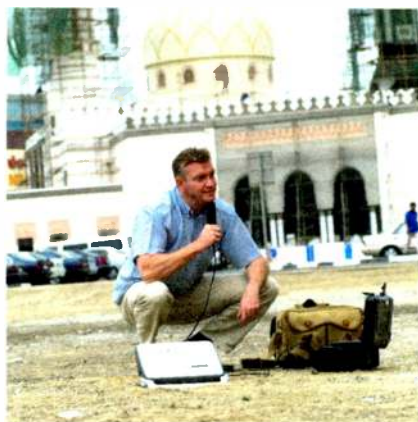
The RM-4C8-HDE1 reference monitor is a 1 RU audio monitor with Dolby E or Dolby Digital audio stream decoding allowing you to monitor visually 8 or 5.1 audio channels respectively and to monitor audibly any two of those channels.

Signalled illuminated studio signs feature RGB LED arrays and internal control circuitry. Display modes are constant on, flash, pulse and/or to be controlled by external switching. The signs may be flush or optionally, end-mounted. In addition to standard signs, custom lettering is available for a nominal setup fee. The signs earned a Radio World "Cool Stuff" Award, as noted last issue.

Info: www.sonifex.co.uk

Stratos Highlights BGAN Deployments

Stratos Global Corp. used the spring convention to feature recent deployments of BGAN by media organizations.



The mobile broadband satellite service enables rapid response and streaming of broadcast-quality video from the field, the company said.

Stratos is one of the world's largest distributors of Inmarsat's Broadband Global Area Network service, a mobile satellite offering that uses portable, lightweight terminals to provide guaranteed video (up to 384 kbps streaming), high-speed data (up to 492 kbps) and voice connectivity anywhere.

BGAN allows communications in areas where terrestrial or cellular networks are damaged, congested, non-existent or too difficult to deploy.

In April, Stratos announced its acquisition by Inmarsat. Stratos is now a wholly-owned operating division of the Inmarsat group but said it will continue to operate as an independent subsidiary under its existing management.

Info: www.stratosglobal.com

Superior Electric Enhances Voltage Regulator Line

Superior Electric added the BVR Series Voltage Regulator to the Stabiline product line.

These solid-state, step-regulating units are designed to protect a facility from AC voltage sags, surges and sustained over-and under-voltage conditions. The BVR monitors and protects individual phases in a three-phase system.

Models include 208Y/120 up to 480Y/277 VAC in 100 to 1200 amp services. Both wide-range (± 30 percent of nominal input voltage/output accuracy adjustable from 2 to 6 percent) and narrow-range (± 15 percent of nominal input voltage/output accuracy adjustable from 1 to 3 percent) styles are available.

The BVR features a small footprint with no moving

parts or fans and 97 percent efficiency for low operating costs.

Info: www.superiorelectric.com

Telos, Around the Clock

Telos came to the NAB Show with a new, smaller 2RU rackmount Zephyr/IP and portable version, the Z/IP Mixer.

The 2RU studio rack-mount Zephyr/IP provides broadcasters with the same feature



set as its predecessor in a smaller, more compact frame size. The Z/IP Mixer combines the versatility of the Zephyr/IP with the utility of a digital four-channel stereo mixer in a rugged portable chassis.

Telos and Omnia clients also now have 24/7/365 support.

The company had launched similar support earlier for its Axia brand. Clients of Telos, Omnia and Axia can reach a 24-hour support line at (216) 622-0247.

The company is also now shipping its Telos Zephyr iPort solution for transmitting multiple channels of audio over a single quality-of-service guaranteed IP connection. And it gave a sneak peek at the planned Telos VX, a next-generation of multi-studio phone system that uses VoIP technology.

Info: www.telos-systems.com

Thermo Bond Prefab Buildings Are Ready In an Hour

Thermo Bond offers a line of pre-fabricated equipment shelters, useful for broadcast sites, as well as a new family of metal, environmentally controlled communications cabinets.

The company's buildings are pre-wired to customer specifications and are designed to withstand 120 mph windloads. Building options include R40 ceiling and R25 wall and floor insulation, bullet-resistant walls, falling ice protection, a choice of exterior finishes and integral fire detection and suppression systems.

The buildings rest on concrete slabs and are anchored with hold-down plates. The typical time to offload from the delivery truck, set and anchor a building is around an hour.

Thermo Bond's new communications cabinets are constructed with 14 gauge steel, edge gaskets to seal the doors and a vented roof and door. The communications cabinets too come wired to customer specifications.

Info: www.thermobond.com

G5 From Tieline Is for STL, Audio Distribution

Codec manufacturer Tieline Technology exhibited the G5 rack-mount audio codec, its next generation of STL-grade broadcast codecs, planned to ship later this year.

The company said it is capable of sending FM-quality audio over mono, stereo, unicast, multiple unicast and multicast connections. An optional six-input/six-output card supports surround applications.



Photo by Bob Kovacs

Features include automatic silence detection, optional dual-redundant power supplies and audio network failover solutions. It is designed for connections over IP and other connection transports within broadcast networks. Single power supply versions are available with optional on-board flash drive storage capability.

Connections can be controlled and managed by a Web-based GUI that provides programming functionality and connection diagnostics. The G5 interfaces with TieServer, Tieline's Traversal Server solution, which facilitates IP "buddy list" dialing of networked IP codecs, much like Skype or ICQ contact management.

The codecs provide connections over wired and wireless LANs, WANs, the Internet, satellite IP, Wi-MAX and Wi-Fi; they can connect over wireless 3G and 4G networks as well as POTS, ISDN and satellite ISDN networks.

As reported last issue, Tieline earned a "Cool Stuff" Award for its Bridge-IT codec. And the company teamed with Inmarsat to provide broadcast solutions with simpler satellite IP and ISDN connections. Inmarsat displayed the flexibility of Tieline codecs by connecting over satellite connections in its booth; and it worked with Tieline to produce a user instruction guide for creating broadcast connections over BGAN satellite terminals.

Shown, Brooke Nelson, left, of Firerose Pictures listens as Darren Levy describes the Bridge-IT and G5.

Info: www.tieline.com

Vorsis Processors Are Enhanced

Updated versions of several Vorsis

broadcast on-air processors are available.

The VP-8 Multi-Mode Processor, shown, now incorporates new operating modes designed to improve the sound of AAC, MP3 and WMA/WMA-VBR audio codecs. They



predict the changes in the program by the bitrate compression, and process accordingly to reduce the bitrate artifacts that compromise the quality of the decoded stream. One mode is designed for bitrates above 48 kbps one for below 48 kbps.

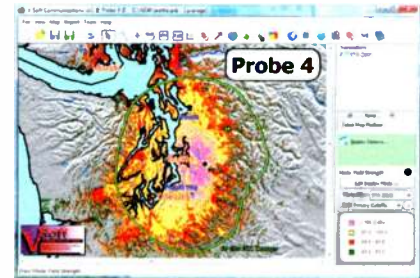
The flagship AP-2000 FM/HD Processor also demonstrated new enhancements and features. A higher-performance main clipper and refinements in the 31-band limiter result in higher loudness with more transparency.

Info: www.vorsis.com

Probe Four Uses Multiple Cores

V-Soft Communications has released Probe 4, a new version of broadcast coverage and interference prediction software.

The new software takes advantage of



multiple processor cores to greatly increase the speed of the complex calculations required.

Combining field strength prediction algorithms with databases from the FCC, the Census Bureau and the USGS, the software is able to predict coverage, interference between stations, including interference to or from IBOC carriers, population coverage, and pretty much anything else desired, according to V-Soft.

A multiplicity of customizable report and map formats provide easy to understand output.

Info: www.v-soft.com

Wegener Pumps the iPump

Wegener demonstrated an IP network-based line of products. Wegener's iPump 525 is the latest in the line of iPump media servers.

The iPump 525 is aimed more towards static displays and signage uses. However, due to its flexibility with multiple formats it is suitable for lobbies, advertising venues or information display at remote locations or in a studio. A suggested use might be as a programmable prompter (e.g. weather, traffic,

news) for on-air news personnel, hosts and sidekicks. The marketing department will also find uses the iPump 525.

For radio broadcasters Wegener teased a little with its emphasis on its "MicroCasting" initiative. MicroCasting is designed to



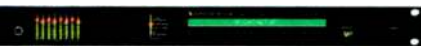
give national radio programmers the ability to infuse a national feed with local content, varying each localized feed with content unique to that locality.

Wegener also demoed its ShowShifting module (shown) for controlling the scheduling of audio feeds from the iPump 6420 audio server.

Info: www.wegener.com

Wheatstone Flicks A New Blade

Wheatstone told NAB Show attendees about its expanding WheatNet-IP system for audio over IP, which took home a "Cool Stuff" Award, including the new ip88m Mic Blade.



The ip88m provides eight built-in mic preamps with phantom power, eight analog output channels and 12 universal logic GPI ports. Mic audio is available anywhere in the WheatNet-IP system. Analog outputs can access any system source, and are typically used for studio headphone and speaker feeds.

Also for radio at the show was Wheatstone CrossTalk, a new series of monitoring and communications stations. CrossTalk integrates with the Wheatstone WheatNet-IP and Bridge TDM networking systems. It is suitable for news operations, remote sites and other venues where two-way communication is desired. CrossTalk R-16 is a rack-mount station with 15 pre-programmable talk/listen keys, a dialup talk/listen key, speaker, front-panel mic, comm XLR-5 headset jack and stereo 1/4-inch jack. Desktop versions with eight and 16 talk/listen keys will be available.

And the company showed the Wheatstone SideBoard console control surface for edit booths, voice tracking and use by "hands on" anchors. It too integrates with WheatNet-IP.

The input fader strips can access any source in the network, with dialup and talk-back on any fader. Sideboard is available in either a four- or eight-fader configuration. Two output busses — PGM and AUX — allow for simultaneous audio-to-air and

cue/mix-minus.

Info: www.wheatstone.com

Yellowtec iXm Provides Exchangeable Heads

The Yellowtec iXm combines a microphone and a digital recorder in one unit.

The iXm is designed for reporters. Its microphone capsules have been optimized for speech intelligibility and low handling noise sensitivity. The swappable capsules are available in omnidirectional, cardioid and supercardioid patterns. Capsules auto-

matically are detected for automatic gain and DSP adaption. The iXm uses an intelligent levelling algorithm, which the company says allows the reporter to concentrate on the interview. Files are stored on removable SD memory cards as WAV, BWF or MPEG-2.

Positioning of record and stop buttons enables quick and easy thumb-on operation.

The iXm uses standard SD memory cards. Power comes from three AA batteries or a built-in rechargeable Li-ion battery.

A headphone output provides quick monitoring. A line input will be useful at press conferences using a mult box. A mini USB port can be utilized for accessing audio



files from a PC, to recharge the Li-ion accumulator battery or to reconfigure iXm. Configuration software ships with the iXm.
Info: <http://yellowtec.com>

25 THINGS

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Show" for FREE from your desk or laptop, hosted by U.S. Editor in Chief Paul McLane and featuring News Editor/Washington Bureau Chief Leslie Stimson and Gear & Technology Editor Brett Moss. The Radio World editorial team traveled the sessions and exhibit floors to find the people, news and technology certain to have an impact on radio broadcasting and station operations throughout the coming year and beyond.



Hosted By:
Radio World Editor
in Chief /U.S. Paul McLane

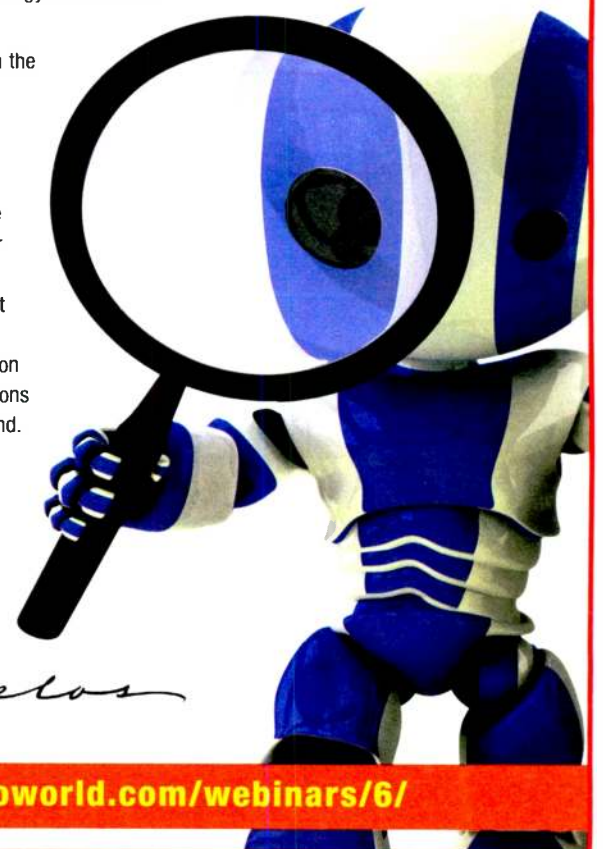
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Logitek Finds a Home in Fresno

JetStream and Remora Make the Best of a Limited Budget

USERREPORT

BY RYCHARD WITHERS
General Manager/Chief Engineer
KFCF(FM)
Fresno Free College Foundation

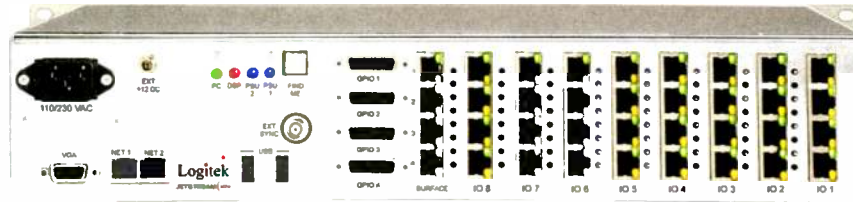
FRESNO, CALIF. — KFCF is a community radio station in Fresno, Calif., that has been in existence for 34 years. Most programming originates with KPFA(FM) in Berkeley but we originate about 20 percent of our programming locally.

We realized that our existing audio board, a 30-year-old Autogram, wouldn't last much longer; switches were failing, amplifier modules were becoming hard to repair and it had drifting audio levels.

I looked at our budget and saw we didn't have a lot of money for this project so I began looking for something flexible that would handle analog and digital I/O and that was manufactured by a company with a good reputation for support.

HELP

I sent out a plea to supporters for donated airline miles and registered at a hostel in Austin to attend the NAB Radio Show last September. With a budget of about \$100 dollars for hostel, food and transportation, I went to the show and



The rear panel of the JetStream Mini

talked to a variety of vendors.

I saw a demo of the IP audio-based Logitek JetStream Mini and was impressed by what the engineers and salespeople showed me of this brand-new model.

Back in Fresno I talked to local engineers who worked with Logitek products and folks on the PubTech listserv, looking for complaints about technical support or equipment. Everyone seemed satisfied. One person even told me he'd gotten an almost immediate response from Logitek in the middle of a massive hurricane in Houston.

We ordered a JetStream Mini with a Remora control surface. The latter arrived first and I noticed that something was rattling around inside, so I opened it up and found a screw that had come loose during shipping and that the cue speaker had become unplugged. I plugged the cue speaker in and replaced the loose screw, and admired the design



The author says good riddance to the rat's nest that connected the old console.

and layout of the inside.

The engine showed up shortly after that and I set it up on the "bench" in our lobby/studio. (Our lobby doubles as a studio, and we hang a sign on the door asking people to not knock, and use the back door while shows are on the air.) I

hooked it up to a computer and began putting it through its paces.

We thus became the first installation of the JetStream Mini.

BUNNY HUNT

The JetStream Mini engine is just two rack units high and has a total of eight cards for I/O.

Each card has four RJ-45 jacks and can be either a digital or analog input or output card. The RJ-45 jacks are designed to use the StudioHub+ console

wiring system. You plug in a Cat-5 cable and run it to the piece of equipment you need to attach, and put a StudioHub+ adapter on the end. The adapters come in a variety of flavors including pigtail, male and female XLR, RCA, and 1/4-inch TRS. Wiring equipment was a cinch with off-the-shelf Cat-5 cables and the StudioHub adapters.

I began working on tearing out the old audio console on Saturday morning and all of its wiring, including a serious session of evicting 12 years of dust bunnies in all the cabinets and pedestals.

I finished the cleaning and ripping out of old wiring about 4 p.m. and decided it was time for a break and dinner. I came back in about 6 and worked until about 10 that night getting the Cat-5, remote start wiring and equipment all in place, along with the surface and the console.

I actually had the console operational in just a few hours, and even went "on the air" to test the console.

I had a problem and after two hours of banging my head looking for a wiring or JetStream problem, I decided the problem was on the other end, and drove over to the STL point and reset the ISDN, came back and everything was working.

Then I turned up the monitors in the control room and was blown away by how incredibly good the audio sounded. We were still using the same Crown

(continued on page 36)

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Sonifex Aids Welsh Community Radio

Console and Furniture Package Keeps Voice FM's Costs Under Control

USERREPORT

BY DYLAN JONES
Chair/Project Manager
Voice FM

ABERBARGOED, WALES — Voice FM is a community radio station founded in January 2006, the primary initiative of the Youth Activities Project, led by the Gwent (Wales) police department and supported by Caerphilly County Council, Gwent Association of Voluntary Organizations and help from local schools and community groups.

DECISIONS

The station can be heard permanently online at www.voicefm.co.uk and during part of the summer on FM. We offer educational, social and creative activities for all people living within the community, which is an area that is recognized as having problems associated with social and material deprivation.

When looking to equip an on-air studio for use at Voice FM we chose a Sonifex S2 radio broadcast mixer and the entire S2 Solution turn-key furniture and cabling package.

Sonifex products have a solid reputation in the industry and looked the best for our purposes. Having worked as a radio presenter before becoming a police officer in 1995, I had used Sonifex equipment. I knew that they were reliable and easy to use, which is essential when being used by both children and adults alike, most of whom are not trained in broadcasting.

We have found that those who are initially intimidated by being in a radio studio soon learn how to drive the desk with confidence and ease.

The Sonifex S2 has a number of features that make it ideal for use by community, student and small-scale commercial radio stations.



First of all, it is simple to use, with automated control of speaker muting and on-air and mic-live sign switching and fader start of ancillary equipment such as CD players and PC-based automation systems.

For Internet broadcasting, the S2 has simultaneous analog and digital outputs with a S/PDIF digital output, which can be connected directly to the sound card of a PC for Internet streaming. There is a range of input and output channels and the mixer is built to the customer's specification, allowing the flexibility of configuring the mixer for any radio application whilst minimizing the costs involved.

The S2 has two main audio busses, allowing broadcasting on the main PGM

bus and simultaneous recording on the AUD bus, with bus output selection on each module.

When setting up the studio, the directions for installation were relatively easy to follow; on the only occasion we had to ask Sonifex a question, they were only a telephone call away. The staff is warm and approachable, and provide you with a swift response.

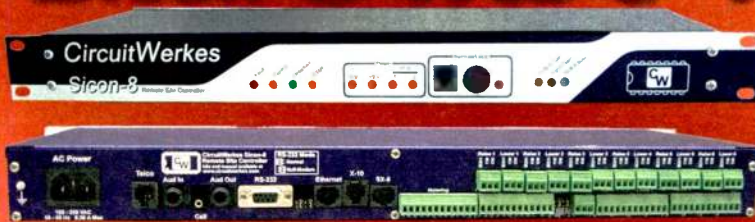
As a result of this, when we secured funding for a production studio and the station, the decision to install a second Sonifex S2 Solution package was never in doubt.

Local children and young people get the opportunity to use the broadcast equipment as schools often use the station to develop the literacy, teamwork and communication skills of their pupils. As many as 30 students can occupy the studio as they research, write and broadcast their projects. We now have more than 300 pupils a week working in the studios during term time.

I would certainly recommend Sonifex products to anyone considering a project similar to ours, or for those within the industry yet to try it.

For information, contact Sonifex/Independent Audio at (207) 773-2424 or visit www.independentaudio.com or www.sonifex.co.uk.

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- DTMF-16 and DS-8 DTMF tone decoders.
- DR-10 & DT-232 Dial Up telephone audio interface & studio controllers
- FSK Encoder/Decoders relay-to-RS-232 & RS-232-to-relay converters
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- Visit our Website at www.circuitwerkes.com to find out about these and many more products designed to make your job a lot easier.



Internal Web Server

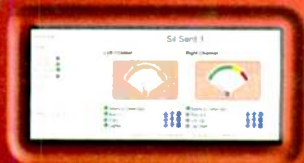


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Simmons College Hits Web With Harris

NetWave Consoles Handle On-Air and Production Duties

SPECIALREPORT

BY STEVE VANNI
President
Technet Systems Group

AUBURN, N.H. — During the summer of 2008, Technet Systems was commissioned to work on a project for Simmons College in Boston. The project focused on the design and integration of a new radio broadcast facility to power a new Internet radio station.

Technet was hired as the turnkey integrator, providing technical consulting for room design and construction, equipment configuration and selection, equipment procurement, system wiring, training and initial start-up.

The scope of work required some architectural design and remodeling of an existing space with two distinct offices. New partition walls were added to break the space into two studios (on-air and production) and a sound lock/green room. Technet works with many vendors and after careful consideration selected **Harris** as the chief equipment vendor for the project.

The design capabilities of the Harris Pacific Design Center group and the user-friendly, feature-rich benefits of the Harris NetWave digital console were notable in the selection.

TWO CONSOLES

Two Harris NetWave 16/12 consoles were installed for the on-air and production operations. The NetWave was selected for a variety of reasons, primarily due to ease of use and durability in



A Simmons College student tries out a new Harris NetWave console.

an educational facility environment.

Training took place immediately upon completion and required little time, as the NetWave layout is easy to understand and intuitive in operation. The combination of analog and digital I/Os also provides plenty of flexibility for meeting the needs of the college today and in the future.

Both the on-air and production rooms are designed the same to make it easy for students to shuttle operations between the two studios. Students use the consoles in each room, along with the venerable Electro-Voice RE20 microphones on OC White arms, Denon CD players and Broadcast Tools audio switches — all provided through Technet and Harris. Each console accepts multiple live and recorded sources for on-air and production purposes.

Although secondary to the technical

operation, the sleek appearance of the NetWave played a role in attracting student interest in the facility. In fact, the studios were well planned in advance to ensure that the appearance would attract student interest.

The Harris Pacific Design Center assisted in the interior design of the studio space, as well as design and construction documentation for the studio build. This allowed the staff at Simmons College to obtain a final view of what the studios would look like prior to beginning construction.

Space limitation required that all of the technical "core" also be contained within the two studios. The minimal wiring needs coupled with the generous cabinet space afforded by Harris furniture design allowed for a clean, easy-to-maintain wiring backbone between the NetWaves and core equipment.

Simmons College Radio is now streaming around the clock and part of the 1,000-member Intercollegiate Broadcasting System. An association with the new IBS/Backbone Student Radio Network has made the station's signal available through Apple iTunes as well as the Simmons College Web site (www.simmons.edu). The station is operated and managed by students, faculty, staff and other members of the Simmons College community.

Len Mailloux, general manager of Simmons College Radio and a member of the Communications faculty, said, "Most of our staff has very little studio training before joining the station and they find it easy to learn and operate. The board is simple, well-designed and the quality is excellent."

He singled out the World Feed I/O connector panel. "It allows us to input from or record to any type of device. Students can use iPods, MP3 players, laptops and other hardware to play music, features and interviews on their shows."

By coupling the Harris Pacific Design Center group's capabilities with the local hands-on service of Technet, the team was able to meet all of the college's expectations. The NetWave has enabled a clean and simple on-air and production operation for the college, also offering enhanced mix-minus capabilities for remote interaction and networkable features for source sharing if the college decides to add network capabilities between the two studios in the future.

For information, contact Harris Broadcast Communications at (513) 459-3400 or visit www.harris.com.

KFCF

(continued from page 34)

D-75 amplifiers and Electro-Voice Sentry 100 speakers as before, and it was amazing how the bass punched, the highs sizzled and how tight it sounded.

I came in about noon on Sunday for a final cleanup and to do some final programming of the remote starts. We were on the air with local programming by 5 p.m. The engine is programmable, with any input being able to be assigned to any fader on the surface. We are working on adding additional features every week with the triggers and procedures available in software.

The engine and surface have exceeded our expectations and the dozens of volunteers have been comfortable with using it in a short period of time.

For information, contact Logitek Electronic Systems at (610) 642-2487 or visit www.logitekaudio.com.

TECHUPDATE

SAS DEBUTS M CLASS CONSOLE

The M Class opens the doors of **Sierra Automated Systems** console ownership to radio stations of limited means. The company says it is engineered to be affordable yet still worthy of the SAS name.

The M Class console features the same design and ease of use as the Rubicon family of consoles, but costs thousands of dollars less. SAS highlights the product's elegance and simplicity.

The M Class is driven by the award-winning RIOLink, the same unit running SAS Rubicon consoles in New York, Los Angeles, Chicago and other top radio markets.

M Class consoles can run as standalone boards and are suitable as drop-in replacements for aging analog mixers. The optional Flex³ module will allow SAS 64000, RIOLink or 32KD owners connectivity to their existing routers without having to change anything. For larger projects, SAS can network studios together and connect everything with a 32KD router.

Features include A/B inputs for faders, three user-configurable output busses, an unlimited number of auto-configuring mix minus busses, dual 1/4-inch and 1/8-inch headphone jacks, full-fidelity cue speaker, meters, up-timer, I/B functionality, intercom capability and eight custom programmable buttons ready for unique applications.

For information, contact Sierra Automated Systems at (818) 840-6749 or visit www.sasaudio.com.



Family Life Commits to Wheatstone

FLN Was the First Domestic Network To Implement the WheatNet-IP System

USERREPORT

BY CECIL VAN HOUTEN
Program Director
Family Life Network

BATH, N.Y. — In early 2008, Family Life Network began contemplating the idea of remodeling its air studio facilities to include a new studio console plus related hardware and software.

We are a Christian radio network of 14 FM stations reaching a potential listenership of more than 3.5 million people across major portions of upstate New York and Pennsylvania.

Bearing in mind the needs of our staff, we decided to upgrade the studio based upon a system that was easy to use, provided superior reliability and used cutting-edge technology.

FLN engineers reviewed several systems and, after weighing the options, chose **Wheatstone WheatNet-IP**.

Because FLN is a non-commercial listener-supported radio network, donor support was a major factor in funding the purchase of the equipment. This being our first major studio upgrade in over 15 years, we were thrilled to see the project gain generous support from donors. Not to mention, Wheatstone offered us the opportunity to beta-test its new system, again helping with affordability.

WHEATNET

With funding on hand, the remodeling project began in December of 2008 and wrapped up in February.

We did a full-on renovation by gutting the air studio to bare walls, rewiring the entire system and purchasing new studio consoles. We also modernized the space by installing new lighting equipment, furnishings and, of course, the fully-digital WheatNet-IP system.

Now FLN has the ability to integrate traditional broadcast engineering functions into an IT-based network, allowing us to link audio and control of many different sources in different locations.

Our new WheatNet-IP system consists of a 16-fader Wheatstone E-6 console control surface, one ip88e Digital Engine, two ip88a analog I/O blades, two ip88ad analog/digital I/O blades, and two WheatNet-PC Windows drivers for our

Broadcast Electronics AudioVault delivery system and Adobe Audition workstation.

The WheatNet-IP blades form a Gigabit Ethernet audio network connected through Cat-6 cabling. Additionally, the Wheatstone Glass-E virtual console software allows us to control the E-6 surface from live remote broadcasts.

One such remote was during our last fundraiser, a three-day listener drive that



In the rack (top): WheatNet Elements, an 88ad Analog/Digital I/O Blade, 88a Analog I/O Blade and 88e Digital Engine

Left: Family Life Network host Sonny Delfyette works with the Wheatstone E-6 control surface.

said, "The WheatNet-IP system is just amazing. It gives us more flexibility than I had working in L.A."

I have to add that this was a once-in-a-decade opportunity to move the network ahead of the game. This system performs like a BMW — sleek, powerful and loaded with features.

FLN was the first domestic radio network to implement the WheatNet-IP system. That's an accomplishment we owe to Wheatstone's technical teams and to Family Life's generous supporters for helping us fund the project.

All together, we did something great for the ministry. Now we have a solid, reliable broadcast system that helps us do what we do — only better.

Wheatstone has already released several software updates, all of which were installed seamlessly and increased system functionality even more. Thanks to a quality system and great tech support, we're looking forward to a long, profitable relationship with Wheatstone.

For information, contact Wheatstone at (252) 638-7000 or visit www.wheatstone.com.

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Atlanta Cluster Welcomes Axia

Lincoln Financial Stations Install IP Audio System

USERREPORT

BY SCOTT F. TRASK
Director of Engineering
WSTR(FM)/WQXI(AM)
Lincoln Financial Media

ATLANTA — Lincoln Financial Media operates an FM and AM radio station in Atlanta. Since 2000 the facility had been upgrading two on-air and five production studios with new audio consoles, replacing Pacific Research & Engineering ABX and BMX consoles that had been in use since 1989.

After upgrading six of the studios, we learned that the console to which we'd upgraded would no longer be manufactured or supported. So in 2006 we took a step back and determined we would need change our architecture.

EVALUATIONS

I started evaluating the different types of networking consoles. I looked at functionality, transition of the studio and cost. The last consideration was the rehab process. Was I going to be able to refit one studio at a time?

After careful consideration, gathering as much information as I could, I came

to the decision that Axia was the product forWSTR and WQXI.

The last studio that needed to be upgraded was a production room that

We started planning the layout, furniture, flooring, wall covering and Axia setup. In planning the studio we had to change our thought process. We needed to look at it as a network and not as a traditional setup.



The Axia control surface atWSTR with controlling software visible on screen.

had a PR&E ABX console with furniture. It would be our first to be outfitted with Axia, a perfect situation to test the new technology.

When planning the Axia network, we created a subnet for an entire station configuration, not just the initial rooms. Every node, GPIO, Studio Engine, console, IP audio driver and switch needs an IP address. This studio would be a stand-alone Axia setup until the next buildout; but I planned the entire network setup as we grow into using Axia in the future.

After placing our order, our equipment arrived about 14 days later, about a month before our remodel. The system consisted of a Mic Node, two Analog Nodes (studio and equipment room), two Digital Nodes (studio and equipment room), a Studio Engine, a GPIO/power supply and console. With the system we also received two Cisco 2960 switches.

We had ample time to do our pre-setup before installing it. We removed all of the equipment for inspection and power-up. Each piece was powered and left standing for the first 24 hours. We had an issue with the power supply when the internal power supply burned up; tech support sent a new one.

Before we configured we found also that we could not initially get the Studio Engine above 100 Mbps of bandwidth. With a field repair we increased it to 1 Gbps.

To learn the system before the install, we completely set it up in the conference room. First we started with the programming of each node, Studio Engine, GPIO/power supply and console with the appropriate IP addresses. We then programmed the switches.

I had never done this, and the information on the Axia Web site was a real help.

We then put the system through its paces. We connected microphones, CD players and the other audio devices. All worked well in the test phase.

We also installed an IP Audio driver in a PC and passed audio. The IP Audio driver replaces the external sound cards used by PCs. You have two choices: single IP Audio driver, which we used for the production PC, and the multiple audio driver, which we used for the automation system PC. You must add a second network interface card to be able to use this functionality. The NIC card's IP would be part of the network configuration of Axia.

CONFIGURATION

Once we finished the test phase, we set forth into configuration, setting up the nodes for their specific use.

One thing I would recommend is the building of a wiring harness. I know that Axia is set up to run a Cat-5/6 from a node (RJ-45) to the audio source (XLR). After talking with engineers who were using Axia, we added a wiring harness to our system; all of the nodes' I/Os and GPIOs have been punched down to terminal blocks.

Once the room had been rebuilt and the flooring, wall covering and furniture were in place, it was time to install the Axia system.

First we removed approximately 65 percent of the wiring that had been run between the studio and the equipment room. We ran two (primary and backup) new Cat-6 cables used to connect the switch in the studio with the one in the equipment room. For peace of mind, the main audio to and from the production studio is run through the nodes, but I continue to use one run of cable (Krone blocks) in case a node fails.

Once the system was in place and running, we put finishing touches on the configuration, creating show/personality profiles for those who use the studio. We were also able to adjust mic processing for each of the profiles. Then the production director was off and running.

We're very pleased overall. And because of the prep work for the production room, the turnaround time from start to finish was approximately 120 hours.

The experience of remodeling the production room also carried over to the remodel of the FM studio, with lessons learned.

At present we have two studios running the Axia broadcast consoles and audio networking system, with plans to reconfigure the entire plant to Axia over the next two years.

For information, contact Axia Audio at (216) 241-7225 or visit www.axiaaudio.com.

TECHUPDATE

LAWO RELEASES V3 SOFTWARE FOR ZIRKON

Lawo recently released new Version 3 software for the zirkon on-air radio console. Among its enhancements is the new Intercom Matrix.

With the ability to support up to 42 "panels" or intercom ports, the Intercom Matrix creates an integrated IFB system and circumvents the necessity for additional hardware or wiring. For integrating the console into a studio, V3 also enables communication over IP (via Ethernet) in addition to the standard serial connection for interfacing with radio automation systems.

While the zirkon console previously supported two independent PFLs and two independent mix-minus systems, the new V3 software adds provisions for a third PFL that is used to realize fader dependent PFL assignments. PFL3 enables a system with a single core, effectively creating a second console. This added capability enables one to create a submixer with local, independent PFL functionality.

Another important addition to Lawo's V3 software is Hotstart mode for Faders. The zirkon provides two modes for fader operation: the Fader start/stop function, which employs motorized faders and the other, Manual Fader operation. The new Hotstart mode facilitates seamless switching between the two mixing modes at the press of a button — enabling multiple operators quickly to use the zirkon in the manner to which they are accustomed.

For information, contact Lawo North America at (416) 292-0078 or visit www.lawo.ca.



TECHUPDATES

HENRY DOUBLES UP WITH THE STEREOSWITCH II

The StereoSwitch II from Henry Engineering is a three-input stereo analog switcher that can switch among three audio sources. Because it uses relays for audio switching, it can also operate "in reverse" as a router, sending one audio source to one of three destinations.

The original version of StereoSwitch required external GPI control inputs (switches, pushbuttons, etc.) to activate the switching circuits, e.g., to switch from one input to another. The new updated StereoSwitch II has front panel-mounted pushbuttons so the unit can be operated (sources selected) either locally or via remote control.

LEDs are also provided to indicate which source has been selected. The remote control inputs may be either a contact closure (switch, open collector, logic gate output) or a DC voltage from 5 to 24 V. Outputs to drive remote tally LEDs also are provided.

By wiring an audio source to the output connector of StereoSwitch II, the unit will operate as a router. The source will be routed to one of three destinations, which appear on what are normally the input connectors. The unit can switch stereo balanced or unbalanced analog audio circuits. Users of StereoSwitch II report that they have also used it to switch AES/EBU digital audio. Although designed for analog, it can work with AES/EBU digital audio signals because the signal paths within the unit are physically short.

For information, contact Henry Engineering at (626) 355-3656 or visit www.henryeng.com.



ARRAKIS MARCS THE SPOT



Broadcast console maker Arrakis Systems has released the MARC-15 analog multi-function tabletop broadcast console.

The MARC-15 is a 15-channel board capable of performing on-air, production or news duties. It can handle up to 30 input channels and up to two telephone modules.

The basic model starts with eight inputs. All MARC-15s have three output mix busses.

A nice addition is a USB port for interfacing with Windows XP or Vista computers.

A meter bridge features analog VU meters. All lit switches are LED.

The board ships with needed cables (with RJ-45 connectors) and Arrakis Xtreme automation, scheduling and production software.

A control room/talk studio monitor option is available.

For information, contact Arrakis Systems at (970) 461-0730 or visit www.arrakis-systems.com.

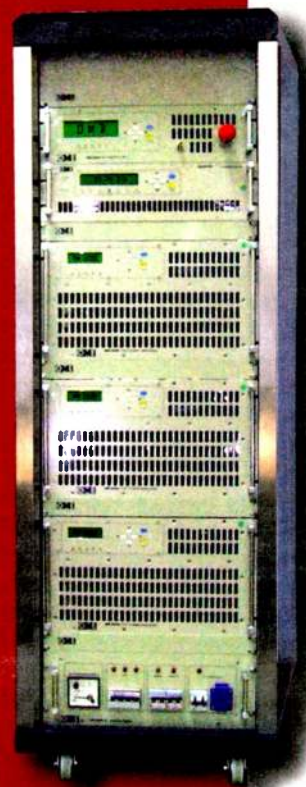
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Klotz Digital Joins the Family

VADIS D.C.II System Links Radio and TV Studios Seamlessly

USERREPORT

BY RICHARD REICH
Senior Broadcast Engineer
Focus on the Family

COLORADO SPRINGS, COLO. — Focus on the Family is not what one expects when one thinks of a typical radio station.

We are a Christian organization founded in 1977 by Dr. James Dobson, devoted to promoting families and family life as defined by the Christian faith. To fulfill a target like this and offer interested audiences a broad spectrum of information, we publish a variety of magazines, videos and audio recordings.

Additionally we do a daily broadcast, which is sent to our FTP site where stations can download files or stream live feeds at anytime.

Our focus has been, and continues to be, on producing audio and video content, mainly recorded, or syndicated, which then is fed out by FTP. Web streaming, podcasts or even video uplinks.

Today, FOTF reaches 220 million listeners in 160 countries on more than 7,000 stations.

MODERNIZATION

Naturally under conditions like these, our studios need to be quite different from those of a standard radio station.

When we started to switch from obsolete analog studio technology to digital several years ago, we were looking for a partner who on the one hand could

streamline our workflow processes and on the other hand map our workflow processes into the new broadcast and production system.

Step by step we started to convert one studio after another from our older analog mixing desks to VADIS D.C.II consoles from Klotz Digital. Our research indicated that the VADIS D.C.II line had a reputation for quality, flexibility, great sound and astonishing network abilities.

We also wanted to get rid of external control boxes, which usually were added to our past mixer boards that were inadequate to handle the functions we needed. We soon learned that the Klotz Digital system can do just about anything you put your mind to.

The networking abilities are a crucial factor as we have 10 full studios in the FOTF Colorado Springs facility. Today all of them are networked via our central equipment area, called Audio Machine Room 1 (AM1), which is equipped with two VADIS audio and control engines.

In the meantime four of our 10 full studios, A, D, E and FNIF 1, which is used for production of "Family News in Focus," have VADIS D.C.II consoles. Our daily broadcast is recorded in Studio A. The studio itself has an elaborate set suitable for television, so that when television broadcasts are done there is little or no need for special setup. The set is lit for television, is soundproofed and features a visitors' gallery that seats around 80-100 people and looks directly into the studio itself. There are microphones in the gallery so that Dr. Dobson or one of his guests can take questions and com-

ments from the gallery audience.

The control room adjoins the studio and has a large window offering sight lines to the entire studio and the visitors' gallery. The control room is equipped with a 24-fader VADIS D.C.II mixing



The author in the FNIF1 studio at the Focus on the Family studio complex.

console and two VADIS D.C.II console panels used for monitoring, control of various speakers, such as those in the gallery and outer gallery speaker area, for control of signal lights, intercom, as well as I/FB talkback to callers and talent via ISDN or other remote equipment.

DIFFERENT MODES

FOTF Studio A was the first implementation of what Klotz Digital calls the "Offline Chat" mode, a feature that was more than welcome and is used often.

This mode mixes selected microphones and remote equipment, pre-fader into a "chat" mix, which is then fed to the talent, producer and screener headsets during breaks while commercials and other audio clips are going out live on the board.

By pushing one button the entire crew and talent of the broadcast can talk to each other while their mics are off, without having to remove their headphones and move about or shout to be heard. Effectively, during breaks, it "dissolves" the glass between control room and studio and allows unobstructed communication between contributors whether in any of the studios or by remote equipment.

Although the equipment differs marginally, Studio D and E functionally are identical. The VADIS D.C.II console system has a 12-fader control surface and control room D is additionally equipped with a four-fader mini-console for the producer.

All of our studios have guest positions. Studio A has six, Studio D has four, while Studio E and FNIF have three. All of these positions have talent panels that

facilitate on/off/cough control of their respective microphones. Another advantage of the Klotz Digital system: the producer or console operator can talk back to any one guest headset or to all of them.

The central technical area, AM1, carries shared resources used by all studios and makes the resources of one studio available to all others. AM1, as well as each studio, has "Mode" buttons, so that when pressed, predetermined routes and

feeds are routed and then everything is returned to a "normal" state when pressed a second time.

Furthermore AM1 allows ISDN codecs and telephone hybrids to be shared among studios. Even the studios that are not equipped with consoles from Klotz Digital — Studios B and C, for example, which still have older analog consoles — have feeds to and from AM1. Those are controlled via Radio Systems controllers that communicate to VADIS via RS-422.

In addition, we have a dubbing bay, satellite operations and two Foley rooms, which are all connected to AM1. The Foley rooms have mic lines to the control rooms and are provided with Foley pits with common surfaces, like concrete, gravel, stairs, linoleum, hardwood, carpet, sand, turf, etc.

With our studio upgrades, we thought we'd put our product supplier through its paces. Far from it! We were positively surprised by the expertise of Klotz Digital's engineering team and the technical sophistication of the VADIS product range.

I am also pleased with the ability to change virtually anything, keeping the board operation up to date and relevant with the equipment we have at that time and what we are doing at that point in time.

We are very satisfied with the results that ushered us successfully into the new, digital era and look forward to upgrading our FNIF 2 studio as well.

For information, contact Klotz Digital at (678) 966-9900 or visit www.klotz.digital.com.

TECHUPDATE

SANDIES DYNAMAX KEEPS IT SIMPLE

Sandies says its Dynamax line of broadcast consoles adhere to basic but crucial qualities: reliability and serviceability.

The Dynamax series starts with the six-channel MX6L and ranges up to the 18-channel MX18EW. Most Sandies boards feature standard linear faders but rotary "retro" faders are available in six-, eight-, 10- and 12-channel models. Standard features include analog VU meters, full monitoring controls, digital multifunction clock and steel frame construction.

Individual channels are hot-swappable.

Options include choices of 24-inch or 36-inch extra-wide console frames.

For information, contact Sandies at (215) 547-2570 or visit www.sandiesusa.com.



AEQ Travels to the Canary Islands

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USERREPORT

BY MANUEL SAIZ MESA
Project Manager
Canarias Radio

SANTA CRUZ DE TENERIFE, CANARY ISLANDS — After the successful installation and operation of a production studio at Canarias Radio facilities in Las Palmas de Gran Canarias in 2008, the technical staff of the company has again trusted in AEQ for the installation of a new turnkey production center at Canarias Radio facilities in Santa Cruz de Tenerife.

Canarias Radio is the public radio broadcaster for the Canary Islands with additional coverage for southwestern Europe and the African coast.

MIRROR SYSTEM

The Canary Islands region is divided in two provinces, with capitals in Las Palmas de Gran Canarias and Santa Cruz de Tenerife. The original idea when we started analyzing the creation of the new studios for Canarias Radio was to provide each with the same technical equipment and program production capabilities.

The Tenerife facilities were designed as a mirror installation of the production center previously executed in Las Palmas de Gran Canarias. Tenerife's installation

includes two studios (control room and studio), a medium-size self-operated studio, two small cabins and an unattended central master control (MCR).

The complete system is run via AEQ BC 2000 D technology — a standard compatible with AEQ digital consoles, audio routers and communications multiplexers. BC 2000 D guarantees quality, reliability and scalability that offers future growth possibilities.

All of the studios, including the cabins, are equipped with digital AEQ Arena consoles interconnected with the AEQ BC 2000 D router/central audio matrix. Thanks to the system flexibility both control rooms have been configured so each one is capable of handling two booths simultaneously or just one by pushing a button. Control surfaces in control Rooms 1 and 2 have 25 faders in total (two Arena D10s and one Arena DM).

The self-op room has a 15-fader control surface and the cabins have units with five faders each. All of the input/output devices of the BC 2000 D system are installed in the rack room (central control) close to the BC 2000 D router. Control interconnection between the router frame and control surface is based on IP protocol, which simplified the installation greatly.

The external communications of the studios use the AEQ Systel 6000 system.

Its touchscreen interfaces have a friendly graphical user interface (big buttons and rich colors) that simplify the use of the system for nontechnical users.

Another important part for us was the AEQ Mar4Suite Pro automation system.



This network includes five central servers installed in the equipment room, five workstations for playout associated with the mixing consoles in the studios and six workstations for journalists in a dedicated press room.

Mar4Suite Pro includes all of the typical applications of the Mar4 suite: news ingest, text editor with optional embedded audio, audio editing, logging and the most reliable data content manager in the market.

In the central equipment room or master control, there are four 42 RU size racks where the electronic elements of the equipment resides, including Mar4Suite Pro central servers, an AEQ AM-03 audio monitor, AEQ Eagle ISDN codecs, AEQ Course multicodec, two AEQ Impact summing audio routers, two AEQ Caddy A/D-D/A converters, an

AEQ Listener multi-receiver for monitoring and six patch panels for digital and analogical signals.

With this installation in Tenerife, we complete the second big production center for Canarias Radio. Both centers featuring the latest in design and broadcast technology, which guarantees a long useful service life for citizens of the Canary Islands.

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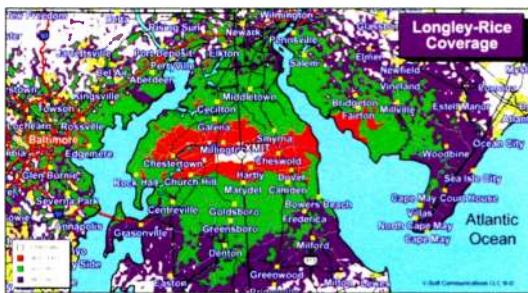
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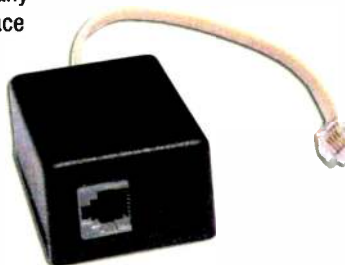
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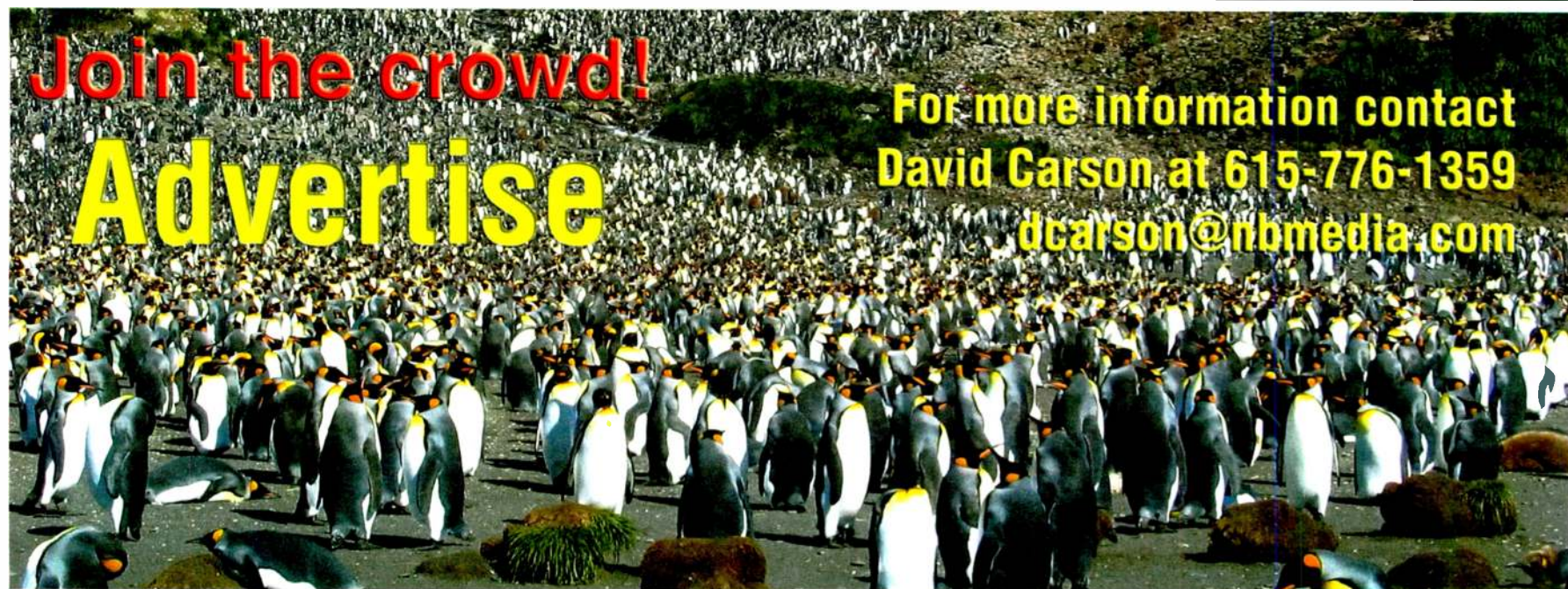
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WILSON

(continued from page 46)

Acquiring Sirius XM Radio would have been a good way to do this, but it looks like Liberty Media beat us to the punch.

SHIFT IT

Another service-expanding option we should consider is time shifting. Time shifting allows us to move underutilized inventory from one daypart to another where it will be more valuable. More precisely it allows consumers to move our product from one daypart to another where it will be more valuable to them. And being more valuable to consumers is what winning in business is all about.

Every 24 hours there are 480 three-minute blocks of time. For illustrative purposes let's assume every piece of radio content is three minutes long. A receiver capable of storing, sorting and playing back content would have roughly 5,000 three-minute audio segments on it in 10 days. Now that's consumer choice.

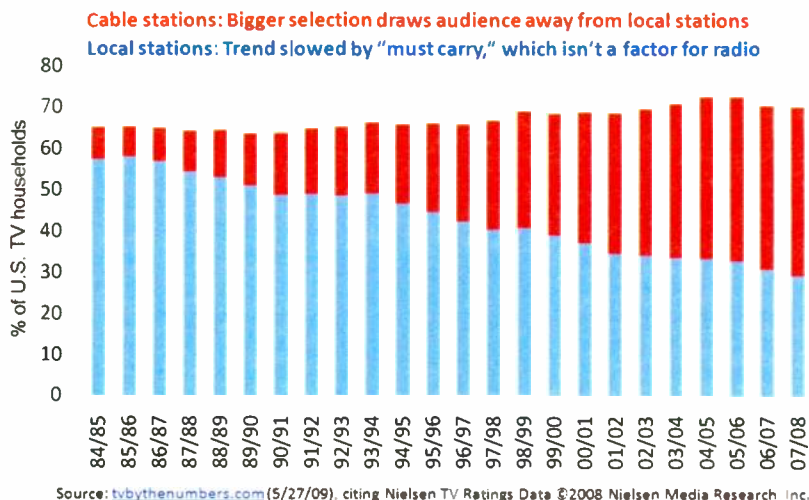
Let me say it one more time to be sure I'm making the point.

Precisely 10 days from this moment, there will be exactly one thing that consumers can listen to on my radio station. It'll be whatever I happen to be broadcasting at that moment.

But if receivers could store and replay content, and they had enough storage for 10 days of programming, then my listeners could choose between roughly 5,000 things from my radio station at that moment.

Consumers Go Where They Have More Choice

Primetime TV Ratings Trends



Local TV stations have been facing competition from services that provide consumers with more choice for decades.

This is the way to compete with MP3 players and satellite radio.

Store-and-replay would allow us to achieve this dramatic increase in choice without having to deal with the complicated, expensive and perhaps politically untenable process of acquiring new spectrum.

It's easy to imagine how this system would work. Radio receivers would have memory in them, and would store the files being broadcast by the tuned-to station. Content would be recorded whether the receiver was playing audio or not.

When you dock your MP3 player on your radio to charge it up, the latest radio content could be uploaded to the portable device. Thus portable music players could be up to date with all of your latest content without having to be on all the time, draining their batteries.

Consumers could search the material from your station easily, actually seeking out paid ads when they want to find a restaurant, nearby lodging or select a movie. They could get customized news and information based on the preferences they program into their devices, hearing only the news for their local

community, the sports scores for their favorite teams and so on.

WE'RE NOT ALONE

Radio doesn't exist in a vacuum. The world around us has changed dramatically over the past 15 years, and it will continue to change dramatically going forward.

A pre-consolidation AM/FM pair may have competed with 10 or 20 other signals in a market. That same AM/FM pair today must compete with those local stations plus hundreds of satellite channels and thousands of other programs from the Internet. Soon it will have to compete with local TV programming beamed to the dashboard, too.

Free local radio needs to provide more content to its customers to compete more effectively in modern society. Consumers are drawn to places that offer more choice. Migrating to a system where our content is stored, organized and filtered by consumers would give them a competitive product for the modern world.

Time is our product, and we're only supplied with 24 hours per day. Some of those hours we use very efficiently, and some of them are essentially wasted.

We need to stop wasting our time.

Dave Wilson's commentaries are a recurring feature in Radio World. He is owner of WHDX(FM) and WHDZ(FM) on Hatteras Island, N.C. He is also senior director, technology & standards at the Consumer Electronics Association. His views are his own and do not necessarily represent the views of CEA or its member companies.

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We're Wasting Our Time

Radio Time Is Like Ice; And What Our Industry Needs Is a Good Freezer

BY DAVE WILSON

Imagine you're a consultant and I'm a business owner. I've called you in to advise me on how to improve my business.

I sell ice at a marina in South Florida. Boaters use my ice to keep food, drinks and fish cold. They flock to my ice stand

COMMENTARY

as they set out to sea in the early morning hours, and there's another rush in the late afternoon when some of them come back with the fish they've caught.

The supplier who brings me my bags of ice is very reliable and comes by every hour like clockwork with two 50 pound bags. My stand is open 24 hours a day and two 50 pound bags arrive at the top of the hour, every single hour. I keep them in standard coolers, like the type you might take on a camping trip.

Every morning shortly before 5 a.m. customers line up at my stand, and by 5:10 I'm sold out of ice. Again at 6 a.m. they line up, the ice arrives, and I'm sold out in a few minutes. By the time mid-day rolls around demand has dropped off a bit and I'm usually able to make it through the hour until the next delivery.

When the late afternoon rush comes, again I can't keep up with demand. Then as evening arrives and throughout the night demand falls off and much of the ice that's delivered simply melts and

goes to waste.

This supplier is the only one who will deliver to my location. I've tried to get him to deliver more ice during peak times and less ice at night, but due to the limitations of his ice-producing operation he cannot alter the quantity of ice he produces and he must deliver it to me every hour or it will melt.

I'm paying for 2,400 pounds of ice every day yet about a third of it is going to waste. During peak demand times I'm missing countless sales opportunities because my inventory has been depleted.

I've asked you for advice. If you're worth your consulting fee you'll hopefully tell me, "Buy a freezer."



EMBRACE THE CONCEPT

Radio air time is a lot like ice. The inventory we have during off peak hours could be producing more money for us if it were stored on the consumer's receiver and available for playback 24/7.

What we need is a good freezer for radio airtime.

TV providers like Dish Network, DirecTV and your local cable operator have recognized the benefit of a good freezer. Only they call it a TiVo.

Sirius XM Radio also recognizes the benefit of a good freezer, only it calls it the XMP3.

Last year Internet advertising revenue surpassed radio ad revenue for the first time. The Internet is really nothing but one big freezer with countless shelves in it called servers.

Some people have tried to market "freezers" for free local radio, but these devices usually haven't been as simple to use as a radio receiver. Most often they've been computer peripherals, and they generally have not been embraced by local broadcasters.

I believe that radio broadcasters need to embrace the concept of the freezer. We need to work on developing, deploying and promoting a simple-to-use, consumer-friendly product that will let us migrate from the streaming business we run today to a file transfer-based business in the future.

SAME STORY, DIFFERENT CHAPTER

This article is related to my earlier commentaries, "We Should Buy Sirius XM Radio" (Radio World, Jan. 1) and "Fix Drugs and Rock & Roll" (April 8).

Each is a chapter in a bigger story, a story based on the premise that the amount of content free local radio provides to consumers must increase dramatically for us to remain competitive in the future.

The idea of buying Sirius XM Radio was about increasing the choices we provide to consumers. The campaign to fix drugs and rock & roll is about standing up for our rights against those who work to make radio "freezers" illegal.

A major problem we face going forward is that consumers are drawn to places where they have more choice. When Home Depot and Lowes came on the scene there were a lot of small hardware and building supply stores around the country. Home Depot and Lowes are still here, but many of those smaller stores are not.

When Borders and Barnes & Noble came on the scene there were many small bookstores around the country. Many of those small bookstores are not around anymore. And now the big box bookstores are facing stiff competition from online bookstores that can offer an even greater inventory without the brick and mortar expense.

And of course we're all familiar with what's been happening in the "radio with pictures" business. Local TV stations have been facing competition from services that provide consumers with more choice for decades. The chart on page 45 shows how they've been faring.

Consumers are drawn to places that offer the biggest selection. Places with less selection can compete, but they often have to do it by specializing in a particular niche and perhaps beating the larger competitors on price, which frequently results in lower profits.

When it comes to radio broadcasting, Sirius XM Radio is a big box retailer. We're a bunch of mom and pop operators. Even companies we wouldn't think of as "mom and pop" operations like Clear Channel and CBS are small-time operators compared to Sirius XM, for they're restricted by FCC rule to owning only eight signals per market. Okay, let's be generous and call it 16 with HD2 streams. Sirius XM has more than 10 times as many offerings.

And just wait until mobile DTV is widely available. It's very likely that there will be single TV stations in some markets that will offer more audio programs than the largest radio operators. Perhaps even more than all of the radio operators in the market put together.

For us to thrive in the future we need to expand the offerings we provide to consumers.

(continued on page 45)

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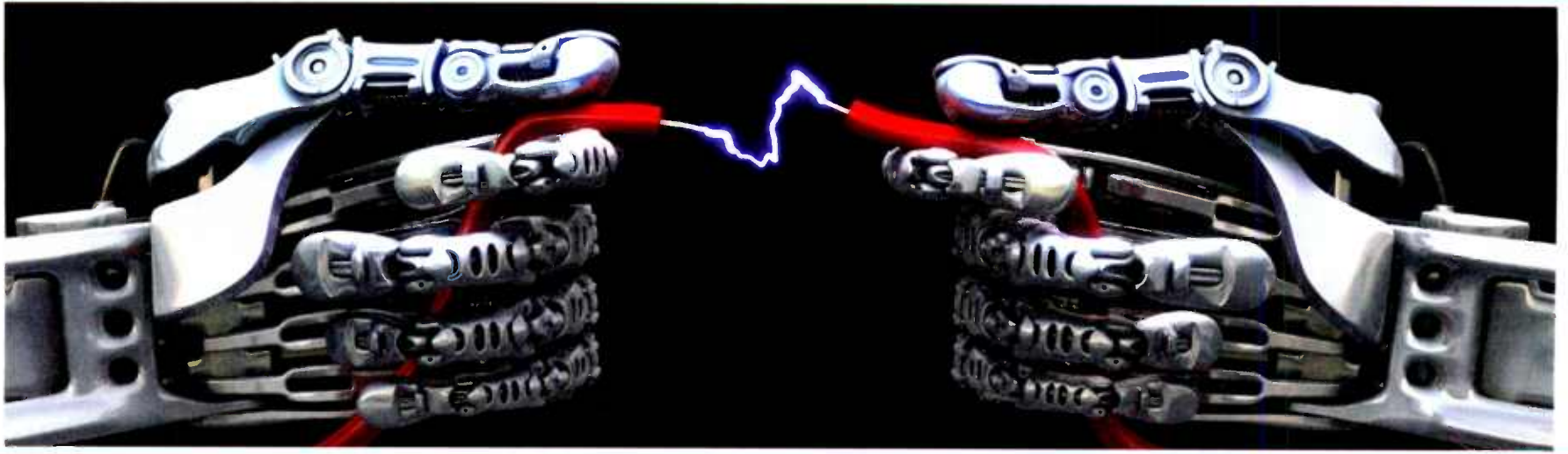
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