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Radio Accessible
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Radio World

$2.50 The Newspaper for Radio Managers and Engineers February 13, 2008

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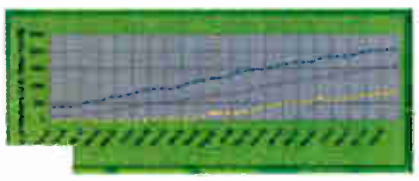
HD RADIO NEWS

▼ Rollout trends: Three-plus years in digital radio.



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HD-R Targets Higher Consumer Profile

CES Wrapup: Proponents Say Portable HD Radios, 'Conditional Access' Capability Are Coming This Year

by Leslie Stimson

LAS VEGAS Some new 50 HD Radio products will available this year. Ford soon will install HD Radio in the dash as standard or optional equipment depending on the car model. And smaller, lower-power-consuming IBOC chipsets are ready for receiver manufacturers.

These are among the news items coming out of the 2008 CES convention, where the industry gets its first look at consumer electronics products expected to make headlines in the months ahead.

A year ago, CES news included car converters for HD Radio amid some 25 products displayed; and smaller chipsets to go into portables were still in development at that time.

The overall theme of the show in 2008 was connectivity.

For audio, several presenters said, consumers want the same level of entertainment in their cars that they have in their homes — whether that means including factory options in the dash or making it easy for consumers to connect their portable audio devices into the car.

Several devices were showcased that use the word "radio" but are meant to deliver entertainment to the user but not tethered to a traditional tower or station.

Here are highlights from CES of interest to radio including news about HD Radio. Satellite-related products will follow next issue.

SAMSUNG HD-R CHIPSET AVAILABLE TO MANUFACTURERS

Receiver chipsets from Samsung and SiPort that can receive the HD-R signal, cost less and consume less power are available to device makers.

The Samsung chip could be in portable devices in the second half of the year, according to Ibiquity President/CEO Robert Struble.

"Radio needs to be on devices that people carry. People aren't buying transistor radios anymore. It's important to be on MP3 players, cell phones, personal navigation devices, because that's what people have on them."

The Samsung IC is built around a single-chip RF-IF peripheral processor SHDR100A, the SDHR200A HD Radio main processor and two memory chips (RAM and flash). The periph-

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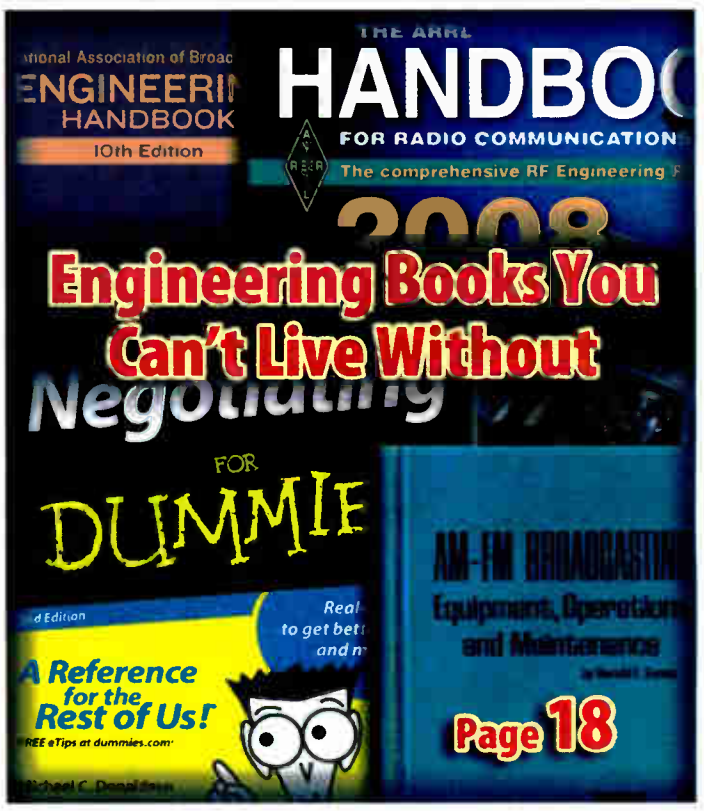
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World Radio History

NEWSWATCH

A Big Year in Station Trading Ahead?

Brokerage and valuation firm Media Services Group predicts that small- to medium-market radio properties will trade at 7 to 9 times broadcast cash flow during 2008, and 9 to 11 times cash flow for larger markets.

"We think the industry is resetting pricing, and expect the year to be record-setting in terms of station trading volume. The first half of the year will be affected by capital constraints, which we expect to loosen in the second half," stated George Reed, managing director of MSG.

It predicts an "unprecedented" volume of stations will change hands this year, the most since passage of the 1996 Telecom Act.

Nevada Tower Firm Closes

VISTA, Calif. Tower Structures has closed.

The tower firm had been in business about 40 years. The closing was first reported by the newsletter CGC Communicator, which published a note from executive Steve Hopkins citing a "perfect storm of unfortunate occurrences" over the past three years.

"I am now working for a company called Comsite Hardware that acquired the antenna mount and cable support portion of Tower Structures. I will also be available for consulting for transmitter site construction." He can be reached via e-mail at *hopkins@comsitehardware.com*.

Hopkins joined the company as a field superintendent in 1974 and became president in 1986. At one point the company had more than 140 employees and built towers from Nigeria to Abu Dabi to Japan.

Hopkins said archive tower drawings are available via e-mail at *towerdrawings@aol.com*.

News Roundup

DELPHI will design the first Worldspace satellite radio receiver for the European aftermarket, based on a reference design developed by the satcaster. Delphi will be a lead designer for its European OEM receiver and reception system applications. The receivers are slated to be ready in 2009 to coincide with WorldSpace's launch in Italy.

P-E FEARS: FCC Commissioner Michael Copps said a worsening economy might lead to private-equity companies breaking up or shutting down media companies they have acquired. He wants the FCC to investigate the trend.

FCC PROBE: Members of both parties in Congress had warned FCC Chairman Kevin Martin they would begin an investigation into how the agency conducts its business if he went ahead with a vote to ease cross-ownership rules. The commission did so; now the House Commerce Committee has begun a formal investigation into the FCC's regulatory procedures "to determine if they are being conducted in a fair, open, efficient and transparent manner," the committee told him in a letter.

"This investigation will also address a growing number of allegations received by the committee relating to management practices that may adversely affect the agency's operation," stated committee chair Rep. John Dingell, D-Mich.

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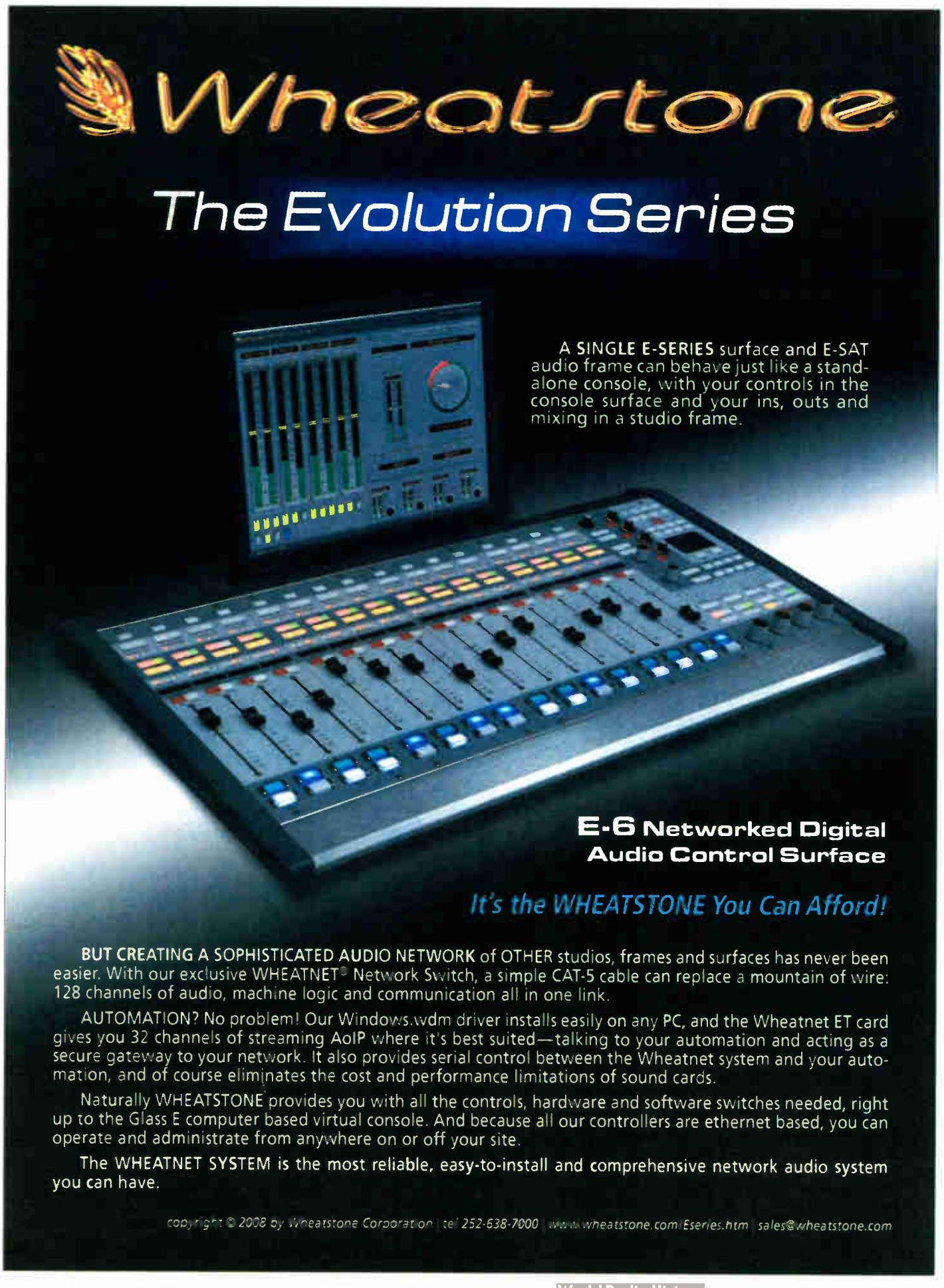

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eral and main processor require 70 mW and 80 mW of power, respectively. Total power consumption is some 180 mW, according to Samsung.

Getting power consumption down to conserve battery life was key; Ibiquity's goal is to allow a user a day's worth of power before needing a charge, Struble said. "The lower power you have, the longer the battery life. You're in the game," he said.

The price goes down as the size and power consumption drops as well, said Struble, who declined to go into specifics.

The chip will be the first to support conditional access without the addition of another chip, according to Ibiquity and NDS.

Conditional access demos in Ibiquity's booth — along with engineering examples of an HD Radio station played over an MP3 player and live over a cell phone provided by Mobicom — used the Samsung HD-R chips.

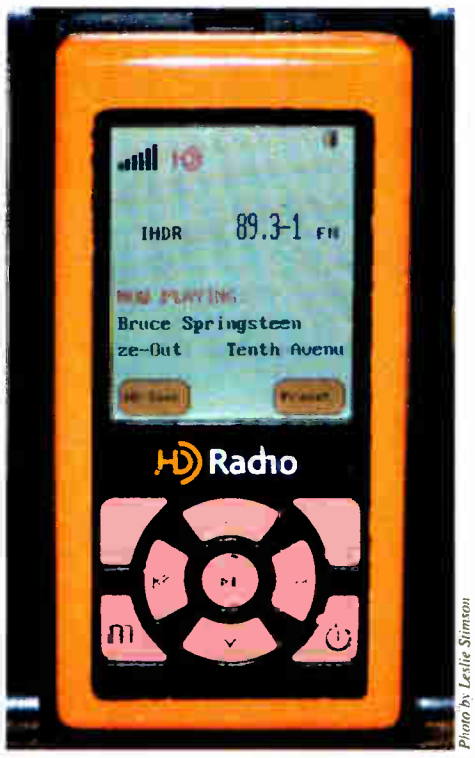

Photo by Leslie Stimson

One demo in Ibiquity's booth was an engineering example of an HD Radio station played live over a cell phone provided by Mobicom, using Samsung HD-R chips.

SIPORT UNVEILS SINGLE CHIP IC FOR HD-R

Meanwhile, semiconductor company SiPort displayed what its engineers say is a single-chip solution for the portable market to select attendees at its suite in the Hilton.

SiPort Vice President of Engineering Aiman Kabakibo told Radio World in an exclusive interview his company's chip consumes roughly 120 to 125 mW of power.

The chip, in development since 2005, can also support DAB and DAB+, RDS and the FM subcarrier-based MSN Direct signal in addition to HD Radio and Terrestrial Digital Multimedia Broadcast.

Digital Radio Mondiale is also on the company's radar screen, he said.

"In order for us to achieve the lowest power [consumption] and footprint we had to start with a clean piece of paper and do this from the ground up so we could optimize for power," he said.

The company displayed two prototype MP3 players with integrated FM HD-R receivers using its chip.

A company spokesman said SiPort expects to launch its chip with major customers this summer.

NEW HD-R TABLETOPS, AUTO RECEIVERS IN 2008

The number of available receiver models from manufacturers shows steady growth; more than 25 booths showed HD-R products for a total of more than 50 HD Radio-related items.

Ibiquity had its largest booth ever at a CES.

The company showcased new iPod-docking radios that include the tagging feature, designed to make it easier for consumers to buy songs from Apple's iTunes store after they hear it on an HD Radio station. Polk, Sony, JBL and Alpine iPod-docking radios were on display. The Polk I-Sonic Entertainment System 2 has been available for just under $500; the others are shipping later in the year.

One car's dashboard included Microsoft Sync, a voice-activated in-car communication and entertainment system, which allows a driver to tell the radio to shuttle among several audio sources, including satellite radio as well as analog AM and FM or MP3 players. Available now on 12 Ford models, Sync will soon work with HD Radio, according to Ibiquity Vice President, Mobile Automotive Products Dave Salemi.

Ford will use a unit from Peripheral, an OEM integration device maker, under the dash to incorporate HD-R into the Sync system; the timing is up to the automaker, although a Peripheral spokesman said he expected approval by this month. Read more about Sync at *syncmyride.com*.

Peripheral Electronics, the OEM integration division of AAMP of America, added new GM vehicles to its applications for the PXAMG Automotive Media Gateway, joining Ford, Lincoln and Mercury vehicles. Peripheral says its gateway is the first interface to bring the iPod, HD Radio and other portable media products into the vehicle.

Pioneer introduced its first HD Radio tuner at an unspecific price. JVC's new HD-R tuner will retail for $99.

Sony unveiled a new IBOC tuner and HD Radio tabletop model that's also an iPod dock. The tuner, the XDR-F1HD, is due out in March, retailing for about $100, while the tabletop with iTunes tagging capability, the XDR-S10HDiP, is slated for summer release and will list for about $180.

Alpine featured a new HD-R tuner that it's calling the first to introduce iTunes tagging to an automotive radio. The TUA-T550HD allows for the addition of other audio sources, such as satellite radio, USB-based MP3 players and Bluetooth. The TUA-T550HD is slated for March availability with a list price of $150.

Apple iTunes tagging is available through the new tuner with Alpine's iDA-X100 Digital Media Receiver, IVA-W505 double-DIN Mobile Multimedia Station and the iDA-X100M Marine Digital Media Receiver. Availability is slated for spring with list price pegged at $400, $1,100 and $450 respectively.

JBL introduced a high-performance loudspeaker dock with HD Radio; the 4001HD also serves as an iPod dock and decodes satellite radio signals. JBL said the unit will ship to retailers in the spring and retail for just under $300.

Dual's new lineup includes three new HD Radio receivers, one of which features iPod connectivity. This unit, the XHD7720, will list for just under $250.

The XDM7615 features a motorized faceplate for access to its CD handling functions while the XDM6350 features front-panel USB connectivity. The XDM7615 will list for just under $200 and the XDM6350 will retail for just under $150.

New tabletop brands for the HD-R market include Audiovox's Acoustic Research brand, Coby, iLive, LG and Jensen.

LG Electronics Tabletop Audio System, the PC12, is LG's first audio system to offer HD Radio technology. In addition to playing AM and FM stations broadcasting in HD sound, the PC12 displays broadcast information including station name, artists and song titles. Other features include iPod Direct Docking station; clock, alarm and sleep functions; CD playback and single-disc vacuum-loading vertical slot; and USB media host for playing MP3 and WMA files.

FORD BUILDS ON INSTALL PROGRAM; OTHER AUTOMAKERS TO FOLLOW?

Building on an announcement at the fall NAB Radio Show regarding dealer-installed HD-R receivers, Ford now says it will include HD Radio as standard or optional equipment in Ford, Mercury and Lincoln vehicles in calendar year 2009.

The automaker did not release details about what models would carry the unit as standard or optional; broadcast engineers queried by RW said they assumed

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World Radio History

In Movies as in Radio, Content Reigns

On assignment for NRB Daily News, a sister publication to RW, I recently had the opportunity to talk with Mark Zoradi, one of Hollywood's most influential executives.

We discussed trends in motion pictures for my story in the Daily, which NRB convention attendees will read on site. But I was struck as well by certain parallels with radio that Zoradi unintentionally raised.

As president of the Walt Disney Motion Pictures Group, Zoradi oversees worldwide distribution and marketing of Disney and Touchstone Pictures films. Past jobs include marketing director for the Disney Channel, director of sales for Buena Vista Pictures Distribution, VP/GM of Buena Vista Television and then president of international theatrical marketing and distribution organization Buena Vista International, which under his guidance earned more than $1 billion at the international box office for 12 consecutive years.

This successful executive's approach to his own industry can offer us several useful reminders.

What business are <u>you</u> in? — In radio we like to say content is king; but how often we forget it.

Zoradi puts it this way about the Disney philosophy: "We're in the motion picture business. The essence of a great motion picture is telling a wonderful story. It starts and ends with the story. We try to never start a movie if we're not passionate about the story it's telling. It's the essence of what we're trying to do."

How many people in radio can speak so clearly about what we do? Understand that we are in the business not of selling commercials but of creating compelling audio content that serves our listeners and clients.

Or as Zoradi has put it before, "Year after year, good product wins."

Change is scary but it need not be fatal. — Zoradi knows all about the boom in consumer media choices including iPods, video games, DVRs and cellphones. In fact he began his career in 1980 as marketing manager for Walt Disney Home Video.

These are challenging to the future success of motion pictures, just as they are in radio. But he reminded me that the cinema is a century old and that over the years, many, many people have sung its death hymn prematurely.

Does that sound familiar?

Radio adapted when TV arrived, he said. TV adapted when cable came along. VCRs didn't kill off movie-making. Lesson: Don't let all the new media hype or years of flat radio revenue growth get you too down about our industry. Choose instead to be one of the people who are remaking the radio business model for a new millennium.

The cinema is a century old now and over the years, many, many people have sung its death hymns prematurely. Does that sound familiar?

Smart businesses can flourish in hard times. — I asked Zoradi how the recent talk of recession affects his work day to day.

"From the world I live in at the Walt Disney Studios, if you look back historically, consumers around the world, not just in America, even in times of recessions, go to the movies. The same is true in regard to home entertainment.

"I'm hopeful our business is not adversely affected by potential recession; it's a medium where you can entertain an entire family with a DVD or take them out to a relatively inexpensive evening at the theater."

Radio too is well positioned to take advantage of a sour economic mood by highlighting our free, compelling audio content — and creating more of it.

Don't fear digital. — The next 12 to 36 months will bring the motion picture industry to a digital tipping point, Zoradi said.

"There are several thousand digital houses now; 35 mm won't be the dominant mode of exhibition, truly, in the next five years," he continued, suggesting that his industry should not be afraid to embrace digital projection. When theaters do change over, it simply means the way the movie is shown in the theater will change. "It will allow the exhibitor more flexibility in scheduling and in quality."

Digital can offer great benefits to radio, as well. Too many people run from it because it is a change in their familiar way of doing things, rather than exploring the benefits it may offer.

Understand your local audience. — Disney has a great deal at stake in how it exports its American-based, American-generated entertainment.

It invests in local staffing of 27 offices around the world and takes great care in dubbing, subtitling and marketing.

For example, Zoradi says, when distributing a movie with a strong comedic angle in Japan, Disney may play up the emotional angle to the story more "because the emotions travel well, where comedy is more culturally sensitive. You do that having people on the ground who understand that culture."

While Disney's international marketing is not directly comparable to U.S. radio, the underlying point is that the company knows it needs to understand the local market where the product plays. Localism, or at least an investment in local awareness, is key.

Too much, too fast? — Disney used to crank out 20 movies a year but now the company intentionally produces only about a dozen, including one or two key releases around the holidays and another batch in summer.

"We're making a few less, but we're putting more into each one," Zoradi said. When you do that, you can be choosier.

Radio can learn from this. In our chase to explore exciting new media outlets, we must not dilute our core product. Just because a cluster has five Internet streams and 10 multicast channels doesn't mean we are producing quality on each of those, much less our main air product.

In fact, without a conscious commitment to quality, it may mean just the opposite.

If you are headed to the NRB convention in Nashville next month, you can see Mark Zoradi along with talented animator Glen Keane speak at the Sunday evening session "The Power of a Story." Visit *www.nrbconvention.org*.

RW's convention preview appears in our March 1 issue.

From the Editor

Paul J. McLane

RW's New Contact Info

We've moved to newer, better offices. I'll tell you more in a future issue but for now, please note:

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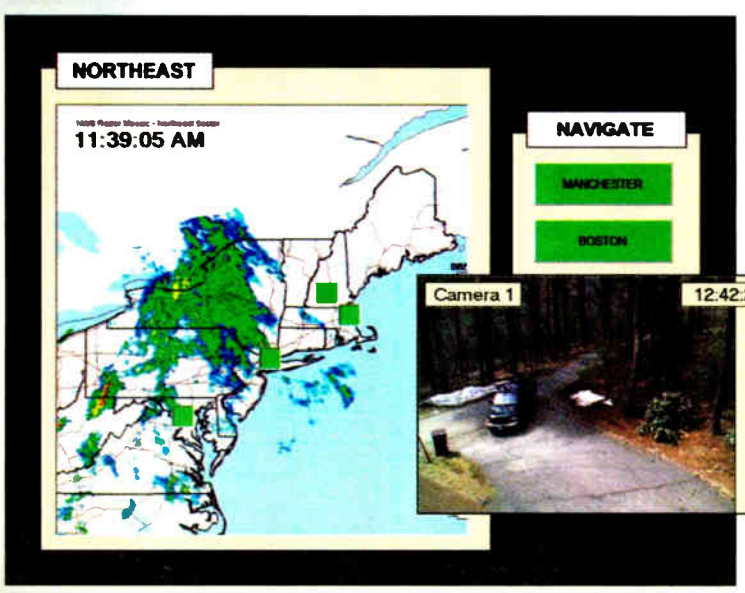

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World Radio History

CES

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higher-end models would include HD Radio as standard.

Ford did not clarify when in 2009 HD-R units could be ordered.

That year, HD-R receivers will join other OEM technologies — including Sync and the company's next-generation of navigation with Sirius Travel Link — offered in Ford, Lincoln and Mercury vehicles.

Ibiquity President/CEO Bob Struble and several broadcast group engineers believe other automakers will follow.

HD Radio would be ordered by dealers to be available in certain cars on the lot, or customers could specify HD-R when they order a car, he said.

One observer at the convention, NPR Vice President/Chief Technology Officer Mike Starling, said for Ford to be announcing "such a broad commitment this early" is significant.

"Automakers typically shy aware from telling you about important new services coming which would put off your purchase for another year. I'm expecting others in the Big Three to announce HD Radio plans — especially given the new functionality of iTunes tagging, low current drain chipsets — allowing the HD Radio to handle background functions like Tivo-style recording — and emerging datacast opportunities."

Critics say it can't happen soon enough. One broadcast group engineer told Radio World 2009 seems far away; another said, "The steady growth we're seeing in HD Radio will be accelerated."

Pricing was not announced. That alarms Mercury Research President Mark Ramsey, who wrote on his Hear2.0 blog, "'Standard' is the difference between acceptance, even at the margin, and none. 'Option,' whether factory- or dealer-installed, is no-man's land."

GM executives did not reply to a request for information about whether the company is considering equipping factory-installed HD Radios in the dash.

Also at CES, Ford announced it plans review its dealer network in North America and slash spending on building vehicle prototypes in half over three years.

Ford, in materials for a presentation to analysts in Detroit, also said it plans to decentralize its North American marketing and sales spending. Ford has cut more than 120 Ford, Lincoln and Mercury dealers in the past couple of years.

Meanwhile, in a first for CES, the head of a U.S automaker delivered a keynote address.

General Motors Chairman/CEO Rick Wagoner arrived on the stage in a car and used the occasion to introduce two cars in advance of the North American Auto Show, the Chevy Volt and Cadillac Provoq. The Volt is an electric car, the Provoq is hydrogen-fueled.

Wagoner said cars are becoming less mechanical and more like computers with sophisticated electronics.

HD-R'S PROGRESS?

While Ibiquity is upbeat about HD Radio's progress in large markets, radio engineers who spoke with RW are concerned about when and whether stations in the next tier, those in mid-size markets, are ready to convert their facilities to IBOC.

While some 1,600 stations are on the air with at least one HD signal, some sources say transmission equipment sales have slowed, a sign that the rollout is saturated in the largest markets.

Meanwhile, broadcast business analyst Bishop Cheen at Wachovia Capital Markets stated recently in a client note that while he sees HDTV as the killer app for television, he projects only a "potential modest lift" from HD Radio as new digital radio channels are slowly rolled out. Wachovia analysts do not believe the upside of HD Radio will be of the same magnitude of HDTV, "but it may help stabilize a currently weakened medium," they said in a 2008 forecast.

Broadcasters face financial challenges as local radio sales are projected to remain relatively flat for the seventh straight year.

"The auto industry, which contributes roughly 16 percent of radio and 25 percent of TV revenues, has been struggling to find stability along with a fragile retail economy," wrote Cheen and Davis Hebert, who handle high yield bond research for radio, TV and outdoor at Wachovia.

"Rising gas prices will likely curtail time spent listening. Audience measurement via a shift to a currently glitchy people meter is also problematic, especially for radio."

MSN DIRECT HD DEMOED

Microsoft and Clear Channel demoed their subscription data delivery service that uses a network of digital FM subcarriers.

Dual Electronics, Microsoft and Ibiquity showed prototype receivers for the HD-R version of the service, dubbed "MSN Direct HD."

Clear Channel station KWNR(FM) in Henderson, Nev., broadcast the MSN Direct data using the data portion of the HD Radio signal.

Clear Channel previously announced its intentions to support MSN Direct HD over its FM HD Radio stations; plans are for MSN Direct HD to launch a suite of location-based content including Clear Channel traffic as well as other services including radio program guide, weather, gas prices, movie information, news and stocks.

"We need to be able to provide data in ways customers want it," Clear Channel Radio Executive Vice President of Distribution Development Jeff Littlejohn said. In addition to analog radio, "we need to provide it over HD Radio, cell phones, because customers want it that way. We can't restrict ourselves to the way we want to send it."

MOBILE VIDEO PROTOTYPES UNVEILED

LG and Kenwood displayed a mobile video project with Harris.

Kenwood's R&D team is working on the implementation using an LG chipset; the project, to be field-tested this month on TV stations by the Open Mobile Video

See CES, page 6 ▶

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CES

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Coalition, is at the concept stage, said Kenwood's Mike Bergman.

The concept, which would support multicasting, would be an upgrade to the DTV standard. Kenwood has created prototype terrestrial in-car DTV receivers based on the MPH (Mobile-Pedestrian-Handheld) in-band mobile DTV system, developed by Harris, LG Electronics and its U.S. R&D subsidiary, Zenith. The devices feature 7-inch screens for back-seat viewing. Kenwood did not announce specific MPH models or pricing.

LG displayed prototype incorporating the MPH technology such as mobile phones, personal DTVs and a Laptop PC "dongle" that connects through the USB port and turns a TV into a portable DTV.

ATSC digital television — which was optimized for transmission to fixed receivers — will be the only high-power broadcast television service in the United States after February 2009, when high-power analog broadcasting ends.

Kenwood believes MPH represents a significant upgrade to ATSC, allowing excellent DTV reception performance in cars, even at highway speeds.

ALLIANCE PARTNERS WITH AGENCY ON RADIO CAMPAIGN

The HD Digital Radio Alliance partnered with marketing and ad agency GSD&M's Idea City on a radio campaign to drive consumer adoption of HD Radio.

Idea City will develop the creative and produce commercials for the year-long campaign set to begin this month on alliance members' stations in the top 100 markets. The participants value the campaign at $230 million. That figure represents the value of alliance member airtime and time spent creating the ads.

"Over the last two years, we have raised consumer awareness of HD Radio to 77 percent, and we've worked alongside automakers and retailers to ensure broad consumer awareness and access," stated alliance President/CEO Peter Ferrara.

Idea City earlier launched a national campaign for BMW's rollout of HD Radio that, the alliance said, "resulted in a measurable increase in HD Radio adoption by BMW buyers and enhanced partnerships with other auto manufacturers, including Volvo, Ford, Hyundai, Mini and Jaguar."

Cambridge Consultants say its Iona Cube is a fun concept in low-cost, WiFi-enabled Internet radio.

The marketing strategy for the new campaign will highlight HD Radio's ability to deliver higher quality and increased choice without a monthly fee.

The ads feature "desperate voice messages to a guy from his old analog radio," urging its owner to ignore the features and benefits of HD Radio.

Some programmers believe the ads go too far in positioning analog radio in a poor light. But Diane Warren, newly promoted to executive vice president of the alliance, told Radio World the new ads are not making fun of analog, but rather are meant to get consumers' attention so they will replace their radios.

... AND UPS WARREN

The HD Digital Radio Alliance promoted Diane Warren to executive vice president.

She had been senior vice president of marketing and communications.

The alliance said Warren has been the primary liaison for HD Radio marketing partners, and was instrumental in helping to secure a number of distribution deals, including Wal-Mart and RadioShack. She directed the alliance's ad campaigns and other marketing components focused on the nationwide rollout of HD Radio broadcasts.

Warren also has been primary point person for the NAB's HD Radio Marketing Task Force.

She will expand her management of relationships with HD Radio receiver makers, radio stations and press.

IONA CUBE IS LOW-COST WIFI RADIO

Numerous manufacturers displayed "Internet radios" designed to receive audio streams from the Internet wirelessly (using WiFi) without the need for a computer. Among those on display were models by Sangean, Tangent and Revo.

Cambridge Consultants say its Iona Cube is a fun new concept in low-cost, WiFi-enabled Internet radio.

In a departure from the traditional push-button user interface, Cambridge Consultants' new design allows the listener to personalize the Cube to play just their favorite radio stations or podcasts.

According to research, the average person listens to three to four radio stations regularly. The Cube has been designed with this in mind. By turning the Cube onto one of its four available sides, it will change to the desired radio station.

A fifth side is dedicated to the speaker and the final remaining side is dedicated to switching the radio to the off position. The Cube can be customized to play the

See CES, page 8 ▶

GREAT RADIO IS AN ART FORM

MOSAIC - ART MEETS TECHNOLOGY

Logitek helps your talent bring that art to life with the Mosaic digital console. This versatile, flexible control surface for our powerful Audio Engine router can manage your most challenging on-air or production requirements while providing the reliability and ease of maintenance that your busy operation requires.

Mosaic consoles are available in a variety of frame sizes to accommodate studios of all dimensions, and useful interfaces are available for guest stations and simple router control.

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World Radio History

Shark, shown interviewing BERT MCCRACKEN, lead singer for THE USED, says: "When Comrex told me that their internal code name for ACCESS was "THE NEXT BIG THING" I got it right away. This IS BIG – I was live, on the air, in places I could NEVER have gone with regular old technology. THANKS COMREX!"

ACCESS

Impossible Remote? Nah, You've Got ACCESS.

Meet Another Real-World Super Hero...

Live coverage of *Next Big Thing 7*, Tampa's 15-band, two-stage, 20,000 screaming fan concert, seemed daunting. But it couldn't have gone smoother for *Shark*, Cox Radio's 97X Program Director and afternoon host. When covering an event like this, *Shark* would normally be battling for a frequency with all the wireless mics, and getting back stage to interview all 15 bands with a live wired mic was just impossible. ACCESS pulled it off without a hitch. *Shark* went live with the push of a button and not a care in the world. Covering even the gnarliest live event is a natural for ACCESS.

ACCESS delivers mono or stereo over DSL, Cable, Wi-Fi, 3G cellular, satellite, POTS (yep, ACCESS is a full featured POTS codec and works seamlessly with Matrix, Vector and Bluebox)—plus some services you may not have even heard of. Given the challenges of the public Internet, it's no small boast to say that ACCESS will perform in real time over most available IP connections.

Contact Comrex today and find out how ACCESS can make you become a Real-World Super Hero—wherever you are!

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Put Comrex On The Line.

COMREX

World Radio History

CES

▶ Continued from page 6

listener's top four stations.

In an effort to keep the operation simple, even the volume button has been removed; listener twists the Cube to the right to increase the volume and to the left to decrease it.

The Cube uses a WiFi connection to provide a choice of up to 10,000 stations. Customization of the Cube can be achieved via a number of ways, including using a Web interface.

DISTRIBUTION GROWS FOR PHOENIX WIFI RADIO

The Phoenix WiFi Radio from Com One is being sold by authorized online retailers tigerdirect.com, mobileplanet.com and buy.com. Distributors include DBL, D&H and Nice Stuff.

No computer is needed to listen, just a broadband connection and a WiFi gateway or wireless router. Com One says the Phoenix gives users the ability to add any viable audio source.

Users would go through a short initial setup and register a serial number online to create a personal management page. This is needed to add a station or podcast that is not already in the preloaded menu listed by genre, country, state and city.

"We've reached our Phase 1 goal — to provide thousands of global listening choices with free access. Broadcast can't touch the range of program offerings; satellite can't touch the cost," said Com One Executive Vice President Christophe Dissaux.

The Phoenix Radio's new firmware upgrade provides improved WiFi quality and stability with a WPA connection that is 25 percent faster than the previous version, the company said.

Other new features include "Snooze" and "Sleep" functions. Firmware upgrades are available on all Phoenix radios by following prompts on the navigation dial.

Firmware upgrades are available online over the Internet. Users can listen to MP3, ASF, WMA, PCM/WAV and Real Audio.

Com One's Phoenix WiFi Radio is available online for just under $250.

Com One says the Phoenix Radio's firmware upgrade provides improved WiFi quality and stability with a WPA connection that is 25 percent faster than the previous version.

3D PROMISES RADIO ON DEMAND

3D Radio's technology continuously records several radio stations simultaneously, including the station the user is listening to, which 3D Radio plays back as it records.

3D is available for device makers to license and place in products; company founders Mike and Caron Ellis seek partners for licensing and business development relationships.

Users are able to pause, rewind, skip forward, save and replay radio across multiple stations on any radio source — AM/FM, HD, satellite, WiFi, WiMax and 700 MHz. The unit is available for in-vehicle, handheld mobile and home use.

"The future of radio is to integrate content sources and give consumers greater control over their radio listening choices," said Caron Ellis, co-founder and president of the Boulder, Colo.-based company.

"We agree with Sirius CEO Mel Karmazin who told Charlie Rose in 2007, 'The consumer wants to listen when they want, where they want and how they want.'"

The Ellis' formed 3D Radio LLC founders last year. Mike Ellis says he has patents for interactive program guides, digital video recorders and interactive TV applications. For more information go to *www.3dradio.com.*

INTERNET RADIO GOES WIRELESS WITH MIROAMER

MiRoamer from Australia-based Torian Wireless is an online portal where users can access Internet radio content, then customize how they access that content.

Torian says MiRoamer is the first portable Internet radio system to give users the ability to wirelessly access all of the same Internet radio content via portable hardware devices, from anywhere.

Users have the ability to select from "hundreds of providers and tens of thousands of Internet radio stations and streams," creating custom playlists from those stations, according to the supplier.

When a consumer purchases an Internet media device that is MiRoamer-ready, the user can synchronize their portable or desktop device with the MiRoamer portal. They can also synchronize their MiRoamer-capable Internet car radio with their portable device.

The company claims the portal makes the Internet radio experience, portable and PC-based, as you want it, when you want it.

Targeted marketing is possible based on user listening habits and can advertise to users visiting the Portal, according to the company.

NEURAL-THX, VOICEAGE GO MOBILE WITH SURROUND

Neural Audio and codec maker VoiceAge released mobile audio compression technology called Neural-AMR-WB+ upgraded with Neural-THX Surround.

Capable of delivering surround sound content at bit rates lower than 72 kbps, they said, the system allows next-gen mobile services and devices to deliver TV-like high-quality surround sound content at low bit rates.

Using this technology, the companies say, LBR surround-encoded content can be played back in stereo through headphones or speakers, and in full surround sound using a Neural-THX Surround home or car entertainment system, depending on the capabilities of the receiving system.

Neural-THX has also branched out into gaming. The companies, along with Sierra Entertainment, said Prototype would be the first video game to feature Neural-THX Surround. Neural-THX said its technology enables its surround sound to be extended from 5.1 to 7.1 when encoded and received on an audio-video receiver, allowing a richer listening environment. Prototype goes on sale this fall.

FRAUNHOFER SHOWS HD-AAC

Fraunhofer said its new MPEG audio codec makes CD collections obsolete.

The codec, HD-AAC, offers music encoding "with quality beyond CDs and at the same time, iPod compatibility." The company said the codec is based on the MPEG-4 SLS standard and provides lossless compression of 24-bit quality music content.

It is the result of collaboration between Fraunhofer IIS and the Institute for Infocomm Research I2R. Fraunhofer is offering the software for PC and embedded devices, including microprocessors or DSPs from companies like Analog Devices, Intel and IBM. An HD-AAC logo will identify conforming products.

NEWS ROUNDUP:

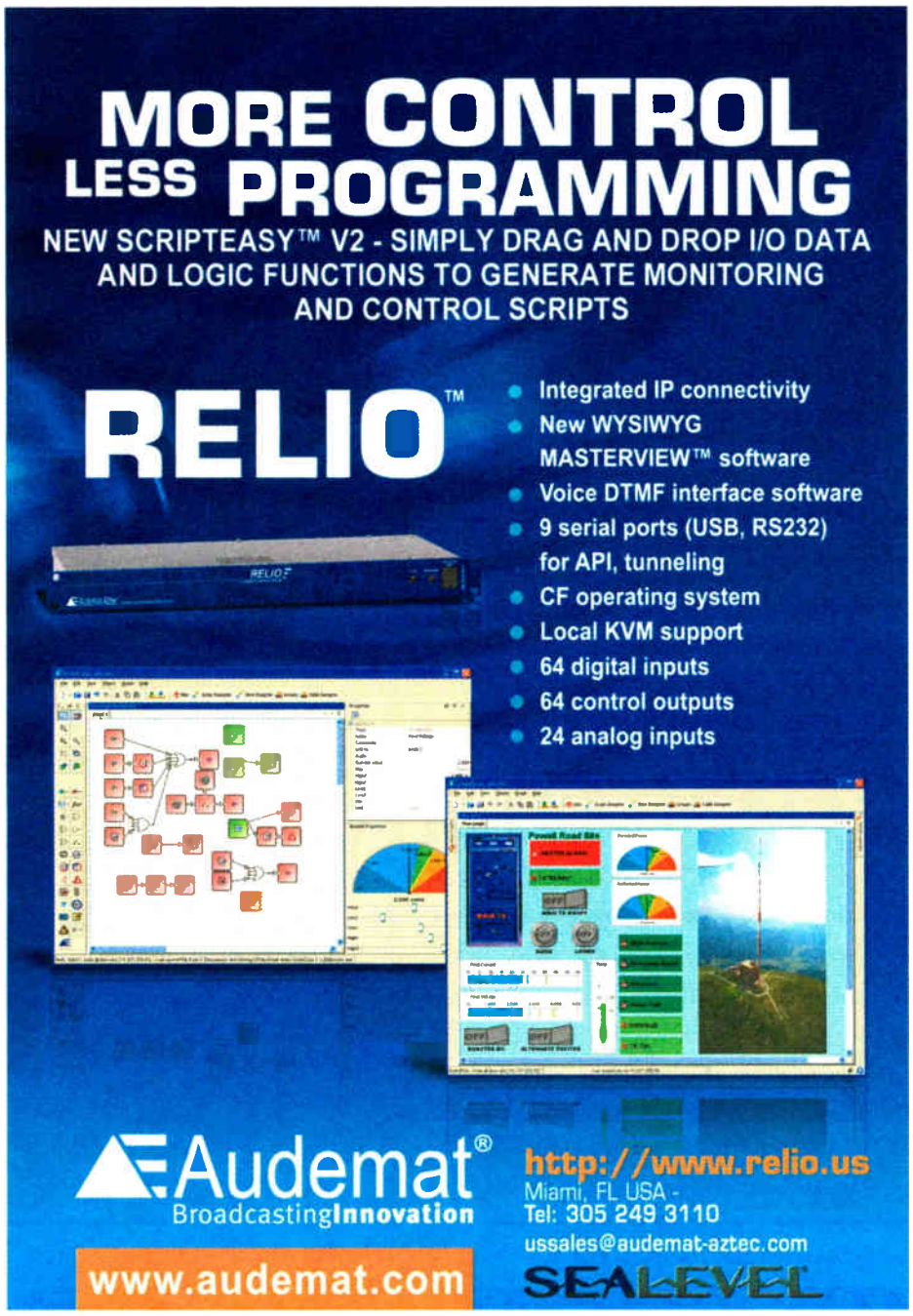
PERRY PRIESTLY recently left Ibiquity Digital. Since 2006, he worked for Scott Stull as director of international broadcast business development. His position will be filled, said a company spokeswoman.

NEURAL AUDIO and **VOICEAGE** demoed advanced audio compression technology in conjunction with the mobile DTV concept mentioned above. Demos show good audio quality at 24 kbps and below, according to Neural.

CLEAR CHANNEL's Total Traffic Network will provide traffic data on several 2008 Volvo models, joining BMW and Mini Cooper. Jeff Littlejohn said Volvo has a similar service in Europe with RDS now, so installing the Clear Channel traffic service on its vehicles here is simple for the automaker.

NDS: The company gave demos of its conditional access capability in Las Vegas. Spokesman Tom Rucktenwald said Ibiquity is due to release a new IC to receiver manufacturers that contains the conditional access capability this spring. At the spring NAB he also hopes to demo what he's calling an ad substitution concept using conditional access capability.

NRSC: The National Radio Systems Committee is still working on the latest update to the IBOC standard, NRSC-5-B. Members placed the AM Subcommittee on hiatus; that group, co-chaired by Jeff Littlejohn and Stan Salek, recently completed an AM bandwidth study.



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World Radio History

Tips on Punching the Right-Sized Hole

by John Bisset

Here's yet another method to hang on to your copper cables. Cable theft has included cutting and removing cables from conduits, so Copper Keeper is a method of locking wires or cables in a conduit, discouraging their removal.

The cables are run through four slots or pockets in a rubber stopper. This is inserted into the conduit; once in place, a compression bolt is tightened. As the proper torque is approached, the rubber stopper is compressed against the conduit and wires.

This action locks the wires in the conduit, preventing them from being cut and pulled through the conduit easily. The Copper Keeper also keeps the conduit dry, as it forms an almost waterproof seal, which also deters dirt and debris.

Here's the link to the Web site: *www.copperkeeper.com/index.html.*

★ ★ ★

Fig. 1 shows a neat method of mounting round cue speakers, as used by Bill Ryall, engineering manager for the Nassau Maine cluster.

Centering the speakers above the talent, over their head, ensures that everyone in the studio will hear the cue audio clearly.

Reach Bill Ryall at *bryall@nassaubroadcasting.com.*

★ ★ ★

Equipment construction projects are not as bountiful now in stations as they were in the distant past, when as much as half of the station might be custom-built by the engineers.

However, nowadays we need to at least drill holes for passing wires or fiber, and when a really big hole is needed for mic connectors and the like, a hole punch is the usual solution.

Fig. 1: Mount cue speakers overhead so everyone can hear.

RW contributor Buc Fitch had an e-mail discussion with an engineer who wanted to make holes in some electrical project boxes. Despite searching the Web and various hardware and supply stores like Lowes, TrueValue and Tractor Supply, he came up empty-handed. Buc pointed the engineer toward Greenlee chassis punches.

With the high cost of precision tools overall, you do not buy a punch that costs $50 for a one-time use, so when Buc found a need recently for an odd diameter foreign connector, he went looking for a punch that he owned that was "close enough."

The classic Greenlee chassis punches are marked with the diameter of the hole these actually make, but at least two other pedestrian hole punch series are not marked directly with the diameter they punch.

"Knock out" punches as used in the electrical industry come in "trade sizes" that match the diameter of the hole needed for the terminating fixture. For example, a 1/2-inch electric punch makes a 0.886 inch diameter hole (close to 7/8-inch) for the terminating end diameter.

"Pipe punches" from the plumbing industry apparently are designed to punch a hole to clear the outside diameter of the pipe. In small pipe size, pipe is made from the inside out with varying diameters; so a pipe with an inside diameter of, say, standard 1/2-inch is going to have a totally different outside diameter.

While Buc was searching for a suitable punch, he decided to make a chart (Fig. 2) of the actual hole made by the "knock out" and "pipe" punches, as near as he can determine. We hope this chart will simplify your selection process in the future.

Some of the decimal values were taken from the "ridge" markings of the punches and are the manufacturer's statement of how big a hole they think the punch actually will make.

The most common regular chassis punches are manufactured by Greenlee and are sized in real dimensions. A 3/4-inch punch will make a 3/4-inch diameter hole. These punches are designed for punching thin-wall aluminum panels and chassis.

Greenlee punches and kits aren't cheap. You can sometimes find punches at a Hamfest, but you'll learn to guard them with your life.

Not only are the punches costly, once you've used one, you'll wonder why you ever put up with the drill bit-and-file method of creating holes in panels and chassis.

See PUNCH, page 12 ▶

Electrical (Trade size) Inches	Actual Hole Diameter Inches
1/2	0.886 (a nominal 7/8)
3/4	1.125
1	1.362 (a nominal 1-3/8)
1-1/2	1.953
2	2.421
2-1/2	2-15/16
Pipe Size	**Actual Hole Diameter**
1/2	7/8
3/4	1-1/16
1	1-3/8
1-1/4	1-3/4

Fig. 2: Keep this table to identify pipe and trade punch sizes.

NEW! Our Ingenious 'Quad Leveler'

Four independent channels of intelligent audio gain control

Inovonics has packaged four channels of smooth-sounding audio leveling into a single rack space. The four channels may be used separately for microphone and phone-line leveling, or may be selectively linked for dual-stereo or split mono/stereo program audio control.

A unique combination of peak and average response to program dynamics combines the gain-riding utility of a gated AGC with the tight peak control of a fast limiter. This particular combination of long- and short-term level correction yields consistent subjective loudness without resorting to excessive dynamics compression that can lead to listener fatigue.

Operation of the 264 is entirely program controlled, and user adjustments have been restricted to a bare minimum for quick, set-and-forget installation. Operating entirely within the analog domain, the 264 utilizes colorless Class-D (PWM) technology for stable and transparent operation.

The 264 also provides alarm tally outputs to signal a 'dead air' or out-of-limits condition for each of the four channels.

Model 264 – $1200 only $300 per channel!

For full technical details, visit

www.inovon.com

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www.inovon.com • e-mail: info@inovon.com

World Radio History

Wireless Broadband Internet Remotes

"The first time out with the Tieline was a brilliantly simple experience for everyone involved. For lack of a better phrase, the codec just worked."

- Christian Vang
Chief Engineer
Clear Channel St. Louis

"The codecs sounded great. My management was very, very impressed with the demos"

- Grady Jeffreys,
Technical Manager,
Mackay Communications

"The remote was a spectacular success, in no small part thanks to the flawless sound which the Tieline G3 provided over the public Internet"

- Mike Rabey
Chief Engineer
Entercom Indianapolis

100%
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*Compatible with Comrex Matrix, Blue, Vector POTS Codecs Comrex is a registered trademark of Comrex corporation

World Radio History

NEWS MAKER

Roark, BE Are 'Bullish' on Radio

In the fall, the board of directors of Broadcast Electronics named Joseph W. Roark as its new CEO, replacing the retiring John Pedlow. Roark is former president of four Weir Group PLC companies and two Danaher companies. RW U.S. Editor in Chief Paul McLane talked to him about what's next for BE.

Joseph W. Roark

***RW:** You're a "bellwether company" in this industry, and BE watchers have seen several changes at its upper levels as well as recent layoffs. What should readers know about BE and its business health?*

Roark: BE is extremely healthy. Our profits are very strong; as a percent of revenue as strong as they've ever been. We're continuing to make improvements in our infrastructure, to our internal processes, and to invest in new and talented people. Our message is one of continuing success.

That being said, the layoffs BE implemented in mid-2007 were directly related to the slowdown in HD Radio adoption. There was a pretty dramatic decline in the number of transmitters purchased in the past year-plus. Everyone who had HD transmitter business went through a similar cycle.

***RW:** Where do you see your growth coming from in the months ahead?*

Roark: We see HD as remaining a good market, just not as great as it was. We see people who continue to plan to roll HD out.

A lot of these stations are still working to determine how to monetize HD Radio, how to fill content, how to sell new space when revenue is declining on their main channels.

We want to try to partner more with our radio station customers to work on business issues. A lot of our customers are small stations who are resource-restrained. How can we partner on the content side? We're looking at creating stronger alliances and partnerships.

Beyond HD Radio, we see the international marketplace and its emerging economies. As a general platform, international growth represents a significant opportunity for us. In the past, BE treated these as spot opportunities rather than an expansive strategy. We see analog opportunities too, both AM and FM, in high-power areas and more government sales.

As a global platform, we see radio as still fairly robust, a good market for growth. We have high share growth expectations as we look forward.

We're working to sharpen our focus too. For example in early 2007 we combined our AudioVault, The Radio Experience, streaming and RF products into one sales organization. We went exclusively to a factory-direct sales structure. We were asking our salespeople to be experts in pretty diverse categories with diverse end users. That model frankly probably shouldn't have been introduced.

Debra Huttenburg, BE's new vice president of business development and marketing.

We're implementing a model that focuses attention by product line. We're putting separate product sales teams together for RF products, studio products.

On the international side we provide appropriate regional-type focus. We've also added a new resource to our management team. Deb Huttenburg has great international experience. *[In November BE named Huttenburg vice president of business development and marketing, charged with expanding the company's business in the U.S. and its footprint into new markets.]*

***RW:** BE is owned by the Audax Group, a private equity group. What is the feeling at Audax?*

Roark: They continue to look at the space and are actively seeking additional investment opportunities. The Audax team and our banks are knowledgeable of our market. There is an appetite for continuing investment. They're not trying to milk the business; they're working to invest for growth, both short- and long-term.

***RW:** What are your sales trends? What's the next "big thing" to drive radio's growth?*

Roark: Our sales certainly have been affected by HD's fall-off but globally we've offset some of that.

I have confidence in the ongoing strength of the radio business. In any business, you go through revenue cycles; we're in one now. We're bullish on the radio market and not just in the Americas. Radio is strong and healthy on a global market basis.

PPM is constantly referred to as a saving grace; I think that will be a wonderful addition but not the end-all. Radio needs to work together to promote HD technology more effectively too.

***RW:** What should we expect from BE at the NAB Show? And should we expect BE to expand its business outside of radio?*

Roark: We do have some innovations we'll be launching, though our focus is not just on NAB.

In our current strategic plan, we have a number of new products. We may transition BE into some new areas people aren't used to seeing us play in. It'll cause a lot of people to wake up.

My particular areas of expertise are "lean business practices" — how we do things more productively by eliminating waste — to create an even stronger focus on customer service and product quality, delivery and cost.

BE has always been a market leader; we don't aim to give up our position of leadership. We're taking a "no prisoners approach" to our market; we feel we are the big dog. It's a bit of an attitude but we work to live up to our reputation every day.

Punch

▶ Continued from page 10

Buc furnishes a link to the Mouser online catalog, a source of Greenlee punches and kits are sold. Select the "page" view in the column next to the item description for the entire punch inventory and pictures. Go to *www.mouser.com*, enter "Greenlee punches" and click Search.

You'll note that there are a few specialty punches that can make life much easier and produce a more professional product. These include the DB series of punches for D-sub connectors, and the K series of punches for relay sockets. Some punches are available off the shelf at Home Depot. Check the electrical department, but note these will be in electrical trade sizes. Chicago Freight offers punches in pipe sizes.

Buc Fitch can be reached at *fitchpe@comcast.net.*

★ ★ ★

Ed Histed, formerly programming and operations director of Route 81 Radio, was clearing through some things at the transmitter site over the summer. While cleaning out a box of "stuff" he came across the cable shown in Fig. 3.

Fig. 3: Put your thinking cap on and come up with a use for this cable.

He asks whether any readers might have an idea what the cable could have been used for. I have a thought, but will wait until we hear from you.

By the way, which end do you suppose should be plugged in first?

John Bisset has worked as a chief engineer and contract engineer for 39 years. Reach him at (571) 217-9386 or jbisset@bdcast.com. *Faxed submissions can be sent to (603) 472-4944.*

World Radio History

e for

attached a picture in white contact me for more info. big_plans #221542

STEADY SEEKING LADY

I am looking for a male partner (38-50)who is willing to be exclusive with me for a long term relationship. Not asking for marriage. I am of average build, dark hair, brown eyes and am an Indian female. I have a wonderful job and attend some classes a couple of nights a week. I have two kids who stay at home with me. They are very precious to me. And they are not going to be a hindrance to our dating. I have a full and busy life. Therefore, the expectation is to see each other on a steady basis, and at the same time, being flexible. precious_me #331252

I LOVE MUSIC. YOU LOVE ME

I'm an indie/hipster girl who adores music and going to clubs and shows. Some of the bands that I'm into are Interpol, The Arcade Fire, Blonde Redhead, Bauhaus, The Smiths, Morrissey, etc. I'm into indie rock, electronica, punk, pretty much anything. I drink and smoke occasionally. I'm 21, 5'8", light-skin, dark brown hair/eyes. I work, am well-educated, funny, spontaneous, nice. #2215234

295065

HANDSOME RAKE

Out of work leaf raker/bagger seeks whimsical beauty with un-kempt auburn or chestnut hair, cool coarse hands and a penchant for whistling. mellow_mo, 28, #101318

LET'S CONNECT

Radio engineer seeks stable long distance relationship. Need to connect immediately. Everywhere I go, I see broadband internet, but I just never hook-up. I need to meet that special someone that will plug me in so I can be heard. Must be reliable, connect easily, forgive errors and adapt to change. Should come from a good family. easy_going #101352

SIMPLICITY HERE

Simply put, I'm looking for a fun, casual relationship with only one person. That means one person for me and one person for you. :-) Every woman wants to feel safe with a partner, whether it's serious or not. It's key to her feeling comfortable to express her more intimate nature. I don't ask for much other than to hang out, enjoy your time with me and be available to chill.

MR. RIGHT

I'm actually posting this on behalf of a friend. Since she's been single she hasn't found the right guy and I'm doing this in hopes of helping her find Mr.Right. After you and I talk, if you are chosen then you will get to go on a date with her and who knows, it could be the perfect date and start of a new

IN LOVE

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to meet a Cl
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Please send
response :)

CALL M

Hah are yo

Connect with Zephyr/IP: The World's Most Advanced IP Codec

The new Zephyr/IP brings an effective package of sophisticated technology to the world of IP audio codecs. Optimized for operation over the public Internet and mobile phone data services, the Z/IP delivers when others can't.

NEW "AAC-ELD" (ADVANCED AUDIO CODING-ENHANCED LOW DELAY) CODEC: Z/IP introduces a new codec technology invented by the experts at Fraunhofer Institute, the people who brought us MP3 and AAC. Optimized for interactive IP applications, AAC-ELD combines features from MPEG AAC-LD and the Spectral Band Replication technology used in AAC-Plus. It's the most powerful audio coding tech on Earth, offering outstanding bitrate efficiency, low delay, and support for packet loss concealment.

NEW TELOS ACT (AGILE CONNECTION TECHNOLOGY): Z/IP brings automatic on-the-fly bitrate adjustment to IP codecs - a first. The Z/IP constantly monitors the network and sets its bitrate to the optimum value. A dynamic adaptive receive buffer also responds automatically to network conditions, minimizing the effects of the varying bandwidth and jitter that occur on real-world networks.

EFFECTIVE PACKET LOSS CONCEALMENT: The Internet usually has packet loss on audio streams, often ranging up to a few percent. The new AAC-ELD codec combined with ACT can conceal this loss, making for smooth audio even with rough network conditions.

TELOS-HOSTED Z/IP SERVER WITH DIRECTORY SERVICES: Enables you to look up, view the status and connect to other Zephyr/IP users worldwide, even through the toughest firewalls.

A STATE OF THE ART USER INTERFACE: And so you don't feel like you are on a blind date, we give you all of the status information you need on a sharp-looking color LCD which shows live network statistics and trace-route maps in an easy-on-the-eyes graphical interface.

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AUDIO | NETWORKS

Telos-Systems.com

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Sat Merger on Ibiquity's Mind
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HD Radio News

Radio World | Covering Radio's Digital Transition | February 13, 2008

Accessible Radio Project Grows

Towson, NPR and Harris Launch Center for Accessible Radio Technology

by Leslie Stimson

LAS VEGAS Dr. Ellyn Sheffield, Towson University professor and NPR Labs researcher, plans to spend the next six months asking people in the visually-impaired, hard of hearing and geriatric communities what features they'd like to see in an HD Radio.

That's important, said Bill Pasco, director of Sun Sounds of Arizona, a radio reading service, who spoke at a press conference describing the joint project on accessible radios involving Harris Corp., NPR Labs and the Maryland university.

Reading services, said Pasco, are human. "It's your neighbors reading to you." He's excited by the promise of reading services being received on mainstream digital radios rather than specialized SCA receivers that are served via FM subcarriers.

However, Pasco cautioned, that promise won't mean anything if the HD Radios are not accessible, noting that the trend in consumer electronics these days is to make devices with tiny buttons for those who are young and have good vision.

"Older people, people with low or no vision, a rapidly growing group, are getting really tired of being handed just one more box which excludes them from the mainstream."

While NPR Labs and Harris have worked on trying to develop accessible features for HD Radios for 18 months, January's CES convention marked the launch of the International Center for Accessible Radio Technology.

ICART will be headquartered at Towson, with the university housing the primary administrative and academic research offices. NPR Labs is providing technology R&D and software development, Harris Broadcast supplies transmission and research support.

The launch kicked off with a live, low-power demonstration. An HD Radio broadcast was translated into text to show how the display of an accessible HD-R receiver would look in the dash.

Photo by: Leslie Stimson

ICART co-director Dr. Ellyn Sheffield shows the accessible radio interface on a Delphi dashboard screen. Behind her from left are Harris CEO/Chairman/President Howard Lance; Towson University Dean of the College of Liberal Arts Terry Cooney; Executive Director of the No. Va. Resource Center for Deaf and Hard of Hearing Persons Cheryl Heppner; and Sun Sounds of Arizona Director Bill Pasco. Not pictured are NPR VP of Engineering Mike Starling, and CEO Ken Stern.

Sheffield, assistant professor of psychology at Towson and co-director of ICART, stressed the split-screen feature, noting that the passenger, not the driver, would be reading the large text.

The demo demonstrated how visually impaired people can "see" live radio content on special receivers by applying a TV closed-captioning process to radio. The technology also will provide audio cues and voice prompts, as well as advanced radio reading services.

Initially, closed captioning text would be created by live, court-reporting-type captioners at individual stations and networks. Ultimately, the organizers hopes to use advanced speech-to-text translation software applications to expand the captioning across the radio dial.

To preserve the copyright exemption for reading services, the HD-R signal would be encrypted using conditional access, the technology from NDS giving a station the ability to permit or deny the receiver the ability to decode the signal.

HD-R chipsets containing conditional access capability are to be released to receiver makers later this year.

Harris will provide $50,000 in seed money over two years towards the effort.

Organizers of the group called for the establishment of an international consortium of equipment manufacturers, broadcasters and other organizations to foster adoption of global accessible radio technology.

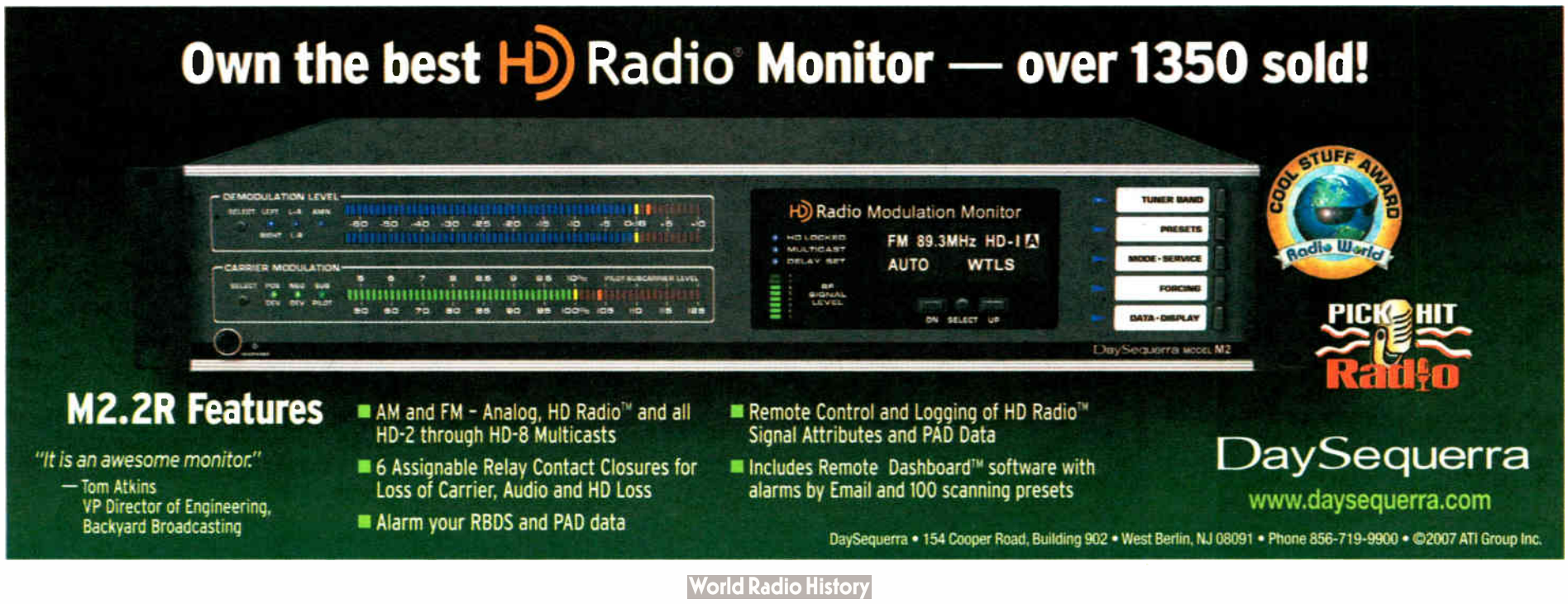
Delphi and Radiosophy have expressed an interest in making prototype receivers. The group was meeting with receiver makers at CES, looking for firm commitments.

"Beyond developing the technology, this initiative will ensure the accessibility of these radio services at minimal costs," said NPR Vice President/Chief Technology Officer Mike Starling, co-director of the project.

The HD Radio signal has the ability to "wake up" the radio and provide emergency alerts, said Radiosophy co-founder and VP Technical Bill Billings. Audible alerts could be provided for the visually impaired as well as "bed shaker" support for the hard of hearing, he said.

Cheryl Heppner, executive director of the Northern Virginia Resource Center for the Deaf and Hard of Hearing Persons, said, "Beyond having crucial emergency information, captioned radio could also open up a world I've never had, because I lost my hearing just before my seventh birthday."

The initiative has more than a dozen members. In addition to founding members NPR, Harris and Towson University, supporting organizations include Ibiquity, Delphi, NDS, Radiosophy, Helen Keller Institute, Carl and Ruth Shapiro Family National Center for Accessible Media at WGBH(NCAM), Northern Virginia Resource Center for Deaf and Hard of Hearing Persons, and the G3ict, an advocacy initiative of the United Nations Global Alliance for ICT and Development.



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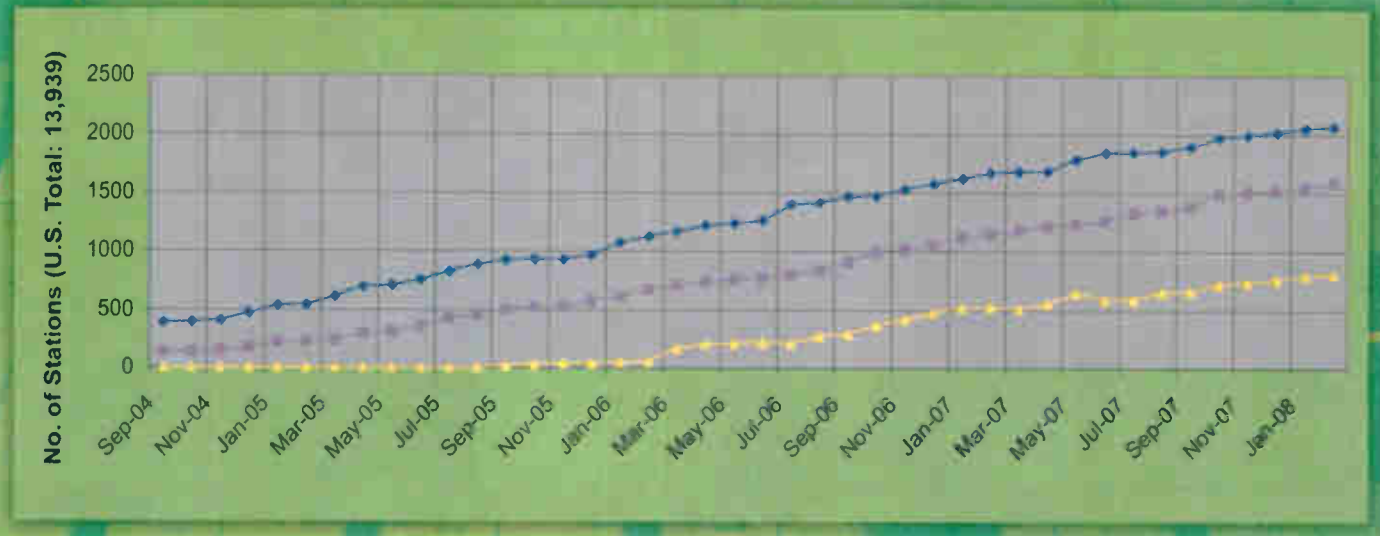
Radio World's HD Radio™ Scoreboard

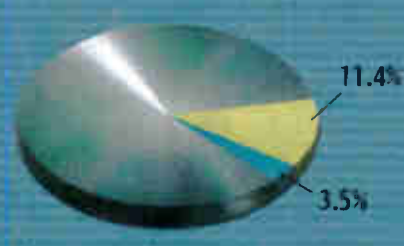
The HD Radio Scoreboard is compiled by Radio World using information supplied by iBiquity Digital Corp., the HD Digital Radio Alliance, BIA Financial Network and other sources. Data reflect best information as of mid-January. This page is sponsored by Broadcast Electronics. HD Radio is a trademark of iBiquity Digital Corp.

Three-Plus Years in HD Radio



HD Radio in the United States

Total stations: 13,939



The HD Radio Bottom Line

	Total Licensed	On the Air	FMs Multicasting
	2,074	1,584	809
Last Month:	2,058	1,550	798
Last Year:	1,673	1,145	532

World Radio History

DIGITAL NEWS

Ibiquity Asks for HD Radio Merger Condition

WASHINGTON Ibiquity officials met with Commissioners Robert McDowell and Jonathan Adelstein to express concerns that a merged satellite company with exclusive automaker deals could hamper its efforts to get HD Radio installed as standard in vehicles.

The technology company is concerned XM and Sirius "may have used subsidies and incentives to discourage proliferation of HD Radio products," and a merger would worsen those problems, according to a filing.

Digital President/CEO Robert Struble and General Counsel Al Shuldiner met with McDowell.

Ibiquity reiterated that it takes no formal position on the merger. But it is asking for significant restrictions: If a merger is okayed, Ibiquity wants the FCC to condition approval on requiring HD-R technology be included in satellite radios; requiring the merged entity to end exclusive arrangements with automakers, suppliers and retailers; and prohibiting such exclusivity in the future.

ADA Shipping New HD-R Tuner

WHITE PLAINS, N.Y. Audio Design Associates is shipping what it says is an "integration-friendly" HD Radio tuner.

In 2006, ADA began shipping the HDM-1 HD Radio tuner module, available separately as a $600 module for use with ADA multi-room/multi-zone pre-amp/amplifier systems, as a $999 single-module black-box chassis and as part of ADA's two- and four-tuner component tuners, the Duo Tuner, which retails for $1,899 and up, and Tune Suite, beginning at $2,399.

The manufacturer said its HD Radio technology is also suitable for use with its matched Suite-16 and Suite 8x8 Multi-Room systems and an option for its Suite 8200 Multi-Room Receiver.

News Roundup

NEXT-GEN RADIO: Research company Parks Associates predicts that in four years, satellite radio will have 39 million subscribers and HD Radio will have 30 million adopters.

"The radio space is experiencing a major shift in how audio content is consumed, sold and transmitted to consumers, creating significant growth in the adoption of satellite and HD Radio over the next five years," it stated in a report titled "Next-Generation Radio."

It sees total satellite listenership increasing from 20.5 million in 2008 to 39 million by 2012; HD Radio adoption will also increase from 4.2 million to 30 million.

It quoted Research Analyst Chris Roden saying, "Most satellite radio subscribers use the service in their vehicle. Conversely, HD Radio owners view the product as similar to other CE devices such as DVD players and home networks. These consumers are more likely to listen to the service at home."

THERADIO.COM: Envision Radio Networks is an affiliate relations partner with TheRadio.Com. Envision will market the latter company's formats to radio stations. Terms were not disclosed.

Envision will work with stations that want to add a second or third channel of HD programming but don't have the resources. Additionally, TheRadio.Com offers custom-voiced and -produced "liners" and identifiers, though it said stations are encouraged to use their own talent to locally brand the HD2 experience.

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Complete System
ready to go out of the box and on the air
$5,000
Xtreme-Complete... Dell PC, software, and Bridge switcher for a complete system

PC enabled Console
includes PC software for Live On Air
$1,999
ARC-10UP the console has a built in sound card with logic & a USB connection to the PC

Automation for the ARC-10
combine the ARC-10 & PC for automation
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Newswatch

▶ Continued from page 2

AUDEMAT: The Audemat group is opening an office in Beijing. Company officials believe the move also will help it get a better handle on Chinese technical requirements for new technologies for digital TV. Its local dealer network remains in place. Separately, moving further into digital TV, the Audemat group has purchased Nortek. "TV on mobile phones won't wait for us," stated CEO Bruno Rost. Nortek makes products in the French domestic market.

CANADA: The Canadian Radio-television and Telecommunications Commission has established a new policy restricting cross-ownership. A person or entity will only be permitted to control two of three types of media serving the same market: a local radio or television station or a local newspaper. Left unchanged are limits on how many radio and TV stations one company can control in a market. The new policies apply only to private broadcasters.

SPLITSVILLE: XM Satellite Radio and Starbucks ended a programming and marketing agreement that included music promotions in the coffee chain's stores and CDs sold with both companies' logos. XM said, "We made a business decision to allocate our resources towards other marketing and programming initiatives."

Radio World's HD Radio Scoreboard is published in alternating issues. Selected data is from BIAfn's MEDIA Access Pro™; the scoreboard also uses information supplied by sources including iBiquity Digital Corp., the HD Digital Radio Alliance and RW's own research.
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World Radio History

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World Radio History

Today's Best Reads and Some Great Oldies

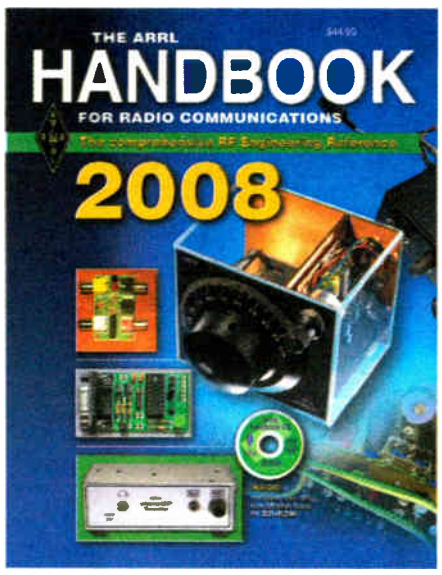
by Timothy Kimble

Radio engineers are nothing if not traditionalists. This becomes clear when you ask them to recommend engineering books they can't live without.

In a query of engineers, several familiar, cherished titles came up again and again. But we also received surprising and astute recommendations for any CE who has a staff to manage as well as facilities to maintain.

No dummies

The various annual versions of the "Radio Amateur's Handbook" received the most mentions of necessary literature on the engineer's desk.



A very popular recommendation.

Doug Fearn, an independent handcrafter of audio equipment and a former chief engineer, says, "Not only did I learn electronics from that book, but the old editions are superb examples of how to explain things clearly."

Andy Butler, senior director for systems engineering at PBS and a former president of SBE, also recommends the handbook, calling it "the best, most comprehensive, cheapest guide to technology you will ever need."

The book is now called "The ARRL Handbook for Radio Communications" and is published by the Amateur Radio Relay League with a retail price of $44.95 in softcover, $59.95 in hardcover. Both come with a CD-ROM that allows the reader to search the text by keyword.

On the flipside is a useful suggestion for engineers who also function as managers.

Ted Nahil, regional sales manager for ERI, recommends titles from the "For Dummies" collection of Wiley Publishing: "Every engineer these days should read and book or two on management techniques and negotiating, and should have an understanding of budgeting and finance issues facing the industry."

Nahil recommends "Negotiating for Dummies," "Accounting for Dummies" and "Managing for Dummies." The price range generally runs from $19.99 to $24.99.

He also suggest IT books from the series such as "Networking for Dummies" and "TCP/IP for Dummies."

Butler points to some heavy hitters in IT and design including "Networking: The Complete Reference" by Craig Zacker.

"If you have a networking question, the answer is in this one somewhere." The book was published by McGraw-Hill and is easy to find at various online bookstores, where it lists for about $30.

Classic

Some engineers prefer old-school literature.

John Bisset, RW's *Workbench* author and a regional sales manager for Broadcast Electronics, recommends "AM-FM Broadcasting: Equipment, Operations and Maintenance" by Harold Ennes, published by Harold W. Sams in 1974. It weighs in at a hefty 800 pages and covers a variety of topics.

Bisset says some of the content is out of date and said it will be more helpful if you are repairing any old cart machines you have on hand than a solid-state transmitter. But he loves the book for its "good, applicable knowledge." SBE reportedly has considered reprinting it, but for now look to online resources, which price the book at $75 for new condition to $45 for like-new.

Cris Alexander, another RW contributor and the director of engineering for Crawford Broadcasting in Denver, also recommends the oldies.

Some of his recommendations would be interesting to dig up. At this writing, "Electronics and Radio Engineering" by Frederick Emmons Terman could be had on Amazon.com if you had $270 to spend — and that's for a paperback. It was written in 1932 and went through three editions up through 1937.

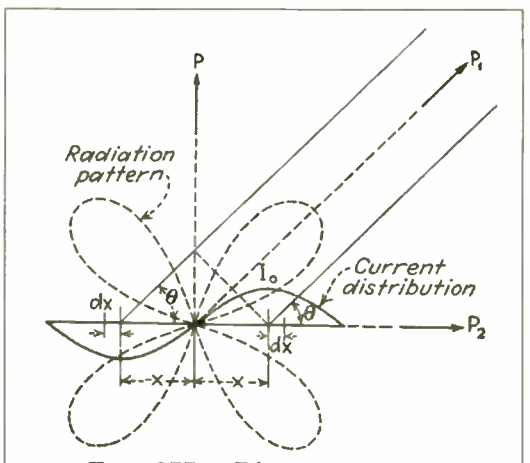


FIG. 377.—Diagram illustrating factors controlling the directional characteristic of an antenna. Note that the radiation does not cancel in the direction P_1 because of the different distances to the two ends of the antenna.

Graphic from 'Electronics and Radio Engineering' by Frederick Emmons Terman.

Alexander also recommends you look at Institute of Radio Engineers papers on antenna propagation and design written in the early days of the industry, when engineers were first putting theory into practice.

"Believe it or not, the stuff in many of these old papers and books is still correct. They figured out a lot of stuff back in the '30s and '40s that remains valid today."

A more recent and affordable reference recommended by several engineers is "Directional Antennas Made Simple" by Jack Layton. It can be had from the SBE bookstore for $59.95; society members get a discount.

And don't forget that the "NAB Engineering Handbook" has been updated in its tenth edition, as reported last year in RW. It includes the work of dozens of top broadcast engineers, includes a CD version and retails for $199. See *nabstore.com*.

E-readers

By contrast, quite a few engineers say they rely almost entirely on the Internet for the latest information, saying it's more up to date than physically published material.

Bob Gonsett, editor of the CGC Communicator newsletter, recommends *www.hallikainen.com* to keep current on FCC rules; that site is compiled by Harold Hallikainen, another RW contributor.

Systems engineering consultant David Bialik checks out Web sites like *www.rwonline.com* and the Tower of the Week site at *www.fybush.com*, where he also gets his Northeast Radio Watch news.

Sites like Wikipedia and Google are the starting points for some. Conrad Trautmann, engineering executive at Westwood One, says, "I can search for pinouts on a particular model two-way radio for instance, and it's always available wherever I am."

Books on the history and overall radio business were also recommended.

"Empire of the Air: The Men Who Made Radio" by Tom Lewis made multiple lists; it's a great history primer for those just getting into radio, providing the story of Edwin Armstrong, Lee De Forest and their work to start radio as a means of providing service, as well as David Sarnoff's efforts to design radio that turns a profit.

If you think the cutthroat nature of commercial radio is a recent phenomenon, read this. "Empire" is published by HarperCollins and debuted in 1991. The Ken Burns PBS special is available on DVD.

For drama, Bisset also recommends a used bookstore find, "D.J." He calls it a slice of life in an early 1970s New York City radio station, where a small-town jock has made the leap to the largest market in the nation.

"It includes backstabbing co-workers, groupies, drugs and overindulgence that eventually brings the star down." Bisset says it came out in 1971; at this writing, a copy was available on eBay for 25 cents. The book by Allan Jefferys and Bill Owen is published by Popular Library.

More recent is "Something in the Air: Radio, Rock, and the Revolution That Shaped a Generation" by Washington Post columnist Marc Fisher.

The book serves as a well-researched history of radio's glory years, progressive rock radio as art, and the massive changes brought about by relaxation of ownership limits. "Something in the Air" is published by Random House and retails for $27.95.

Which engineering or radio books can you not live without? Tell us at radioworld@imaspub.com.

World Radio History

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World Radio History

Toward an Embarrassment of Niches

In an Internet-Driven, Highly Personalized World, Is the Traditional Radio Format Doomed?

The Big Picture

Photo: Gary Hayes, BBC

by Skip Pizzi

We're all aware that one of the primary social trends empowered by digital technology has been generally increased consumer personalization of products and services.

An example of this phenomenon is evidenced in the music world by the movement away from blockbuster hits and toward "catalog" material and emerging or lesser-known artists.

One recent study, conducted and reported by a respected music industry publication, The Lefsetz Letter, compared the overall music sales — both physical and digital — of the calendar year 2000 (the peak sales year to date for the industry) with sales in 2007, and found that the 2007 figures were down about a third (–36%) from the 2000 sales.

Then Lefsetz compared the *individual* sales of each of the top 10 selling records for those two years with one other (i.e., sales of the #1 record of 2000 compared to the #1 record of 2007, #2 with #2, and so on), which you would expect to approximately reflect the same one-third drop — but they did not.

Instead, the records that occupied each of the top 10 slots for 2007 were off from over 50 percent to nearly 70 percent compared to the sales for the records in those same positions for 2000.

Always in stock

This substantially disproportionate drop for the bestsellers of 2007 indicates that music sales are clearly trending toward greater diversity and choice.

One possible reason is that across that seven-year period, online music stores have made it possible to search, browse, sample and purchase a far wider variety of music than consumers ever could in any physical store.

In other words, a digital inventory allows the complete "Long Tail" to be kept in stock at all times, and as a result, the comet's head is shrinking and its tail is getting fatter. (See the Sept. 1, 2006 edition of this column at *rwonline.com* if that reference escapes you.)

Closer to home, what impact do you think this consumer trend might have on the popularity of traditional radio formats?

In Long Tail terms, these formats are the very essence of a "head-only" selection, including purely the most popular hits. If this approach no longer adequately reflects consumer purchasing preferences, it may not hold as much value for the music industry as it once did.

One outcome of that understanding provides direct fuel for the new push toward performance royalties for terrestrial airplay of music recordings. If airplay doesn't sell records like it used to, then the music industry is incented to seek a more direct form of payment from broadcasters themselves (like it gets in most other countries outside the U.S.).

On the other hand, there are other purveyors of music radio — Internet and satellite broadcasters — that do more closely embrace the trend toward greater choice and diversity with narrower formats.

Photo by Jonathan Chasteen

Terrestrial radio should realize that its intrinsic (and exclusive) niche is localism.

They can do it because their environments allow them to operate more simultaneous services on a full-time basis. That and other efficiencies of digital processes (automation, etc.) allow them to build a viable aggregate audience with fewer listeners per service than terrestrial radio requires.

Ironically, this is not because these new media operators have *more* channels per se. The largest terrestrial radio companies actually own a far greater number of channels than any satellite or Internet radio service operates, but because of the geographic distribution of terrestrial channels, the same narrowing (or "nicheing") of formats cannot be applied there.

So these terrestrial radio groups run many of the same, broad formats, repeated over and over again in different markets.

Of course, the flip side of that coin is that terrestrial radio can serve up localized content, but it's difficult to leverage that benefit into a music radio format. Highlighting local bands, promoting music venues in town and airing live or recorded music broadcasts from the region can only go so far, not to mention the additional expense and sometimes reduced listenership that these efforts might engender.

Moreover, recent management trends among large station groups have actually *reduced* localized content in general, which only exacerbates the problem, and negates the one advantage that terrestrial radio may have against this new competition.

These are all fairly obvious truths that the industry has been living with for a while, but viewed holistically, and with today's heightened sense of urgency, what conclusions emerge?

A changing world

Consumption patterns are shifting, and these may significantly affect radio formatics, particularly for music.

Here are the high-level bullet points that influence any course corrections that terrestrial radio might consider:

- As blockbuster sales decline and niches grow in importance, music promotion will move away from traditional radio formats and seek more specialized outlets.
- As big names sell fewer records but continue to receive most terrestrial radio airplay, music labels will seek increased compensation to make up for sales losses through new royalty payments from broadcasters.
- Metadata matters, particularly for less well-known artists.
- One-to-many is giving way to many-to-many, and unilateral purveyors of taste (e.g., radio programming gurus) are giving way to "communities." These virtual communities are defined along multiple axes, one of which is geographical. Terrestrial radio's limited coverage can be turned to a strength for such localized communities.
- A potentially controversial point, but worth considering (at least academically): In terms of maximizing competitive agility, terrestrial radio ownership limits may be inverted.

In other words, it might be easier for terrestrial radio to compete if ownership limits per market were relaxed, in return for some restoration of national ownership limits. Think about it — to compete with satellite and Internet radios' ability to deliver niche formats, an operator needs to maximize the number of channels it delivers to the *same* audience, not to a disaggregated set of separate audiences. This implies that there might be only one or two radio broadcasters in a given locale, but how many newspapers are there in most markets?

Radio might be better able to compete if it traded the ability to maximize stations in markets it served for a cap on how many markets in which it could operate.

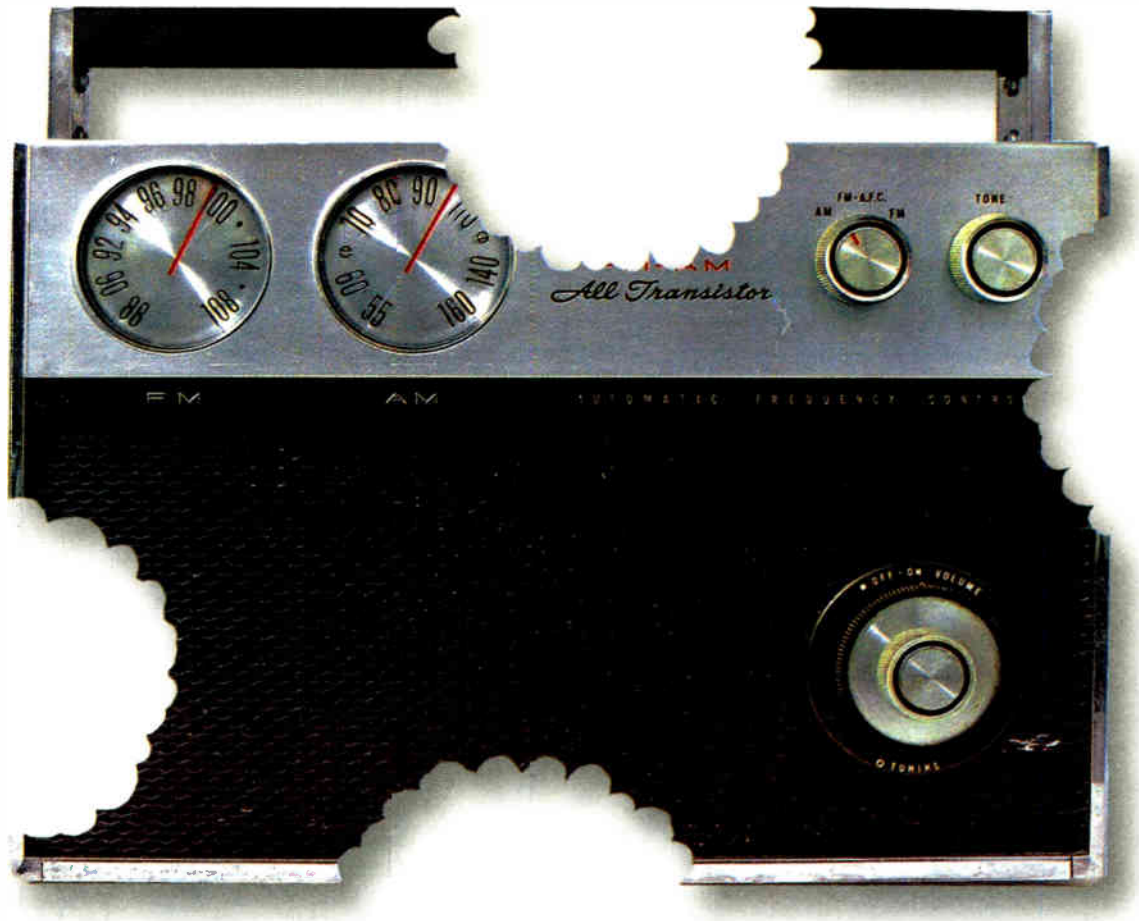
Regardless of how these external forces play out, terrestrial radio should realize in this context that its intrinsic (and exclusive) niche is localism.

Ignoring this and trying to act like it can compete with national operators on equal footing is a losing proposition for the terrestrial radio industry, in both offensive and defensive terms.

Skip Pizzi is contributing editor of Radio World. He thanks Josh Shapiro of PRX for inspiring the headline of this column.

World Radio History

CHEWED UP MARKET SHARE?



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World Radio History

Lee Loves Radio But Says It Can Do Better

by Scott Fybush

Jerry Lee, owner of Philadelphia's WBEB(FM), better known as "B101," is a former NAB board member and a legend for his survival and success as an independent in a world of eight-station clusters and massive group owners.

The association honored him this past fall with its National Radio Award, presented during the Radio Luncheon at the NAB Radio Show

"(Lee) helped to build B101 as the most successful standalone station in the U.S., proving that standalone operators can still succeed in the largest markets," said NAB President/CEO David Rehr as he introduced Lee and his family, including a son who flew to Charlotte from Asia to be present.

Rehr praised Lee for his philanthropy as well as his radio successes, honoring him for his support of the University of Pennsylvania's school of criminology, which bears Lee's name.

"This is an incredible honor to be honored by your peers," said Lee as he accepted the award. "I've been in this business for 50 years and I love it passionately."

With that love, however, came some criticism of the way most stations do their business in the early 21st century.

In particular, Lee expounded on a favorite theme: that radio needs to emulate television when it comes to testing commercials for effectiveness.

"TV tests 85 percent of all their national commercials," Lee said. "Radio tests less than 1 percent, and most of that is done by my radio station."

Lee said the radio industry needs to do a better job of selling advertisers on the results of the laboratory studies it has done, in particular a finding he cited that adding radio to a television campaign "triples the value of the campaign."

More controversial was another of Lee's proposals: that, like national TV, radio should guarantee audience delivery to national advertisers, including refunds if ratings fall short of the promised numbers.

"As we roll out in Portable People Meter markets, radio should guarantee audience delivery," Lee said. "We need to offer a money-back guarantee to a few national advertisers to jump-start the industry."

Lee drew louder applause and more general agreement when he praised the NAB's "Radio 2020" campaign.

> **TV tests 85 percent of all their national commercials. Radio tests less than 1 percent, and most of that is done by my radio station.**
>
> — Jerry Lee

"Radio 2020 is really going to galvanize radio so it has a single vision of how great it is," he said. "We don't realize how great radio is. It is phenomenal."

In particular, Lee said, radio can create a much more intimate atmosphere for an advertising message than television.

"TV is telling you what to see. It's somebody's vision of what they want you to see," he said. "Radio advertising creates personal views."

Pressing on

Another upbeat message came from Jones Radio Network talk show host and columnist Bill Press, a featured speaker at the luncheon.

David Rehr presents the NAB

"I'm here to tell you that radio is alive and well, and I'm proud to be part of it."

A veteran of political TV talk, including a stint as co-host of CNN's "Crossfire," Press says he's always made it a point to find at least some radio work, no matter how busy his TV career has kept him. That's a tradition he's maintained since his early days in television, at KABC(TV) in Los Angeles in 1990.

"What I learned to love about L.A. was that it was a great radio town," said Press, who said he quickly connected with KABC(AM) in Los Angeles.

"Within a year, I was not only doing TV, I was doing commentary on KABC radio," a gig Press parlayed into five years as a talk host at KFI(AM), which in

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MARKET PLACE

K+H Has 3-Way Loudspeaker for Studio

Klein + Hummel says its O 410 midfield monitors were designed for use as midfield monitors in music, broadcast and post-production studios for tracking, mixing and mastering.

The O 410 is a tri-amplified three-way loudspeaker, featuring magnetically shielded drivers: 10 inch bass, 3 inch soft dome midrange and 1 inch tweeter. The drivers are powered respectively by 340, 160 and 180 watt hybrid class A-B amplifiers. A high-capacity vented enclosure extends bass response down to 34 Hz, even at high output levels, according to the company.

Structural resonances are avoided in the cabinet through the use of Low Resonance Integral Molding material. A waveguide featuring Mathematically Modeled Dispersion reduces negative effects associated with the loudspeaker-room interaction.

K+H says the most important range of the frequency spectrum is reproduced by a dedicated midrange driver, resulting in low harmonic and intermodulation distortion, and clean audio reproduction. The design allows rotation of the waveguide to permit usage in either vertical or horizontal formats.

Various input options allow the O 410 to be used with any source equipment. An electronically-balanced analog input is fitted as standard. A transformer-balanced input and a 192 kHz, 24 bit digital input are both available as options. The digital input can accept AES3, AES3id and S/PDIF signals.

Acoustical controls adapt the monitor's response to suit its environment: bass, low-mid and treble controls for specific and common acoustical issues, and a parametric equalizer for additional low-frequency corrections.

The electronics may be located remotely when the cabinet is flush-mounted, and the O 410 can be powered with two modes of operation (0 V and 12 V trigger).

For more information, contact Klein + Hummel's distributor Sennheiser Electronic Corp. at (860) 434-9190 or visit www.klein-hummel.com.

turn brought him to the attention of CNN in 1996.

"During all that time," he said, "my goal was to have a national syndicated radio show."

That's a goal that the self-proclaimed "hardline liberal" host finally achieved in 2005, initially syndicating himself from a single progressive talk station in Akron, Ohio, Clear Channel's WARF(AM).

"I tell you, I have never had so much fun in my entire life," Press said of his show, which airs in East Coast morning drive on a network of some two dozen stations, including outlets in Los Angeles, Chicago and Denver.

Despite his political background, which includes three years as chairman of the California Democratic Party, Press said he tries to avoid "loonies on the left, or loonies on the right" on his show.

©NAB

National Radio Award to Jerry Lee.

"I knew I had arrived about a month ago," Press said, "when Ralph Nader wrote a column attacking me for having General Motors as one of my sponsors."

And while the progressive talk format has struggled recently, Press says he's excited about doing radio.

"Especially during an election year like this, radio is an integral part of the democratic process," he said. "Whatever happens, radio is going to play a huge part in this decision."

Press says the talk format is especially well suited to survive the changes that the radio industry is going through.

"The only place to get talk is on the radio," he said.

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World Radio History

You think *we* have a lot to say? You should hear our clients.

When we asked our clients which **Element** features they liked best — well, you see the results. And this is the *edited* version. (Good thing we bought two pages.)

Go (con)figure • The folks at MPR say they really love being able to configure their Elements and keep tabs on their entire Axia network using standard Web browsers. You can set up and administer an entire building full of consoles from the comfort of your own office where there's plenty of Cheetos and Pepsi. Put an Internet gateway in your Axia network and you can even log into Element remotely, from home or anywhere else there's a Net connection. Great for handling those 6 P.M. Sunday "help me!" phone calls from the new weekend jock.

Who are these guys? • Why buy a console from Axia? Element was designed by Mike Dosch and his team of ex-PR&E renegades (who know a bit about consoles). And Axia is a division of Telos, the DSP experts.

Screen play • Element lets you use any display screen you choose, to suit your space and decor. Get a space saving 12" LCD, or go for a big 21" monster. (This is Dave Ramsey's favorite Element feature, by the way. Anyone wanna bet he bought his monitors on sale?) Hook up a VGA projector and make a Meter Wall!

Perfect timing • You can't have too much time. That's why Element's control display contains **four different chronometers** to help keep talent in sync: a digital time of day readout that you can slave to an NTP (Network Time Protocol) server, an elapsed time event timer, a countdown timer talent can set for any interval they choose... and there's also that big, honkin' analog clock right in the center of the screen (Big Ben chimes not included). We wanted to make it even bigger, but our screen designers charge us by the pixel.

Where's Waldo? • Hide and seek is a pretty fun game. But not when when you're in a hurry, and definitely not when you're on the air. So every Element fader comes with a big, **bold** 10 character LED display right above it to show talent, at a glance, exactly what source is assigned to that fader. If it's music from a digital playout system provided by one of our partners, the display can even show the title or artist of the song that's active. Talent tells us that these displays are at the perfect angle for either sit down or stand up studios.

Options • Clients say they love Element's uncluttered worksurface. We kept it clean by placing an "Options" key over each fader to give instant access to all the advanced goodies. It makes customizing settings easier than selling fudge cake to Dom DeLuise.

Black velvet • What's 100 mm. long, silky smooth, goes up and down all day and **lasts forever**? Our super quality conductive-plastic faders, of course. (You have a filthy mind, mister. Shame on you.) We sourced the most durable, reliable, premium faders and switches for Element. And we added extra touches, like the custom molded plastic bezels that protect on/off switches from accidental activation and impact. Because we know how rough jocks can be on equipment — some of us were jocks, not rough). And because we also know there's nothing more embarrassing than a sudden case of *broadcastus interruptus*.

Audio cards • Well, *um*, there actually aren't any. Not in Element, or anywhere else in an Axia network. Why not? Think about this: your production guy spends hours crafting exciting, finely tuned bits of broadcast magic, only to filter them through a card sitting in a noisy, RF-filled PC. It's like washing a wedding dress in the Hudson River. Not only that, broadcast audio cards are *expensive*. And they only work in *PCI slots*... how many of those are you seeing on new PCs? The **Axia IP-Audio Driver** installs on any Windows® PC to send and receive pure digital audio right through the PC's Ethernet port — no sound card required. You get better, cleaner PC audio that's sharable right to the network. And you save tons of cash on sound cards, and on the audio inputs you would have needed for that PC card audio — more than enough to buy that cool new network tester you've been lusting after.

Great Phones • We wanted the phones on Element to work like an extension of the board-ops themselves. Unfortunately, talent objected to having Ethernet ports implanted in their skulls, so we came up with the next best thing. With Element, jocks never have to take their eyes or hands off the board to use the phones. Element works with any phone system, but it really clicks with the Telos Series 2101, TWOx12, or the new NX-12, which connects four hybrids plus control with a *single Ethernet cable*. Status Symbols™ (those cool little information icons) tell talent at a glance whether a line is in use, busy, pre-screened, locked on-air, etc. You can even dial the phone right from the board using the integrated keypad.

Fried Chicken • Conductive aluminum bullnose is connected to a 40-kilovolt storage capacitor* that can be activated with a GPIO closure. Set up a hotline remote trigger for the PD to give the jocks a little "positive feedback!"

Shown: 20-position Element, nicely equipped, $16,557.00 US MSRP. Not shown but available: 4-, 8-, 12-, 16-, 24- and 28-position Element. Dual exhaust and whitewalls optional at extra cost.

Element

World Radio History

<< "Necessity is the mother of invention." So we invented IP Audio for broadcasting: realtime, low latency routing where logic & mix-minus follow audio. Thanks Mom!

<< Those other guys are really proud that they've built a couple dozen routers. We use Cisco switches to power our networks. Guess how many *they've* built?

<< At Axia, "remote" is our favorite word. As in "remote control," "remote maintenance," "remote diagnostics." So your life doesn't have to go on without you.

<< Soundcards? How quaint. Our IP Audio driver for Windows sucks audio right out of computer NICs, like pimentos from martini olives. Mmmm... olives.

Meter reader • LED program meters? How very 1990's. Element's SVGA display has lots of room for timers, meters, annunciators (*there's* a five-dollar word) and more — enough to show meters for all four main buses at once. Reboot the console to 5.1 surround mode and the light show is even cooler. Any more bling and those fast 'n furious types'll want it for their dashboards.

Status Symbols • There are those icons again. (We're in love with icons. It's the Telos way.) These Status Symbols alert talent to phone lines ringing, mix-minuses minusing, talkback channels talking, etc. They can even display fader numbers, like you see here. Just one more way Element makes it easy for talent to do a fast, clean show.

How many? • How many engineers does it take to change these light bulbs? None... they're LEDs.

Swap meet • Element modules are easy to hot swap. Remove two screws and a cable or two, and they're out. In fact, you can hot swap the **entire console** — unplug it and the audio keeps going, because mixing is done in an external Studio Engine.

Can I play with your knobs? • Twist 'em, push 'em, make 'em click. Element comes standard with some pretty powerful production features, like per-fader EQ, voice processing and aux sends and returns. Context-sensitive SoftKnobs let production gurus easily tweak these settings while simultaneously satisfying their tactile fixations. (Don't worry: for on-air use, you can turn off access to all that EQ stuff.)

Memory enhancer • We know how forgetful jocks can be, so Element remembers their favorite settings for them. Element's Show Profiles are like a "snapshot" that saves sources, voice processing settings, monitor assignments and more for instant recall. Have talent set up the board the way they like it, then capture their preferences with a single click for later use. (Hey, make *them* do some work for a change.)

Stage hook • This button activates the emergency ejector seat. OK, not really. It's the Record Mode key; when you press it, Element is instantly ready to record off-air phone bits, interviews with guest callers, or remote talent drop-ins. One button press starts your record device, configures an off-air mix-minus and sends a split feed (host on one side, guest on the other) to the record bus. Like nearly everything about Element, Record Mode is completely configurable — its behavior can even be customized for individual jocks. Sweeeet.

Coffee? • No console is spill-proof, but Element is easy to service and has no motherboard to damage in the event of stupidity.

Mixmaster • Does the thought of constructing a complicated mix-minus on-the-fly bring a big grin to your face? If so, you're excused (Masochism 101 is down the hall). But if you hate building mix-minuses manually as much as we do, you'll love the fact that Element does them for you. No more using all your buses for a four-person call-in; no more scrambling to set up clean feeds for last-minute interviews. When you put remote codecs or phone calls on-the-air, Element **automagically** figures out who should hear what and gives it to 'em — as many custom mix-minuses as you have faders.

It's already in there • Element comes standard with a lot of cool goodies you'd pay extra for with other consoles. Like custom voice processing by Omnia™ that lets you quickly build and capture compression, noise gating and de-essing combinations for **each and every jock** that load automatically when they recall their personal Show Profiles. (There's even a secret "Big Balls" setting that makes wimpy interns sound like John Leader. A fifth of Chivas to the first guy who finds it.)

Talk to me • Need some one-on-one time with your talent? Talk to studio guests, remote talent, phone callers — talk back to *anyone* just by pushing a button.

Push my buttons • You can program these custom button panels with any macro you want, from recorder start/stop to one-touch activation of complex routing switches and scene changes using PathfinderPC™ software. You can probably even program one to start the coffee machine (black, no sugar; thank you).

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© 2006 TLS Corp. Axia, Element, PathfinderPC, Status Symbols, Omnia TM TLS Corp., all other TM's property of their respective owners. *No, the console doesn't really have a high-voltage zapper in it. (But it sure would be cool!)

World Radio History

Marcos O'Rourke Answers the Call

by Ken Deutsch

One in an occasional series of articles on the changing face of radio engineering.

Marcos O'Rourke breaks the stereotype of a radio engineer. As a youngster he didn't disassemble radios and never stared in awe at the local towers. He never built a crystal set or DX'd a station 500 miles away.

In fact, he backed into his radio career by designing graphics for KRTM(FM), Temecula, Calif., on the campus of Calvary Chapel Bible College. But he nearly ended up in a different field.

"The college didn't have a newspaper, so I checked out the campus FM station," he said. "But then the siren call of radio drew me in, and being able to work hands-on sealed the deal. I love working with equipment."

The same entity that owns Calvary Chapel Bible College, Calvary Chapel of Costa Mesa, also owns KWVE(FM), a commercial Christian station 50 miles from Temecula in Santa Ana. That is where O'Rourke, now 26, continues to learn his craft.

Under the tutelage of mentor Tom Koza, O'Rourke began to understand some of the complexities of the industry. Koza is the Los Angeles engineering manager for Univision Radio.

"Marcos is a great kid and has a wonderful enthusiasm," Koza said. "His strengths are along the lines of where technology is going and he knows his stuff. He also knows how to keep his job and his home life in balance, which is critical. Marcos knows that you have to be a success in your job, but you also have to be a success with your family."

O'Rourke has good things to say about Koza as well.

"I can't put what he taught me into a list, but Tom has a lot of wisdom, and experience in the business," said O'Rourke. "It's great having someone with a wealth of knowledge like that to tap into."

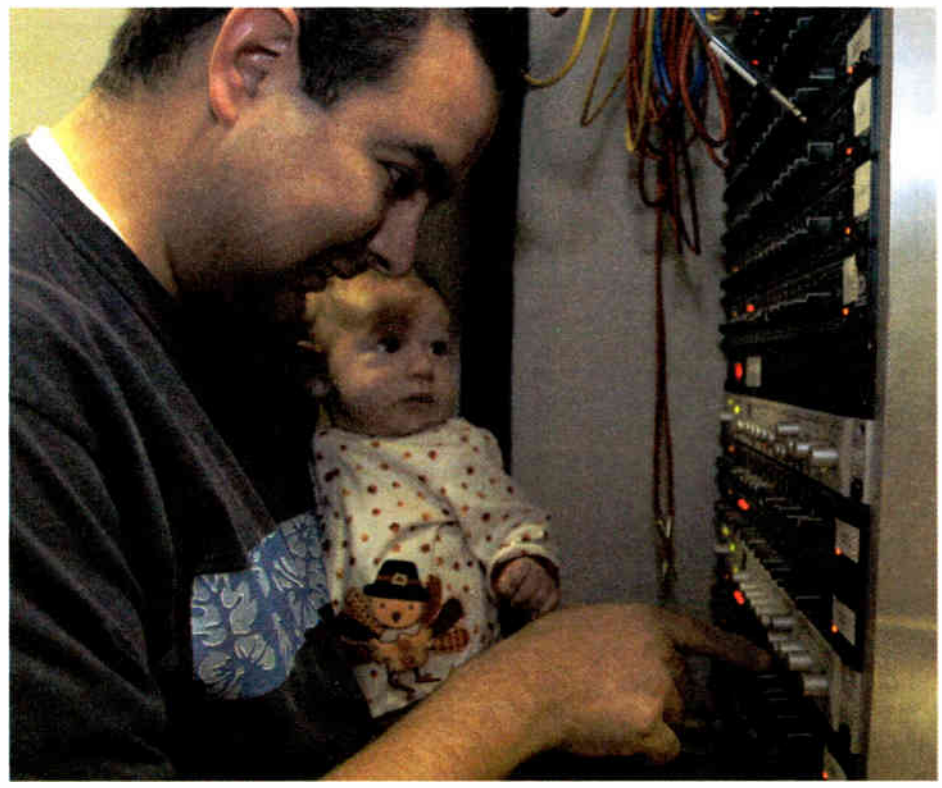
Station with a mission

KWVE is a religious station, which fits well with O'Rourke's beliefs.

"Jesus said to go into the world and preach the Gospel, and what better way is there to do that than radio?" he said. "We have had people respond to the station when they were depressed and going to commit suicide. They were flipping through the dial and came across our station and the pastor on the air pulled them out of whatever they were into.

"This station touches people."

O'Rourke occasionally fills in on the air during locally broadcast segments, but much of what is aired on KWVE is recorded church services, edited for specific time slots and made available through syndication.



O'Rourke says KWVE 'touches people.' Here, son John helps him make adjustments to the mics in the TOC.

The stand-alone FM's Web site states that the station uses no consultants or research. "All programming is done through Calvary Chapel without regard to sales trends, profit margins or demographics."

Yet KWVE is still a commercial station; if underwriting and sponsorships are not in place, the station will not continue to run.

"I have a general manager, Richard McIntosh, who is really in touch with the religious and the business side of broadcasting," said O'Rourke. "The projects he has me working on are exciting."

McIntosh said, "Marcos is very good at keeping up with trends and keeping me informed because I'm a non-technical kind of guy.

"One of the projects he'll be involved with involves putting a booster in the corridor along the freeway between Corona and Anaheim Hills, which has a car count of about 275,000 per day. We have a shadowing problem there now. And we're about to add HD2 and HD3 channels that will also stream on our Web site. The HD2 channel will be a music format and our HD3 will be Spanish religious programming.

"It just grows and grows, and Marcos is integral to everything we do here."

KWVE is part of a satellite network that O'Rourke helped build. The Axia Audio platform is used, and studio updates are ongoing. There are six studios at KWVE — an on-air room, talk studio and three production rooms — and a master control room for satellite operations.

"I've always been a reader," said O'Rourke. "I will actually read equipment manuals. I know it's a rare thing, but I do it. Then sometimes I'll just dive right in and try something. Hopefully I won't reformat the hard drive."

The station known as "K-Wave" is a small operation and O'Rourke is called on to do almost everything.

"That means it gets interesting when I try to go on vacation," he said. He and his wife Lindsey and son John recently went to Las Vegas for a three-day vacation "and I had seven or eight phone calls from the station during that time. I'm glad it was just computer stuff that I was able to log on and fix."

His favorite part of the job is working with equipment and building new studios.

"I like to do something right," he said. "That is the most important part of any job."

Outreach

Asked about the biggest problems facing the engineering profession, O'Rourke didn't hesitate.

"There are not enough young people. I go to SBE meetings and everyone is over 50." He'd like to see more outreach programs where engineers go into high schools.

"If someone had done that for me when I was that age, my attention might have been drawn to radio a lot earlier. No one ever told me I'd be able to be the one to fix the equipment or help build the station."

"There will always be a place for terrestrial radio," he continued. "In disasters, when all other services such as Internet and phones are out, radio is there. I don't think satellite services are a threat to radio, but I do think that Wi-Fi or similar wireless networks could be. Unless the RIAA interferes, Internet radio will be heard in cars, so I see that growing."

'The siren call of radio drew me in, and being able to work hands-on sealed the deal.'

And where does O'Rourke see himself in the future?

"I would love to still be working here at KWVE," he said. "But my biggest goal is to love my family and raise my son to be a man."

Ken Deutsch has been a frequent contributor to Radio World since 1985.

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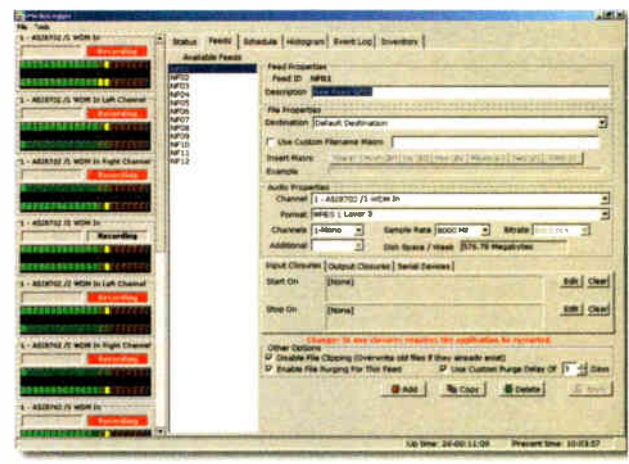

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A TiVo-Style System for Recording Radio

Radioshift Is $32 Software for Mac OS Machines Offered by Massachusetts-Based Rogue Amoeba

by James Careless

Can radio programs be more easily "time-shifted," recorded for later listening, in a manner akin to the TiVo and similar digital video recorders? If so, will consumers be willing to buy software that can do this for them on their home computers?

Software developers at Rogue Amoeba are gambling the answer is "yes" to these questions. The company, a Massachusetts-based, privately owned software firm founded by Quentin Carnicelli, has invented a program called Radioshift.

Available for Mac OS machines at *www.rogueamoeba.com* — offered as a free trial version that can be made permanent for $32 — Radioshift "is a tool for improving the experience of listening to Internet radio," says CEO Paul Kafasis.

"Right now, in the 1.0 version, it's built to do timed recording of streamed (and AM/FM) radio content, much like a PVR does. Select a show, click Subscribe and you're all set. Radioshift also works nicely to listen to tens of thousands of programs that are available online.

"Live listening features are fairly rudimentary right now, but in the future we'll be working to improve the live listening aspects of Radioshift as well."

The product

Click on the Radioshift "speaker" icon on your desktop and you're transported into Radioshift's Radio Guide. Using data licensed from RadioTime Inc., this guide has more than 50,000 station and program listings. It comes with a search engine that allows you to search by program name, station ID, keywords or genres. If you're feeling global, call up the program's world view, to shop for stations by city.

Radioshift is a tool for improving the experience of listening to Internet radio.

— Paul Kafasis

Selecting specific programs to record/timeshift takes a few mouse clicks. Recording is done in the background whenever the audio is being streamed, in real time.

Radioshift can handle Real Audio, QuickTime Windows Media and MP3 streaming formats, so compatibility is rarely an issue. You can also record directly from AM or FM by connecting a USB-enabled Griffin RadioShark receiver to your Mac.

Genesis

"Radioshift is really the latest in a line of audio recording applications," said Kafasis.

"[Our] Audio Hijack Pro has long been popular on Mac OS X for recording of all audio since its release over four years ago. It didn't take long for us to realize that there were two major use cases for Audio Hijack Pro. The first was live recording from podcasts, to importing audio from records and tapes, to pulling sound bites from various sources. The other was timed recording of Internet radio.

"This second use case was possible with Audio Hijack Pro, but it wasn't easy. Setting up recordings, particularly finding the stream URL, isn't simple. With Radioshift and its built-in Radio Guide, we're making this a lot simpler."

Useful?

Like so many Web-based applications over the years, Radioshift is undeniably clever and cool to use. But will people pay for it?

Yes, according to Kafasis. "Radioshift has been selling quite well, better than we expected," he said. "That's encouraging, because we plan to add many more features to the application, which should increase its popularity further."

Does Radioshift have value to the broadcasting industry? "Probably for smaller stations," said Tom McGinley, DOE/MIS for CBS Radio in Seattle and technical adviser to Radio World.

"Most digital storage automation products out there already used by most stations have a BGR (background recorder) or time-shift program capability," he pointed out. However, for those stations that don't, Radioshift could fill a gap. The downside is that Radioshift "only runs on Mac OSX," says McGinley. Nevertheless, he finds it a good value at $32.

The bottom line: As a Mac-only application, Radioshift has limited value in a PC-dominated universe. Still, the program's functionality could be of use to stations needing the ability to record programming from other sources via the Web, or to record their own content for long-term storage. And for consumers, it's software that can help extend online radio's brand and content beyond the traditional real-time experience.

MARKET PLACE

Progressive Offers Specialized Transmitter For Prisons, Health Clubs

Here's an interesting twist in the product line from one industry manufacturer.

The ACC-100 from Progressive Concepts is a low-power FM transmitter used to retransmit television sound to inmates in correctional facilities. The devices are also used in health clubs.

The company says the unit reduces background noise and allows users to watch multiple TV sets without competing for the sound of each.

"Users simply tune their Walkman or headset receiver to the FM broadcast frequency corresponding to the screen they are watching, and they can listen to the sound without bothering others in the same room," the company said.

Progressive Concepts carries broadcast equipment including AM and FM transmitters, amplifiers, STL equipment, RDS and EAS encoders, stereo generators, mics, audio sources, mod monitors and other products.

For information call the company in Illinois at (630) 736-9822 or visit www.progressive-concepts.com.

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Studio Sessions

Radio World — Resource for Radio On-Air, Production and Recording — February 13, 2008

Product Guide

Inside

PRODUCT EVALUATION

ADMS 44.22 Switches 3 Sources for KLZ

Broadcast Tools Offers 'Flawless' Matrix Switching; Stations With Automation Will Like Its Flexibility

by Edward C. Dulaney

When the long-anticipated Broadcast Tools ADMS 44.22 matrix switcher was released, I pounced on the chance to take a look at it.

For many years, broadcasters have needed a switcher that could manipulate both AES and analog inputs, while providing both an AES and an analog output. But would the unit live up to my expectations?

When it arrived, I immediately installed it into the air chain on KLZ(AM). This station broadcasts a Christian music and talk format, and a matrix switcher that would be transparent to the audio is absolutely essential. Previously we used an analog-only matrix switcher that, while capable, could not pass AES audio. Over the past year I've made every attempt to get rid of any remnants of analog audio in my engineering room, and that one last switcher had been a thorn in the flesh.

So out it came, and in went the Broadcast Tools ADMS 44.22. I needed to be able to switch back and forth between three sources: on-air console output from the Wheatstone router (AES); output from a second Wheatstone bus (AES); and an emergency direct feed from the RCS NexGen automation (analog). The output was configured to send the AES program audio direct into our Eventide BD500 delay.

The installation was simple, with audio I/O connected using the standard "Euroblock"-style terminals. Power is supplied via an "in-line" transformer, a refreshing change from the standard "wall wart" type of power supply. Serial I/O uses the typical Broadcast Tools RJ-21 style of connector. Provided with the switcher is an adaptor that permits connecting the modular style cord to a standard 9-pin RS-232 port on a PC.

The ADMS 44.22 provides sample rate conversion on all the AES inputs, and a high-quality 24 bit A/D-D/A converter for analog audio. For facilities that require AES sync, the ADMS 44.22 has a word clock input and output available.

Back and forth

It was now time to place the switcher into active service. As expected, it came online without a hitch. Audio was exceptionally clean and the matrix switching between AES sources was flawless.

However, switching between an AES source and an analog source was not quite as clean as I wanted it to be. The internal A/D converter introduces about 40 ms of delay, causing a noticeable "hiccup" in the audio. For the majority of people using this switcher, I don't see this as being a problem. However if you use it like we do, switching from AES to analog for an emergency backup, the switcher will make a slight "flanging" sound during the transition.

Speaking of transitions, the ADMS 44.22 has a number of ways it can switch audio sources.

Just as with Broadcast Tools previous offerings, the ADMS 44.22 can switch sources instantaneously, just like the older 6X1 switchers. It can switch sources with an overlap — very nice if you want to seamlessly transition between local and satellite feeds. Plus it can keep multiple events active at all times, so if necessary you could have all four AES sources active at once.

Fade away

There also is a programmable fade in/out available on every channel. Rather than just cutting off the audio cold, the ADMS 44.22 could slowly fade down the audio. Or, if you are using it to join a satellite channel that has bumper music, it could fade it in at a pre-programmed rate.

Radio stations with automation systems will enjoy the flexibility that the ADMS 44.22 provides. The RS-232 interface permits connection of the switcher to any PC with a serial port available. And many automation companies have modules available to control the switcher through a local log entry. In my case the NexGen system could not talk directly to the ADMS 44.22, but I was still able to control it using the "Send Serial" commands available in the NexGen system.

If eight inputs (four AES and four analog) are not enough, the ADMS 44.22 has a port on the back panel that facilitates the interconnection of two ADMS 44.22 units in parallel. This will give you 16 total inputs (eight AES and eight analog).

My only complaint about that configuration is that the switcher will not give you any additional outputs by putting them in parallel. It would be a nice to be able to expand both input and output via the interconnection.

If you are looking for a way to mix AES and analog sources together easily, the ADMS 44.22 is the device you want. I've placed my order for more of these units. With four radio stations in one building, a switcher like this is just what the engineer ordered.

Edward C. Dulaney is the chief engineer for Crawford Broadcasting in Denver.

Product Capsule:

Broadcast Tools ADMS 44.22 A/D Stereo Matrix Switcher

Thumbs Up

- ✓ Easy installation
- ✓ Power supplied via "in-line" transformer vs. "wall wart"
- ✓ Exceptionally clean audio
- ✓ Matrix switching between AES sources was flawless

Thumbs Down

- ✓ Internal A/D converter introduces 40 ms of delay, causing "hiccup" in audio
- ✓ Unable to expand both input and output via the interconnection of two units in parallel

PRICE: $1,299 list

CONTACT: *Broadcast Tools at (360) 854-9559 or visit www.broadcasttools.com.*

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PRODUCT EVALUATION

Zoom H2: A 'Remarkable Little Machine'

Though Radio May Require a More Rugged Unit, The Low-Cost H2 Offers Flexible, Clean Recording

by Frank Beacham

I suspect you're wondering the same thing: Is it possible that a $200 digital audio recorder is good enough for professional use in radio broadcasting?

I wish I could offer a simple "yes" or "no" answer but the story is not that simple. As with most things in life, there are grey areas.

The Zoom H2 Handy Recorder, priced at $199 list, is definitely a groundbreaking product — if for nothing else than by offering such a rich feature set for so low a price. It might even fit on a timeline of technology history as an example of how good China has become at designing and building complex electronic devices at an extremely low cost.

There are quite a few portable audio recorders now available, but this tiny, four-ounce model is no "me too" product. It uses an adjustable four-microphone array in a W-X/Y configuration to capture and decode audio in several formats up to 48 kHz at 24 bit resolution.

That means the H2 can be used in novel ways. For example, it can be mounted on top of a video camcorder to record audio in a 360 degree pattern on four tracks for conversion to 5.1 surround.

For more traditional radio broadcasting functions — say, recording news conferences or other live events — the H2 easily can be used with two mic capsules to record in a 90-degree pickup pattern as stereo or a dual mono mix in a 16 bit WAV or MP3 file. As a dual side-fire device, it also can be set in a front-rear pickup mode for face-to-face interviews.

By pressing the Play/Pause button while recording, the H2 creates a marker as a cue point. These marks, up to 99 of them, can be used as locators within BWF (Broadcast Wave Format) files. This embedded information can be useful in locating key segments of a recording quickly.

Like most audio recorders in this category, the H2 stores data to an SD flash card (up to 4 GB for about six hours in 16 bit/44.1 kHz mode). The card can either be removed for insertion into a Mac or Windows PC, or the recorder can be connected via USB 2.0 to act as a full-speed mass storage device.

In a separate function, the H2 also can serve as an audio interface for a personal computer. The user can directly record the output from the H2's microphones or external inputs directly to the computer via a USB cable.

Using two AA batteries (alkaline, oxyride or rechargeable nickel-hydride), the device can record for four continuous hours. The batteries are easy to change by removing a thin plastic lid on the back of the recorder. An AC adapter is included.

Sibling rivalry

Unlike its big brother, the Zoom H4, the H2 has no XLR connectors. In addition to the built-in mic array, there is a mini stereo microphone input with 2.5 volt plug-in-power capability, plus a separate line-level input. Also available is a combo headphone/line out mini jack for playback and monitoring.

The H2 has an especially wide choice of signal processing functions for maintaining proper recording levels. There are choices of AGC (general and speech), compression (general, vocal, drum) and limiter (general and concert). These also can be turned off for completely manual control. There's also a low-cut filter, two-second pre-record buffer and auto-record function.

In evaluating any portable audio recorder, I start by diving in to the user interface without reading the manual. I've found that if the functions are intuitive and clear without the operating instructions, it's usually a sign of thoughtful design.

I'm pleased to say, for the most part, the H2 passed my test, though for aging eyes, glasses might be necessary to view the tiny text on the 1 inch wide, backlit, 128 x 64 dot display. Once I could see, I was able to zip right through most of the functions.

However, to my dismay, I found that after formatting the flash card, most of my chosen set-up parameters switched back to default. This also happened after one battery change but did not occur after another. I can't explain the inconsistency.

I frequently re-format flash cards so this constant resetting is annoying, and I hope Zoom, in a future firmware update, allows the user's preferred functions to be remembered until changed.

How does the H2 sound? Quite good for a $200 recorder. But come on, dreamers, use your common sense. The components and preamps in this type of device do not equal the sonic quality of high-end professional gear.

As a consumer-grade, general-purpose audio recorder, however, the Zoom H2 is a decent performer.

Radio folks

Perhaps more important to radio broadcasters who might be salivating at the prospects of a $200 digital audio recorder is the issue of durability.

Again, common sense helps. The H2 is made of thin, light plastic. Some switches feel fragile, and the hinged door covering the SD slot appears ready to snap off with a single heavy-handed touch. I wouldn't bet on an H2 surviving a drop to a concrete sidewalk.

If a broadcaster seeks an audio recorder for hard daily use, the H2 is not the best choice. I would suggest a far more rugged (and expensive) unit like Sony's PCM-D1 for that role. However, if treated gently, the H2 can certainly do the job and do it well. A workhorse, it's not.

Used in the right creative hands, the H2 has the flexibility to go far beyond many traditional recorders. The experimental possibilities with wide stereo and surround sound fields are exciting, and no doubt will be explored by some with an artistic view of sound production.

A couple of years ago, when the first generation of low-cost portable digital records began appearing in the marketplace, a $200 device like the Zoom H2 would have been unimaginable. Now that it's here, this remarkable little machine opens a new world of digital audio recording that just about anyone. Perhaps that's the big story here.

Frank Beacham is a writer and media producer living in New York. Visit his Web site at www.frankbeacham.com.

Product Capsule:
Zoom H2 Handheld Digital Recorder

Thumbs Up
- ✓ Full-featured portable digital audio recorder for $200
- ✓ Four-microphone W-X/Y configuration allows creativity in sound design
- ✓ Good battery life, long recording time on up to 4 GB SD flash card
- ✓ Features like compression, limiter, low-cut filter and marker for BWF metadata
- ✓ Choice of various WAV and MP3 recording formats
- ✓ Small, compact, 4 ounce package

Thumbs Down
- ✓ Flimsy, plastic case seems fragile
- ✓ Menu settings lost after SD card format
- ✓ Display screen small and hard to read

PRICE: $199

CONTACT: *Samson Technologies at (631) 784-2200 or visit* www.zoom.co.jp.

PRODUCT GUIDE

Studio Technologies Debuts Three Units for Broadcasters

Studio Technologies introduced its Model 46 interface, which it says is designed to interface two-wire full-duplex party-line intercom circuits with four-wire audio circuits associated with matrix intercom systems.

The unit provides two independent two-channel interfaces. Each contains two hybrid circuits with automatic nulling capability.

Multiple LED level meters allow continuous monitoring of the input and output signals for reliable operation. DC power sources eliminate the need for external intercom power supplies, according to the company.

Studio Technologies also added the Model 233 to its line of announcer's consoles, with features such as an integrated side tone section, two line-level audio talkback outputs, two line-level audio inputs, dual-channel intercom interface and a tally output; and it debuted StudioComm for Surround Models 76 and 77.

Based on the StudioComm for Surround Models 68A/69A, Models 76 and 77 offer several upgrades. The inputs are AES3id (unbalanced) digital audio, while the outputs remain analog. Multiple Model 77 user control surfaces can be connected.

For more information, contact Studio Technologies Inc. at (847) 676-9177 or visit www.studio-tech.com.

Product Showcase

Model RFC-1/B Remote Facilites Controller
- control transmiter from any telephone
- 8-64 channels of telemetry and control
- programmable control by date and time
- optional printer and modem adapters
- programmable telemetry alarms
- integrated rack panel

Sine Systems, inc
615.228.3500
more information: www.sinesystems.com

World Radio History

PRODUCT GUIDE

DSF-1 Is Surround Mic System

SoundField says its DSF-1 music surround mic system was designed solely for music recording.

It incorporates a technology that enables the high-resolution capture of ambient or image critical music events that must ultimately fit a variety of delivery formats, from stereo to multi-channel formats.

The DSF-1 delivers mono, stereo, 5.1, 6.1 and 7.1, as well as B format, the archival medium for future formats. It comprises a SoundField microphone and a digital output preamp/processor. In addition to selectable 48/96/192 kHz output sample rates, the DSF-1 can output audio at the CD mastering standard of 44.1 kHz, as well as 88.2 kHz and 176.4 kHz.

Both word clock input and output are provided. The DSF-1 allows users to change the microphone pickup pattern remotely from the preamp; rotate and invert the mic without physically handling it; adjust the angle or width of the final output in stereo or surround; and deliver the final output in mono, stereo, mid-side or surround sound.

SoundField's Surround Zone software is available for use with common DAWs such as Digidesign Pro Tools, Steinberg Nuendo and SADiE.

For more information, contact SoundField's distributor TransAudio Group at (702) 365-5155 or visit www.soundfield.com.

Plug-in Enables File Exchange Between Pro Tools, Dalet

Dalet Digital Media Systems enables the integration of Digidesign Pro Tools with Dalet Radio Suite via the MetaPlug Broadcast 2.0, an audio suite plug-in developed by Creative Network Design.

MetaPlug Broadcast 2.0 for Dalet Radio Suite lets Pro Tools users save complex mixes with associated metadata to a Dalet Content Catalogue. These mixes are then available to all Dalet users.

The integration merges post-production workflows based on Pro Tools with integrated production, scheduling and play-out workflows driven by Dalet Radio Suite, as well as with digital archives based on Dalet Media Library.

Prior to the Dalet integration with MetaPlug Broadcast, Pro Tools users had to undertake multiple steps to hand off sessions: bounce to disk, upload to an FTP site, import the file and manually enter metadata into the Dalet Asset Manager.

The MetaPlug Broadcast 2.0 for Dalet Radio Suite reduces the upload process to one step from within Pro Tools. The media file, including metadata, is populated in the Dalet Content Catalogue and available across the music production and playout workflow.

For more information, contact Dalet in New York at (212) 269-6700 or visit www.dalet.com.

Popless Has Filter For Heil Mics

Popless Voice Screens says its VAC-PR40 pop filter is designed for Heil Sound PR-40 and PR-30 microphones, and clamps onto the Heil SM2 shock-mount.

Popless' filters feature Variable Acoustic Compression, which provides adjustable control of pop and sibilance filtering to fit an individual's voice. With VAC, the user adjusts the acoustic screens for the desired amount of pop and sibilance filtering needed.

A mini-gooseneck adjusting system places the VAC-PR40's 3.5 inch diameter acoustic screens in front of the microphone and tracks microphone movement. Attaching the VAC-PR40 to the Heil SM2 shock-mount keeps the microphone isolated from unwanted vibrations. Suitable for reading copy, the VAC-PR40's low-profile acoustic screens are a suitable choice for radio stations looking to upgrade the sound quality of their on-air announcers for HD, according to the company.

Each VAC pop filter comes with two washable 3.5 inch diameter acoustic screens and an adjustable screen holder. For minimum filtering, only one acoustic screen is used. Adding the second close to the first provides medium filtering, with maximum filtering obtained when the distance between acoustic screens is furthest apart in the screen holder.

The VAC-PR40 has a MSRP of $77.

For more information, contact Popless Voice Screens at (800) 252-1503 or visit www.popfilter.com.

TOP STUDIO BUILDOUTS

INSIDE Americom Reno

by Tom Vernon

Some buildouts require quick turnaround times, others force designers to think out of the box. In this series of occasional articles, RW profiles facilities that caught our eye due to their size, complexity or innovation.

When Americom Reno, a seven-station medium-market radio group in Nevada, purchased a new building, the move needed to be executed quickly.

Bill Schulz, director of programming and operations, says three criteria were emphasized during the planning process.

"We needed an easy path to HD Radio when we were ready to make the switch; the operation needed user functionality to accommodate multiple program sources; and we needed functional equipment that wouldn't break the bank."

Bill Schulz in KLCA Studio 2

The 10-studio complex is home to KRNO(FM), KODS(FM), KLCA(FM), KCTQ(FM), KBZZ (AM), WJFK(AM), and also Scott Communications-owned KWNV (FM), for which Americom Reno provides programming, operations and engineering support. Forty-five people are employed at the site.

Harris provided turnkey services for the Nevada broadcaster including planning, design and installation of equipment in the new two-floor facility. The move was completed over a 17-day period.

KODS Studio

Harris also delivered nine 16-channel, 12-fader NetWave on-air consoles, the VistaMax Envoy networking system, audio infrastructure for seven on-air studios, two production rooms and one talk studio, as well as the studio furniture. All 10 studios connect to the central 64-channel studio networking system, which allows Americom Reno to share any audio source in the building, whether connected to one of the consoles or to the Envoy in the technical operations center.

While most of the gear was purchased new, Schulz said the group is reusing a lot of microphones and audio processors.

KBZZ Talk Studio 2

At the same time as the move, Americom Reno switched from an older DOS-based automation system to a Prophet (now RCS) NexGen package. This was provided by Harris and integrated seamlessly with the rest of the project.

Much of the studio gear came with customized tweaks for the group's unique needs. Schulz said each of the NetWave consoles has an external "World Feed" panel encased in a wooded frame. Each contains an assortment of cables and connectors enabling television crews, live bands and temporary sources like laptops and MP3 players to quickly interface with the studio.

The talk studio shared by the two AM stations features a custom table with multiple turrets for cabling and built-in delay dumps, custom relay controls for switching between the two AM studios and built-in headphone jacks for multiple host and guest positions.

In addition to the studio gear, the TOC contains eight racks that house microwave transmitting and receiving gear, Marti remote equipment, audio processors, the Prophet Systems automation PCs and a frequency-agile auxiliary transmitter.

Behind the studio building, a 70-foot tower mounts nine STL dishes to five transmitter sites, as well as the auxiliary antenna for FM broadcast. The extra STL antennas provide capacity to handle HD Radio signals along with analog once the switchover is made. Tower rigging was performed by P&R Tower Systems of Sacramento, Calif.

"By upgrading everything at home first, we will be better prepared when we begin HD Radio upgrade work at the transmitter sites." added Schulz.

Tell us about your new studio buildout or renovation. E-mail radioworld@imaspub.com.

World Radio History

USER REPORT

Sony PCM-D1 Is 'Combat-Ready'

Recorder Has 4 GB Drive, Titanium Body, Weighs Less Than 19 Ounces and Passes 'Klutz Test'

by Steven L. Herman
Broadcast News Correspondent

NEW DELHI, India I have been using audio recorders since tape spun around on reels and the fastest way to edit on deadline was with a razor blade.

My days of accidentally drawing blood from my fingertips are, thankfully, way behind me. Little could I have imagined back then, however, that I would eventually record on a machine with no moving parts.

During the past couple of years I have purchased several of the portable "tapeless" recorders marketed to broadcast journalists and other audio professionals. I have put them to the test at news conferences, in the field and in the studio throughout North America and Asia.

My primary criterion, of course, was whether the units could produce broadcast quality sound; all were able to accomplish that. In addition, I wanted to determine which machine was the most intuitive and reliable, and which unit I'd be willing to "go into combat" with, meaning would it hold up to adverse conditions and still function if it got shot out of my hands? Actually, I wasn't worried about gunfire but rather my notorious butter fingers.

Only one unit passed the "klutz test" and all others: the **Sony** PCM-D1, with its 1 mm-thick pure titanium body, and a design elegance and user-friendly interface that restored my wavering faith in Sony electronic equipment.

The PCM-D1, a 96 kHz/24 bit recorder, has a non-removable 4 GB drive, sufficient for hours of high-quality recording. It also has a slot for Sony's favorite memory stick. Unless the memory stick is being used, audio must be transferred to a computer via a USB interface (supplied).

Press kit

The Sony, weighing less than 19 ounces with batteries inside, is a WAV-only machine. WAV is a higher quality format but consumes more memory. MP3 is sufficient for most voice recordings, especially at the 48 kbps sampling rate setting. I record on the PCM-D1 at 48 kHz/16 bit, which gives me nearly six hours of recording time on the internal hard drive.

This distinction between MP3 and WAV is not so important for most reporters. And for most radio journalists, except perhaps the audiophiles at NPR, the stereo settings are a waste of memory. I do wish the PCM-D1 had a mono option.

The reliability and convenience of the PCM-D1 does not come cheap. At $2,000, a price that hasn't come down since its introduction, this is significantly above the cost of what most company bean-counters might consider justifiable compared to other seemingly sufficient alternatives.

Some buyers might also be tempted to purchase the D1 for the same reason a driver would choose a pricier convertible coupe over a less expensive hardtop. The D1, let's face it, looks so darn cool.

The soft-spoken spokesman for the Japanese Foreign Ministry, Tomohiko Taniguchi, eyed it after a news conference I attended and loudly exclaimed, "Wow!"

I have discovered that sometimes the D1 is the only piece of equipment I need in the field because the built-in stereo X/Y electret condenser microphone produces surprisingly good audio. I once was forced by circumstance to hold up a relatively bulky unit from a competitor to the lips of the Dalai Lama. The Sony D1 would have been a more dignified and convenient choice.

Plop the D1onto its sturdy tripod stand and you have done away with the need for an external microphone and stand in many circumstances.

Herman used the PCM-D1 to capture Bhutan's former prime minister, Lyonpo Khandu Wangchuk, speaking in Thimpu.

Audio purists — the type who wouldn't be caught dead using "consumer-grade" equipment — have blogged disdain for the D1 because it does not accommodate those assuring three-pin XLR cannon plugs, which are not apt to become accidentally unhitched.

Additional criticisms of the PCM-D1 include no method to recharge the batteries without removing them, and no onboard phantom power for high-end condenser microphones (which provide a higher audio output level).

Sony now offers an optional adapter to handle the XLR connectors and to provide 48 V phantom power. But I have hesitated to purchase the optional unit because it retails for $500.

Suggestion box

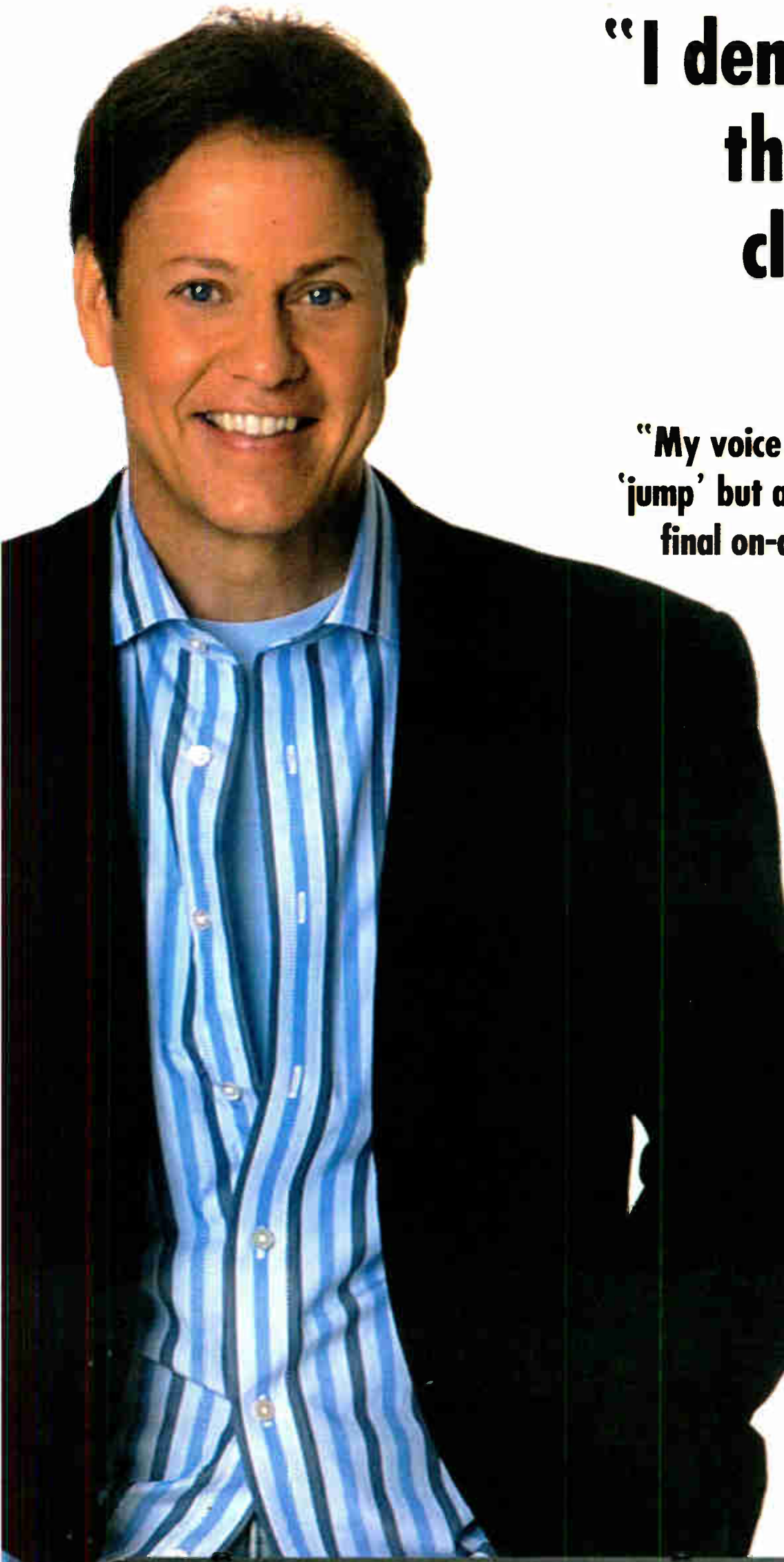
My biggest beef with the PCM-D1 has dealt with battery power.

I have learned to be careful about using batteries that seem fine (just below 1.5 V on a voltage tester). The load on

See SONY, page 36 ▶

World Radio History

Check out the new HeadPod™ Amp.



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World Radio History

USER REPORT

AEQ Eases File Transport for Punto-Radio

by Yúsef Arikat Sanz
Technical and Transmission Manager
Punto-Radio-Vega-Baja

ALICANTE, Spain In establishing our radio station, we had to define a wide range of technical devices necessary for the development of our daily work. One such device was a recorder that was portable, easy to use and had an integrated voice editor.

Internal affairs

We selected the AEQ PAW-120 portable digital recorder for the journalists of Punto-Radio-Vega-Baja, and from the first were surprised at the small size of the unit — not bigger than a typical mobile phone, which turns file transport into a simple task.

The PAW-120 has 1 GB of internal memory that allows for 18 hours of voice recording or 10 hours for music. Features include an internal integrated microphone, additional clip-on stereo microphone and external mono microphone. The XLR cable is supplied.

It also has USB file transfer, automatic level control for recording, voice activation and a built-in speaker.

The simplicity at the moment of recording is an important feature to consider. The recorder does not lose any quality because its easy operation and easy functionality make it accessible for personnel without any technical specific training. The PAW-120 records in the necessary format and quality for our transmission program: WAV-MPEG, Layer II.

The system also allows recording from an external microphone or line inputs, which is common in our daily meetings and at press conferences. A marvelous internal microphone also is available if necessary.

Yúsef Arikat Sanz holds the PAW-120.

AEQ's PAW-120 has other possibilities as well. The integrated audio editor is useful for editing recorded files and enables us to do so without an additional computer. If we have access to any PC software, it is USB-connectable using the cable that PAW-120 incorporates.

The PAW-120 has turned out to be an effective and valid work tool for our journalists, some of them with limited ability to manage technical devices.

For more information, including pricing, contact AEQ at (800) 728-0536 or visit www.aeqbroadcast.com.

Sony

▶ Continued from page 34

the PCM-D1 is 400 mA, which is four to 40 times the load presented by a typical tester. Too often, I've watched the indicator drain down quickly in the PCM-D1 after installing what I thought were fairly fresh AAs. Sony recommends using Energizer e2 Lithiums.

Sony Pro Audio Product Manager Karl Kussmaul told me, "We have observed 7.5 hours to 8 hours of operation with e2 Lithium compared to 2 hours (best case) using alkaline batteries. They cost significantly more than conventional alkaline batteries, but having up to four times the battery life can make operating the D1 much easier."

Later models have been shipped with an extra battery holder unit which will, at least, save some time fumbling with battery replacement mid-interview.

I have to admit I have always recorded to the unit's hard drive and have never fiddled with the Sony memory stick. Sony warns that only sticks with sufficient high-transfer speeds should be used or files can get corrupted.

With some tapeless recorders, I have experienced trouble — new files apparently getting corrupted with data that had been "erased." As most computer-users have learned, dumping a file in the trash bin does not mean it is really gone forever. I have become prudent about frequently reformatting digital recorders after transferring audio off the drives just to make certain everything has been properly flushed.

Another quirk, which through my ignorance caused me initial panic, was seeing a "ghost" mirror drive pop up in the computer after connecting via the USB port. Opening the first drive I would see no files! It turns out that the internal flash memory appears as one drive, and (if a memory stick is installed), the memory stick will show up separately as a second drive.

Another quibble is that the PCM-D1 has no speaker. To listen to the audio playback you'll need earphones.

The built-in stereo X/Y electret condenser microphone produces surprisingly good audio.

Sony recently rolled out the PCM-D50 sans some of the D1's bells and whistles at a retail price of $600. But because the lower-cost unit is encased in aluminum, I hesitate to put in my klutzy hands. I am not sure if titanium and the included tripod stand and windscreen (options for the D50) justify an extra $1,400 for most potential buyers.

Anyway, a choice between the two units was not possible when I purchased my early serial number D1 in Tokyo. But with titanium reputedly able to stop a bullet, I am sticking with my "combat-ready" D1. Besides it will still work if it happens to slip through my fingers.

For more information, contact Sony at (800) 686-SONY (7669) or visit www.sony.com/professional.

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World Radio History

TECH UPDATES

PMD620 Uses SD Card for Data Storage

Marantz says its PMD620 is the first model in the PMD series to use the SD (Secure Digital) flash memory card for data storage.

The handheld recorder houses two electret condenser microphones and a monitor speaker, making it suitable for "go-anywhere" field recording applications such as interviews, podcasting, meeting recording or live music.

Tactile buttons ease one-hand operation; a high-contrast organic LED screen eases setup under dim lighting and offers a large-font option. "Level" and "Peak" LEDs give the status of the input signal, and let the user toggle between four display screens that provide elapsed time, time remaining and other data.

The PMD620 records uncompressed

WAV files for high-fidelity stereo music, or lower resolution, mono MP3 files to maximize record time. For WAV files, users can choose from 16 or 24 bit linear PCM recording at either 44.1 or 48 kHz sample rates.

Podcasters will appreciate having a total of six MP3 bit rates available, ranging from 192 kbps stereo down to 32 kbps mono. The menu-selectable Auto-Input feature detects whether the line input or external mic input is being used, switching off the dual integrated mics automatically.

The company touts its post-production features as well, saying journalists will appreciate its editing capabilities. The Skip Back function eases transcription, acting as a preset "back up and replay" function, programmable for audio jumps of up to 59 seconds.

File transfers to any computer are via drag-and-drop with the USB 2.0 connectivity. Use the integrated speaker or mini-plug headphones to monitor. The Copy Segment function extracts a piece of audio as a separate file while keeping the original intact.

Additional highlights include an array of 1/8 inch stereo connectivity, including both line and mic inputs, a Line Out for playback and a headphone jack for monitoring. A pair of Up/Down buttons allows adjustment of input sensitivity.

For more information, including pricing, contact Marantz Professional at (630) 741-0330 or visit www.d-mpro.com.

Mayah Records to SD, USB While Transmitting Over IP

The second generation of **Mayah**'s portable audio recorder Flashman is called Flashman II, described by the company as a robust, compact unit with two switchable microphone/line inputs with professional XLR connectors, additional line inputs and a headphone/line output.

It records to SD cards or USB sticks of any capacity while transmitting simultaneously over IP/Ethernet. Using an optional PCMCIA-based adapter, Flashman II also can transmit over UMTS/3G cellular networks, as well as WLAN/WiFi networks.

Flashman II records audio in an uncompressed PCM (BWF) file, as well as in MPEG Layer II or III. These formats are also available for live audio transmission along with G.711/G.722 and with advanced audio compression algorithms MPEG-4 HE AAC v2 and AAC ELD (Enhanced Low Delay).

Full automation of the audio-over-IP connections — no matter if they are established via wired Ethernet or wireless UMTS/3G and WLAN/WiFi — is secured by the implementation of the SIP protocol in combination with SDP and RTP protocols as required by the EBU Audio-over-IP standard, available since October.

For more information, contact Mayah's U.S. distributor Lamar Systems at (918) 770-0941 or visit www.mayah.com.

RemoteMix 4

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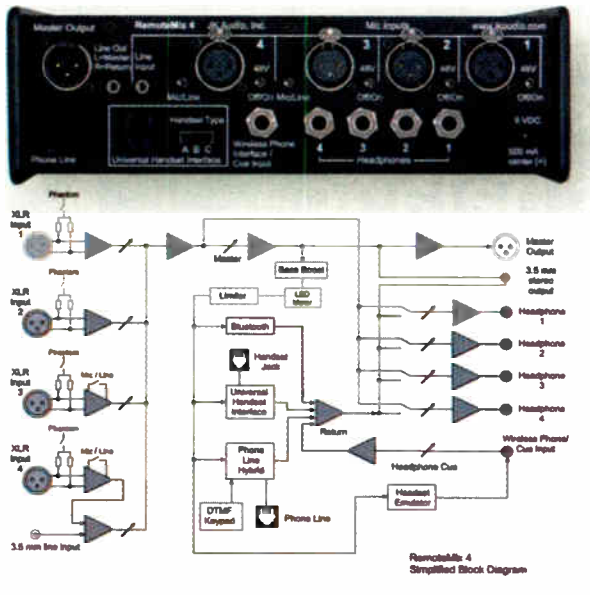

Combining a four-channel field mixer with a four-channel headphone amplifier, a phone-line hybrid, a universal PBX handset interface, a wireless phone interface and Bluetooth® Wireless Technology to connect to cell phones and portables, the RemoteMix 4 is ready to work just about anywhere you are.

Use it as a phone-line hybrid, calling into your studio talk show hybrid. Use it as a front end mixer for your POTS, ISDN or IP codec. Or use it as a combination broadcast/IFB mixer. No matter how you use it, you'll find that it's an incredibly versatile mixer.

Plus... IT SOUNDS GREAT! A soft limiter prevents overdriving the phone line interfaces, while the mixer XLR output is pre-limiter (full range), meaning you have a feed for every need. Bass boost adds a bit of low end before sending the signal down the phone line to provide that "how'd you get it to sound THAT good over POTS lines" nudge. There are convenient 3.5 mm send and receive jacks for recording the show or mixing in your MP3 player.

The RemoteMix 4 can be powered by batteries or the included AC adapter, so you'll never lose a connection – even during a loss in power!

We think we've done our homework with RemoteMix 4. And it'll be in your hands in plenty of time for the fall sports season.

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World Radio History

TECH UPDATES

You/Com Parrot Interfaces With Cellphones

You/Com says its Parrot ENG flash recorder and communication device has an easy user interface.

Each button has only one function. The unit has professional connectors; an XLR mic or line and a 6.3 mm jack for the headphones; a true limiter; batteries that last for 10 hours; and a flash memory, whose record length depends on the size of the card and used bit rate.

The Parrot interfaces with a mobile phone to act as a digital hybrid so users can build a duplex communication channel to the studio. In an emergency, a reporter can be on-air with a live report.

Pair the Parrot with a mobile phone and press the Go button to send a file to a server in the studio. This audio file includes the following header information: time and date stamp, name of the reporter and radio station, number and length of take, bit rate, sample rate and markers. A computer is not necessary.

The company says the Parrot is a sound card when editing on a computer. While a computer is unnecessary, reporters can use their computers to edit longer stories. By connecting to the USB port, audio files on the flash card can be accessed. The microphone and headphones remain connected to the same connectors, allowing the reporter to edit and play back his contribution.

Additional highlights include a Bluetooth antenna and an LED bar that indicates I/O level.

For more information, visit www.youcom.nl.

LS-10: Three Recording Formats, 2 GB

The LS-10 linear PCM recorder from **Olympus** offers 24 bit/96 kHz recording, 2 GB memory and an SD slot.

The 2 GB flash memory assures immediate recording, while the SD slot allows for expanded capacity, according to the company. Long battery life enables users to record music, performances or lectures up to 12 hours with two AA batteries.

Features include three recording formats: WAV, MP3 and WMA; and high-sensitivity microphones and microphone amplifier circuitry. Olympus says the microphone amplifier circuitry is designed to reduce interference for ultimate sound clarity.

Additional highlights include up to 12 hours of recording capability; lightweight, aluminum, 5.3 ounce body; and stereo speakers.

The Olympus L-10 carries an MSRP of $399.99

For more information, contact Olympus America at (888) 553-4448 or visit www.olympusamerica.com.

Lingo TVR-128 Offers 59 Hours of Record Time

Lingo Corp. introduced its 2.2 ounce TVR-128 digital voice recorder, measuring in at 4 inches x 1 inch x .75 inches. It allows for up to 59 hours of voice-activated recording time in two speeds: SP and LP. It also allows reporters to download and upload voice and music files to their PC.

The TVR-128 comes with a USB adaptor and CD-ROM, as well as a built-in microphone. It operates on and two AAA batteries.

Additional highlights include 128 MB memory; external microphone; and earphone.

The Lingo TVR-128 retails for $99.95.

For more information, contact Lingo Corp. at (800) 697-4825 or visit www.lingotravel.com.

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TECH UPDATES

Portastudio Additions Record To Hard Drive, CF

TASCAM released the DP-02 and DP-02CF, part of its Portastudio line of studio recorders.

The difference between the models is that the DP-02 records to a 40 GB hard drive, whereas the DP-02CF records to CompactFlash media. The DP-02CF also includes a 1 GB CompactFlash card as a launch promotion.

Features include two XLR mic/line inputs with phantom power for condenser microphones; eight-track recording at uncompressed 44.1 kHz /16 bit audio quality; Portastudio-based interface with volume fader, pan, effect send, high and low EQ controls per channel; and an EQ frequency button to access high and low EQ shelf frequencies.

Also included are stereo line outputs on RCA analog and S/PDIF optical digital connectors; USB 2.0 interface for transferring tracks, mixes and backup files to a computer; dedicated stereo master track for mix-down; internal metronome and bar/beat display for song position; headphone output; and a stereo reverb processor with send/return controls for multichannel mixing.

The DP-02 also has a multi-effects processor with guitar, bass, vocal and drum programs, and featuring a tube overdrive effect; a chromatic tuner; and CD-RW burner for CD mastering and song backup.

For more information, including pricing, contact TASCAM at (323) 726-0303 or visit www.tascam.com.

MicroTrack II Captures High SPL Without Clipping

M-Audio debuted the MicroTrack II handheld digital recorder, which features analog input limiter, 48 V phantom power and headphone monitoring of S/PDIF.

The extended input gain range and limiter enable the MicroTrack II to capture high-SPL sources without clipping. The unit's high-speed USB 2.0 connection yields a fast file transfer rate, according to the company.

MicroTrack II lets users record WAV and MP3 files to CompactFlash cards through balanced line inputs or built-in microphone preamps, then drag and drop recordings to a computer for editing or Web posting. Preamps with 48 V phantom power work with condenser microphones to record up to 24 bit/96 kHz.

Balanced 1/4 TRS line inputs also ease the taking of a feed directly from a studio or club mixer. S/PDIF inputs let users record the output of digital mixers and perform transfers from other digital recording/storage devices.

Create multi-part WAV recordings beyond 2 GB in size. The ability to place markers in WAV files during recording makes it easy to find a specific event while editing content, according to the company. A user-created folder structure enables organization and location of files in the field.

Users also can dim the backlight to save battery life and be discrete in a dark room; and let the recorder hibernate, then "wake it up" to record on short notice.

The MicroTrack II carries an MSRP of $499 and is shipping.

For more information, contact M-Audio at (626) 633-9050 or visit www.m-audio.com.

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World Radio History

USER Q&A

Clear Channel Asheville Trades MD for FlashMic

Ken Ray, an engineer with Clear Channel Asheville, N.C., commented to RW on his experience with the HHB FlashMic.

How do you use the HHB FlashMic?
Newsgathering. We replaced our previous system of gathering location sound on DAT or MiniDisc with cabled microphones and then uploading to a computer for editing. Everyone likes the FlashMic because it is just a mic; everything is built in. You don't have to worry about mic cords or big recording units.

Has it performed as expected?
Yes.

What features do you like the most?
It's pretty much plug and play. Turn it on and it's ready to go. Also, clients don't have to come to the studio to cut spots; we can just grab the small mic bag and go to them and have studio-quality spots without having to get everybody in the studio.

What features do you like least?
When you turn the mic on "not recording," it has a buffer after about 10 seconds, so if you wanted to record something fast and hit Record, it takes a couple of seconds to start. It's probably in the manual to adjust that, but who likes to look at those? Also, our WWNC news department would like to be able to use the headphones while recording.

How long has it been in service?
Spring, 2007.

Any maintenance or operational problems?
None.

How would you rate the manufacturer's service/support?
We haven't had any problems, so, great.

What was the deciding factor in purchasing the system?
Tiny size; no cords.

Was the FlashMic a new purchase or a replacement for an older system?
They were replacements for MD players, about 10 x 12 in size.

Any other applications for the FlashMic?
We also have a lot of musicians here between our six stations and we use it for some mini-recording. If we just want a couple of guitars, or bass and guitar, it works great. When finished recording, just plug into a computer and there it is; just click and drag.

What other HHB products does your station use?
Headphones.

Note: HHB also has expanded its FlashMic range with a cardioid version, FlashMic DRM85-C (pictured). Both models share the same feature set, which includes 1 GB flash memory for up to 18+ hours recording, USB audio data transfer, a preamplifier with manual or automatic gain control, an illuminated LCD display and nine user templates that can be configured externally using the supplied FlashMic Manager software.

The company says radio journalists cite fast file transfer and instant one-button recording among the product highlights.

For more information, contact HHB's distributor Sennheiser USA at (860) 434-9190 or visit www.hhb.co.uk.

TECH UPDATES

ZFR800 Adds MP3s as File Output Option

Zaxcom says it added MP3s as a file output option for its ZFR800 handheld digital audio recorder for people who need small files to send over the Web.

The 14 ounce aluminum time code-referenced microphone is suitable for voice recording applications that require mobility and sound quality such as broadcast journalism and radio interviews.

The ZFR800 records eight hours of uncompressed audio using a 2 GB memory card. Features include fault-tolerant recording with a pre-record buffer; removable mini-SD recording media; RF receiver for remote time code synchronization and remote control; ergonomic camouflaged keypad for single-handed operation of recording functions; graphic backlit display; and a headphone monitor output.

Markers can be set to identify key points in memory for fast transfer of recorded material. If a memory card is ejected or the unit is accidentally turned off while recording, there will be no audio loss prior to the point of interruption.

File transfer software that runs on both Mac and PC operating systems is included with the ZFR800. Audio files are recorded at 48 kHz/24 bits. The transfer software uses sample rate conversion to obtain the sample rate and bit depth of choice when files are imported to a computer. Any number of versions of the same recording can be made from one file.

For more information, including pricing, contact Zaxcom at (973) 835-5000 or visit www.zaxcom.com.

H2's USB Card Reader Supports Leopard

Zoom released version 1.20 of its H2 portable recorder. Changes were made to the USB card reader function, which now supports Mac OS X v10.5 (Leopard).

Existing features include dual X/Y configured stereo mics facing front and rear, which the company says are suitable for capturing a wide and contiguous stereo image. The two sets of mics allow the user to record at 90 degrees from the front or 120 degrees from the rear; or use both pairs to produce a four-channel recording with 360 degree coverage.

After recording, the 3D panning function gives the user control over front/rear/left/right balance. Users also can use commonly available authoring software to create 5.1 surround recordings.

Choose between recording formats such as 24 bit/96 kHz linear PCM (WAV files) and MP3. The company suggests recording in MP3 format in almost any bit rate when long recording capability and smaller file sizes are your goals. Four-channel, 360 degree recordings can be made in 24 bit/48 kHz format.

The H2 records on SD media and a 512 MB SD card is included. H2 can accommodate up to an 8 GB card, allowing up to 12 hours of total recording time using the 16 bit/44.1 kHz WAV format. At 128 kbps MP3, users get 140 hours of stereo storage. With the onboard USB port, recordings can be moved to a computer and recording software can be used to edit the audio, create mixes, burn CDs or distribute recordings by e-mail or on a Web site.

Additional highlights include an automatic recording function. The H2 can be set to start recording automatically when audio is detected and stop when audio ceases, allowing users to capture audio while minimizing total recording time.

For more information, including pricing, contact Zoom's distributor Samson Technologies at 631-784-2200 or visit www.zoom.com

PR-R Internal Shock Mount Reduces Handling Noise

Heil Sound will soon release its PR-R, a microphone suitable for ENG reporting.

Features include an omnidirectional moving-coil dynamic element with an internal shock-mount that reduces handling noise.

The foot-long extended handle length is provided for larger call flags. Its non-glare profile results in a low profile on TV cameras, according to the company.

The zinc die-cast body construction enables the microphone to withstand physical and environmental punishment typically encountered during field production operations.

Additional highlights include a foam pop shield, extended frequency response with rising high end; and a weight of 10 ounces.

For more information, including pricing, contact Heil Sound at (618) 257-3000 or visit www.heilsound.com.

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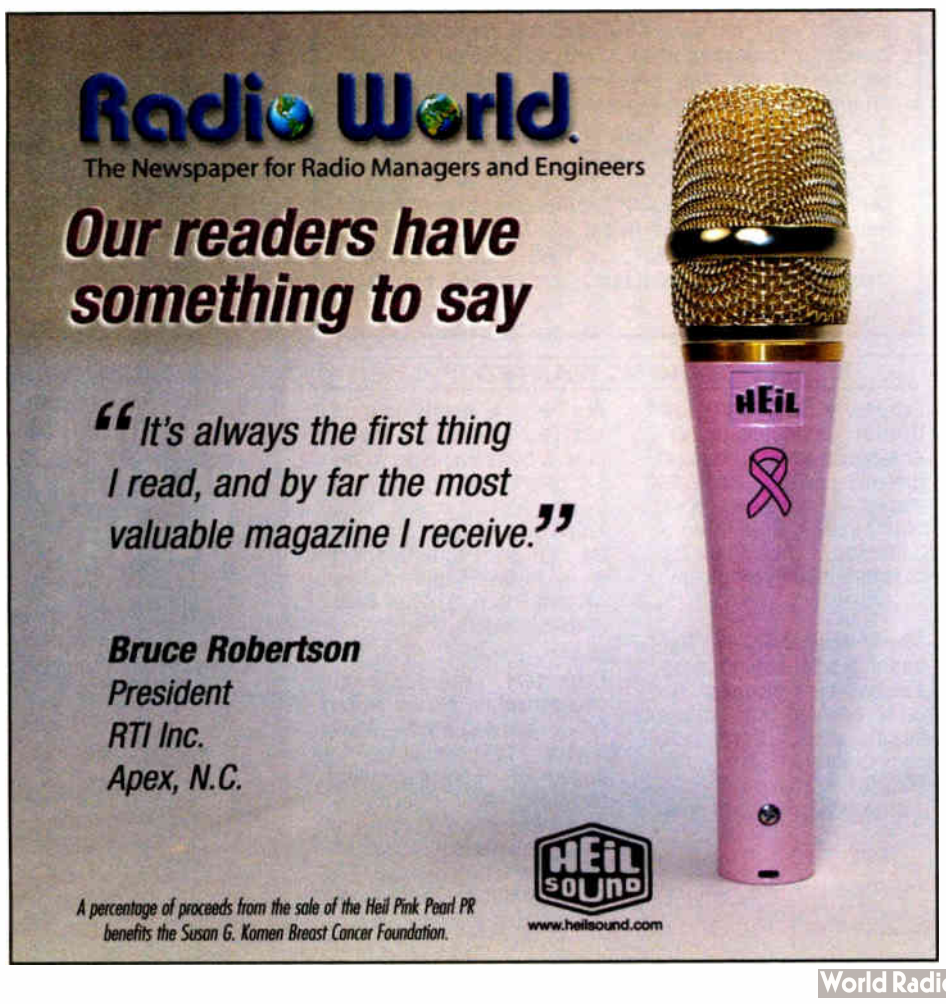

READER'S FORUM

Long Live Free Radio

This letter originally was sent to KZOK(FM) in Seattle.

I'm sitting here at work listening to KZOK on my little SanDisk Sansa, yet another iPod wannabe.

It's a fun little device — tiny, inexpensive and full of features. It's also full of music. I've ripped most of my CDs in what has turned out to be a tedious never-ending task that makes me crave better ways to spend my time; like weeding the yard or cleaning the garage.

I've been using my Sansa for more than a year now. There are several hundred songs on it, and usually I tell the thing to play random selections all day long.

This morning I realized that even with hundreds of songs available, it just isn't picking what I want. It seems you need thousands of songs, or at least songs from hundreds of artists, otherwise they all start to sound the same.

I mean, I love progressive rock and so it stands to reason that I'd love it whenever Dream Theater pops up in random rotation, right? Maybe so for the first few months but a year later ... it's starting to "pull me under."

One problem with listening to music that I've bought: It's all stuff I've bought. I can't buy everything and I can't afford to waste cash by taking chances on CDs that I haven't heard of, so I mostly stick with the familiar, which means it all sounds familiar; it all sounds the same.

So, this morning I remembered that my Sansa has FM radio and clicked to that mode. Wow, it's been nice. Each song is something that I enjoy, but that I wouldn't necessarily pick for myself. KZOK knows how to pick songs; me, not so much. Can my MP3 player pick music? Not really.

First of all, it only can pick from what I've already picked and loaded. Then, if I take the time to fill up "playlists" or use "genre"-based features, I find it's really no better than plain random mode.

Plus, here's the key thing — actual live KZOK people can do something a computer can't: put a finger on the pulse of things. If it's the holidays; or if it's a sunny day in the middle of several weeks of rain; or if Seattle is in some funk or collectively excited about whatever, KZOK can play the music that fits. Your pros can make these judgments; my MP3 player can't.

Having said that, screw MP3 and long live free radio.

Joe Trofimczuk
Bellevue, Wash.

Try Something New

Now that I'm semi-retired, I can make a few bucks on the side, and have discovered that there's a need for people locally who can repair tube radios.

So I've been getting some old AM things from the '40s. Turns out, none of the owners really want to listen to what's out there. Worse, I did something I never thought I'd do: my first iPod audio jack installation.

The owner (who is 34 and in a demographic now courted by stations) summed up why he wanted to do this: "I especially don't want to learn how to hate anybody, I don't want to be told that if I vote Democrat that the world's coming to an end, and I don't speak Spanish. If there were music on AM, any music whatsoever besides oom-pa-pa, I might consider listening."

So you could say that people in my community are deserting the AM band. But it appears that time also may be running out for those who own FM terrestrial stations.

I shop regularly at a fairly popular natural foods store. For years, an FM radio piped in various forms of post-1970 music from local stations. Last month, I noticed something radically different. In fact, one woman was even humming along to the music coming from the PA system: some '50s, some '60s and stuff that didn't reach #1, 2 or 3, along with a live DJ.

Radical! And totally unsafe according to bean-counters. What's up with that? The answer came a few minutes later when they identified on-air as a (brand name deleted) satellite radio channel.

Said the manager: "We were getting tired of hearing the same stuff over and over again, and so were our customers. It's amazing how many stations play Creedence Clearwater Revival. And why are they all playing the same five Creedence songs? My God, they're even playing the same (Creedence) songs on our local jazz station. Didn't these guys record albums too? With satellite radio, we get what we pay for: jazz, and an endless supply of songs no one dares to play on FM."

I have a love for radio, so I continue to listen. But what I hear continues to annoy me.

Last week an out-of-town classic rock station decided it would be a good idea to let listeners phone in their top 10 faves, and the station would play them (as long as it's post-1970). Guess what? Now our classic rock station is doing the same thing! So it's pretty obvious, a bean-counter has decided that this idea is now "safe."

Why wait for some bean-counter programmer to tell you it's safe before you try anything new? Such is a snapshot of terrestrial radio in Sonoma County, Calif., 2008. Not very healthy.

Brother Duke Evans
Santa Rosa, Calif.

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World Radio History

GUEST COMMENTARY

Reasons to Embark on a 'Green Strategy'

Manufacturer Explains Why It Chose to Adopt Environmental Practices and Why You Should Too

by Bruno Rost
CEO
The Audemat Group

Dear industrial friends and broadcast customers,

For a number of years, the Audemat group has invested in sustainable development. We have always integrated practices that are relevant to the environment. We consider the environment when we design our new products.

Last summer, we obtained ISO 14001 certification. Today we are one of the few members of the broadcast industry to engage itself in global environmental awareness.

This action becomes more relevant as the planet is becoming "asthmatic." The majority of scientists agree that global warming is at least partly due to human activity. The majority of world leaders are convinced that urgent action needs to be taken. Help and support for limiting greenhouse gases is growing, development around renewable energies is advancing.

As passionate participants in the radio and television industry, we are all under pressure to reach objectives set by our shareholders and our customers, the broadcast operators.

On that note, I want to state that, to our surprise, being a "green" company doesn't mean restraints and the imposition of drastic, anti-business or anti-profit practices. On the contrary. In the case of Audemat, setting some environmentally friendly measures in place was quite easy. Today, we even realize that there are many economic advantages within this approach.

We identified five good reasons to embark on the "green strategy."

Good for business, good for the planet

First, the "green" strategy is as good way to save money.

Here is a list of simple actions that can enable you to save without much effort: Use less paper by printing on both sides of a page; decrease energy consumption by using low-consumption light bulbs; switch off computers and unused equipment; recover rain water to water plants; heat water using solar panels; use mugs and glasses for coffee and water instead of disposable cups; and put a filter on tap water instead of buying bottled water.

Second, the "green" strategy is a marketing feature as it can save money for our customers, both radio and television, when we design products with low electrical consumption and longer life spans.

At Audemat we have designed a multi-function product with its own label: "Radio All in One." Our Digiplexer is an audio processor, stereo generator, RDS encoder, remote control unit and audio backup within one single rack. For our customers, the electrical consumption is reduced by 75 percent and at the end of the product's life, there is less waste for the planet.

We are always working on increasing the lifespan and efficiency of our products. A product that lasts twice as long means half the environmental cost of manufacturing and recycling. A more efficient and longer-lasting product also is a good benefit for our customers.

Our FM liquid-cooled transmitters (5 and 10 kW) benefit from the liquid-cooled technology. Compared to their air-cooled equivalent, the components operate at a lower temperature and last much longer.

Our R&D department works daily on replacing features that used to require hardware with new and powerful software modules.

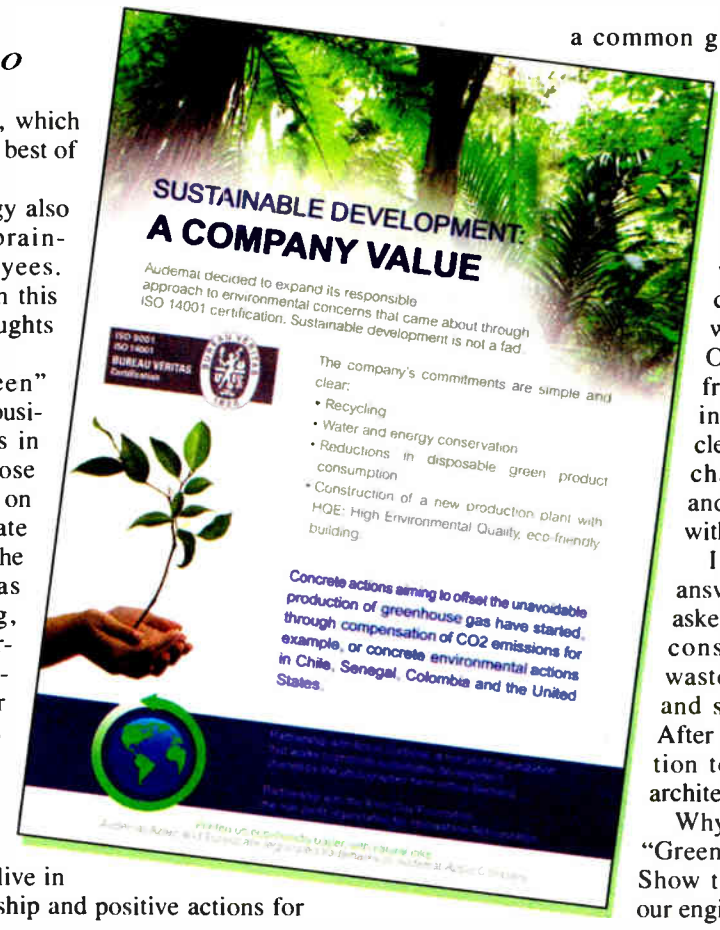
Third, the "green strategy" can be a positive management tool that drives energy and establishes values throughout the company. An employee who respects the environment is more likely to respect his co-workers, and respect the place at which he works as well as its customers, if the company adopts "green" practices.

Environmental values are a positive guide during the acquisition of another company. The employees coming from the purchased company can find common values within the new group, which helps them to give the best of themselves.

The "green" strategy also is a way to drive brainstorming for employees. Everyone has ideas in this domain; positive thoughts are easily shared.

Fourth, the "green" strategy" is good for business. Many customers in the world today impose specific requirements on suppliers that integrate concrete benefits for the environment, such as recyclable packing, management of batteries and recycling products at the end of their lifespan. Many clients around the world are sensitive to the issue of the environment.

Fortunately we can be proud that we live in a world where citizenship and positive actions for a common goal are encouraged. Our customers are individuals too, who have children and wish to raise them in a safe and "green" world.



Finally, the "green" strategy is good for innovation. I am thoroughly convinced that progress will save us from progress. Our engineers, and many from other companies in our industry, are ready to find clever solutions. Give them a challenge and a direction, and soon they will come up with a solution.

I still can remember the answer of our team when we asked them to reduce electrical consumption and product waste: "Let's create software and stop building hardware." After that, we began the transition to a more digitally-based architecture.

Why not create an award for "Green Innovation" at the NAB Show this year? That will drive our engineers, for sure.

◆READER'S FORUM◆

Fill the Engineering Pool

In response to your interesting editorial on recruiting broadcast radio engineers ("Who's Speaking to the Students?," Dec. 5), you should try recruiting from the ranks of amateur radio operators.

Technologists who are oriented towards radio frequency technology tend to start out and continue in amateur radio.

You could place advertisements in QST, the magazine of the American Radio Relay League. The ARRL is the national organization of amateur radio operators. Its Web site is *www.arrl.org*.

Also, the broadcasting industry may be suffering from "credentials creep," where they are expecting too many technical job holders to be graduate professional engineers. It may be the case that many of these technical jobs can be filled by technicians who are not professional engineers.

Various organizations such as the SBE, NARTE and ISCET certify electronics technicians in the radio field. With a broader pool of qualified applicants, the radio stations should be able to fill their technical staffing needs.

Nickolaus E. Leggett
Reston, Va.

I enjoyed your follow-up article about the dearth of future engineers. One of the IEEE groups I belong to strives to promote engineering as a career.

The IEEE has some tri-fold brochures I use whenever I can. I bring them to my ham radio club meetings, flea markets and other suitable places. If you want some you can contact the IEEE Precollege Education Committee in Washington at (202) 785-0017. Ask for the "My Science, My Math, My Engineering" brochures. I asked for 50 and they gladly mailed them to me.

Along those lines, have you noticed the PSAs that have been running on TV (or at least on PBS) promoting chemistry? Chemistry has gotten a bad rap over the past decade or two, so there is a corresponding lack of chemists and biologists. Now the industry has had these PSAs made.

To illustrate the downplay of chemistry, have you noticed that DuPont has changed its slogan from "Better things for better living through chemistry" to simply "Better things for better living"?

There's also a very old company in New Jersey called National Lead. About 20 years ago it changed its name to just "NL" to hide the evil "L" word.

It would be nice if the IEEE or some similar group organized an ad campaign like the chemistry people have. No wonder other countries trump us all the time in math and science scores.

H. Robert Schroeder, N2HX
Communications and Warning Officer
N.J. Office of Emergency Mgt.
West Trenton, N.J.

Focus on Content

The "Recalibrate Expectations" editorial (Oct. 10) gave me pause for a variety of reasons. The "slow and steady progress toward default status among stations and receivers" smacks of mandating IBOC across the country.

The entire editorial gave me the impression that the initial marketing scheme of IBOC has failed and now needs to be subtly implemented to the point that broadcasters and consumers will have no other options. Forcing an unpopular and technically inferior broadcast medium on everyone today is, at best, an evolutionary dead end.

Nothing will take the place of compelling programming. This will be most readily apparent with the later iterations of the WiMax technology. Satellite and terrestrial radio, as we know it today, will then become a quaint technology used only by a small niche of the population.

Until that occurs, radio needs to focus on content and total product quality, and not more poor-quality same ol'-same ol' in our current band space.

R. V. Zeigler
Director of Engineering
Nebraska Rural Radio Assn.
Lexington, Neb.

RW welcomes reader IBOC experiences and perspectives, pro or con. Write to radioworld@nbmedia.com.

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NewBay Media

Basic Questions, Often Overlooked

Radio Should Build on the Positives and Fix the Irritants

As "new media" continue to proliferate, traditional radio broadcasting faces new competitive challenges.

When you see a young person with ear buds in her ears, chances are that she's not listening to an AM or FM radio station. Even automobile radios come equipped with auxiliary inputs these days so that users can plug in their MP3 players. Similar competition is increasing from other sources such as satellite radio, Internet streams and MusicPhones.

This will only increase as these devices and their underlying infrastructures proliferate.

Does terrestrial radio have a choice other than to watch its market share and revenues erode? We believe that there *is* a choice, to either sit in the driver's seat or sit back and let someone else do the driving.

If we are to have any say in the future of our business, we have to make our program offerings different and better and we must maximize the listener experience. Addressing these issues involves identifying the positives as well as the irritation factors. We must then build on the positives and find fixes for the irritants.

We can begin by asking some specific questions with regard to each of our stations:

- Have we made *sound quality* of our terrestrial station as good as it can be?
- Is the *signal* all it should be within the confines of the allocation? Are there interference or coverage issues that we can address?
- If the station is digital, are the digital and analog audio properly *time* and *level aligned*?
- If the station is not digital, is the time right to *convert* it to digital?
- Is the *title/artist information* on the RDS and/or PAD displaying properly? Is it properly synched with the audio?
- Is the *Internet stream* working right? Does it sound good?

Problems in these areas degrade the listener experience, whether over the air or via the Internet. Likewise, when these things are working right, they are factors that can attract and hold listeners.

It's no secret that in the over-the-air world, the stations with good coverage and good audio tend to get the listeners. In the streaming world, high-quality, well-processed radio station streams that employ a high data rate and are delivered from high-bandwidth servers will attract and hold listeners much more effectively than over- or under-processed streams offered at a low data rate with inadequate originating server bandwidth. It's not rocket science.

Terrestrial radio can no longer assume that the listeners will be there. Those listeners have many choices, and terrestrial radio is just one of them. We are going to have to work harder than ever to be *different* and *better* and to provide the features and quality that listeners demand. Everything within our control should be examined and tweaked for best performance.

The alternative is to assume the role of a passenger and see where things take us. If we do that, chances are, we won't much like the destination.

— RW

◆READER'S FORUM◆

Do-Nothing Technology

Okay, Paul. You want to know why IBOC is going nowhere fast? Because just like AM stereo and the expanded band, nobody ever asked the vast majority of radio station owners.

What passed for leadership in our industry made the best deal they could to make themselves richer, and the owners of the other 8,000 licensed stations were just expected to go along.

I have always operated on the theory that my programming was a better selling point than my signal strength. If you put something on the air that people want to hear, they'll fiddle with the dial to tune it in.

Bluntly, IBOC does nothing for the owner of a local AM station, a small-market AM station or a small-market FM station. And precious little for anyone else.

Here are the economics: If I wanted to get my FM station in Winnemucca, Nev., set up for "HD" radio, it would cost me, excluding the equipment, a $15,000 "license" fee and 3 percent of my additional revenue.

Why would I ever want to share the additional revenue I work so hard to get with a bunch of clowns who can't even get the car manufacturers to do what XM and Sirius were able to do?

Never gonna happen.

And to introduce an IBOC system for AM, which flat-out does not work and just craps up the band, verges on the criminally stupid.

When this system was being debated, Rob Glaser was introducing RealAudio. I remember suggesting at a meeting of my colleagues that perhaps we already had a digital algorithm that would work, and why don't we take an AM station, go all-digital emission and see if it would work.

I had a daytimer at the time I was willing to experiment with. I called the FCC the next day and it said I might be able to get an experimental license to try this but don't get my hopes up. And, oh yes, if it did grant such a deal, I would have to run it without commercials.

So USA Digital comes along and actually gets a system approved that doesn't work. And I'm supposed to drop everything I'm doing and get my wheelbarrow out, fill it with money and buy that system? And keep paying them after I do? Thanks but no thanks.

Like most crappy deals that come down the pike for small operators, I'll pass. I'd rather support the merger of XM and Sirius and buy one of their surplus channels when they merge. Their stuff works and I bet I can make money programming a channel.

The smartest thing the HD Radio promoters can do is to sell out to someone who actually understands the business. Perhaps the merged XM and Sirius.

Fred Weinberg
Las Vegas

Find a Real Solution

I must congratulate RW on your fine editorial ("AM IBOC in Distress?," Dec. 5).

It's a sober and balanced view of a serious situation, which needs to be addressed promptly; and a courageous stand for a publication, which is unavoidably fed by major equipment manufacturers "with a dog in the fight." It was well-written, frank and honest; a good piece of work.

Thank you also for your coverage of the WYSL-WBZ adjacent-channel interference matter ("Rochester Station Says IBOC Interferes"). You now know that a second FCC complaint has been filed. We will follow this up with written statements from local law enforcement, the district attorney and members of the New York state and congressional delegations, to file with the FCC to warn that the WBZ degradation of WYSL's nighttime coverage poses a threat to public safety and communications — including the Emergency Alert System.

If CBS continues to delay and dither, we'll have no choice but to file a federal lawsuit and seek an injunction, and at the same time we may petition the FCC for a refund of our regulatory use fees. We pay good money for the use of our frequency, and WYSL is being deprived of our spectrum use by the very agency which charges us for it.

Barry McLarnon's companion piece about HD AM ("Enough Is Enough") combines analysis free of the usual IBOC hysteria and hucksterism with unassailable technical evidence based by solid, provable facts. It's a stark contrast to Cris Alexander's smug pro-HD advocacy and cynically skewed, inaccurate data ("AM Nighttime IBOC: Apocalypse or No?," Oct. 10).

Hopefully CBS and others will get the message. The sooner rational thinking prevails, the sooner the industry can move on and find a real solution. IBOC AM is no cure for AM radio's ills. It's laetrile.

Bob Savage
President/CEO
WYSL(AM)
Avon, N.Y.

World Radio History

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