

◆ NEWSWATCH ◆

HD2/HD3 PPM Reporting to Begin

COLUMBIA, Md. Multicast and Internet stations that are encoding for the Arbitron Portable People Meter and that meet minimum reporting standards could be in July Survey Reports distributed this month.

In the first 11 Portable People Meter markets, the audience research firm said in July that 69 of the 77 eligible HD2 stations were encoding for PPM as well as six of the seven eligible HD3 stations; 173 of the eligible 216 combination

“AM/FM/Web” stations are also encoding and ready for reporting.

Arbitron also announced a wake-up service for PPM survey participants. The user-controlled, Web-based, telephone wakeup and reminder service is designed to improve compliance by increasing day-to-day contacts between those who wear the meter and Arbitron.

GM, Toyota Say ‘No’ To Mandated HD-R

General Motors Corp. and Toyota oppose mandating HD Radios in digital

satellite receivers.

Ibiquity Digital, Clear Channel, NAB and some lawmakers support the concept, describing in commission filings possible conditions the FCC should place on Sirius/XM should the commission approve their merger.

GM and Toyota said in a letter to the agency that both companies offer satellite receivers as optional or standard features in addition to other entertainment features, like AM/FM analog radio. What the IBOC proponents are seeking, say the automakers, is “unprecedented” — a choice that would regulate the entertainment technologies in the car.

“HD is already penetrating the auto-

otive sector without a mandate,” stated GM and Toyota. “Several manufacturers are either currently offering HD or have announced plans to make HD Radio standard or optional in future models. Nothing in our companies’ respective agreements with XM inhibits our ability to offer HD Radio.”

Calling IBOC “an evolving technology,” they said any mandate would reduce incentives to lower costs and further improve the HD-R product offering.

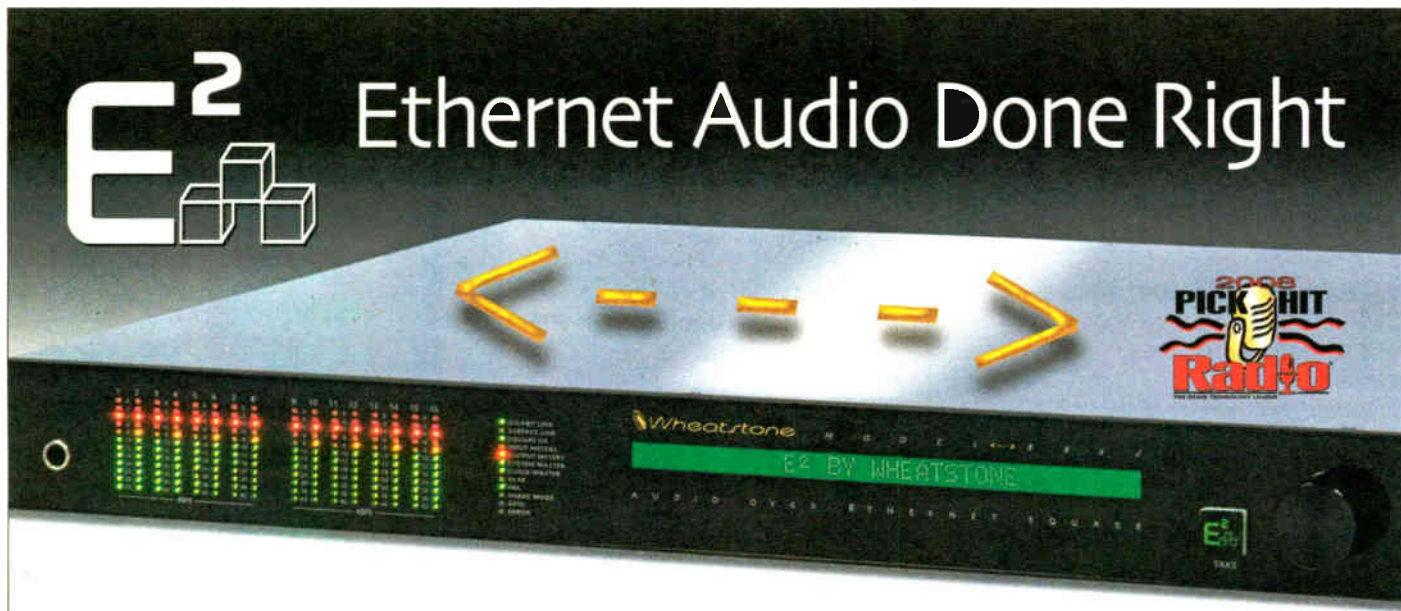
Ibiquity estimated in a July filing the cost of components to include HD Radio technology “in most satellite receivers” would be \$12–\$15, saying an IBOC base-band chip costs about \$10, additional flash memory of one or two dollars and including a small cost for nonrecurring engineering. Ibiquity believes costs will decrease significantly once receiver manufacturers negotiate with suppliers for higher volume purchases.

News Roundup

TRAFFIC: Half a million people have signed up for Clear Channel’s Total TrafficNetwork (www.realtimetraffic.net). The broadcaster says customers are receiving data from a growing number of distribution platforms, from car to portable navigation systems using wireless media and cell phones. The service, launched in 2005, uses RDS.

MARTÍ: Congress is reviewing contracts awarded to south Florida TV and radio stations for Radio and TV Martí broadcasts. Its investigative arm says the contracting practices of the government’s Cuba broadcasts do not reflect sound business practices. The Office of Cuba Broadcasting awarded the noncompetitive contracts to the local stations in 2006, following a push from the Bush administration to increase hours of broad-

See NEWSWATCH, page 3 ▶



MEET THE SQUARE

The Wheatstone E² (E SQUARE) gives you the convenience of Ethernet audio without all the IP hassle. It just *knows*. The built-in Setup Wizard lets you configure an entire system with just your browser and a laptop. Unplug it when you’re done and there’s no PC between you and system reliability.

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88D I/O: 8 digital inputs and outputs. You can headphone monitor and meter any of the SQUARE’s inputs or outputs in real time. The 32 character display gives you all the information you need about your audio and system configuration. And because you can operate in either 8-channel stereo or 16-channel mono mode, 16 channels of metering are provided.



88A I/O: 8 analog inputs and outputs. You can bring a new SQUARE up in seconds and of course use the front panel encoder for your X-Y control. Front panel status LEDs give you continuous link, status, and bit rate information as well as confirmation of any GPIO activation.



88AD I/O: 4 analog plus 4 digital inputs and outputs—perfect for small studios or standalone routing.

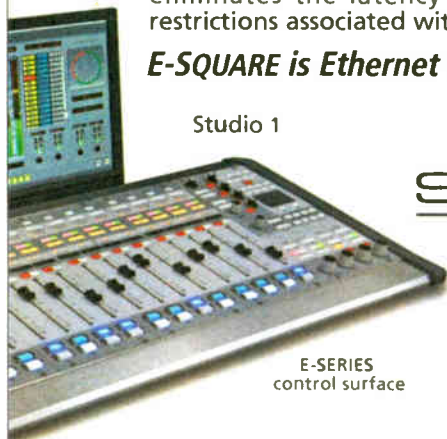


88 I/O CONNECTIONS: E² has both DB-25s for punchblock interface and RJ-45s for point-to-point interface. All SQUARES have 12 individually configurable opto-isolated logic ports that can be either inputs or outputs.

Because the E² system doesn’t rely on a third party GUI, tech support is straightforward (and 24/7). Likewise, system operation doesn’t require external PCs for continued full functionality. Best of all, 1 Gigabit protocol eliminates the latency and channel capacity restrictions associated with older technology.

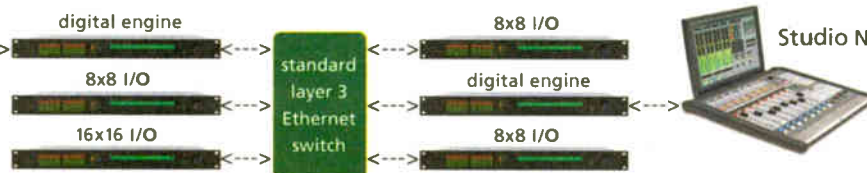
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K-FAT, Green in the Desert



but the company will regain about 30 percent back through tax breaks and rebates.

The station has been on the air for 11 months and sits among rough terrain amid mountains.

"It's hard to truck in diesel here, and the roads are steep," Rolando said. The station has a generator fueled by propane as a back-up to the solar powered system, "in case the sun goes out in Arizona," he quipped.

Murphy Chief Engineer Faron

Eckelbarger said, "Although we routinely test the generator, we have never had to switch it on."

KFTT uses an Armstrong transmitter and STL. Asked how going solar changes what needs to be done operationally, Eckelbarger said, "Monitoring the voltage of the battery bank and logging the different parameters measured by the charge controllers is important."

The goal of going to solar power is to reduce the station's consumption "on the

BAGDAD, Ariz. Chris Rolando, president and chief executive officer of Murphy Broadcasting, says KFTT(FM) in Bagdad, Ariz. — "K-FAT" — is about the "greenest" radio station there is.

The 900 watt Class C3 facility runs 100 percent solar at its transmitter site in Bagdad and uses solar power for its STL. Soon, the company will add about 180 solar panels to feed power to the Bagdad studio and then onto the roof of the adjoining, co-owned bar and grill.

In addition, the company also plans to install solar panels to its 5,000-square-foot media center in Lake Havasu City, where studios and offices for five stations are located. The roof solar installation is slated for completion by year-end.

The estimated cost of its entire solar effort is \$290,000, according to Rolando,



Photo by Faron Eckelbarger

Solar panels at the KFTT transmitter site.



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Newswatch

► Continued from page 2

cast to Cuba. The contracts marked a major change in government practice, reported the Associated Press, since the U.S. International Broadcasting Bureau generally is not allowed to air its programs within this country to avoid the appearance of domestic propaganda.

NPR: The network launched an Open Application Programming Interface that it says will make NPR news and information content available to share on the Web sites and blogs of member stations. NPR said the launch is one of the first comprehensive Open APIs introduced by a major national media organization. It's part of the network's digital media strategy, which has included expansion of its Web site, podcasts, the NPR Music destination site and NPR Mobile on-demand services.

MCINTOSH: The company introduced the TM2 AM/FM HD Radio Tuner Module, designed to be integrated with the new MA6600 integrated amplifier. Using a blend feature, consumers can select between auto, digital-only or analog-only modes. The unit comes with a

dual-differential AM antenna. Users may view signal strength, channel, RDS and RBDS Data using the connected MA6600's display. It retails for \$800.

SIRIUS TV: The private investment firm Georgetown Partners says Sirius Backseat TV service is a violation of licensing rules and it has asked the Enforcement Bureau of the Federal Communications Commission to order Sirius to "cease its unauthorized television broadcasting" after investigation, according to a July filing. Georgetown has been pushing the FCC to mandate that a merged XM/Sirius lease a portion of its spectrum to a third entity. The company says it could establish a competitive alternative digital satellite radio company with 20 percent of Sirius' 25 MHz swath of SDARS spectrum.

'FAMILY' INDUCTED: The National Radio Hall of Fame has announced its class of 2008. Focus on the Family, a ministry founded in the 1970s by Dr. James Dobson, was chosen; the syndicated radio show of the same name now is heard on 4,000 stations. Also inducted: Art Bell, Jess Cain, Howie Carr, Bob Collins, Michael "Mickey" Luckoff, Charlie Tuna and Dick Whittinghill.

grid." Rolando said electricity costs 11 cents per kilowatt in that area. The temperature was 115 degrees when he spoke with Radio World in July.

KFTT is one of five stations licensed by Murphy Broadcasting, which is privately owned. KFTT's programming is of "no defined format," according to the company Web site, though it also states the station airs top 40 hits from the '80s to today.

Murphy's headquarters are in Lake Havasu City, Ariz. Its stations serve portions of three states along the Colorado River: Nevada, Arizona and California. Other Murphy stations are licensed to Lake Havasu City: KVAL(FM), KRRK(FM), KRCY(FM) and KZUL(FM). KFTT itself has translators in Lake Havasu City and Bullhead City, Ariz., and in Laughlin, Nev.

Rick Murphy is owner and chief executive officer of Murphy Broadcasting, which claims to be one of the largest small-market broadcast companies in the United States.

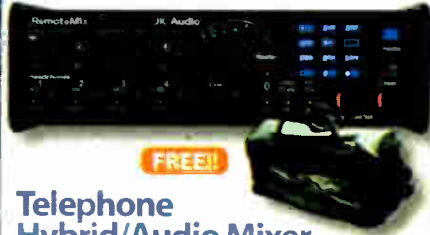
Murphy Broadcasting provides funding for its other businesses, the Tri-State News Network and e-Press, a free, local news publication e-mailed daily to thousands of readers, provided by www.justsaynews.com.

— Leslie Stimson

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Session Offers a Lot to Process

AES Panel Promises To Be a Mini 'Hall Of Fame' of Audio Processing

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If that list gets you lightheaded, book a flight to the fall AES show in San Francisco.

David Bialik is determined to make the broadcast content at the U.S. AES the best track of broadcast panels offered anywhere — in fact he pretty much feels it already is. I'm not ready to grant AES that national title just yet; but it's certainly a contender, and Bialik is the reason. He's like a one-man convention committee: cajoling, lobbying, pleading with his best New York attitude, building the best sessions he can dream up. And he dreams big.

I've told you before about his efforts to put together don't-miss panels; he's shooting for the heavens this time with a superstar lineup of processing innovators who will talk about the history of analog audio processing at the October show.

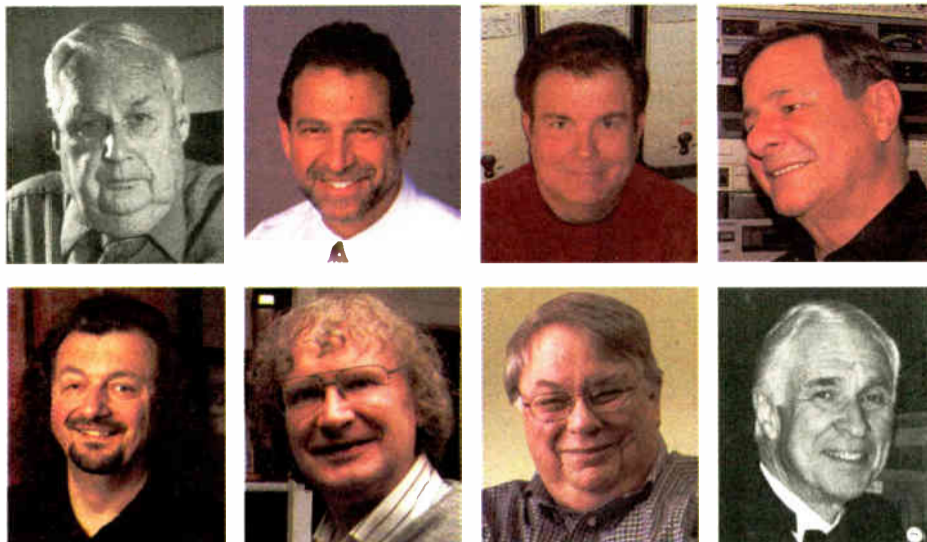
"This is the easiest session I've ever put together," he told me. "Everyone including the speakers realize the contributions that they've made."

"We did something like this a little smaller at the New York convention a few years ago [but] this is the first time we're doing this on the West Coast." The AES convention alternates east and west each year.

"Ninety-five percent of the developers of audio processing are still around and willing to talk about it," Bialik continued. "I sat down and thought of every single audio processor I've worked on."

It's no easy task to get every living broadcast audio processing genius into one room at the same time; in fact it's probably impossible. But give the guy credit for coming close.

Emil Torick — the former vice president of audio technology at CBS, holder of numerous patents, designer of the CBS



Dick Burden, Marvin Caesar, Glen Clark, Mike Dorrough, Frank Foti, Bob Orban, Eric Small and Emil Torick.

Audimax and Volumax — will moderate the session. Signed up to participate are Dick Burden, Marvin Caesar, Glen Clark, Mike Dorrough, Frank Foti, Bob Orban and Eric Small.

Note I list them alphabetically; you don't want to show favorites with a group like that.

He would like to have included even more innovators; and when I spoke to David he was trying to find someone who worked on the Gates Level Devil.

"These men, through the 1970s and earlier, shaped the way we listen to music, and radio in general," Bialik said.

"This really is the foundation. Even though these guys are competitors, they realize each other's contributions; and at times they work together."

That's been my experience too. Few topics generate as much passion as audio processing; and yet when you talk to the innovators, they tend to evince a healthy respect for each other's work even while arguing hammer and tongs to defend their individual opinions and designs (though let's face it, much of the fun in such sessions is seeing how these guys interact, listening for the little digs and watching to see if the veins start to pop out in their necks).

Bialik promises a discussion, not a debate.

"In all honesty these men deserve more of a tribute than we've given them. I'm really proud of this. What's better than a hall of fame?"

The 125th AES will take place Oct. 2-5 at the Moscone Center, and there are three days of exhibits. For info visit www.aes.org.

I'll be moderating a panel myself and will tell you more about that later. We'll have a full convention preview in our Sept. 24 issue.

An RW contributor in the news:

Donna Halper was a happy lady this summer when she found out that the rock group Rush would be honored with a star on the Hollywood Walk of Fame.

From the Editor



Paul J. McLane

Halper helped put Rush on the map in her days in Cleveland radio, and the band dedicated its first two albums to her. "We've kept in touch and maintained what is to me an amazing friendship over the past 34 years," says Halper, who is now a radio consultant, historian and author.

"A small group of us fans decided that if the Rock and Roll Hall of Fame won't admit them — the critics have been scornful of the band for years — we should try something else to get them some recognition. So we made a presentation to the Hollywood Walk of Fame, and to our delight, we've learned that Rush will get a star next year."

You can read Halper's account of her involvement with Rush at www.geocities.com/SunsetStrip/Amphitheatre/2740/discov.html.



Donna Halper, center, hangs with Geddy Lee and Alex Lifeson at the Comcast Center in Mansfield, Mass., where Rush performed in June.

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HD2

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breaks per hour.

"We are not necessarily tracking such things, but it is happening," Ferrara said. "We're just not sure at what revenue level this is happening."

'Natural progression'

Non-alliance members are free to sell advertising time on their multicast channels provided they adhere to FCC rules covering decency and commercial advertiser identification.

Observers said the alliance's recent changes are part of a natural progression from commercial-free service to a revenue

model. The HD-R multicast rollout is young and this adds to the complexity of when to run commercials and how many.

The HD Radio Alliance comprises Clear Channel Radio, Beasley Broadcast, Citadel Broadcasting, Greater Media, Entercom,

channels.

Several companies failed to respond to RW's interview requests. A survey of some alliance members shows most are remaining patient when rolling out HD2/3 sponsorships. Other broadcast

and are "simply not saying much" about the process.

"People are concerned because they don't want to make it sound like they are not supporting HD, nor do they want it misconstrued that since there haven't been great success stories yet that this is a flawed space for us," the corporate executive said. "That's not the case. It's just early in all of this."

Most broadcasters contacted for this article readily state that they are not rushing their multicast channels to produce a revenue stream.

"We don't have anything imminent, but if the right opportunity arose, we would consider selling to a fitting partner following the alliance guidelines," said Pat Paxton, senior vice president of programming for Entercom.

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Observers said the changes are a natural progression from commercial-free service to a revenue model.

Bonneville International, CBS Radio, Emmis Communications and Cumulus.

Ferrara said CBS, Clear Channel and Emmis have engaged in some form of underwriting-like mentions and accepted advertising dollars on their multicast

groups contacted by RW remain cautious about sharing information about their multicast advertising plans.

One broadcast executive said he "doubts if anyone has made great strides to generate much revenue" to this point

HD Radio Is Boom for Program Suppliers

With broadcasters rolling out multicast channels, demand for programming and other on-air products and services is growing — at least if activity among content suppliers is an indication.

ESPN Radio launched its ESPN HD Radio network in June to coincide with coverage of the UEFA Euro 2008 soccer tournament.

It and other program suppliers have seen a jump in interest from programmers looking to fill schedules on their HD2/3 multicast channels, said John Fitzgerald, vice president of advertising sales for ESPN Radio.

"Station groups are starting to figure out this new technology and realizing there is a lot of opportunity in terms of what they can serve to the consumer."

ESPN Radio has 500 radio affiliates that carry all or part of ESPN's daily offerings. Nearly 75 of those stations are FM broadcast stations.

"The greatest level of interest is coming from our AM affiliates that have FM stations in the same cluster," Fitzgerald said. "A lot of those FM subchannels could very well be ESPN affiliates."

Fitzgerald described ESPN HD as a network with an array of programming, with not only regular ESPN Radio offerings but also live play-by-play those stations can program.

"They can choose from sports content on the ESPN HD menu."

Fitzgerald said the network launched with a "limited" number of FM affiliates carrying the HD content in June, but he expects that number will increase throughout this year.

In addition to programming, those FM multicast channels need imaging and jingle packages. TM Studios President David Graupner says it appears broadcasters are freeing up more money to purchase his company's products.

"We are working more and more on specific imaging packages for HD2 stations," Graupner said.

In addition to jingles and production libraries, multicast channels are looking for specific music libraries with some very deep tracks, Graupner said.

"Many broadcasters are going outside the mainstream of what you would consider traditional radio. And that's a good thing."



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PPM

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Beginning in the spring of 2007, Philadelphia was the first U.S. market to "go live" with official published audience estimates based entirely on PPM data.

Respondent PPM devices

Panelists in the survey carry small PPM devices that monitor the audio environment and identify PPM encoding if it is present. Arbitron says its devices can reliably detect PPM encoding after only a few seconds of exposure to the encoded stream, even in noisy acoustic environments.

Headphone listening is accommodated through the use of "loop-through" jacks; external source equipment (for example, a walkable radio) is connected to the PPM device with a short jumper, then the listener's headphones are plugged in to the PPM device itself. The PPM devices have their own internal clocks and maintain a record of decoded audio streams throughout the day.

The PPM devices also contain sensitive motion sensors, and can add a notation to their internal logs when they are not moving. This notation can be used to exclude "listening" results that might have been recorded while a device was not actually being carried by its survey respondent.

Arbitron makes available dedicated rack-mounted decoder boxes that are programmed to respond to the presence or absence of a particular encoding stream.

By connecting these decoders to an off-air feed, the broadcaster is warned when encoding has failed.

The encoders and the confidence decoders are the only components of the PPM system whose operations are under the broadcaster's control. While their deployment is relatively straightforward, the number of these boxes required to support the program streams generated by a cluster of stations can be surprisingly large.

Start by considering how many separate programs in your facility will require Arbitron encoding. Our facility, with one AM station and four FM stations, various HD-R and streaming offerings, and backup air chains for every program, required no less than 44 separate Arbitron encoders.

Arbitron equipment

Even if your facility does not have dedicated backup air chains for every single program stream, it is nevertheless advisable to install backup Arbitron encoders for every stream. These units can be wired in series, with one unit actively encoding and the other unit in bypass.

With such a backup unit already installed in this "hot standby" configuration, a failure of the main encoding unit can be quickly remedied. Without a backup encoder, you would need to wait for a replacement unit from Arbitron. During that time your facility would not receive any PPM listening credit.

Next, consider how many confidence decoders will be required.

For most organizations, a reasonable guideline would be, "If it is important

enough to encode in the first place, it is important enough to make *sure* it is *being* encoded." In our case, we elected to obtain confidence decoders for all 22 of our program channels.

The confidence decoders have XLR audio inputs for connection to encoded audio (preferably, from an off-air or post-transmission source), and a D-connector that provides a dry contact closure indicating that encoding is successfully being detected.

The confidence decoders also come equipped with a rear-panel RS-232 output, which outputs a text stream at periodic intervals, indicating either that encoding is being detected, or that encoding is not being detected.

In the Philadelphia market, Arbitron's engineers were in contact with market engineers commendably early in the PPM rollout process. We placed orders for encoders and decoders many months before the system was scheduled to go online, and equipment showed up in plenty of time for both main and backup units to be installed and thoroughly tested.

Verification of proper encoding in many cases could be done over the telephone. A local engineer could simply hold his telephone receiver up to a speaker playing various examples of encoded audio, one program at a time, and the Arbitron engineer at the other end of the line could verify the encoding was correct.

Other equipment

As if the prospect of the sudden delivery of 66 boxes of equipment isn't daunting enough to you and to your receiving department, it is worthwhile to examine what other equipment will be needed to monitor your system successfully.

Recall that since Arbitron's PPM encoding process analyzes the program and adds encoding energy where it won't be audible, it follows that if for some reason a program stream is silent, PPM encoding cannot occur. The predictable result is that a station will not get ratings



PAULAUSKY

Greater Media's Larry Paulausky discusses the Arbitron PPM during the NAB 2008 BEC.

credit for any period that it has silence on the air.

Given this, evaluate all air chains to be certain they can successfully and automatically recover from silence problems. Many devices exist that can monitor a program air chain and switch to a backup source (an emergency CD, for example) when silence is detected.

Secondly, an off-air silence sense is a useful tool for technical responders to evaluate whether Arbitron decoder alarms are in fact due to an Arbitron encoding problem, or are simply due to silence on the air. This is especially important for channels that may not be easily monitored by an on-call technical responder, such as HD-R or Web streaming channels.


In our case, we elected to replace a haphazard existing system of silence monitoring with new, centrally located silence sense devices, one for each program stream.

Next, monitoring requirements should be addressed. Each Arbitron confidence

See PPM, page 8 ►

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HD2

► Continued from page 5

Clear Channel has announced several HD2 sponsorship agreements with Verizon for underwriting on the broadcaster's multicast channels, according to a company press release.

Emmis Communications is selling advertising on its St. Louis HD2 stations on a "very limited basis," said Dean Mutter, vice president/director of sales for the Emmis cluster in St. Louis.

"We were excited to be one of the first, if not the first, to monetize" an HD2 channel, he said, referring to KSHE(FM)'s multicast outlet KSHE2 Classic. "We aired our first underwriting sponsor in February. We are keeping the commercial inventory low and using only the underwriting model right now."

Mutter said advertisers are still curious about how HD digital radio works and waiting to take a "wait and see" position since broadcasters have no way to right now to quantify their

HD2 listening audience.

Rick Feinblatt, vice president of radio for Greater Media, said, "We have started the process in all of our markets. We won't do any comp. We have learned from our interactive Web sites that you cannot comp it." Complimentary ads are no-charge advertisements that broadcasters may provide clients for various business reasons.

CBS Radio is "selling great ideas on HD to further brand their products," said Dave Robbins, the broadcaster's digital director of programming.

It is launching formats and platforms on HD2 and HD3 that are consumer-friendly and advertiser-integrated and follow the alliance's guidelines, Robbins said.

"Since HD is in its early stages, this offers advertisers a tremendous opportunity for ownership. We are looking at a blank canvas that we can literally produce anything we want for them," Robbins said.

No broadcast group contacted for this story would estimate what it is charging for underwriting credit.



Rick Feinblatt, vice president of radio, Greater Media. "We have learned from our interactive Web sites that you cannot comp it."



Impossible Remote? Nah...You've Got ACCESS!

Cape Town's Heart 104.9FM's hot, new ACCESS opens new horizons!



Above: Heart 104.9FM DJ **Koketso Sachane** doing his show from the streets of Cape Town.

Top: **Saskia Falken**, Heart 104.9FM Mid Morning Mix host broadcasting from Table Mountain.

With ACCESS, Heart 104.9FM left its competition literally standing still by offering innovative, superb sounding remote broadcasts that kept listeners (and advertisers) coming back for more. Whether it was from a sailing yacht, from the top of majestic Table Mountain or from the vibrant streets of downtown Cape Town, ACCESS always delivered with its winning combination of pristine audio and ease of use.

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.

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World Radio History

PPM

► Continued from page 6

decoder and the associated silence sense for that channel, if one is used, needs to have a dependable source of off-air or post-transmission audio.

Analog channels each require a dedicated analog tuner. HD1 and HD2 channels each require dedicated HD Radio tuners. Web streaming channels each require a dedicated computer or a dedicated Internet radio appliance "tuned" around the clock to recover audio from the stream in question.

Your facility should plan to acquire these monitoring sources, or if you already have them, plan to extend audio from the monitoring sources to the Arbitron confidence decoders and silence senses. Do not overlook that a stack of individual computers used to monitor your Web streams will probably require consumer-to-pro level audio interface converters, a local rackmountable pullout monitor and keyboard, and a large, remotely accessible KVM switch.

Last, all the dry alarm contact closures from Arbitron and from silence sense equipment need to be connected to remote control monitoring equipment. Such a remote control should be capable of permanently logging error conditions and then generating several types of alarms, from e-mails and pages to POTS line voice callouts.

It is also useful to consider a system that can evaluate alarms and make appropriate callout decisions. For example, problems with Arbitron encoding on a main analog channel are top priority and delivered to all on-call engineers, while problems with stream encoding are delivered to the IT department on-call staff.

You may need to find space for new racks, as well as evaluate power and cooling needs.

Other considerations

Give some thought to where in the program chain to locate the Arbitron encoders. Arbitron recommends that they be installed after a pre-limiter, but before final audio processing and before EAS encoding equipment.

Note that this means a station would not be generating Arbitron encoding while its EAS device is running tests, forwarding alerts, etc., assuming the EAS encoder is in the air chain and not an input to the console.

A station using a broadcast delay system should install the Arbitron encoder after the delay, so that an obscenity "dump" wouldn't disturb the encoding.

Stations that don't use an obscenity delay nor IBOC delay may question whether the Arbitron encoder adds enough throughput delay to cause problems with live off-air headphone monitoring.



Silence sensors and Arbitron confidence decoders

Very early versions of Arbitron encoders were a concern in this regard; some air personalities were sensitive to the post-Arbitron encoded sound and found it somewhat unpleasant. However, our experience was that Arbitron worked attentively to address this issue, improved its coding algorithms very significantly, and effectively solved this problem in early field testing many years ago.

Installation

Installation of the Arbitron encoders is easy. XLR connectors are provided on the rear panel for audio in and out connections. The device is equipped with a hard relay bypass, so that if power is removed from the unit, a relay releases to directly connect the input to the output connectors.

A front-panel, key-operated switch provides a similar function; turning the key to the "Bypass" position also connects the input and output connectors. Software inside the unit will also force a bypass if certain error conditions are detected.

The unit has a front-panel LED that is green when all is normal and flashing red when various faults occur. The unit also

has an LCD screen that provides messages about the current state of the device.

A vital step in the setup process is to verify with Arbitron that the encoders all work as intended. Consider that in a market-wide rollout, hundreds of boxes will need to be processed, shipped and installed; you would like to know for certain that the box in your station's air chain that will be responsible for your station's ratings is the correct one, and that it is working perfectly.

The confidence decoder installation is also straightforward. Plug line-level audio from the correct air monitor on XLR connectors into the box, and the front-panel LED will almost instantly change from flashing red to steady green.

A confidence decoder box will only successfully decode its dedicated companion encoder. For example, WJZZ's decoder will not show a green light if it is hooked to WMMR's off-air monitor, even if WMMR's encoding is working properly. Arbitron says its decoders have an internal three-minute delay before a loss of detected encoding results in an alarm.

Operation

Greater Media elected to acquire additional space in our building's penthouse mechanical area to hold the three new racks full of Arbitron confidence monitoring equipment we installed.

The leftmost rack contains the monitoring devices: analog tuners, HD-R tuners and rack-mounted CPUs for Web stream monitoring.

These are arranged in frequency order from top to bottom, with the analog tuners first, the HD-R tuners next, and the CPUs at the bottom.

Since monitoring devices for our entire facility are now centrally located, we also located a remote node from our routing switcher to this rack, bringing access to all of these feeds, many of which were never commonly available before, to all routing switcher destinations in our facility.

The middle rack contains half of the remote control system, all of the dedicated silence senses — one per monitored program stream — with each arranged to the immediate right of its corresponding audio source.

Finally, the rightmost rack contains the other half of the remote control system and the Arbitron confidence decoders. Again, each one is arranged to the right of its corresponding monitoring source.

Walking in to the room, it is easy to see at a glance the status of the various devices. Blank spaces were left in the

rack at appropriate locations for the eventual installation of HD3 monitoring equipment.

The remote control system continuously monitors the various dry status contact closures of the system, and responds on an alarm condition. E-mails and pages are sent, and the system can place POTS calls and speak in English to an on-call respondent.

Possible improvements

We have added a remote power cycle feature to each of the tuners in the rack, such that if the remote control notices a silence sense indication of failure on a particular tuner, the remote control can issue a momentary pulse that will cycle the power for that tuner. If a receiver lock-up caused the silence problem, the reboot would cure the condition before the Arbitron confidence decoder's three minute time-out, preventing nuisance alarms.

Keeping computers running and happily connected to a live Web stream is an ongoing issue. Nuisance alarms occur when a machine spontaneously disconnects from its host and comes up silent. We respond to these alarms by logging in via VNC from a remote location and manually restarting the affected computer.

Other audio monitoring points have been considered, such as the post-encoded audio right before it leaves our office on the way to the stream host provider. We rejected these alternatives because if used, they would be unable to alert us to problems that might develop with the streaming host itself.

We are experimenting with the use of the Roku SoundBridge M1001, a small, inexpensive device that can directly access Internet streams and which, in theory, would offer several advantages: The Roku doesn't require a dedicated computer so it is much less expensive. The device can be easily remotely controlled and reset via Ethernet, and it will automatically and continuously try to reacquire the stream should the stream be temporarily lost.

The author gratefully acknowledges the use of information contained in Arbitron publications "Studio Grade Encoder: 1U Analog Interface. Operations and Field Service Manual" and "CBET Encoder Monitor. Operations and Field Service Manual."

This article is based on Paulausky's NAB Broadcast Engineering Conference paper, "Practical Considerations of Radio Broadcast Operations in an Arbitron PPM Market."

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Radio World, August 13, 2008

Past columns are archived at radioworld.com

Hide Studio Cables, Don't Break the Bank

by John Bisset

So what do you do when you are building multiple studios but have no over-ceiling space and no room to run wires under the floors? You get a carpenter to build a wire raceway as seen in Fig. 1.

Quantum Communications Chief Engineer Joe Jarjoura passed along this cost-saving tip. The raceway runs above doors and will drop to an access box at each studio, shown in Fig. 2. Inside the studio, Fig. 3 shows Joe holding the cables as they are ready to be dressed into a similar raceway to each console.

Cable runs inside buildings that weren't designed to house radio studios don't have to be complicated or look ugly. In fact, when you walk down the hall, the raceway is up so close to the ceiling that you don't even notice it.

Got a neat way that you handled wiring in your station? Share it with your engineering brothers and sisters. Drop me an e-mail at jbisset@bdcast.com. Remember, photos should be of high resolution and sent as attachments to the message.

Joe Jarjoura can be reached at avcraftsmen@aol.com.

★ ★ ★

Bill Weeks of Hungry Wolf Electronics showed me a handheld vector impedance analyzer manufactured by AEA in California. Bill was using the AEA Via Bravo for the tuneup of WGNV(AM) in Newburgh/Middletown, N.Y.

At a price of around \$2,000 depending on options, this device will measure both impedance and resonant frequencies of circuits and antennas. It has worked well with Bill's DA tuneup at WGNV.

A Smith Chart displaying the measured circuit impedances also is available



Fig. 1: A wooden raceway runs the length of the hall and holds interstudio cabling.



Fig. 2: At the studio entry, a box drops the cables down and through the wall.



Fig. 3: The raceway entry into the studio has room for plenty of cables.

using the Bravo PC Vision software and a PC, and is shown in Fig. 4.

The Via Bravo can sweep across a set of frequencies, plotting the results, as seen in the traditional R-X plot in Fig. 5. (The tuning of the array was not completed when these screen shots were taken but they give a good representation of the capabilities of the device).

In addition to the vector impedance analyzer, AEA manufactures several handheld test instruments including a TDR. See www.aeatechnology.com/products.

He was moving a lot of coil taps in tuning the WGNV array, and Bill offers the following tip, which picks up from our suggestion to use a Sharpie or similar brand marker to indicate coil tap locations.

When making a lot of adjustments or changes, select several different color markers to ensure that you won't have to go back to the start if those adjustments

See BRAVO, page 11 ►

NEW! Our Ingenious 'Quad Leveler'

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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.

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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

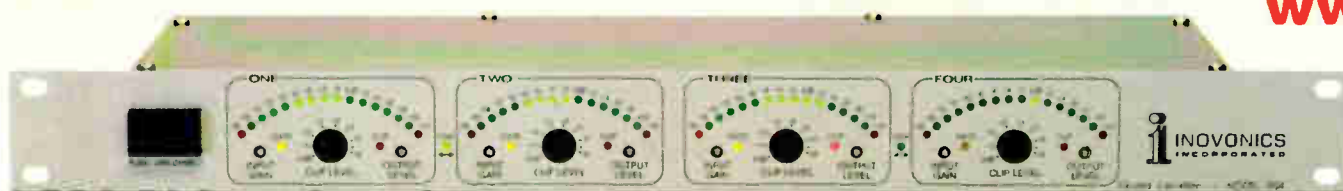
(PWM) technology for stable and transparent operation.

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

For full technical details, visit

www.inovon.com



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Bravo

► Continued from page 10
 don't work out. A bottle of fingernail polish remover will wipe the old marks clean once the component clip is set.
 Reach Bill Weeks at bill@wolftron.com.

★ ★ ★

Transmitter buildings often suffer from "settling cracks." Maybe you'd trowel over them with a mortar fix; but that's just a Band-Aid. The cracks will come back, as we see in Fig. 6.



Fig. 6: Don't disregard settling cracks that may get bigger and pose a leak threat.

As cracks widen, so does the potential for water leaks.

If you aren't protecting your transmitter site with some kind of water detection device, save yourself a major headache, especially since sites are visited on a weekly basis anymore.

Here are a few sites that provide water sensors:

www.watalert.com: Provides several models; one is a low-cost detector that provides an audible alarm when water is sensed, others will tie into existing alarms or remote control systems. Dorlen Products also manufactures Water Alert Sensor Cable and Ceiling Guard systems.

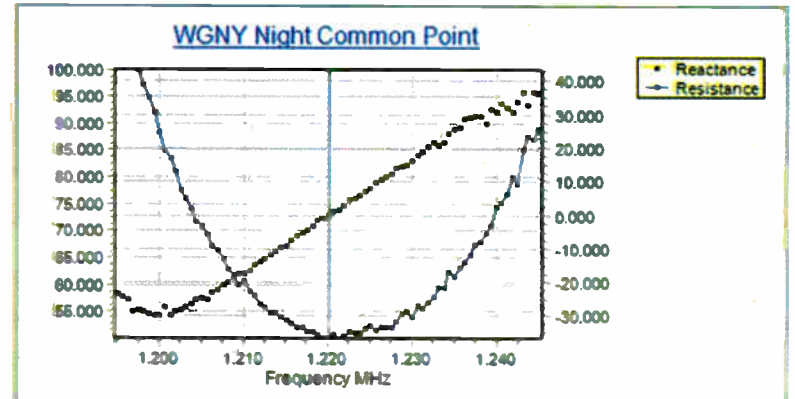
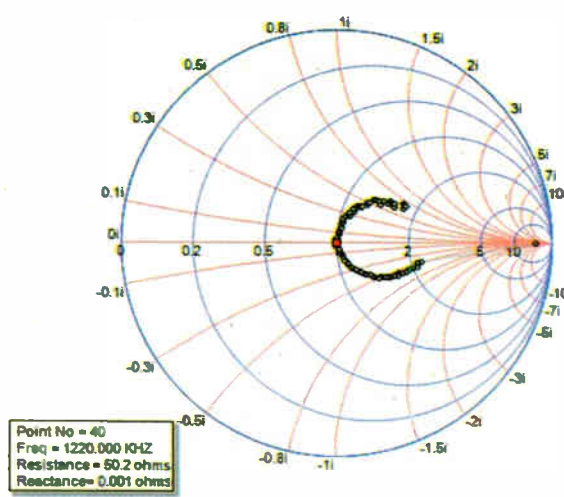
www.winland.com: Winland Electronics manufactures a line of sensors and alarms including popular WaterBug sensors. The improved Model WB-350 operates on a 9V battery and has an open collector output. The sensor will not alarm due to condensation or high humidity.

www.wayscale.com: Wayscale provides a variety of environmental sensors. The sensors have more features, and of course, cost more. The BMS WaterBug+Plus includes status LEDs, an internal alarm and a sensitivity adjustment; it will operate over a standard AC mains or 12/24 VDC power supply. Aqualeak sensor pads, tapes or probes are additional.

John Bisset has worked as a chief engineer and contract engineer for 39 years. He is the northeast regional sales manager for Broadcast Electronics and was the 2007 SBE Educator of the Year. Reach him at (571) 217-9386 or jbisset@bdcast.com. Faxed submissions can be sent to (603) 472-4944.

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

WGNV Night Common Point



Figs. 4-5: The Via Bravo will provide Smith Chart plots as well as standard form impedance sweeps.

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In Search of the Universal Receiver

We Explore the Possibility of True 'Radio Convergence'

You've probably heard about Ibiqity Digital Corp.'s quest to have the Federal Communications Commission place a condition on approving the satellite radio merger, one that would require future satellite radio receivers to include HD Radio capability.

Whether such a device is produced by mandate or voluntarily, it would combine both forms of satellite radio with both forms of terrestrial radio, something that no device manufactured to date has done.

Meanwhile, we are seeing a lot of new standalone Internet radio "appliances" entering the market lately.

Only a few of these include AM or FM receivers, and none to date include HD Radio. Thus a device that combined Internet radio with HD Radio would also be a first.

This is a variant of the original "boom-box with a browser" concept espoused in this column over five years ago (see the June 4, 2003 edition at *radioworld.com*), which still has not broadly appeared in the marketplace.

While we're envisioning such consumer-electronic chimeras, why not go for it all and suggest an AM/FM/HD/Sirius/XM/Internet device — the universal American radio receiver?

Throw programmable, integrated off-air recording and a podcast client into the mix and you've got perhaps "The Ultimate Radio."

Could it be possible? Probably not, and here's why.

IP?

First, let's stipulate that we are talking about a dedicated, or "embedded," device here — as opposed to a PC with a bunch of plug-in tuner cards and some sort of kludged antenna farm.

To be practical, the hardware device should have form and function as close as possible to today's radio devices, usable in home, car, office and portable/handheld applications. (Anyway, this converged functionality isn't readily available yet on the PC platform, either, and the software-defined radio is still science fiction at the consumer level.)

This product would also have to be

widely available at a reasonable cost — ideally at price points not much greater than those of today's regular analog radios, in each of the form factors mentioned.

And that's where the problems start.

Consider the intellectual property cost

Other practical matters include the issues of multiple antennas and battery life on portable designs. These would likely constrain the handheld form factor from becoming very small and lightweight. The multiple-antenna issue



of such a device. The licensing fees alone would probably make it prohibitively expensive before the first piece of silicon was baked. The pure hardware expense might not be so bad in comparison, but it would certainly add fuel to the fire.

Three tuners, an IP stack (the other IP, Internet Protocol), and at least six different audio codecs, plus control hardware and screen, audio infrastructure, chassis and antennas, and we're likely into the four-figure range.

Could this price be subsidized by service providers down to something reasonable? This also seems unlikely when it provides so many options for access to competing services.

(Consider that even the FCC-"suggested" XM/Sirius converged receiver has never emerged, which developers also blamed on untenable cost, but the concern over competitive access was almost certainly also involved. This is evidenced by the new commitments by satellite radio to such a device now, as a part of the proposed merger. The potential absence of competition magically erases those previously cited cost concerns. Hmm ...)

Further, the possible low initial demand for such a device wouldn't help drive the price down organically.

would also complicate aftermarket automotive installations.

Finally, there is the strange element of mixing so many pay and free services on a single terminal device.

Yes, most satellite radios today include AM/FM, but this is largely out of necessity, given satellite radio's primary target of automotive use. Concern over churn is so high that it is unlikely the satellite

This is clearly a two-edged sword for broadcasters.

radio providers would approve of additional free services being bundled on their receivers.

(This argument may soon be altered, however, since one likely outcome of the merger is an open-market requirement for satellite radio receivers, so the service provider[s] would no longer hold such unilateral control. On the other hand, in such an environment, the provision of receiver subsidies by the service provider is also less certain.)

Overall, for all of the reasons above, the concept of a truly universal receiver seems destined to remain a consumer pipedream.

A few good PPMs

Beyond the point of competitive access on subsidized receivers mentioned above, the idea of any sort of converged device isn't very appealing to any service provider.

This is simply because the more channels that are available on any device, the less likelihood there is for any individual channel to be listened to — statistically speaking, at least.

This could be part of the reason why we've seen so few Internet radios with even AM/FM included, which would be a cheap and easy option to add. Correspondingly, local radio stations remain happy to see the continuing survival of the lowly AM/FM-only receiver as a baseline product in traditional consumer electronics — but for how much longer?

The Big Picture



by Skip Pizzi

Making this concern even worse is the move toward new technology in audience measurement.

For example, the Arbitron Portable People Meter system can accommodate a large number of both traditional and new audio delivery channels, tracking them each accurately. With the pie sliced ever more thinly through the availability of new services, broadcasters probably won't like what they see with such precise reporting.

This is where Jack Nicholson tells the GM, "You can't handle the truth!"

So it appears that convergence isn't high on anyone's roadmap in either the radio receiver or broadcast industry. Only consumers would benefit from such a process, and their interests are unlikely to be fully served without regulatory pressure.

If you can't beat 'em ...

If total convergence is off the table, is there any value to (or likelihood of) partial steps toward this end?

We have seen at least one Internet radio model recently add a standard AM/FM tuner, and, as mentioned, we may soon see converged XM/Sirius radios, most of which will likely include AM/FM receivers like most of the current, separate XM and Sirius receivers do.

But there has been resistance among some receiver manufacturers toward Ibiqity Digital's call for mandatory inclusion of HD Radio capabilities in satellite radio receivers.

Meanwhile, a number of recent 3G wireless phones are making it easy to receive Internet radio on a portable device, and very few of these include AM/FM receivers.


This is clearly a two-edged sword for broadcasters. An AM/FM-only device keeps the competitive service providers at bay, but the introduction of new devices without AM/FM receivers keeps local radio content off of increasingly popular emerging platforms.

Yes, there are already more AM/FM-only receivers in use than any of these other new devices, but sales of those old one-trick radio ponies are decreasing rapidly, as we discussed here in the May 7 column.

Should broadcasters therefore welcome any opportunity to see AM/FM bundled with other formats, as a way of keeping themselves in the game, albeit for a lesser share of the listening? On balance, the answer probably is yes.

Meanwhile broadcasters can also hedge their bets by putting their content into the environments that these new devices can receive, wherever possible. Since we'll probably never see a universal receiver, perhaps broadcasters can move toward becoming "universal transmitters."

Skip Pizzi is contributing editor of *Radio World*. Past columns are archived at radioworld.com.



Who Reads Radio World?

Greg Rickaby Does

Name: Greg "Frog Man" Rickaby
Title: Chief Engineer
Stations: WDJR(FM), WESP(FM), WDBT(FM)
Employer/company: Gulf South Communications Inc.

Favorite station growing up: WIX(FM), Green Bay

My first radio job: Frog Country, 101.5, WJNR(FM) Iron Mountain, MI

My radio mentors: Houston McDavitt, Larry Wilkins, Bobby Gray

Favorite piece of radio equipment or technology: My Optimod!

Why I believe in radio: It's been around forever, through thick and thin. It remains the only medium

that can reach such an array of different people, yet connects each one of them with music and local information.

Why I worry about radio: Sales are down, small stations are jumping ship with Arbitron, engineering budgets are being slashed. Another result of the slumping economy. I hate to see good people in sales look so down these days. But radio WILL bounce back. It always has.

The most important challenge facing radio engineers today: Managing our time. We all wear many hats, and it's important to remember what is really important: family.

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World Radio History

SBE NEWS

What Those Letters Actually Mean

With So Many Society Certifications, Which One Is Right for Me?

by Megan Clappe

The author is SBE certification director.

If you read Radio World or any publication catering to our industry, you have seen one or more SBE Certifications listed after someone's name.

You might ask yourself, "What are these certifications and how can I obtain them?"

Let me start with a quick background of how SBE Certification came to be.

The Society of Broadcast Engineers' Program of Certification began 33 years ago as a way to recognize and raise the professional status of broadcast engineers by providing a standard of professional competence. It has become recognized in the industry as the primary method of verifying the attainment of educational standards.

All of SBE's Certifications are based on eligibility for the years of work in the broadcast industry.

ENTRY-LEVEL CERTIFICATIONS:

Certified Television Operator (CTO) and Certified Radio Operator (CRO) — These two certifications are targeted to the entry-level, non-technical pool of applicants filling board operator and master control positions in today's radio and television marketplace and include the opportunity to be tested and certified. The exam consists of 50 multiple-choice questions. It is closed book and you are allotted one hour. Passing score is 90 percent.

Certified Broadcast Technologist (CBT) — This exam will consist of either AM/FM or TV questions. Content of these questions will consist of electronic fundamentals, FCC rules pertaining to operating tolerances and safety. The exam is 50 multiple-choice questions. It is open book and you are allotted three hours to take the exam. Passing score is 70 percent.

Certified Broadcast Technologist (CBT) — If you hold a valid FCC Amateur Extra Class license or a General Class license and have two continuous years or three out of the last five years work experience in broadcast engineering or a related technology, you can apply for the CBT certification without taking the exam. Please contact the national office for more information.

Certified Broadcast Networking Technologist (CBNT) — This certification is designed for persons who wish to demonstrate a basic familiarity with networking hardware as utilized in business and audio/video applications in broadcast facilities. This exam will consist of questions on network topologies and layouts, common network protocols, wiring standards and practices, maintenance, troubleshooting and connectivity issues and challenges unique to broadcast-based networks. The exam is 50 multiple-choice questions. It is open book and you are allotted three hours to take the exam. Passing score is 70 percent.

5-YEAR CERTIFICATIONS:

Certified Audio Engineer (CEA), Certified Video Engineer (CEV), Certified Broadcast Radio Engineer (CBRE) and Certified Broadcast Television Engineer (CBTE) — These certifications are based on the years of experience you have in the field of broadcast engineering or related technology. You may substitute the years of experience to supplement the five-year requirement (see acceptable substitutions below). This exam will consist of questions regarding safety, problems, operation practices and theory. The exam is 50 multiple-choice questions. It is open book and you are allotted three hours to take the exam. Passing score is 70 percent.

10-YEAR CERTIFICATIONS:

Certified Senior Radio Engineer (CSRE) and Certified Senior Television Engineer (CSTE) — These two certi-

fications are based on years of experience you have in the field of broadcast engineering or related technology. You may substitute the years of experience to supplement the 10-year requirement (see acceptable substitutions below). The exam is 50 multiple-choice questions. It is open book. There is an essay portion associated with the senior exams. You will be given a choice of three essays (choose one). The essay is closed book. You are allotted three hours to take the exam. Passing score is a combined score of 84 percent.

For the five- or 10-year certifications you may substitute the years of experience holding a state-registered Professional Engineer's license (four years), a bachelor's degree (four years), an associate's degree (two years) or years of related accredited education, year for year (up to four years).

20-YEAR CERTIFICATION:

Certified Professional Broadcast Engineer (CPBE) — This certification requires 20 years of professional broadcast engineering or related technologies experience in radio and/or television. Educational credits will not be counted towards the 20 years. There isn't an exam associated with this certification. However the applicant must first be certified on the Senior (10-year) level in order to apply for the CPBE.

To apply you must fill out the application and include three letters of reference. Two must be from a certified Professional Broadcast Engineer, Certified Senior Broadcast Engineer or State-Registered Professional Engineer.

At least one other letter of reference must be from a person who has supervised your work. However, if he or she is certified at one of the above-mentioned levels, that reference will be counted as two letters. In addition to the application and letters of reference you must submit a résumé and a statement showing why you believe your professional experience, educational background and training qualify you for certification.

Your application will then go for review to your SBE Local Chapter Certification Chairman and then to the National Certification Committee.

SPECIALIST CERTIFICATIONS:

Certified 8-VSB Specialist (8-VSB), Certified AM Directional Specialist (AMD) and Certified Digital Radio Broadcast Specialist (DRB) — These certifications were created by the National Certification Committee to establish a benchmark of individual strengths. In order to apply for the Specialist exams you must first be certified on the five-year, 10-year or 20-year level. The exam is 50 multiple-choice questions. It is open book. There is an essay portion associated with the senior exams. You will be given one essay, which is closed book. You are allotted three hours to take the exam. Passing score is a combined score of 84 percent. Upon passing, your Specialist certification will be linked to the expiration of your host certification.

All SBE certifications are valid for a period of five years, at which time you will need to recertify by professional credits. These credits will be valid from the five-year period of your certification.

Credits can be obtained by continuing your education, working in the broadcasting field, attending seminars, writing for trade publications, SBE meetings and active membership in SBE or other national technical broadcasting societies.

To apply for any of these certifications please fill out an application from SBE's Web site at www.sbe.org or you may call the National office to request an application at (317) 846-9000. Exams are given year-round at your local chapter during exam sessions.

So now when you see a list of SBE certification you will know what is required to obtain and maintain them.

If you have any questions please contact me at mclappe@sbe.org.

Practice for your SBE exam. Click on "Certification Corner" at radioworld.com.



Exam Dates	Location	Application Deadline
Nov. 7-17, 2008	Local Chapters	Sept. 19, 2008
Feb. 6-16, 2009	Local Chapters	Dec. 31, 2008
April 21, 2009	NAB	TBD
June 5-15, 2009	Local Chapters	April 17, 2009
Aug. 7-17, 2009	Local Chapters	June 5, 2009
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Pico Wi-Fi: A 'Portable' Internet Radio?

Revo's Offering Is Solid, But Calling It A Portable Is Pushing Things a Bit

by James Careless

In a world of AC-powered Internet radios, the British-built Revo Pico Wi-Fi is unique.

Revo bills the Pico Wi-Fi as having "supreme portability" by virtue of its onboard rechargeable NMH battery pack and Wi-Fi Web connectivity. But do these qualities combine to create a true portable radio, along the lines of an AM/FM portable?

The Revo Pico Wi-Fi — which sells for \$349.95 at www.ccrane.com — essen-

tially is a small loudspeaker with an Internet radio built in. It incorporates a 6 Watt mono amplifier and uses a 2 inch neodymium driver. Also included is a conventional FM tuner, a welcome feature for those times when tuning locally is preferred.

The Pico Wi-Fi does not have AM or HD Radio capabilities. It does have an extendable antenna for better FM reception.

Physically, the Pico Wi-Fi's front has a two-line illuminated LCD screen at the top, with a two-way turning dial (really a

plastic circle with a thumb indent) flanked by three function buttons on each side. The left side's buttons cover On/Off, Browse and Back functions, and the right three Internet Radio/FM, Volume and Reply.

The dial can be pushed in, to serve as an Enter key. When used with the Back button, the tuning dial and push-in feature allows you to download a list of Internet radio stations from www.reciva.com, the maker of the Pico Wi-Fi's software. (Reciva also supplies tuning software and support to other Internet radio manufacturers such as Acoustic Energy and Tangent.) The push-in dial also provides access to the Pico Wi-Fi's treble and bass controls.



The Pico comes with a small remote control. It can be used to tune the receiver and adjust its volume, and to store up to 10 station presets (five FM, five Internet radio). Because it connects to a Wi-Fi network — presumably one used by computers with media files — the Pico Wi-Fi can be used to access, sort through and play back audio files through its single speaker.

The Revo Pico has the same perks and problems of any Reciva-based Internet radio: thousands of stations that are sometimes difficult to choose among if you aren't familiar with the hundreds of names in a genre category.

Besides these features, the Pico WiFi has a front-accessible M-Port, a female miniature plug jack (protected by a rubber sealing tab) that accepts an input plug from an iPod or other MP3 player. There is a miniature plug headset jack on the back, above a jack for the radio's 12 V DC adaptor. Both openings can be sealed shut with an attached rubber panel, but only if nothing is plugged into them.

A software reset button is also located here, for those times when the Pico Wi-Fi's software goes on the fritz. To date, I have not had to use this feature.

The case is charcoal gray plastic, and measures 6.5 inches tall by 4 wide by 4 thick. It is splashproof: "Pico's case is sealed against the elements, allowing Pico to be used outdoors, or in places where there is moisture, such as a bathroom," states the user manual. "Pico has been designed to withstand small splashes of water, such as raindrops. It is not

See PICO, page 19 ►

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Pico

► Continued from page 18
designed to be submerged in water.”

Performance

In terms of tuning, the Revo Pico has the same perks and problems of any Reciva-based Internet radio.

The plusses include the thousands of stations made available by www.reciva.com, which can be downloaded and updated directly to the Pico Wi-Fi using its Internet connection.

The Reciva list is used by the tuner: You get to drill down through the list by station or location (country), then dig deep into musical and talk genres, from which you select the station you want. Of course,



The M-Port female miniature jack, under this rubber tab, accepts an input from an MP3 player.

if you don't recognize the hundreds of station names that can be in a single genre category, making a choice can be difficult and time-consuming. That's one of the big

minuses with this system.

As for the Revo Pico Wi-Fi's audio performance? Strangely enough, it seems to provide fuller and louder sound when tuned to an Internet radio station than when tuned to FM. Overall, the sound quality has reasonable and clarity range, but it isn't enough to make you toss out your favorite FM portable. Still, it is quite pleasant for extended listening.

What about the Pico Wi-Fi's much vaunted portability?

Well, given that its NMH batteries are rated to run 3–4 hours on a charge, this claim is reasonable. However, the Pico Wi-Fi's reliance on Wi-Fi Internet connectivity is its Achilles heel.

Wi-Fi is notorious for being a short-range transmission medium. As a result, my test unit is unable to connect reliably to my Wi-Fi network when moved a floor

above my wireless gateway.

This problem is not the Pico Wi-Fi's fault, but it does undercut the notion that this unit is truly a portable radio. In the unit's defense, its FM tuner can take over when its Wi-Fi link falls short. But if this is the case, why not just use a conventional AM/FM receiver and forego the Pico Wi-Fi's cumbersome Reciva tuning system?

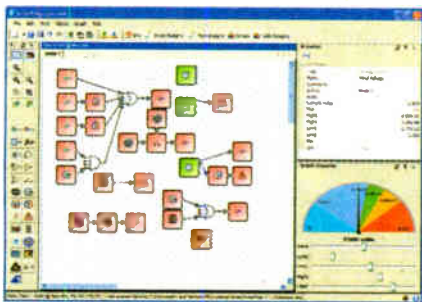
The Revo Pico Wi-Fi Internet Radio is about as portable as a modern Internet radio can be. In other words, it really isn't.

However, the unit's otherwise solid performance — it retained enough battery power to remember the stations last tuned, when the battery pack was too low to run the radio proper — makes the Pico Wi-Fi a worthwhile choice for first-timers wanting to try Internet radio. ●

MARKET PLACE

Audemat Adds SNMP GET/SET Management

Audemat's Scripteasy V2 now includes SNMP GET/SET commands capabilities enabling broadcast equipment using the SNMP protocol to be monitored and controlled via TCP/IP.



The goal is to ease the monitoring and control of many types of equipment including transmitters. The company's Christophe Poulain stated, "This will avoid time-consuming and expensive wiring connections at the transmitting site and facilitate complex operations such as 1+1 and N+1 transmitter management."

GET and SET commands appear via two icons that Audemat added in the Graphic Script Designer module, which behave as virtual digital inputs and relay outputs and can be connected with other and more traditional inputs and outputs for automatic actions or alarms sending.

They send queries and get answers that are compared with normal operating conditions or set values in the connected equipment.

Scripteasy V2 software will come standard with various Audemat products including the transmitter remote control line; HD, ATSC, DVB-T/H monitoring equipment; and FM/HD Audio Processors and "Radio All in One" Digiplexer line.

All Audemat equipment that includes Scripteasy software now is compatible with the Audemat Broadcast Manager management software for centralized management and monitoring. These units are able to talk to each other as well as interact with other equipment or devices in the same IP network.

Info: www.audemat.com

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Can a radio console be over-engineered?

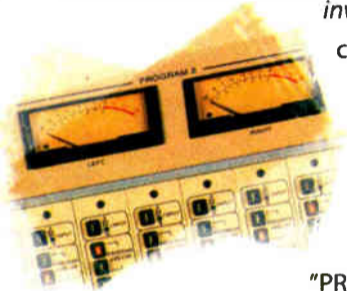
(Only if you think "good enough" really is good enough.)

"OCD" redefined

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

How It began

"20-odd years ago," says Axia President Michael "Catfish" Dosch, "I was designing custom consoles for recording studios. Somebody at **PR&E** – it was still called **Pacific Recorders** then – liked what I was doing and invited me to move there. Work with Jack Williams, the guy who practically *invented* the modern radio console? I jumped at the chance; BMX consoles were ultra-reliable, sounded great, and nearly indestructible!



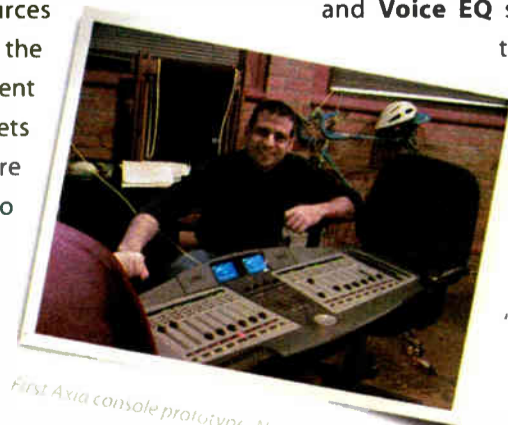
"PR&E was a dream job. Jack taught me how to design consoles without compromise — how to **over-engineer** them. It's great to see, 15 or 20 years later, that many of the boards I designed are still on the air.

"By the late 1990s, computers and routing switchers were becoming an essential part of the broadcast studio, and I'd been thinking about how useful it would be to combine console, router, and computer network. I shared some of my ideas with Steve Church, who'd introduced digital phone hybrids and ISDN codecs to radio. He thought the same way I did about computers in radio studios, and we decided to work together."

A new kind of console

In 2003, Axia was launched to make digital consoles, but with a twist: Axia consoles would be integrated with the routing switcher, and **networked** to share resources and capabilities throughout the studio complex. This intelligent network of studio devices lets Axia build consoles that are **more powerful** and easier to use than ever.

Our team of engineers blended the best ideas from



First Axia console prototype. Nice test stand. Catfish

old-school analog consoles with innovative new technology to produce **bullet-proof boards** that can actually make shows run smoother and sound better.

And we invented a way to network studios, consoles and audio equipment using **Ethernet**. It's called **Livewire™**, and it's now an industry standard.

Livewire carries hundreds of channels of real-time, uncompressed audio plus synchronized control logic and program-associated data on just one skinny CAT-6 cable.



There's a reason these board-ops are smiling. Axia consoles are in more than 1000 studios worldwide.



Lots of well-known broadcast software and hardware companies (over two dozen already) now make products that work directly with Livewire. Thanks to this scalable network technology, **integrated router control** is a standard feature of every Element. Any source in any studio can be loaded on any fader with no need for add-on panels.

And Livewire lets you bring computer audio into the air chain without going through multiple A/D/A conversions. Our **IP-Audio Driver** lets



you connect computers directly to the network without any intermediate I/O — all that's needed is a CAT-5 cable and your computer's Ethernet port.

Feature packed

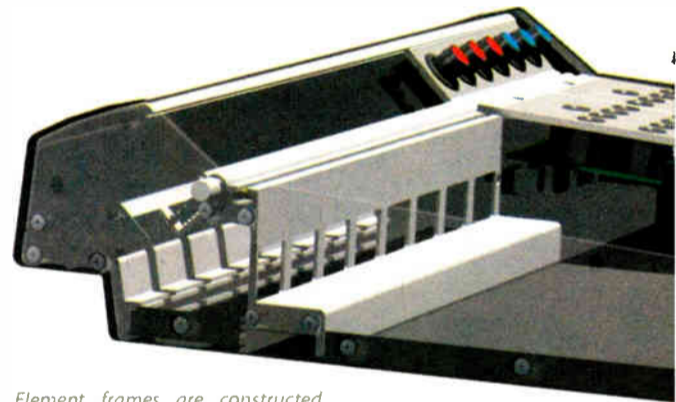
Board-ops told us they wanted a console that's **powerful, yet easy to use**. So we designed Element to be user-friendly, yet still have all the power of a full-on production board.

For example, Element Show Profiles can **recall each operator's favorite settings** with the push of a button — audio sources, fader assignments, monitor settings and more. And each jock's Show Profile contains personalized **Mic Processing** and **Voice EQ** settings that load every time they're on the air (so the midday guy will stop badgering you for "just a little more low end"). There's even a "panic button": one key-press returns a Show Profile to its default state instantly. (No more 3 A.M. "Help!" calls.)

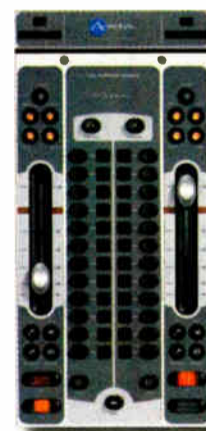
Did we say "mic processing"? You bet. Every voice channel gets **studio-grade compression, de-essing and expansion** from the processing experts at Omnia, plus three-band parametric EQ to sweeten the deal. There's even **built-in headphone processing** so you don't

have to waste money building a separate side-chain just for the studio cans.

Jocks have complained for years that making a mix-minus is too hard — so Element **constructs mix-minuses automatically**. Plus, mix-minus settings are saved for each audio source, so that sources, backfeed and machine logic all load at once. And every fader has a "Talkback" key to **communicate with phone callers**, remote talent or other studios using the console mic.



Element frames are constructed from custom aluminum extrusions for maximum rigidity. Module face plates and console side panels are machined from thick plate aluminum. Even the hand rest is a beefy extrusion. With all this heavy metal, even that ham-handed overnight jock won't be able to dent it.



Speaking of phones, board-ops have enough distractions without having to reach for an outboard phone control panel. Element has **hybrid controls with dedicated faders** for Telos talkshow systems; there's even a **dial pad** so jocks can dial, pick up, screen and drop calls without ever diverting their attention from the console.

Nearly every air talent has accidentally changed a fader's audio source while it was on-the-air. To prevent that error, **Element "queues" source changes**: the operator must turn the fader off before the next assigned source "takes".

The radio console, redefined.

Element was designed to fulfill either a **production or on-air** role, with amazingly powerful features waiting just beneath the intuitive surface. For instance, Element can mix in 5.1 Surround as well as stereo. That's standard; **nothing extra to buy** (except more speakers). There are four stereo Aux Sends and two Aux Returns, so production guys can use their favorite outboard FX boxes. Great for **custom IFB feeds**, too.



Clear the junk out of your studio. Element has 8 submixers built in.

Got a PA mixer tucked away in a studio corner to mix mics for live performers, talk shows and such? Element has **8 Virtual Mixers** — no outboard gear needed. And the Virtual Mixers emulate ACU-1s, allowing tight integration with automation and satellite systems.

You can **administer Element remotely**, from home, the airport — wherever there's network access. A password-protected web server lets you examine the state of the console, see what's on the air and even fix operator mistakes, without ever leaving the comfort of that new Aeron™ desk chair you (ahem) "requisitioned" from the Sales department.



Small VU meters mounted at desk level are hard to read, so we re-invented the traditional meter bridge. Element's **big meters** are presented on an easy-to-read computer monitor along with large analog and digital clocks, event and countdown timers, and tallies that light when mics are open, delay is active, or during phone calls. You can even customize the display by adding your station's logo.



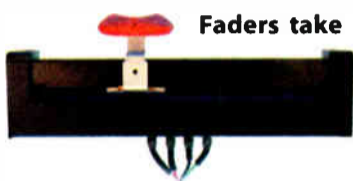
Beneath the surface

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

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

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

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



Faders take massive abuse. The ones used in other consoles have a big slot on top that sucks in dirt, crumbs and liquid like the government sucks in taxes. By contrast, our silky-smooth conductive-plastic faders actuate from the side, so **grunge can't get in**. And our rotary controls are high-end optical encoders, rated for more than **five million rotations**. No wipers to clean or wear out — they'll last so long, they'll outlive your mother-in-law (and that's saying something).

Element's **avionics-grade switches** are cut from the same cloth. Our design team was so obsessed with finding the perfect long-life components that they actually built a mechanical "finger" to test switches! Some supposedly "long life" switches failed after just 100,000 activations; when they found the switches used in Element, they shut off the machine after **2 million operations** and declared a winner. (The losers got all-expense-paid vacations to the landfill.)



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

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



Element uses high-impact Lexan overlays with color and printing on the back, where it **can't rub off**. And instead of just sticking the Lexan to the top of the module like some folks do, our overlays are **inlaid on the milled aluminum module faces** to keep the edges from cracking and peeling — expensive to make, but worth it. For extra protection, there are **custom bezels** around faders, switches and buttons to guard those edges, too. Element modules will **look great for years**.



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

More than just products

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

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



Proudly Over-Engineered

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



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August 13, 2008

PRODUCT EVALUATION

Arrakis ARC-10 Targets Smaller Budgets

by Bill DeFelice

I recently found myself liquidating a majority of my former studio equipment, with a move to a new home and the termination of my oldies Web stream.

While in the process of building a smaller, personal studio, I decided to downsize from the large console I had been using.

I discovered the Arrakis Advanced Radio Console series while researching the resale of my former 1200-15s board. My ARC console purchase occurred after crossing paths with another user who was liquidating his own studio; his console wasn't even two months old.

The quality of Arrakis products influenced my decision to buy, and the offer to purchase the console at a significant discount clinched the deal.

Less is more

Arrakis offers its ARC-10 console in three configurations.

The first two feature unbalanced inputs to accommodate direct connection to consumer audio equipment; the third is equipped with balanced inputs. Configurations feature two balanced microphone inputs and seven stereo line

channels, as well as a dedicated channel for use with a telephone hybrid with balanced in and out and logic control.

The middle- and high-end console configurations include a USB audio interface on Channel 9, allowing direct connection of a



computer for automation and production uses.

Arrakis includes a free "ARC version" of its Digilink Xtreme automation software. The console also supports the optional, full-feature Digilink Xtreme system; and thanks to the console's on-board serial connector both versions allow control of the automation via the Channel 9 on/off switch.

Additional features common to ARC configurations include two stereo program bus outputs along with corresponding mono mix-downs, monitor muting, input channel on/off logic with tally, VU meters that follow monitor audio switching, a built-in headphone amplifier, studio talk-back, integrated cue system with speaker, LED illuminated switches with electronic audio switching mix-minus output for hybrid use and an external power supply.

The ARC-10 is designed to be an economical console, so the sliders do not have the familiar cue detent at the bottom of its stroke. Each line input may be placed into cue by pressing the button above the corresponding slider. Inexperienced operators may panic at the loss of monitor audio in their headphones should they forget to take a source out of cue.

I would have preferred a split cue system similar to the 1200 series consoles, one ear with monitor audio and the other ear with cue audio. I think this would remind the operator that an input had been left in cue mode, as well as being helpful when joining a network or remote feed.

The console is well suited for various

Product Capsule:

Arrakis ARC-10 Advanced Radio Consoles

Thumbs Up

- ✓ Long-life LED illuminated switches
- ✓ Optional built-in Windows sound card
- ✓ Digilink Automation-friendly
- ✓ Low-profile design

Thumbs Down

- ✓ Headphone cue mutes monitor audio
- ✓ No schematics supplied
- ✓ Non-transferable warranty

PRICE: \$1,599 (ARC-10U), \$3,495 (ARC-15BP)

CONTACT: Arrakis Systems at (970) 461-0730 or visit www.arrakis-systems.com.

uses from production and on-air applications to audio/video and podcasting. The target audience seems to be those with minimal technical background, as the manual does not include any detailed schematics for troubleshooting.

While most ICs are socketed, readily available and accessible by removing the bottom of the console, it would have been nice to provide a more detailed technical manual schematic for those who desire it.

Given that the board is touted as serviceable by "modular replacement," I don't think many would be happy to discover they must return the console for repair or slider replacement even when they have a qualified and competent engineer on staff. This may not be a terrible thing with a small studio, but users of the more recent ARC-15 console may not like being without the use of a studio.

A sore point with me was that Arrakis only offers a warranty to the first end user. I had purchased my console from the original owner, who had it less than two months. Arrakis informed me that it was no longer covered under warranty.

In a time where cars and computers offer transferable warranties it seems rather draconian to disallow a subsequent end user the remainder of the original warranty. While this may not be a common scenario for many, it bothers me just the same.

The ARC series of general-purpose consoles will meet the needs of on-air and production studio applications, and its low-profile, sleek design and clean layout will make the operator feel at home.

Bill DeFelice was chief engineer of the now-defunct WMMM(AM) in Westport, Conn. He does freelance computer and broadcast consulting in addition to his fulltime gig as an electronics technologist for the Norwalk Connecticut Public Schools. Contact him at rwa2008@ctradiohistory.org.

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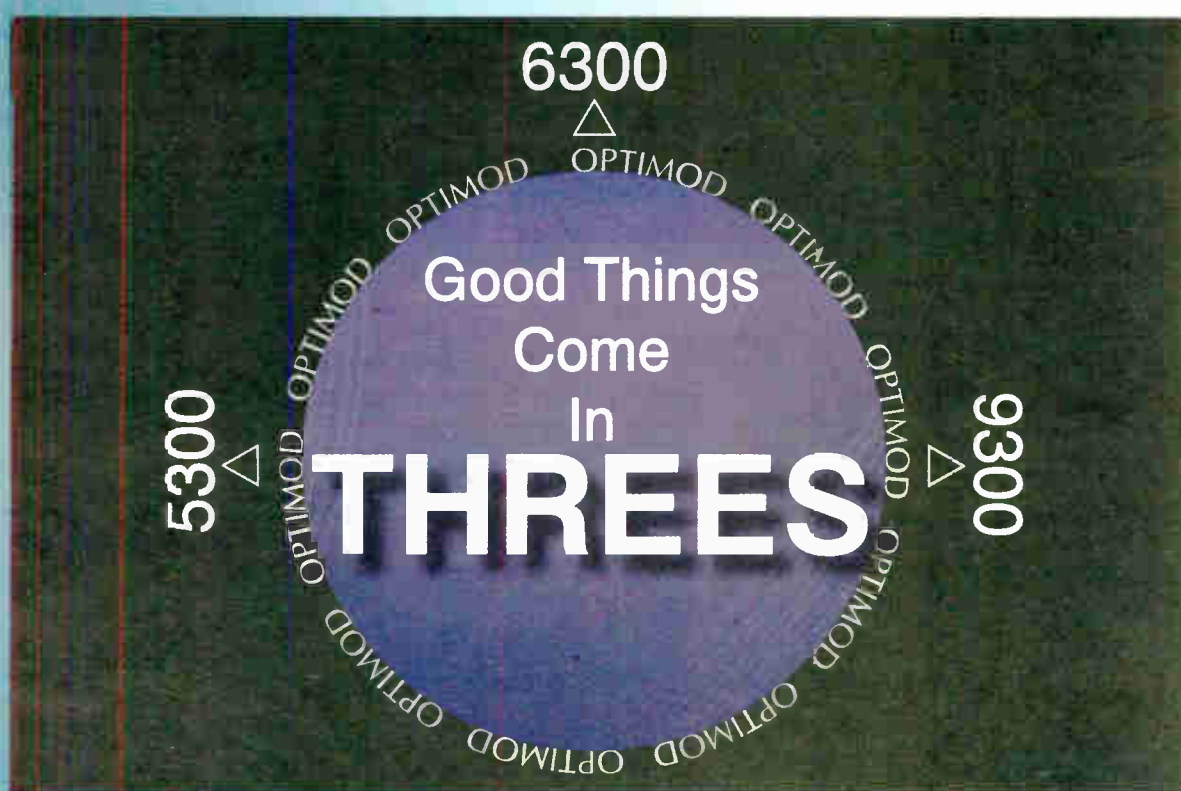
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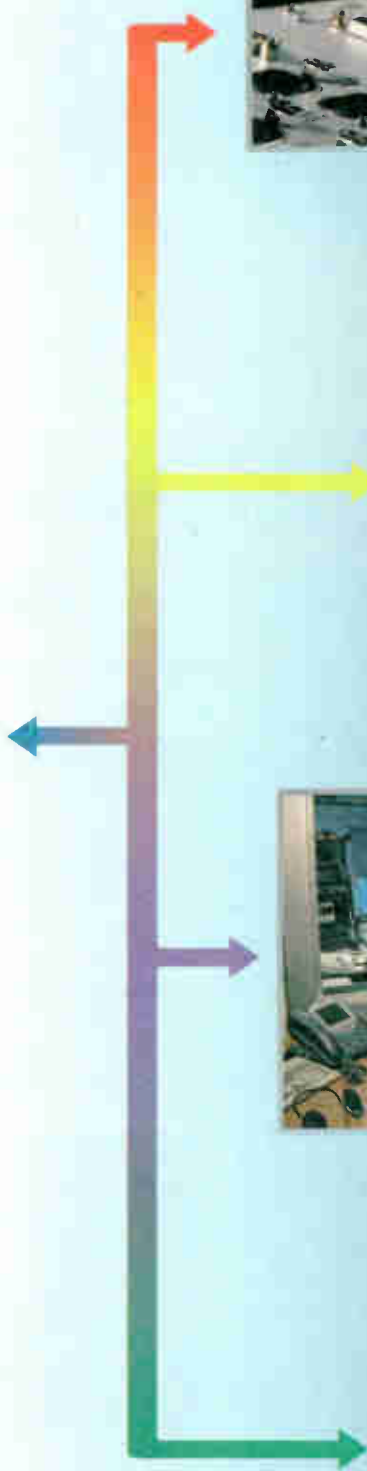
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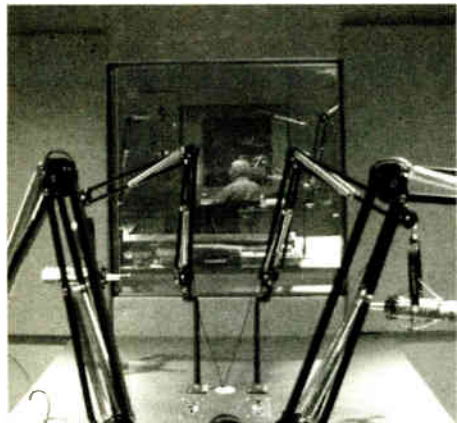
INSIDE Crawford Broadcasting Birmingham

by Tom Vernon

Studio consolidation projects rarely go off without a hitch, but the curveball thrown to Crawford Broadcasting's Stephen Poole was a whopper.

As market chief engineer for the company's Birmingham, Ala., operations, Poole had planned the move of WDJC(FM), WYDE(FM), WXJC(FM), WXJC(AM) and WYDE(AM) into a gutted 10,000-square-foot space for more than a year.

The plan called for eight control rooms: five for the existing stations and three for HD-2 expansion in the future. Then things started to go south.



Auxiliary studios (still a work in progress), looking from the #2 talk studio, through Control 2 and Control 1, and into talk studio #1.

At the last minute it was discovered that local codes required a space of this size to have a sprinkler/fire-suppression system. This instantly put the project over budget, and problems retrofitting sprinklers into an older building delayed construction well into November. Instead of having a month to make the move, Poole was left with a weekend. He called for backup.

In addition to Poole's assistants Todd Dixon and Jimmy Parker, corporate chief Cris Alexander sent staffers Ed Dulaney from Denver and Rick Sewell from St. Louis, as well as Robert Payne, a contractor from Dallas, to lend a hand.

Wheatstone was the major equipment supplier, providing five Generation 6 control surfaces, six Bridge Routers and studio furniture for nine rooms.

Work on the project began with assembling studio furniture. To keep costs down, Poole had opted for Wheatstone's TechLine furniture, and found the results gratifying. "The studio cabinetry was 'value' in name only," he said. "It was a breeze to put together and looked beautiful. Wheatstone pre-cut it for our equipment; all we had to do was drop it in and go."

The simplified wiring needed to interconnect control surfaces to routers saved time and provided a bonus. "With the Generation 6/Bridge Router system, any source can be made to appear on any control surface in the building; punch once, use everywhere," said Poole. "I didn't think this would be that useful before I tried it, but now, we can't live without it."

More time was saved when a Wheatstone rep reprogrammed the console default assignments and e-mailed them to Poole so they would be ready to go on Monday morning.

Crawford Birmingham uses the RCS/Prophet NexGen automation; its flexibility helped with the move, as Poole



Morning host Ken Lass at the Wheatstone G6 Control Surface in WDJC's control room. The studios are in a line, with windows between, so that you can see through the receptionist's area and into the WXJC control room,' said Poole.

TOP STUDIO BUILDOUTS

INSIDE Motor Racing Network

by Tom Vernon

As "The Voice of NASCAR," the Motor Racing Network completed a studio move last year from Daytona Beach, Fla., to Concord N.C., close to NASCAR headquarters in Charlotte.

MRN provides coverage of NASCAR races to more than 700 affiliates and produces segments for Sirius Satellite Radio's NASCAR channel. As MRN Chief Engineer Doug Watson said, the new MRN headquarters already had a NASCAR heritage.

"Our new home is Darryl Waltrip's old race shop, complete with garage and

and air-conditioned garage large enough to house the two tractor trailers and other vehicles used for MRN's remote broadcasts.

"We can do our regular and off-season maintenance indoors and without having to lug tools all over," said Watson.

He and his engineering staff of two handled the studio construction themselves. From start to finish, the project took about two weeks.

Watson's goals for the new facility were simplicity and consistency. "We wanted everything identical, so that once you train someone on one room, they can operate all the rooms," he said. "The control rooms are mirror images of each other, and the



MRN Edit Station and Control Room

edit suites are identical as well."

Furniture was provided by Studio Technologies; the Media Technology Group served as acoustical consultants. Equipment was purchased through Crouse-Kimzey and Broadcasters General Store.

Major equipment includes Axia Element control surfaces, Telos Nx12 phone hybrids, an ESE master clock system, Tannoy Reveal studio monitors and Scott Studios (now Google) automation software.

Watson praised the plug-and-play nature of IP audio with the Axia consoles as a key ingredient to the fast studio build. "Once we got the hang of it, one engineer was able to go from sealed boxes to

offices," he said. "We built two identical control rooms and four audio edit suites for MRN."

The space also includes three video editing rooms for Nextel Vision, a division of MRN delivering trackside on-screen entertainment.

"We did our first show out of here on Oct. 2, and have been doing two or three feeds a day ever since."

MRN's activities follow the NASCAR calendar, with off-season starting in late November; things geared up again full-force with the mid-February start of the 2008 NASCAR season.

The new facilities also include a heated

explained: "NexGen has so many options to stay on the air. For example, control room computers can be put in 'local database mode' and operate stand-alone for up to two days. While we were juggling STLs and moving the audio servers to the new building, we put the PCs at the old studios in this mode to stay on the air."

Poole also had to move five STLs: two T1 lines and three microwaves. Through careful juggling of signals onto standby STLs, he was able to get the gear moved without a loss of airtime.

For AC backup, Crawford installed a 45 kW generator, sufficient to keep each studio live in the event of a power failure. They also placed three 2200 watt, and five 1500 watt APC UPS units into service to hold things together until the generator comes on line.

Through a Herculean effort by Poole and his team, the five-station move was completed over a weekend. All that remained was the celebration.

An evening of ribs at Dreamland Barbecue allowed the group to savor their accomplishments.

Tom Vernon is a frequent contributor to Radio World.

wired studio in about 40 minutes. The interconnecting hub is just five Cat-5 cables." He added that the only soldering in the project was to build GPIOs for contact closures to signal affiliates.

Once Watson and his staff got the hang of programming with Axia's Pathfinder software, they were able to do some creative engineering projects. One involved automated switching during solar outages. At the right time, Pathfinder switched from the satellite uplink to telephone hybrids and back after the outage had passed.

MRN is a high-pressure, high-reliability operation so backups are essential. The primary signal feed is via a satellite uplink from MRN's Concord, N.C., headquarters to ABC in New York, which takes care of distribution to affiliates. The backup is a Telos Xstream to New York. When all else

fails a Comrex Vector is used, although Watson said this option has no contact closures, and is just a way of staying on the air.

The move also provided MRN with an opportunity to memorialize two of its long-standing employees. MRN control room A also is known as the Barry Hall studio in honor of the lap-by-lap announcer who recently celebrated his 50th year at the mic. MRN control B is named the Harry Howard studio, in honor of MRN's first engineer, who recently retired. Bronze plaques in the studios note the contributions of both men to the organization.

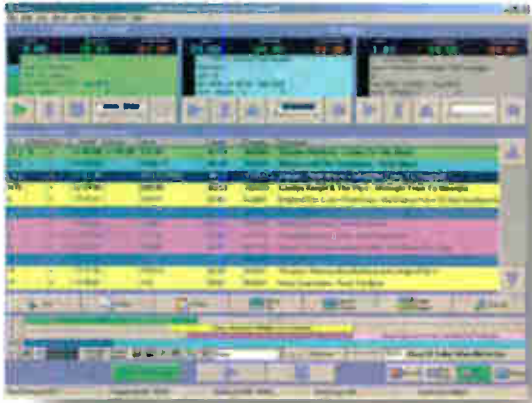
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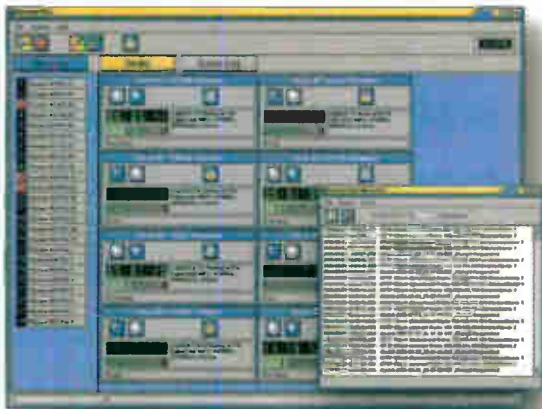
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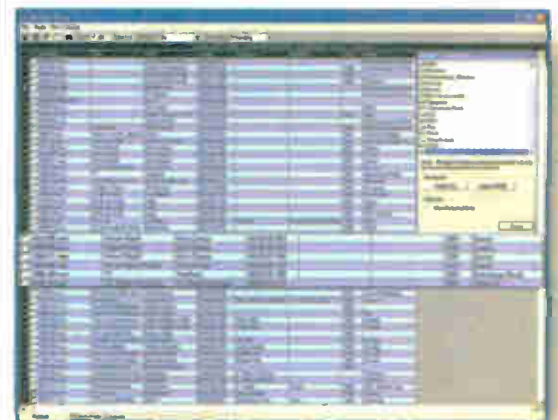
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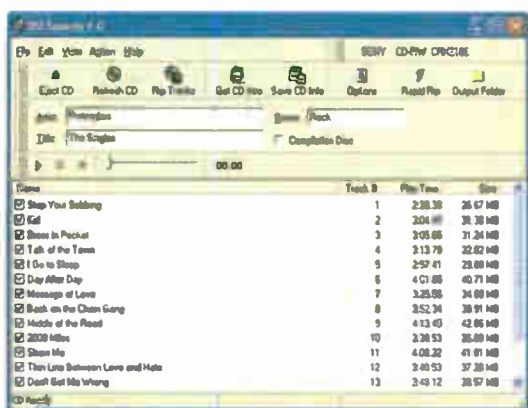
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PRODUCT EVALUATION

R-09HR Enables Firm Grip on Recording

Roland Packs Rubber-Coated Handheld With Multiple Modes, Omni Mic, Monitor, OLED Screen

by Mark J. Pescatore

Digital audio recorders are all the rage; new professional models are appearing with regularity.

The latest portable linear PCM recording option from Roland is the Edirol R-09HR. While its body design is a bit plain, it's functional. The rubber-coated body is easy to grip, and it weighs about 7 ounces so you get less fatigue during handheld interviews than some of the heavier units out there, such as the Sony PCM-D50. The unit runs on two AA batter-



ies or DC power.

Recessed controls and ports, including mini mic and line inputs, are found on the back and sides of the recorder. There is no XLR connection, but there is a small preview monitor (a valuable feature often overlooked by more expensive units) as well as a mini headphone jack.

The R-09HR sports a stereo, omnidirectional condenser microphone on top that is protected by thin metal rings.

For simple menu navigation, the front panel features a directional pad

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Product Capsule: Roland Edirol R-09HR Portable Linear PCM Recorder

Thumbs Up



- ✓ Rubber-coated body for easy grip
- ✓ Lightweight
- ✓ Preview monitor
- ✓ Built-in omnidirectional condenser mic

Thumbs Down



- ✓ Adjusting the audio level during recording will distort the audio

PRICE: \$459 list

Contact: Roland Systems U.S. at
(323) 890-3718 or visit
www.rolandsystemsgroup.com.

that doubles as record and playback buttons. A small OLED screen offers a bright white-on-black display of your level meters, record time and battery status.

There's no built-in memory. The R-09HR stores digital recordings on SD or SDHC cards, which can be accessed from the bottom of the unit (along with its USB port) by opening the protective cover. You can record about three hours of CD-quality sound on a 2 GB SD card.

Plenty of WAV file record modes here, with sampling rates of 44.1, 48, 88.2 and 96 kHz, each of which offers 16 or 24 bit depth. Frequency response is 20 Hz to 40 kHz.

You also can record MP3 files (sampling rate 44.1 or 48 kHz, various bit rates), but it's not the right choice for quality audio; too much compression.

The R-09HR has one significant flaw. Adjusting the audio level during recording will distort the audio. You can adjust the level from 0-80, but it doesn't flow like a pot or slider on an audio board; it changes step by step. I found that a setting of "40" gave me plenty of loudness without peaking.

I compared the R-09HR to the Sony PCM-D50 (list price \$600) to see if the less expensive Roland could compete.

I set both recorders to record 16-bit, 44.1 kHz WAV files, set them an equal distance away and then recorded the same voiceover and interview simultaneously on both units. Both units delivered good audio, but the Sony's built-in mics have a richer, more broadcast-friendly tone.

When I plugged in my old Audio-Technica Pro 3H mic and read the same script into both recorders, there was no discernible difference in quality.

While the sturdier, more expensive Sony PCM-D50 has the convenience of built-in flash memory and better sound from its built-in mics (plus the fact that you can ride the audio level without distortion), there's a lot to like about the Edirol R-09HR.

It's a solid piece of gear with a brighter screen and better menu interface than the Sony model. It's also smaller and lighter, has a built-in speaker and offers similar recording specs at a much lower price tag.

Mark J. Pescatore is the editor of RW's sister publication *Government Video* magazine. 

PRODUCT EVALUATION

Get Rid of the Evidence With Tape2PC

by Ty Ford

Audiocassette tapes: Nearly everyone over a certain age has more than plenty of them.

My wife had so many that I bought a big, sealable plastic tub to put them in so they would be stable and contained until something could be done with them. We seldom spoke about them afterwards ... until now.

Memory Lane

The cassette was always about portability, not fidelity. However, times have changed, while listening habits and consumer audio technology have changed even more.

For most folks, a cassette deck with a USB out and a simple PC recording program such as Audacity is a great way to reclaim the soundtrack of your life: old radio broadcasts, mix tapes, live music or old studio dubs, speeches, lectures and even messages on hold.

There are memories on some cassettes you probably don't want to remember, but I guarantee there are some you do. For these reasons, a product such as the Ion Audio Tape2PC cassette archiving system exists.

The Tape2PC consists of a cassette deck with analog and USB output, USB cable, stereo RCA cable, software CD and quick Start Manual, all for only \$199.

Once you get the audio into the computer, you can burn CDs or squirt it to your iPod or cell phone. Is it a plausible professional tool or cheap audio Ginsu knife? Let's find out.

Just because the name Tape2PC seems to ignore Mac users, don't fret. The box and software speak "Mac" just fine. In fact, it brings up the files in iTunes and you can burn your CD right from there.

I did my tests using a 500 MHz Mac G4 Sawtooth running OS X 10.4.11, but Tape2PC works with any Mac at OS 9+ as well as PCs running Windows XP and Vista as long as you have a free USB 1.1 port or higher — that's about as universal as it gets.

The dual-well cassette tape drive is not elegant, but its utilitarian metal cabinet feels solid and the controls are easy to operate, albeit slightly stiff. I'm not sure why you'd want to make cassette dubs at real time or high speed, but you can do that with the Tape2PC transport even when it's not connected to a computer. There are switches for noise reduction and Chromium Dioxide tape.

The stereo RCA I/O jacks on the back allow integration into the standard record/tape monitor loop system you've known for years. If you have other consumer audio gear, you can use the RCA jacks to throughput to the USB output and go right to the host computer. There's a small tape counter meter on the front panel. There is no tweak for balance adjustment and no fast-speed audible cueing.

In use

The EZ Audio Converter software that comes with the kit is easy. Make sure you take a trip to your computer's audio preferences panel before recording; although I could plainly hear Spirit's "12 Dreams of Doctor Sardonicus" cassette coming out of the Mac, nothing was recorded the first time because I hadn't chosen the USB



codec from the input selector of the Mac sound preferences panel.

After you record, EZ Audio Converter presents you with a naming screen for the cassette title, artist and individual cuts. Fill this out as best as you can and, on Macs, the info will be transferred to iTunes. If

you entered incorrectly (as I did) you can change the info in iTunes.

Before burning your CDs, don't forget to visit the iTunes preferences burn screen to choose how many seconds you want between each cut. If you want as close to the original experience as possible, choose "none."

You can use the Audacity software included in the package to record both sides without dropping CD IDs, and then go back and select each song manually and export it. Audacity uses a proprietary audio file format that's reminiscent of the AKG DSE-7000 workstation. Audio is recorded in chunks of 1 MB or less.

They end up in the project folder for that

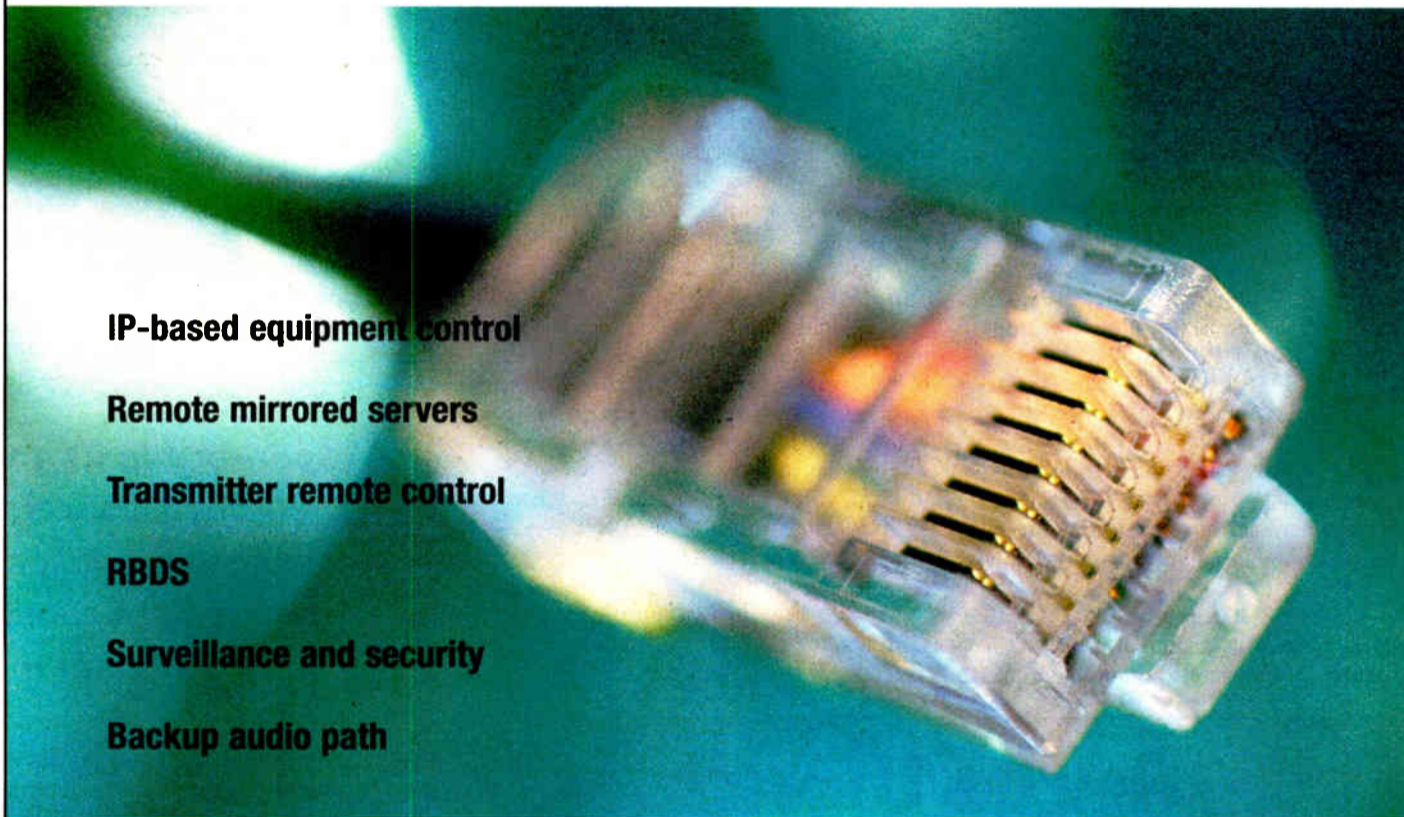
particular transfer if you set each cassette up as a new folder. As a result, one cassette can have a huge collection of strangely numbered files representing what you have recorded. There are many tweak effects plug-ins. Audacity is a free program.

My three-speed Audio-Technica ATPL-120 turntable has a little built-in preamp that allowed me to plug the turntable right into the RCA jacks on the rear of the cassette deck. I grabbed an album off the shelf and effortlessly made a CD from a 1973 live Mickey Newbury LP. If your turntable isn't turning anymore, Ion also sells a turntable with a USB output and one with an iPod socket.

For more information, visit www.ion-audio.com

Ty Ford is a frequent contributor to Radio World. Reach him at www.tyford.com.

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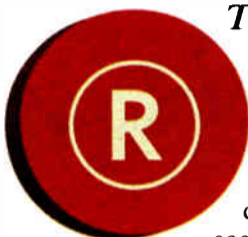
COLE'S LAW

Sponsor ID Comes Under Scrutiny

The FCC Expresses Concern About the Practice Of 'Embedded Advertising' in TV and Radio

by Harry Cole

ing steps to rein in embedded advertising.



If only you could defeat the high-tech security perimeter and gain access to the otherwise impenetrable Cole's Law Compound, you could see the Dell® computer on which this is being typed, the Washington Redskins® poster above some Office Depot® banker's boxes next to a Hewlett-Packard® printer, a Beatles® mouse pad, a Mosrite® guitar switch plate or any number of other readily identifiable commercial products.

But could you read that last sentence on the air? And if you did, would you have to worry about sponsorship IDs?

This is not an idle question.

The Federal Communications Commission has released a Notice of Inquiry and Notice of Proposed Rule Making (NOI/NPRM) in which it expresses concern about the practice of "embedded advertising," and its two primary components, "product placement" and "product integration," in current programming, particularly as those practices implicate the sponsorship identification rules.

Although the NOI/NPRM is less than clear about what actions the FCC might possibly take in this area, it's safe to say that the commission is thinking about tak-

Consideration

Let's start with the basics.

Section 317 of the Communications Act requires each broadcaster specifically to identify, on air, any programming material for the broadcast of which "valuable consideration" — meaning any money, goods, favors or anything else that's worth anything — has been provided or promised to the station.

The statute also requires the licensee to "exercise reasonable diligence" to determine whether any consideration has changed hands in connection with the production of the program before it gets to the station. And Section 508 requires non-licensee folks involved in program production to disclose receipt of such consideration either to their employers or to broadcasters airing the program.

The sponsorship ID rule was not aimed at obvious spots, such as your standard McDonald's spot, which essentially identifies itself.

The rule entered the law in the early 1960s, largely in response to the payola and quiz show scandals of the late 1950s. In the former, disc jockeys were found to have been taking money on the side to promote certain records on the air. In the latter, it turned out that money had



changed hands during the production of some quiz programs, as a result of which certain products or companies got themselves mentioned repeatedly on air.

Worried that over-the-air ads arising from under-the-table deals might somehow dupe a guileless and unsuspecting public,

audiences in particular are affirmatively skipping traditional commercial breaks; accordingly, advertisers, with the cooperation of program producers, have gravitated toward embedding techniques to assure access to the audience.

The FCC is concerned that such embedding, when combined with established sponsorship identification techniques, may not adequately inform the public of the nature — or even the fact — of the embedded advertising. Hence the NOI/NPRM.

The NOI/NPRM is short on detail. While the impetus clearly derives from the video side of the universe, the NOI/NPRM expressly includes the radio industry within its scope.

So when the commission suggests that it might require "concurrent" IDs — that would mean the sponsorship ID would have to air simultaneously with the reference to or depiction of the sponsor's product — the commission asks whether such concurrent IDs would be "more or less disruptive to radio broadcasters."

It also asks whether sponsorship IDs on radio should be of a "certain duration" or a "certain volume."

Sponsorship ID on radio is probably only a peripheral concern of the commission, but the imposition of some form of 'concurrent ID' requirement could complicate things for radio far more than for TV.

Congress imposed the sponsorship ID requirement (which the FCC then dutifully included in Section 73.1212 of its rules).

Generally speaking, there appears to have been little problem with undisclosed sponsorship since the rule was first imposed almost 50 years ago.

Periodically one would hear stories — possibly accurate, possibly apocryphal — of questionable record company promotional practices, and more recently the commission (at the prodding of a couple of "public interest" organizations) has questioned the use of "video news releases" on the TV side.

But by and large, sponsorship identification has not been a matter of particular urgency for years.

But the FCC seems to think that that has now changed.

Placement

The new concern arises from the practices of "product placement" (which involves the mere use of commercial products as props) and "product integration" (which entails the inclusion of such products in the dialogue and/or plot of a program).

Various trade press sources have reported that, with the increased use of digital video recording devices, television

The NOI/NPRM also asks whether it should be presumed that some tit-for-tat exchange has occurred (and, therefore, that a sponsorship ID is required) when a radio host provides a personal, on-air endorsement for goods or services that may have been provided at little or no cost.

On that last point, the commission wonders whether such endorsements should be treated differently if they are "made to sound like they are part of a radio host's on-air banter rather than an advertisement."

Complication

Sponsorship ID on radio is probably only a peripheral concern of the commission, even though the NOI/NPRM is clearly targeted to both TV and radio.

But the imposition of some form of "concurrent ID" requirement could complicate things for radio far more than for TV.

After all, on TV the licensee can run a crawl or insert a "pop-up video"-style identifier that, while intrusive and distracting, would still permit the essential program to continue.

On radio, by contrast, an audio ID would have to be imposed over the program audio, which would at least interrupt the program, if not make it difficult

See EMBEDDED, page 30 ▶

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Radio Profit and Fun With Furniture

by Mark Lapidus

He was single — a cigarette-smoking, beer-guzzling, epithet-spitting car mechanic. She was a church-going mother of five who missed her kids.

How did they end up in the same bed?

It all started with 20 people. Some were lying down, others were sitting up, while the rest of them sat on the floor and leaned against the waterbed. Nobody knew each other.

The rules were simple: The person with the longest continuous contact with the bed won the entire waterbed suite, valued at \$3,000.

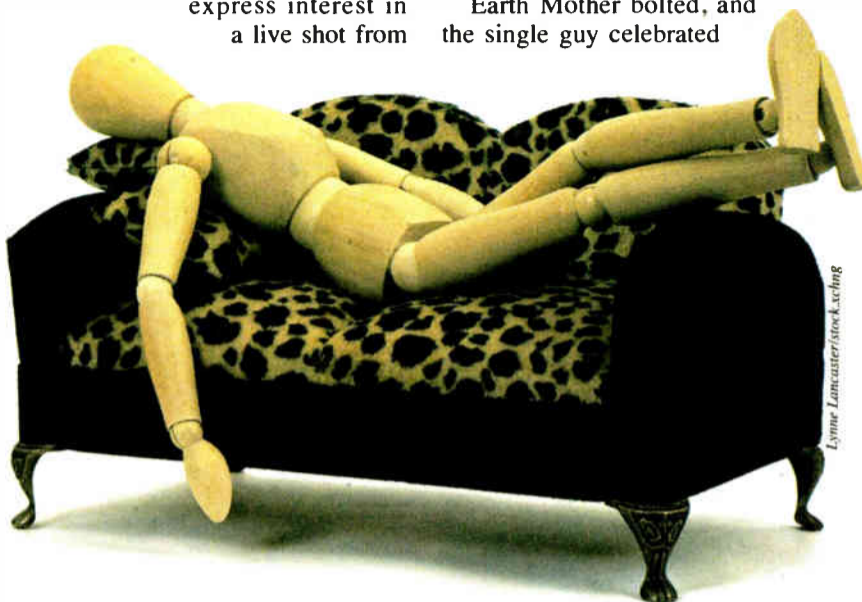
The contestants received an hourly five-minute break to use the restroom or to walk around. If they were late from their break, they were out. We catered the meals. A broadcast loop was installed next to the bed, so we could put them on-air whenever we wanted.

Little did we know the action would go on and on ... and on.

The event attracted two full-page newspaper stories and coverage on every local TV newscast. After nine-and-a-half days, "Good Morning America" called to express interest in a live shot from

the store the next morning. But even that level of attention was not enough to keep both final contestants in bed until the next day.

Earth Mother bolted, and the single guy celebrated



PROMO POWER
BY MARK LAPIDUS

furniture store. Provide them with beer and snacks from a sponsor. Have them bet on a series of games over four Sundays. Eliminate one each week.

The winner takes home the La-Z-Boy, the TV and his weight in beer. Have them on the morning show throughout the week to discuss strategy.

Sleeping Around: Choose 10 couples to come to a mattress store. Blindfold the men while the women try out every bed until they pick their favorite. Then blindfold the women while the men pick their favorite.

The couple who picks the same mattress wins it. In case of a tie, whichever couple can stay awake the longest wins.

Beside Manor: Have a character from your morning show move into one of those furniture showroom model bedroom

See FURNITURE, page 33 ▶

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with a six-pack.

Here's what I learned: 1) Marathons are fun because they're unpredictable; 2) The way you paint a picture with the contestants' character traits can make a great story on-air and in other media; 3) Furniture stores will buy promotions.

La-Z is good

With reality TV still doing so well, don't forget the furniture! Aside from a bed marathon, check out these ideas:

La-Z-Boy Sundays: Put four contestants in La-Z-Boys in front of TVs at a

Embedded

▶ Continued from page 28

to comprehend. It is not clear how such a new requirement could be said to serve the public.

The commission has demonstrated an overheated interest in "sponsorship identification" for the last several years — recall the multiple VNR inquiries, as the most obvious example. The NOI/NPRM is in line with that interest, but it extends it in a way that could have a serious adverse impact on broadcast operations.

Radio licensees in particular should be concerned that perceived problems on the TV side may lead to significantly burdensome, and unnecessary, new obligations on the radio side.

One might also ask what purpose would be served by such a requirement?

While the NOI/NPRM invokes the "public's right to know who is paying," the NOI/NPRM does not dwell on the questions of whether the public is perhaps smart enough to realize that a disc jockey lavishing plaudits on a product might not be entirely altruistic.

At bottom, the commission appears to assume that there is in fact some overriding public interest in requiring sponsorship identification — but the commission fails to explore exactly what that public interest might be.

Increased regulation of embedded advertising inevitably will draw the commission even more deeply into content regulation than it has previously ventured — and, as a result, the commission will

be drawn even closer to obvious First Amendment issues that should not, cannot, be resolved by broad platitudinous references to "the public's right to know."

Ideally, the commission will in the end seek to avoid the treacherous constitutional waters toward which it has set sail. But if it does not, the substantial burdens on broadcasters that would likely flow from increased sponsorship ID requirements,

The commission has demonstrated an overheated interest in 'sponsorship identification' for the last several years.

combined with the substantial content regulation that would necessarily accompany such requirements, ultimately will require far greater justification than the commission has thus far demonstrated.

The comment and reply comment deadlines for the NOI/NPRM have not yet been established. Check our blog at www.commlawblog.com for updated information, which will be posted when available.

Harry Cole is a member in the law firm of Fletcher, Heald & Hildreth, P.L.C. He can be reached at cole@fhhlaw.com.

Radio World welcomes other points of view to radioworld@nbmedia.com.

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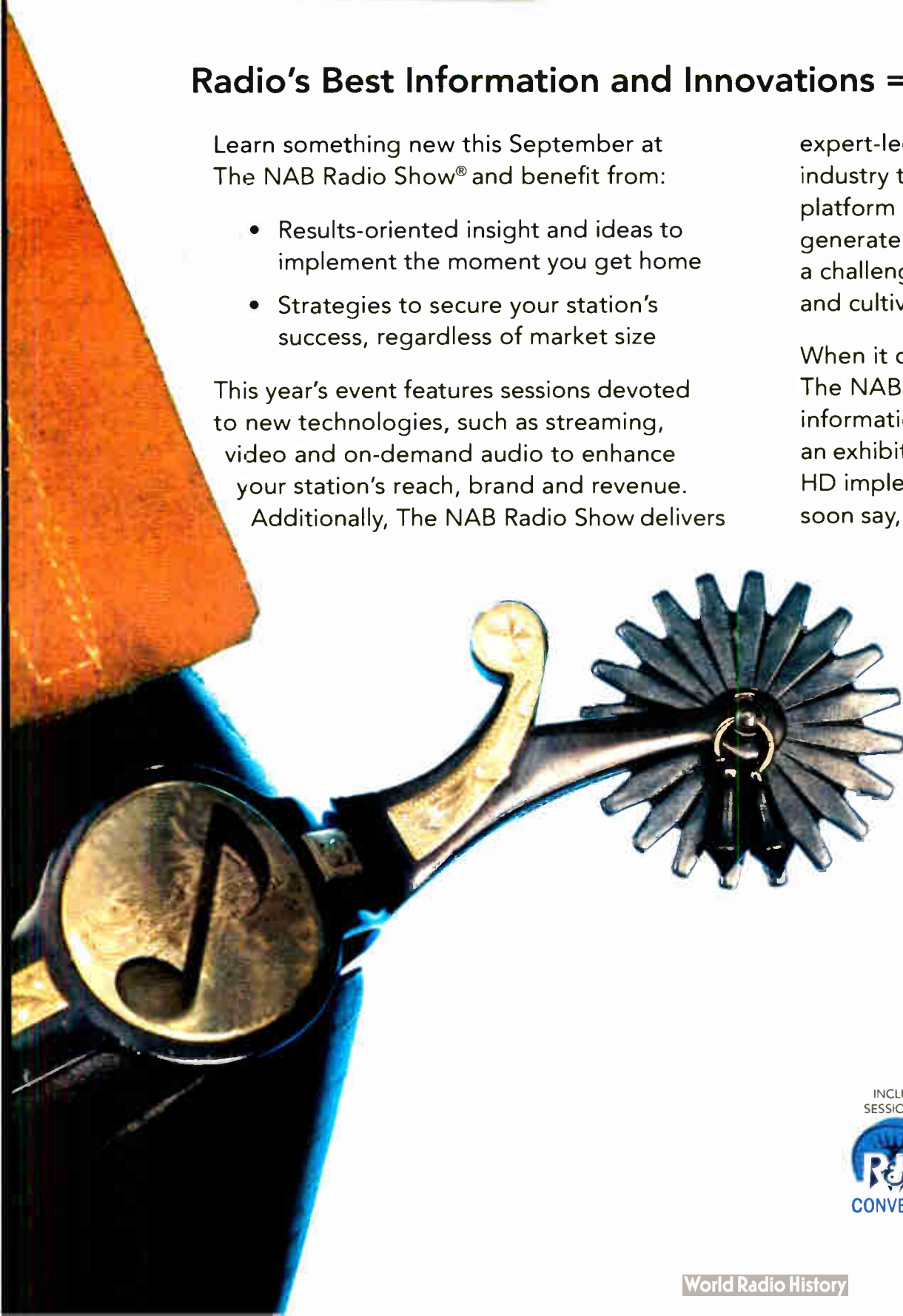
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This year's event features sessions devoted to new technologies, such as streaming, video and on-demand audio to enhance your station's reach, brand and revenue. Additionally, The NAB Radio Show delivers

expert-led sessions addressing the hottest industry topics, such as: thriving in a multi-platform world; using new technologies to generate new revenue streams; managing in a challenging environment; developing talent; and cultivating the next generation of listeners.

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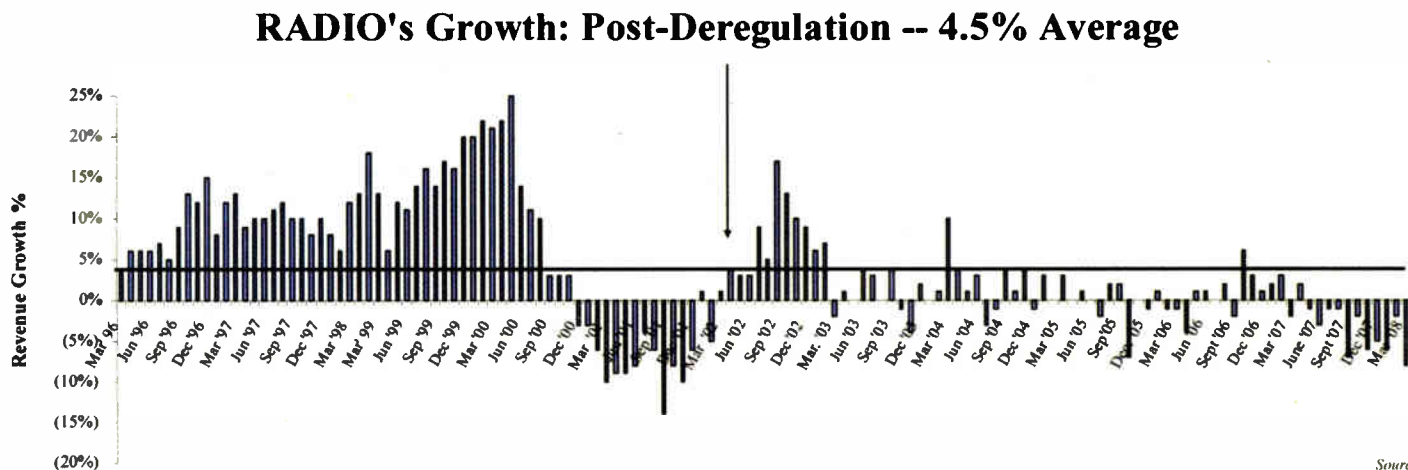
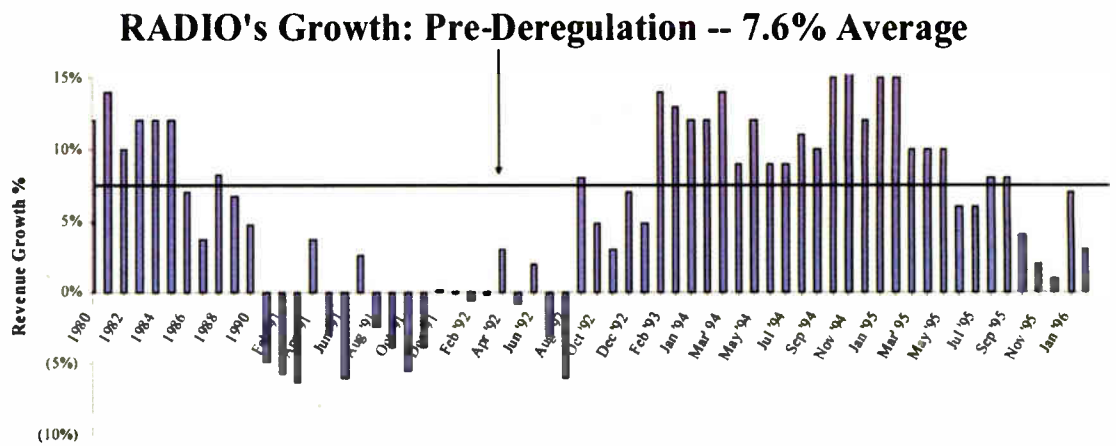


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On a Down Slope

We noticed these charts in a spring financial report from Wachovia Capital Markets Senior Analyst Marci Ryvicker and Associate Analyst Timothy Schlock. They provide a vivid visual representation of macro U.S. radio revenue trends in recent years. The charts show growth in U.S. radio revenue since 1980, divided into pre- and post-1996 deregulation periods. Core statistics are from the Radio Advertising Bureau. The black horizontal lines in each graph are the average for the given period.



Source: Radio Advertising Bureau

Esayan: A Targeted, Custom Approach

by Paul Kaminski

Deborah Esayan says that when it comes to online presence, radio enjoys synergistic advantages over other media.

The co-president of Emmis Interactive feels that radio has a unique relationship with its listeners, one that allows it to gather information like no other medium can.

Esayan talked about how new technologies can be used to attract new revenues during this year's NAB Show and used examples from Emmis Web sites to discuss how to maximize revenue from a site and develop measured interactive campaigns.

She said less of Emmis' online revenue is derived from the traditional cookie-cutter approach of banner ads and tiles, while substantially more is from solutions customized for advertisers.

The offerings necessary to compete in a new media market require two main ingredients, she said: integrated multi-touchpoint campaigns and measurement of results.

Such an approach also is not suitable for all sales people. In fact it can be a hard way to make money on the Web.

"This is about strategic selling; this is about meeting an advertiser's needs. It is

a very local approach, but it is extremely successful and rewarding and results in repeat sales at higher levels of complexity and more money."

A targeted custom approach is a good fit for existing clients but requires a commitment from all levels of the company.

"This only works with management support. You can have senior management behind it; but if local management is not dialed in, it's not going to go anywhere. People have to know that they are being supported as they try this new experience."

Sharper focus

At Emmis, Esayan says the interactive component can and does offer powerful information and opportunities to advertisers.

For example, a station Web site can refine leads and define a customer base more clearly, even down to the type of contests the listener plays and songs they request. This can help bring the market into sharper focus for a client.

That kind of information helped an Emmis station develop a campaign for a marketer of rock 'n' roll memorabilia. The campaign provided the marketer a small but powerful customer base — one Esayan said would not have been possible were it not for the music the station played, the relationship between the station and listener and the interactive opportunities the Web site provided.

As a result of this focused campaign, the advertiser experienced strong sales to the point of selling out of some merchandise.

A powerful example of radio's ability to capitalize on its relationship with listeners was a promotion for a hip-hop station called "Pimp My Grille."

Listeners entered online and explained why they needed a dental makeover. An advertising dentist provided the dental work for the winning entrant.

Esayan said the station's relationship

with its listeners was strong enough that entrants felt they could share some very personal details and reasons for the makeover.

This produced compelling content that was written and photographed by the entrants themselves and that evoked powerful emotions. Yes, the content consisted of pictures and words, she acknowledged; yet this was local radio at its best.

Esayan also suggested that advertising not overwhelm the content.

"Just like running too many spots per hour can pollute your on-air program, you have to be careful about running too many ads on your home page. Every time you do that, you have the potential to erode the listener's trust" in your station.

Also, the application and execution of your interactive component will not come cheap.

"If you think you're going to do this well for free, you're crazy, because that's not possible," she cautioned. "Technology is costly, good technology is even more costly; but the ability to reap the benefits from it is huge."

Stations may wish to explore partnering with organizations such as schools to achieve mutually beneficial objectives — for instance, video on your Web site.

"It's amazing how fast organizations will grow with interactive, once they start doing it. It is a lucrative opportunity; it is exciting. It is great for your advertisers."

"But you do have to approach it thoughtfully. You have to train your staffs and make technological investments. It wasn't the easiest way, but [it is] the most sustainable way to run a profitable interactive business."

Esayan will take part in a "super session" panel discussing new media opportunities during the NAB Radio Show in Austin. Executives from CBS Radio, ESPN Radio and Triton Media Group are also expected to take part.

Paul Kaminski is a Radio World contributor and contributor for CBS News Radio; he writes RW's "Radio Road Warrior" column. His e-mail is motorsportsradio@msrpk.com.

Furniture

► Continued from page 30

set-ups for a week — and don't allow them to leave the store. Write up a plot line of what you want to happen to them during their stay.

Furniture for a Cause: You might be surprised at how many people in your audience will volunteer to make furniture, to be sold for a cause. Have these handcrafted pieces taken to a furniture store for a one-day sale that solely benefits the selected charity. You can sell each piece with a set price, or do an auction.

Dealing in Dining Rooms: Play a day of Texas Hold 'Em around every dining room table in the store. Have contestants make a donation to charity to participate. The winner takes home the dining room set at which he is playing.

The World's Largest Yard Sale: Furniture

stores typically have large parking lots. Invite your listeners to bring all of their second-hand stuff to a huge annual yard sale you do in the lot.

Charge a nominal entry fee per table, the proceeds of which go to charity. Individuals get to keep their profits. If the furniture store is smart, they'll provide free refreshments and a huge sale inside.

TV Marathon Weekend: Find a furniture store with a gazillion TV sets and show a certain TV show on all the screens at the same time — like a "Lost" weekend marathon. Include free popcorn and drinks. Everyone who stays for the entire time is eligible to win an HD set.

One of the earliest sight gags on the tube was watching Dick Van Dyke take his weekly tumble over a misplaced ottoman. Just try going a day without furniture! It's everywhere — waiting for you to do something funny with it.

Mark Lapidus has been Radio World's promotions guru for many years. Contact him at marklapidus@verizon.net.

Triton Digital Works With NowMedia

Triton Digital announced a partnership with NowMedia Corp. through which Triton is offering Radio 3.0, an interactive social broadcasting platform, to radio stations.

"Media companies today recognize the engagement value of content created by their audiences," the companies stated. The deal, they said, helps stations "extend the engagement of their broadcast programming to include live video, chat, media sharing, widget distribution and rich media advertising."

The Radio 3.0 social broadcasting platform allows stations to stream live video of studio talk shows or events from remote locations. During a broadcast, listeners can interact with air personalities and each other through the media player and personal profile pages.

Radio 3.0 also provides widgets so that the broadcast events can be watched, within Facebook, MySpace or any third-party site where the widget has been embedded.

Subsidiary Triton Radio Networks recently acquired Jones Media Group and its companies Jones Media America, Jones Radio Networks and JonesTM from Jones International Ltd.

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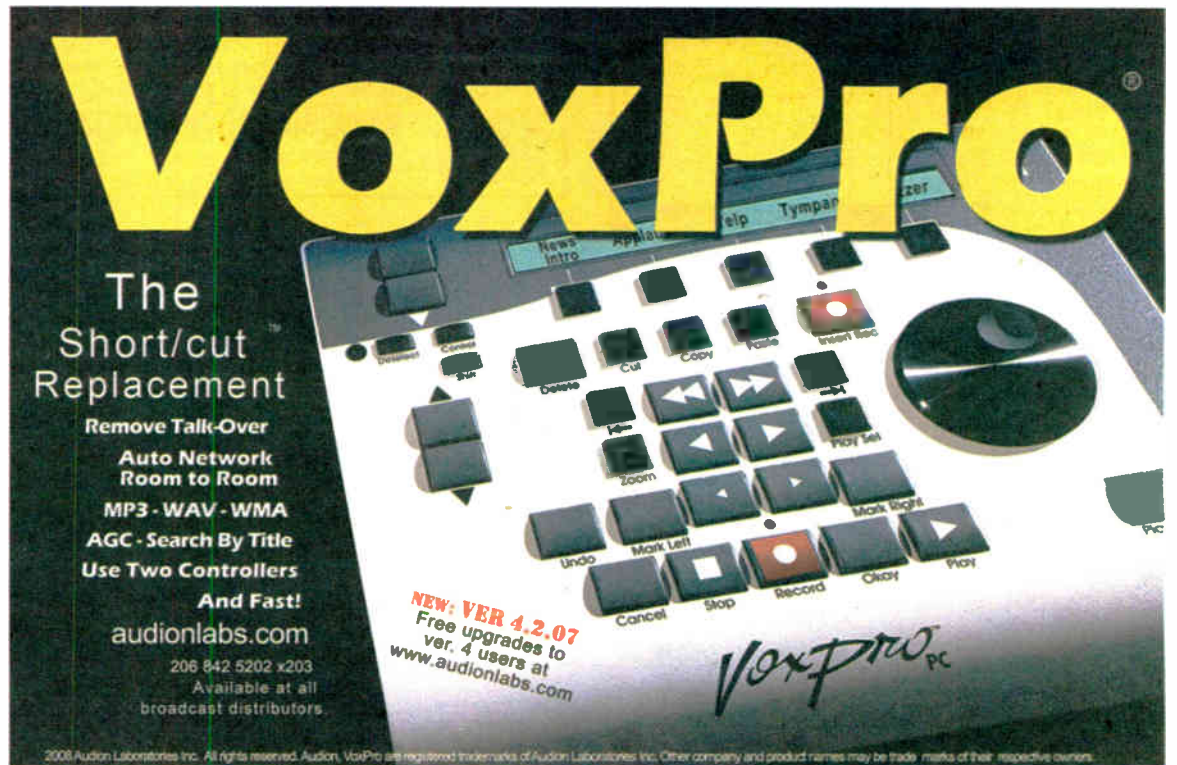
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27.5	KW	1988	Continental 816R-4B
30	KW	1988	BE FM30A
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GUEST COMMENTARY

BBG Should Enhance SW, Not Replace It

'Consumed By New Technologies,' It Should Improve Shortwave, Not Replace With the Internet

by George Woodard

The author is a former vice president of engineering at Radio Free Europe/Radio Liberty and director of engineering of the International Broadcasting Bureau. He is now retired.

Recent commentary in Radio World discussed the pros and cons of various mediums for international broadcasting (*Reader's Forum*, March 26).

It used to be, until about 1994, that shortwave was both the preferred and generally accepted medium to reach mass audiences across international borders. The end of the Cold War and the collapse of Soviet-style communism circa 1990 caused a natural (and correct) rethinking of what the medium, or mediums, of the future for IB should be.

U.S. government broadcasters such as Radio Free Europe/Radio Liberty and the Voice of America, who, of the U.S. broadcasters, were involved in the winning of the Cold War (from an IB perspective), looked immediately for fresh and effective ways to reach new, changing and expanding audiences.

RFE/RL and VOA began a highly successful campaign to launch local AM and FM former Soviet and Eastern Europe "affiliate" stations to carry their respective programs.

Trigger-happy

In the early days of this endeavor most RFE/RL/VOA/and BIB/BBG members and staff realized that, due to the history of conflict between western and Soviet societies, the so-called "affiliates" could always "pull the plug" on the arrangement.

As time went on, however, the ensuing euphoria over having local AM and FM outlets in countries where RFE/RL and VOA were once banned seemed to some BBG members and staff to dim the possibility of ever having the "plug pulled."

The "pull-the-plug" reality, however,

may be beginning to sink in to some current BBG members as they see what is happening in places like Azerbaijan, Belarus, Ukraine, Russia, Georgia, Uzbekistan, Kazakhstan and many others, not to mention Afghanistan, Iraq and most countries in the Middle East — some of whom profess to be our friends yet are reluctant to allow us access to their radio stations, even for a fee.

In addition to local affiliate placement, there also is a new and renewed interest by many past and present BBG members in satellite radio (and television, as well) and Internet audio and video streaming.

These developments and pursuits are appropriate, though too often they are accompanied by an unthinking euphoria in the BBG that, instead of making the IB



George Woodard

direct experience with the current BBG who, except for one member, are all new to me. But I see nothing to make me think this has changed since I retired.

It was not always that way. The predecessor to the BBG was the Board for International Broadcasting. The BIB I was familiar with was made up of such luminaries as James Buckley, Malcolm S. (Steve)

The BBG uses the cost argument against shortwave. That logic is flawed. The Internet, when comparing apples to apples, is actually less cost-effective at present.

picture clearer, actually clouds the scene.

Further exacerbating the situation is the U.S. government's Broadcasting Board of Governors.

The board is made up of well-intentioned, patriotic and highly successful individuals from the private sector. However its experience in international public matters, foreign policy and diverse cultures at the level of the common citizen was — in my experience and to put it kindly — somewhat limited.

My tenure with the BBG was from about 1994 to 2000, and my experience was that instead of listening to experts who have devoted all or most of their lives to IB matters, the BBG instead were consumed with its own brilliance, and self and group importance. I have no

Forbes, Michael Nowak, James Michener, Ben Wattenberg, Lane Kirkland and others who, despite their proven and recognized expertise, actually listened to the many and varied disciplines of IB experts before making up their minds on a topic.

The BBG has been consumed by new technologies such as the Internet, satellite and local AM and FM placement almost since its beginning in about 1995.

For example, a big "to do" was recently reported in several media outlets about Internet Denial of Service (DoS) of RFE/RL Internet broadcasts to Belarus. The media did not mention, however, that prior to these DoS attacks, RFE/RL was averaging very few page views per day on its Belarus Web page — a pitance by normal Internet standards, "in

the noise" compared to historical shortwave audience numbers.

Yes, the Internet is a technology of the future and also the present. Its potential is almost unimaginable and growing every day. Every news broadcasting organization in the United States — ABC, CBS, CNN, Fox, NBC, local AM/FM/TV stations — have remarkable Web pages to enhance and expand their core delivery medium.

Enhance and expand, not replace. Yet the BBG wants to use mostly the Internet to replace its historical radio medium: shortwave.

I have a former colleague whose son is serving in Iraq. The son wrote his father an e-mail saying that one of his military colleagues recently asked him, "Where is the VOA? All we hear anymore is the BBC." That whole story is more complex, but the question does deserve an answer.

The BBG often uses the cost argument against shortwave: "The Internet is more cost-effective, and further, the Internet is where the competition is."

That logic is flawed.

Comparing apples to apples, the Internet is actually less cost-effective at present.

One million real-time listeners, small by shortwave standards, entail very high cost bandwidth requirements on the Internet. The competition, by start-up bloggers for example, could not possibly afford being on shortwave radio. The business example should be: "Go where your competition can not follow."

The U.S. government can afford shortwave radio.

For example

Let me close with a story that elaborates the BBG's past closed mentality. (I am referring only to known past group mentality from my own personal experience, though there is no evidence that leads me to believe the current crop is any better.)

During the 1998/99 Yugoslavia war, I was DE of the IBB. The State Department asked the BBG to put VOA on the air on FM into Belgrade. The closest we could get to Belgrade was about 120 miles, from the hills/mountains of either Bosnia or Romania.

I tried as best I could to explain to both the BBG as well as "State" that 120 miles was a long distance for FM, and that whatever little signal would reach Belgrade could be easily jammed by a 100 watt or less transmitter and simple antenna from a tall building in the center of Belgrade.

Neither the BBG nor State listened to my argument. They said that young people in Yugoslavia listened only to FM. Where they got this information was never explained.

We proceeded to put 5 kW FM transmitters on the air (with 13 dBi gain Yagi antennas) from the mountains in both Bosnia and Romania, with the antennas pointed to Belgrade. The whole operation took less than six weeks due to some dedicated and inspired work by several IBB employees, indeed the entire IBB organization.

In the end, the signals were effectively jammed by low-power transmitters near the center of Belgrade. Shortwave, and later a high-power medium-wave signal from Hungary, got through.

As the Don McLean song about Vincent van Gogh goes, "They did not listen, they're not listening still, perhaps they never will."

◆ READER'S FORUM ◆

Lights Out For OPB

It was disappointing to read the article about Oregon Public Broadcasting turning off its radio reading service in the wake of the conversion to DTV, as well as budget cuts ("Reading Service Imperiled in Oregon," June 18).

Radio reading services are a vital form of broadcasting for "print-handicapped" people throughout the world. I hope this did not set a precedent for other reading services.

I am the station manager of Pell Radio in Scranton, Pa. We use the SCA of our local public radio station. We have found that, for the clients we serve, this is the best way of sending our signal. Most of our listeners are home-bound and in nursing homes, and

find us not only a form of information but one of companionship.

It is good to see Bill Pasco and Heather Lusignan of IAAIS taking steps to secure an outlet for radio reading in the state of Oregon.

Paul Trama
Station Manager
Pell Radio
Scranton, Pa.

'Meet the People'

Paul, please forward this letter to Ken Deutsch for it was a wonderful article ("When You Had to Meet the People," July 16).

Sometimes it takes three spirits to gently guide a "well-off" individual to see what it's really like for the other

world, commonly referred to as "the rest of us." All too often such individuals rely on a wing and a prayer ... and sometimes a massive kick in the keyster.

The late '70s (as well as today) is like watching a repeat of J.R. Ewing's brazen schemes from a devil's hell. It's nothing new: through-the-roof fuel prices, domestic vehicle sales and employment down to near nothing, prompting one to believe if the apocalypse is in our face.

Ken, don't underestimate yourself being the ghost of Christmas past. We need more of them nowadays.

Same pig manure, different century. We need to keep on keepin' on with being the Baileys, showing the Potters the ghetto they create and systematically ignore.

James Linthicum
Piqua, Ohio

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AM-DA Rule Changes Are Way Overdue

Fast Track or Off Track?

AM radio is perhaps the most challenged of broadcast services. Its vitality has been eroding with every passing year.

FCC rules institutionalize a long-standing inequity that has burdened the licensing and compliance requirements of AM directional antenna arrays. The performance bar is held much higher for AM antennas than for other services.

For almost 20 years, we've been hearing that help is on the way. In 1989, an enterprising group of competing consulting engineering firms proposed radically relaxing the rules so that laborious and expensive field measurements essentially could be eliminated. Modern computer modeling and the use of calibrated antenna monitoring systems could ensure that AM DA antennas were performing as intended.

Most of the world is doing it this way. Why is it taking so long for the country that invented AM radio to adopt a more modern, efficient way of doing business?

MM Docket 93-177 was introduced in 1993. It undertook a careful evaluation and study period to decide if and how this proposal should be implemented. Virtually every interested party who understood the pure technical nature and clear merits of this proposal supported it — including, we hear, all of the FCC staff engineers who handle AM issues and applications.

Only a few outside objectors surfaced in the comment and reply comment proceeding. Since then, those concerns have been addressed in the proposed rule-making guidelines, suggested by the AM Directional Antenna Performance Verification Coalition. This group, as we've reported in the past, consists of an all-star list of consulting and corporate engineers representing most of the major radio owners.

Radio World ran a story under the headline "DA Proposal Could Be Fast-Tracked." That was in June of 2007. We noted the coalition had begun meeting in fall 2006 to examine directional antenna modeling and follow through on a Further Notice of Proposed Rulemaking the FCC had issued in 2001, when the

commission previously overhauled AM antenna proof rules.

Adoption of the proposed rule making had been rumored in advance of the 2008 NAB Show. That didn't happen. We worry that the proceeding has fallen off the FCC's radar screen; as we write it has yet to make it to the 8th floor of the Portals for a stamp of approval from the commissioners.

Certainly Kevin Martin's FCC has had many non-technical and controversial issues bogging it down in recent months. Purely technical issues can be preempted in such an environment. But this one should be easy. It appears void of meaningful opposition.

The matter need not be handled through a vote at a full meeting; it could be issued "on circulation" to the commissioners for acceptance. FCC engineers should agree that MM 93-177's time has arrived and urge their bosses to vote for adoption. After the obligatory waiting period and publication in the Federal Register, the rule finally would take effect.

This rule will not be applicable to all stations. As proposed, "Only arrays consisting of series-fed elements may have their performance verified by computer modeling and sample system verification." The computer model of the towers must match measured impedance data within fairly restrictive limits. Sample systems must also meet explicit, strict requirements to allow a system to be eligible. Some arrays with dissimilar towers may also be ineligible, depending upon the sampling situation.

However, many stations with DAs will benefit. There are hundreds waiting to take advantage of the rule in order to eliminate the unnecessary expense of pattern tuning, field proofs and monitor point and partial proof maintenance.

Having to wait almost 20 years for justified relief is unconscionable, especially given other challenges to AM that are more difficult to address. Radio World urges those at the commission who can expedite approval of this change to help push it through as soon as possible.

— Radio World

◆ READER'S FORUM ◆

Collins 20V

Good article on the 20V ("Collins 20V Was a Joy to Maintain," May 21). When I was young(er) I worked on one of those.

Also, Dick Hyatt, a fellow engineer and friend, had a 5 kW rig in Kingston, N.Y., on 920 kHz that I believe used the 20V as a driver cabinet. That transmitter was so cool; polished clean, with glowing tubes and undulating mercury vapor rectifiers in the center "power cabinet." Lots of glass for viewing pleasure. The rig sounded great as well. All of the Collins rigs seemed to have that "smooth hi-fi sound."

Dave Groth
 Red Hook, N.Y.

I've been thoroughly enjoying the series on older transmitters. I had a Collins 20V at a station in Southern Pines, N.C.; they were using it as an auxiliary. I couldn't get over how clean it sounded. I wanted to use it as the main, but they overruled me.

Keep those articles coming. I love 'em.

Stephen Poole
 Birmingham, Ala.

Read Buc Fitch's series on 1 kW transmitters of yore under the "Milestones" tab at radioworld.com.

Real Work

Paul, I always read Radio World from front to back. I am [writing] to express my appreciation for "A Person Cries for Work That Is Real" (May 21).

I find myself working many nights and weekends to put together projects for special events or special broadcasts,

or just because the station will operate a little more smoothly if I finish that final task before I go home.

The station would probably still be on air and operating even if I did not work long hours and put in extra effort. I do it because I feel that anything worth doing is worth doing well.

I was beginning to believe that I was just a glutton for punishment. It is refreshing to know that others do it because they love it. The paycheck is nice but the rewards of broadcasting don't come only on Friday.

By the way, I have to assume that I am one of the youngsters. I am 27 and still in my first five years in broadcast engineering.

Please tell the "mystery engineer" thanks for his comments.

Jeff Yates
 Engineer
 South Central
 Communications-Evansville
 Evansville, Ind.

Hope for The Future

Skip Pizzi presents an interesting scenario where both FM and AM broadcasting are being shut down for the last time ("2020: The Biggest Loser vs. Tiny Tim," June 4). This is certainly a drastic view of the future of radio.

Perhaps the future of radio broadcasting could be improved if some channels in large markets were made available to local community organizations for the distribution of locally produced radio programs. The current LPFM service has been exiled to rural areas and there are no

channels available for local and neighborhood broadcasting in large cities such as New York.

Certainly if regular radio broadcasting stations were dying, at least some channels could be reallocated for local use. In the meantime, channels in the huge millimeter-wave spectrum could be allocated for neighborhood broadcasting uses.

There is no reason to accept a decline of radio broadcasting.

Nickolaus E. Leggett
 Reston, Va.

Chronohertz Stations

Paul, allow me to express appreciation for the two consecutive articles on the history of the chronohertz stations WWV and WWVB (April 23, May 7). These articles are very interesting and informative.

I first heard WWV back in 1945 when the station was located in Beltsville, Md., and I was located in a small country town in South Australia. We used to tune in to WWV for the correct time and frequency adjustments to our receivers.

I gained two QSL cards from this station during this era. One of these now historic cards is a straightforward text card with the address as Beltsville, Md., and the other is a picture card showing the block-style facility building.

Dr. Adrian Peterson
 Indianapolis

The author is a frequent contributor to Radio World on the topic of American shortwave.



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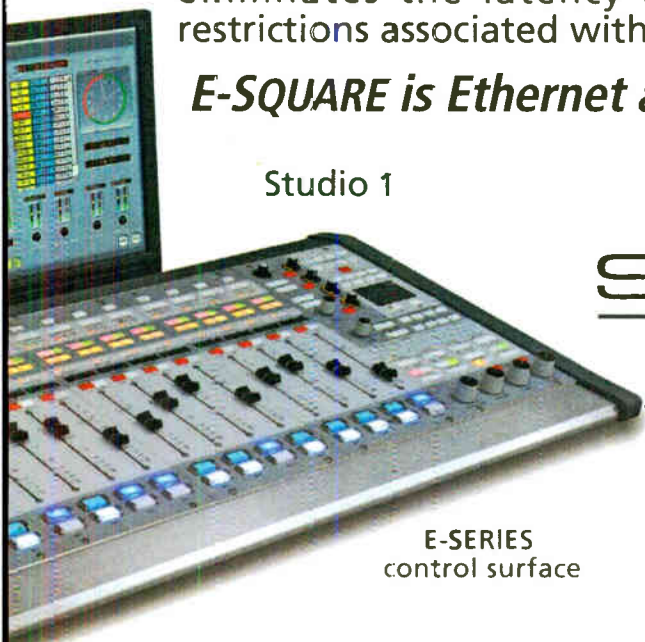
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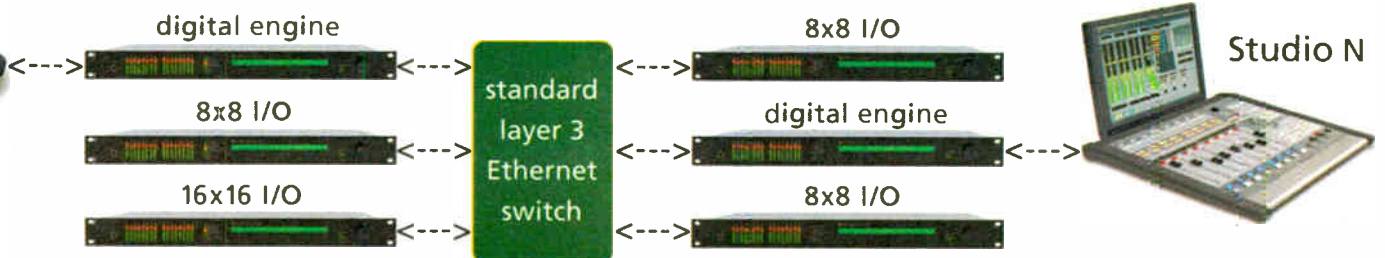
88 I/O CONNECTIONS: E² has both DB-25s for punchblock interface and RJ-45s for point-to-point interface. All SQUAREs have 12 individually configurable opto-isolated logic ports that can be either inputs or outputs.

Studio 1

STUDIOS DONE EASY!



E-SERIES control surface



AIR WARRIOR



A modern air warrior needs all of the power and control he can muster to bring to the battle. **When it's you against the other guy, the VORSIS AP-2000 has it ALL.**

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