



# RADIO WORLD

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## For Digital Radio, 'Hardware Sells Hardware'

### Asymmetrical Sidebands, AM Transmission Are in the News

BY LESLIE STIMSON

**LAS VEGAS** — To demonstrate that receivers are becoming more readily available from mainstream automakers, iBiquity Digital showed in-dash HD Radios in a 2011 Ford truck and Volvo crossover vehicle in a prominent space at the NAB Show.

Meanwhile digital AM is getting more attention. Some transmitters at the convention incorporated an iBiquity transmission configuration intended to benefit high-power AMs airing talk or lightly processed music formats. The technology developer also is exploring a way for HD Radio receivers to display souped-up data broadcast via analog AM signals, similar to what is now available from stations

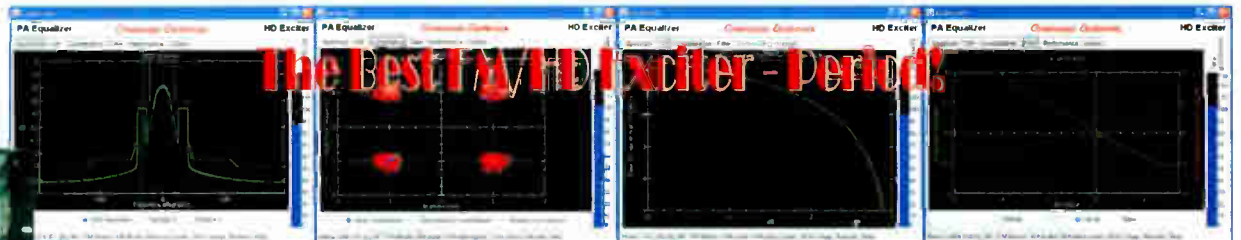
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## Congratulations, 2010 "Cool Stuff" Winners!



Learn about the award-winning products inside

146  
 #BXNN101 \*\*\*\*\*AUTO\*\*SCH 3-DIGIT 856  
 #0009383 1# RDM4 E0912  
 TOM MILLER  
 ARIZONA BROADCAST SERVICES  
 2033 S AUGUSTA PL  
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World Radio History



# E-1 IS PURE GENIUS!



The compact E-1 Control Surface Console and associated ip88cb Console Audio Blade provide all the networked control, mixing, and I/O needed for small to mid-sized studios at a price comparable to similar sized standalone analog consoles. The E-1 features an integrated LCD Monitor for metering and control, a streamlined user interface with password protected access to complex functions via LCD display and touchpad, and 4 Main Mix busses as well as Control Room and Studio Monitor outputs with selectable sources from the audio network. Complex Mix Minus setups are made simple thanks to per channel Mix Minus outputs with selectable reference mix and talkback interrupt. You also get auto switching between off line Mix and on line Mix Minus per channel. The E-1 features 99 show presets and a programmable per-channel A-B Source/Select switch which emulates traditional broadcast consoles. Of course the E-1 will work just fine with Wheatstone TDM products, too! Completely made in the USA and available TODAY!

- Digital Control Surface in new compact frame
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- Monitor / Channel Display area is angled for better ergonomics and display view
- Streamlined user interface with password protected access to complex functions via LCD display and touchpad
- 4 Main Mix Busses
- Control Room and Studio Monitor Outputs with selectable sources from Audio Network
- Per Channel Mix Minus Output with Selectable Reference Mix and Talkback Interrupt. Complex Mix Minus setups made simple.
- Auto Switching between Off Line Mix and On Line Mix Minus per channel
- 99 Show Presets
- Incredible new price!



*With the brand new ip88cb Console Audio Blade, a complete standalone/IP-Networkable Wheatstone console is well within the reach of any studio. And with the E-1's integrated LCD monitor, all functions are immediately viewable and editable with no additional hardware needed.*



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**IBOC**

(continued from page 1)

airing digital FM or FM RDS.

The HD Radio FM digital power increase was big news at the show. The FCC order approving the increase had just been published in the Federal Register, and the increase took effect not long after the convention. FM digital stations that want to increase digital power by 6 dB now can do so without applying for special temporary authority.

Several requests for the full commission to review the Media Bureau order were filed. But although the commission potentially could tweak the increase, it is unlikely to rescind it, sources believe; the FCC repeatedly has said it wants to help foster radio's digital transition.

Exhibitors also discussed the concept of asymmetrical sidebands, a way to help a station achieve the power boost without harming an adjacent analog signal. Once stations begin using this approach experimentally and become experienced with it, transmission manufacturers expect the FCC eventually

will approve asymmetrical sidebands for general use, much as it did multicasting and separate antennas.

Highlights of digital radio news from the show:

**MODIFIED MA1 BENEFITS AMS**

iBiquity Digital unveiled an optional AM IBOC transmission configuration that is meant for digital AM stations that air talk, have low audio program density or are not planning to send discrete data.

Some high-powered AMs had said that some wideband receivers made before 2003 produced audible interference to the host station's analog signal from the digital secondary and tertiary sidebands. The new transmission configuration, called "Modified MA1," is meant to address this.

In the new low bandwidth mode. "We turned off the secondary and tertiary carriers. We raised the level of the PIDS carriers, the station information carriers, to the same level as the primary

carriers," said Jeff Detweiler, director of iBiquity Digital's broadcast business development. "All of the host interference that used to occur goes away."

The new exciter configuration reduces the digital bandwidth and increases the analog bandwidth of the AM IBOC hybrid signal.

There's an improvement in signal-to-noise ratio of 6 to 10 dB on all analog radios with the new configuration, according to iBiquity.

It previously had recommended that stations limit analog audio bandwidth to 5 or 8 kHz; in the new configuration, stations can transmit using the full 10 kHz.

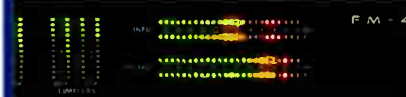
Codec improvements at low bit rates now allow for good mono, "parametric stereo" or stereo audio in a single 20 kbps audio stream.

The normal MA1 configuration uses 36 kbps for audio. Near the tower, a listener hears stereo; farther away the signal shifts to mono digital, then to analog. Those noticeable transitions could be annoying to the listener. With the Modified MA1 configuration, the digital AM audio is

(continued on page 6)

**29,062 products in stock at press time!**

**Powerful Processors!!!**



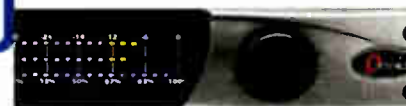
**NEW Vorsis FM-4! FM-Only Digital Processor**

Sometimes, simple is best. That's the philosophy of the new Vorsis FM-4. Ideal for stations looking for no-frills FM-only audio processing while enjoying Vorsis' cutting edge technology, the FM-4 gives you everything you need to create your signature sound. The FM-4 gives you the out-of-the-box presets Vorsis is famous for, so you're ready to go as soon as you fire it up, conveniently accessible right from the front panel.

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**Award-Winner: BW Broadcast RX1 and RBRX1 Receivers**

BW Broadcast, which has an established line of audio processors, transmitters, RDS encoders and audio over IP gear, adds a pair of professional receivers suitable for station monitoring, re-broadcasting and re-encoding.

Both allow the user to monitor stations using a capacitive touch front panel, accessing information on signal strength, IF bandwidth, modulation, stereo blend and ultrasonic noise.

The RBRX1 is a "re-broadcasting" receiver. Its capabilities, combined with a built-in RDS encoder, allow you to monitor audio quality while re-transmitting received RDS information or changing it for more relevant information.

The DSP-enhanced MPX output reconstructs a clean peak level and bandwidth limited waveform; BW emphasizes that this lets you stop worrying about studio-transmitter link overshoots.

"Furthermore, the ability to adjust the IF bandwidth and an automatic adjust setting allow for protection from unwanted

interference. The RDS PI code can also be employed so that if the code of the audio received does not match that set, either the AES/EBU digital and analog inputs, or built-in flash memory can be used to prevent any unwanted re-broadcasts."

This switching can be used automatically on the back of Plan B silence technology, which will change to the inputs/flash memory in the event of loss of signal.

Rob Kidd and Brendan Lofty hoist their plaque.

Price: RX1 \$1,395; RBRX1 \$1,995

Shipping: End of May

Info: Adam Hall, adam@bwbroadcast.com, www.bwbroadcast.com



Photo by Jim Peck



# Excited About a Baby Before Delivery

## Is a New Product Still Cool If It Hasn't Started Shipping?

A reader who saw the announcement of Radio World's "Cool Stuff" Award winners online posted a comment suggesting that in future, products must be "in stock and available for immediate purchase from the manufacturer" before qualifying to win.

He said two winners caught his eye and he was disappointed to learn that they weren't yet shipping.

I was pleased to know that he took our list and immediately started shopping with it; I replied online to his comment.

I've given a lot of thought to such stipulations over the years. Our judges do in fact consider the quoted delivery timetable, as well as a company's history in meeting past promised shipment dates. However the judges don't flatly rule out products that aren't yet shipping.

A key purpose of the NAB Show floor is to exhibit products that are new on the market *or coming soon*. Some of the best new gear in radio is developed right at the wire before NAB and doesn't ship for some weeks or months. Many reputable manufacturers introduce deserving products but quote delivery dates in summer or fall.

I agree that we run the risk that a product may not ship for much longer; it has happened. It's hard to make the determination in advance, though the judges try. A product may even turn out to have been vaporware, though this is infrequent.



In my view, it would be worse to issue a hard rule that a product must be in stock and shipping as of show time. This could undercut a main point of the awards: to recognize innovative new stuff coming into the market.

However, I also feel that if a company consistently introduces products that don't ship for an extended period, they deserve the reputation they get for not delivering on their promises.

Throughout this issue, you'll find details about this year's award winners. Mobile applications, powerful FM processors and economical choices in transmitters and consoles are among the trends. My thanks to our judges' panel for their hard, otherwise unacknowledged work.

Should regulators be allowed to meet behind closed doors with representatives of industries they regulate?

It happens all the time in Washington, but two organizations offered the bold idea that the Federal Communications Commission should eliminate the practice of allowing private meetings with commissioners and staff.

The FCC had asked for suggestions on how to change the "ex parte" system under which private meetings are allowed (though they must be reported publicly).

Public Knowledge and the Consumer Federation of America offered three options: ban private, oral presentations to FCC staff from interested parties outright; appoint a "neutral third party" such as a staff member who is not involved in a proceeding to record the meeting; or start recording all meetings on video.

"In the age of YouTube and other online video services, where cameras and microphones are inexpensive and widely available, there is no reason why every oral *ex parte* presentation could not simply be recorded and made available to the public," they wrote.

I am dubious whether these ideas will go anywhere. Even the most reform-minded bureaucrat will find it difficult to change the way business has been done. But count me as a supporter. If a company is affected by regulatory activity, if it has something to say to government regulators and can get FCC commissioners and staffers to open their door, we should insist that the door not

### FROM THE EDITOR



Paul McLane

be closed behind them. As citizens and taxpayers we have the right to know about these discussions, and not just in a two-sentence summary.

### RW IN PDF

Fans of Radio World's digital edition, note that you can save it as a PDF. You can also read the issue offline on your desktop via Adobe AIR.

When you are in the digital edition, click on the Save icon, then follow the Save prompts to an info screen that gives you these options (the PDF option is near the bottom).

All readers can see the current and past issues of Radio World in digital edition form under the Resources tab of our website.



## Award-Winner: Shively Labs 6020 Broadband Dipole

What's exciting about a simple antenna like this?

How about *value*? Our "Cool Stuff" judges appreciate not only high-end razzmatazz but good, solid, economical products designed for the real world of engineering. There are several such winners in this year's class.

The Shively Labs 6020 broadband dipole (inset) is designed to be deployed rapidly, by itself or in branch-fed arrays; it is suited for standby or emergency situations and is rated at 5 kW per dipole with a 7/8-inch EIA connector. A single 6020 offers an input VSWR, out of the box, under 1.25:1 at the band edges, and much less within the mid-band frequencies. It can be operated either pressurized, or non-pressurized by the incorporation of a unique

venting plug.

Both the dipole and the 6018 panel (which uses two 6020-style dipoles) are designed to be "flat-packed" for ease of shipment, offering broadcasters anywhere an efficient, versatile antenna system at low cost that can be deployed rapidly.

Sensible, no-nonsense, affordable. Those attributes are always cool.

Shown in the Shively booth are Edd Forke, Angela Gillespie and Bob Surette.

**Price:** \$750, quantity discounts available  
**Shipping:** Now  
**Info:** (888) 744-8359 or [www.shively.com](http://www.shively.com)



Photo by Jim Peck



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JUNE 2, 2010

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it's a portable radio it's a tape recorder

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**Award-Winner: Wheatstone E-1 Digital Audio Control Surface**

Wheatstone has packed a great deal of its high-end console engineering into this new, affordable, compact surface.

For what you could easily spend on just a standalone analog board, the E-1 Digital Control Surface and associated Wheatnet IP-88cb Audio Console Blade provide the networked control, mixing and I/O needed for small to mid-sized studios.

The E-1 features an integrated LCD Monitor and touch-pad for metering and control, 12 input channels, four main mix busses, per-channel A-B Source/Select switches that can access system-wide network sources, MXM outputs (with talkback) for each input channel, and control room and studio monitor outputs, also with network source access.

The E-1 can store 99 instant recall show presets. It integrates with both Wheatnet IP and TDM audio networks.

Shown in the booth, from left, standing: Brad Harrison, Phil Owens, Jay Tyler and Steve Dove; kneeling are Kelly Parker and Darrin Paley.

*Price:* \$12,000  
*Shipping:* Now  
*Info:* Jay Tyler, (252) 638-7000, sales@wheatstone.com, www.wheatstone.com



Photo by Bob Kovacs



**Award-Winner: Nautel Asymmetrical Sideband Technology**

Why are only half of the folks in the photo holding up their hands? Because the group is asymmetrical!

This technology comprises a suite of proprietary algorithms that permit broadcasters to address adjacent-channel interference by accommodating the full -10 dBc HD Radio signal on one sideband while keeping the other sideband at more conservative -14 dBc injection levels.

"Asymmetrical Sideband technology (subject to FCC approval) is a capability of Nautel's HD PowerBoost suite of technologies that can provide a marked increase in power output (up to 30 percent improvement) and up to 7 percent gains in transmitter efficiency in HD Hybrid transmission modes," the company says.

Front, from left: John Whyte, Gary Liebisch, Wendell Lonergan, Peter Conlon, Gerardo Vargas, Tim Hardy. Back: Ellis Terry, Jeff Welton, John Bisset, Nelson Bohorquez, Hal Kneller, NV20, Philipp Schmid, Chuck Kelly, Kevin Rodgers, Gary Manteuffel.

*Price:* HD-PowerBoost LP for 3.5 to 15 kW NV Series transmitters starts at \$6,000  
 HD-PowerBoost HP for 20 to 40 kW NV Series Transmitters starts at \$12,000  
*Shipping:* Third quarter  
*Info:* Chuck Kelly, info@nautel.com, (902) 823-5151, www.nautel.com



Photo by Jim Peck



**STL made simple with the Barix Reflector**



**Barix IP Audio - Intelligent Products around Audio, Streaming and Control → www.barix.com**





**IBOC***(continued from page 3)*

either mono, “parametric stereo” or stereo all the way until the signal blends to analog, providing a more consistent user experience, Detweiler said.

The changes are contained in a software load that iBiquity released to transmission manufacturers in December; the changes were reflected in transmitter models on display at the show.

**AM DATA DISPLAY STUDY UNDERWAY**

Meanwhile, iBiquity is trying to develop a low-cost method of transmitting digital data with an analog AM signal, so that future HD Radio receivers can have snazzy AM data displays — similar to what is now available on FM HD and RDS receivers — even if the originating AM station is analog-only.

National Radio Systems Committee Chairman Milford Smith, the vice president of radio engineering for Greater Media, said the idea is akin to RDS for analog AM and does not require the broadcaster to initiate HD Radio transmission.

“The station’s audio is analog but the receiver would recognize the digital data

and display it,” said Smith.

Details such as the ideal bit rate and the content to be displayed, such as call letters, are still being worked out on this AM analog low rate data service. The project is funded by the NAB FASTROAD technology development program.

Detweiler said during a convention session that the company has studied six design options and is narrowing in on two for further study, looking to minimizing station costs as well as evaluating IBOC compatibility and the impact to the host analog signal.

iBiquity hopes to have a feasibility report on the concept ready by the fall NAB Radio Show.

**STRUBLE BULLISH ON RECEIVER SALES**

As the economy begins to turn around, iBiquity Digital President/CEO Bob Struble is realistic about the time it will take time for radio stations once again to devote serious money and other resources to digital conversions. The technology executive says stations continue to convert to IBOC technology but admittedly not at the pace they had been before the recession took hold.

“I talk to many industry leaders and get a good sense, generally, that things



Kelly Jarvis of iBiquity demonstrates an HD Radio receiver in a 2011 Ford 250 Super Duty pickup truck to Nick Wymant of RFS.

are picking up. But you also have to keep in mind that things got really, really bad, so there’s a long way to get back,” said Struble. Even though business is improving, he said, many radio groups are struggling with debt.

“For the last 18 months, capital spending in radio has dried up because of the economic realities of the business. We don’t forecast that improving much in 2010. I don’t need it to go up a ton; I just need it to stop going down. And I’ve got some confidence that we will see that.”

What iBiquity is hoping will bring broadcasters back or cause them to take a fresh look is twofold: HD Radio’s momentum in the consumer space and the increase in data applications, which is helping some stations to make money

with IBOC.

iBiquity tried something different for NAB this year; it used two exhibit spaces and displayed factory built-in HD Radios in a Ford 2011 SuperDuty pick-up truck and a Volvo XC60. The vehicles were in a prominent space between the North and Central Halls. Attendees could sit in the vehicles and listen to HD Radio.

“NAB wanted to do something special in that space,” said Struble. He quoted a Detroit phrase: “Hardware sells hardware.”

“If people see something and touch it, they’re more likely to buy,” he said. The company believes showing radios in mainstream vehicles demonstrates its momentum in the OEM sector.

*(continued on page 8)*

# Your Story Is Out There. Grab It LIVE with ACCESS!

In Chile, it was business as usual for the BIO-BIO LA Radio team. They’d been using ACCESS to cover the presidential elections as well as international broadcasts of the Libertadores Cup from Argentina, Brazil and Venezuela. Then tragedy struck in the form of a devastating earthquake. The team was there, with journalist Maria Carrasco reporting live as well as working with the police to help enable communications using a Comrex ACCESS.

Whether it’s business usual or providing essential coverage of breaking news, you can always be where the story is. And you don’t need a full crew to grab it. Wherever you are, you can be live on the air, creating pinpoint, relevant programming that keeps an ever-growing number of listeners glued to their radios.

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**Award-Winner: Arrakis  
ARC-8 Series Radio Consoles**



Photo by Jim Peck

In baseball, they say even the little guys can bring a lot of "pop." The ARC-8 is a little guy for remote applications, live air, simple production, podcasts and streaming.

It has a small profile and low price tag, yet it incorporates 10 source inputs to eight input channels: a single stereo mixing bus with both balanced and unbalanced inputs; PC USB output of the program bus for recording to your PC; monitor/headphone/cue system with external input for off-air monitoring; cue system autocues with program dimming into the monitor and headphone systems; and balanced mix-minus telco output.

Judges appreciated details like the clever built-in PC USB sound card on Channel 8B to play in digital directly from your favorite PC audio software. The program output from the console records in digital over the USB directly to your PC recording software. Digilink-Xtreme software is included to get you on the air doing production immediately.

Allen Harrison, Ben Palmer, Melissa Freeman and Mike Palmer show it off.

*Price:* \$1,200 (Sale \$799 at press time)  
*Shipping:* Now  
*Info:* Ben Palmer, (970) 461-0730, arrakis@arrakis-systems.com, www.arrakis-systems.com

**Award-Winner: Digital Alert Systems  
DASDEC-II Emergency Messaging Platform**



Photo by Jim Peck

Alerting is a big deal right now, given all the activity on the regulatory front and our nation's ongoing need for reliable emergency information.

The DASDEC-II improves on the company's original system of integrated receivers, range of hardware interfaces, software upgrades and network-based design. The new unit uses common information exchange protocols and offers a range of physical connections and third-party interfaces.

"This flexible emergency messaging platform provides multiple, simultaneous access with tiered security using any standard Web browser on PCs, Macs, even smartphones," the company says, "eliminating special software, steep learning curves or IT support."

The MultiStation software option allows one unit to replace five legacy EAS encoders, "achieving EAS compliance for up to five unique stations or channels regardless of location for a tightly integrated centralcasting environment."

Jim Heminway and Bill Robertson are shown.

*Price:* Starts at \$2,695  
*Shipping:* Now  
*Info:* Bill Robertson, (941) 224-6944, bill@digitalalertsystems.com, www.digitalalertsystems.com

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## IBOC

(continued from page 6)

With more HD Radio receivers in cars and the advent of digital portables, sales to date have reached more than 2.5 million units, according to Struble. More than halfway through iBiquity's fiscal year, he predicts, "We are comfortably going to do another two times what we did last year" in receiver sales.

While not claiming victory or critical mass yet, "2.5 million is certainly different than what we were talking about two years ago," when receiver sales stood at 200,000, he said.

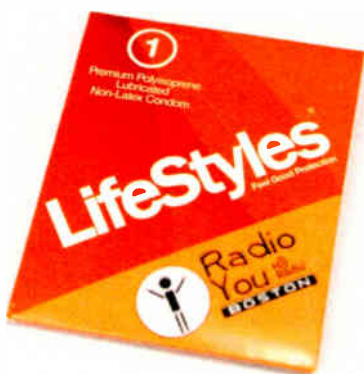
With the advent of more data applications that use HD Radio technology — such as multicasting, traffic services and iTunes Tagging — "plenty" of stations are making money and getting a return on IBOC investment, he said. "That becomes easier the more receivers that are out there."

Building on song tagging, soon the market will see album art and other graphics on the screens of their HD Radio receivers. Tagging will expand beyond music to advertising, said Struble.

For example, if you tag an ad, it will send you to a website where you can redeem a coupon. Those actions give the station, and the advertiser, direct response, accountability and reporting information. "We think that's going to be increasingly important as other media services are able to provide that," according to Struble.

Yet, despite the optimism, radio is just beginning to recover from a recession in which stations laid off people and reduced budgets severely.

Radio World asked about rumors heard at the show that some stations, faced with budget cuts, may let AM HD Radio operations stay off the air when there's a problem rather than repairing them right away. Struble said he believes this does happen but that it is not a widespread situation.



**You didn't know HD Radio could be sexy, did you? Condom maker Lifestyles is an advertiser on Greater Media HD2 station Radio You Boston, which gives away this branded product at events.**

"If you had a guy who was responsible for re-booting the exciter, that guy isn't there anymore; and now it's on someone else's list, and it may take awhile. I think the lack of personnel and the impact of layoffs is real."

Regarding the FM digital power boost, Struble said he'd heard anecdotally about newly digital stations going on the air with IBOC at the elevated power level. He also reiterated his past statements that radio's transition will be gradual.

### 'ACTIVE RADIO' EMERGENCY ALERTS SHOWN

iBiquity demonstrated the "Active Radio" emergency alerting concept. An HD Radio receiver with this technology can detect alerts even when turned off.



**This Active Radio emergency alert in iBiquity's booth was sent using software from SpectraRep.**

The company generated the alert using software developed by SpectraRep. Both audio and data messages are supported.

Shortly after the show, the concept was tested on WAMU(FM) in Washington. The alert was transmitted using the station's HD Radio signal. Nautel, SpectraRep and Sage Alerting Systems provided equipment.

"It's especially critical to alert those with sensory disabilities, now possible due to the new accessible digital radio services NPR has been developing," stated Mike Starling, vice president and chief technical officer of NPR.

The HD Radio Emergency Alert broadcast protocol is compliant with the Common Alerting Protocol message definition adopted by FEMA and other emergency organizations, according to the companies involved in the demo. The HD Radio system will allow federal, state and tribal emergency agencies to notify the public of presidential directives, national security alerts, AMBER Alerts or weather-related events.

Stations can use the audio and data

(continued on page 10)



### Award-Winner: Continental Electronics 802EX FM Digital Exciter



Saying it represents the "next generation" FM/HD Radio standard, Continental showed its new exciter, promising outstanding sound quality and digital performance along with its unique IBOC monitoring system.

"For our HD Radio customers," the company states, "the 802EX features fully-adaptive, real-time forward pre-correction; built-in audio delay, up to

16.4 seconds; synchronization, using a GPS 10MHz signal; dual outputs, for analog and HD transmitters; a high-resolution color LCD screen for maximum accuracy; and Continental's 'Insight' IBOC monitoring system that lets you 'see' the performance of your IBOC system in real time."

For analog-only FM users, the exciter provides built-in stereo generator, multiple AES3 digital audio inputs, a standard composite input and two baseband SCA inputs.

Price: \$16,900

Shipping: Now

Info: Mike Troje, (214) 381-7161, sales@contelec.com, www.contelec.com



### Award-Winner: RadioDNS



**RadioDNS**  
connecting radio & internet

Radio World introduced most U.S. radio folks to RadioDNS when we featured it in our "What to Watch for in 2010" Webinar last winter (be sure to catch the 2011 webinar later this year). The organizers took a high profile in Vegas, with a booth (including yummy Cadbury's chocolates) and a presentation to the National Radio Systems Committee.

Our judges have shown an admirable willingness over the years to recognize not only good products but good technical initiatives; this is one. RadioDNS is a collaborative project that connects broadcast radio with the Internet to enable IP-delivered enhancements to the listening experience.

"Just because your radio also has an Internet connection within it, that doesn't instantly mean that it can find more information about what it's listening to," the organizers argue.

RadioDNS uses information that is already being broadcast to create a kind of "pseudo-domain" which, by using standard DNS technology on the Internet, can point the radio to the broadcaster and its advertising. It works on DAB, FM, HD Radio and DRM. Applications under development include a way of adding text and visuals synched to the program; an electronic program guide with "universal preset"; and a tagging system.

This not-for-profit system envisions a small fee charged per entry in the DNS lookup table for broadcasters to cover operating costs. It is free to receiver manufacturers and software providers. The first radio with RadioDNS capability is the Pure Sensia; software is in development adding RadioDNS to mobile phones equipped with FM tuners.

This is an open project whose members include the NAB, BBC, Global Radio (the U.K.'s largest private broadcaster), Clear Channel (the largest U.S. radio company), the EBU, the Australian Broadcasting Corp., RadioTime, vTuner and several others. A developer's mailing list is underway.

Shown, James Cridland works the booth (and doles out the Cadbury's).

Info: RadioDNS: feedback@radiodns.org, http://radiodns.org



If money is no object, this console is for you.

(It's also for those who live in the real world.)



Introducing **iQ™**. The brilliant new IP-Audio console from Axia.



[AxiaAudio.com/iQ/](http://AxiaAudio.com/iQ/)





## Award-Winner: Tieline Report-IT Live App for iPhone

The Report-IT Live app, downloaded from the iTunes App Store, turns your iPhone into an IP audio codec for transmitting high-fidelity, low-delay audio over 3G cellular broadband or WiFi, to a Tieline IP codec in the studio.

You can record your broadcast on the phone while broadcasting live; record an interview or report offline and then go live later; edit reports and create playlists; and report live and play "grabs"

from a recorded interview while you're on the air.

Audio files can be forwarded in real time to a Tieline codec in the studio for recording, or uploaded via FTP to a news server, with no codec in the studio.

The app launches fast and connects with one button; it supports live, bidirectional 15 kHz audio with low delay, so the studio can send program mix-minus



and communicate with the reporter while they are broadcasting.

Report-IT Live can be purchased direct from the iTunes App Store. Report-IT Enterprise for network wide installations coming soon.

Shown from left: Kevin Webb, Neil Morrish, Charlie Gawley, Mary Ann Seidler, Rodney Henderson and Darren Levy.

**Price:** \$29.99 demo; \$249.99 full app

**Shipping:** Now

**Info:** Kevin Webb, (317) 845-8000, sales@tieline.com, www.tieline.com

Photo by Jim Peck

## CONNECTING STUFF IS ALL ABOUT THE GOZINTAS AND COMEZOUTAS



## MULTIPOINT IS ALL ABOUT CONNECTING STUFF TO YOUR STUDIO

Getting all your external gear into and out of your studio is never easy. You're always looking for an adapter or cable of some kind and, even when you find it, you're then on the hunt for level or impedance matching gizmos.

MultiPort™, from Henry Engineering, takes care of all that by facilitating interface between a studio and external audio equipment. Providing convenient access to a studio's analog and digital audio inputs and outputs, it allows connection to both professional and consumer gear. MultiPort's active circuitry performs all level, impedance, and topology conversion necessary for correct interface.

You can put MultiPort wherever it's convenient. Mount it in your cabinetry, or use the included rack adaptors to mount it in your rack. Once you've got MultiPort, you'll wonder how you ever limped along without it!

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## IBOC

(continued from page 8)

channels of their HD Radio signal to send multilingual announcements, text alerts and image data to alert-enabled receivers.

## HD2 AS 'TRAINING WHEELS'?

Numerous stations are using their multicast channels to make money, says iBiquity.

Moderating a session called "HD Radio Digital Marketing: Cashing In

station that features local bands, owned by Greater Media and airing on a multicast of WBOS(FM). Its target demo is adults 18-24. Greenhut said the station sought to tie in its HD2 spots with Web banner ads and branding.

The Connecticut School of Broadcasting and condom maker Lifestyles bought advertising schedules on Radio You Boston. Lifestyles gave thousands of condoms with branded station packaging to the HD2 station to hand out at events.

The HD3 channel of WAMU(FM) in Washington, Bluegrass Country, is nearing its third anniversary. In a recent fundraiser, approximately 400 members donated a total of \$40,000.



KUVU's Mike Pappas conducts a DTS-Neural surround sound demo in a Lincoln in the DaySequerra booth. DTS-Neural's Mark Seigle says the surround technology was used in some 650 stations in 2009 and the company hopes that will approach 700 soon.

on All Your Content," Rick Greenhut, the director of U.S. broadcast sales for iBiquity, highlighted six.

In general, he said, HD2 and HD3 channels have "become the training wheels for some advertisers" who can't afford to be on the main channel.

Station representatives prepared videos in which they described how they're integrating their on-air, website, streaming, HD Radio and print/billboard presences into one brand image.

Radio You Boston is an indie rock

A spokesman for Emmis station KSHE2 in St. Louis, an HD2 channel, said in a video to attendees, "We want to get people back from satellite and iPods. We want people to think of HD Radio as newer than the Internet." The multicast channel has top-of-the-hour ads, including Harley Davidson and a Bar-B-Q restaurant.

Graffiti Radio in Wilmington, Del., run by Delmarva Broadcasting, is targeting students in high school and col-

(continued on page 12)



# SMART :



JetStream MINI IP Audio Networking System



Logitek Jetstream IP audio networking is smart and our lineup of surfaces gives you more choices. JetStream MINI covers all your console and routing options whether it's for a large standalone console, a smaller desktop control surface or a space-saving virtual controller. You decide what's best for your operation.

With JetStream IP audio networking, it's all about smart choices.

**Next generation 'smart' IP audio.** JetStream supports the latest IP and Ethernet protocols for affordable, easy and ultra-fast audio networking.

**More I/O choices for all sources and destinations.** Just one JetStream MINI handles 64 digital or analog inputs/outputs of your choice and up to four Logitek control surfaces or vScreen virtual controllers of your choice. **Choose what you need.** Everything you need is in one user-configurable, 64-channel node.

Your JetStream can have mic inputs, line-level and digital I/O, built-in EQ, dynamics and mic processing, profanity delay, GPI/O, Internet codecs, WAN support, automation interface, battery power and a whole lot more.

**No computer science degree needed.** JetStream IP audio networking is super easy to set up with built-in memory and automatic configuration. Just plug in and let JetStream do the rest.

**Affordable and flexible.** Regardless of studio size, Logitek's smart architecture allows you to get more done for less. Complete systems start at under \$6000.

# CHOICES:



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Mosaic



Remora



Pilot



vScreen



**NEWSROUNDUP**

**POWER:** The FCC provided notification guidance to FMs that want to increase their digital power. Procedures apply until a new electronic form for e-filing digital notifications is approved by the Office of Management and Budget. Stations that increase digital power by up to 6 dB must file a letter within 10 days of the change. Stations that seek more than 6 dB, up to the full 10 dB increase, and all super-powered FMs still must file an STA application.

**BACK WITH NAB:** CBS, including its 130 radio stations, and Fox Broadcasting rejoined the National Association of Broadcasters. CBS, Fox and ABC had resigned their membership over disagreements concerning the national TV ownership cap, at a time when Eddie Fritts still headed the organization. Fox left in 1999; CBS left in 2001, according to NAB. At the recent show in Las Vegas, NAB President/CEO Gordon Smith urged broadcasters to speak with one voice.

**TRAFFIC:** Clear Channel Radio's Total Traffic Network and TomTom will offer Lifetime Traffic Updates on several TomTom RDS-TMC equipped portable navigation units. Customers will receive these updates for free for the useful life of the device.

**RADIO GROUPS:** Clear Channel, CBS Radio and Citadel were the top three radio ownership groups by revenue in 2009, according to BIA/Kelsey. Clear Channel had revenues of

\$2.3 billion from 847 stations in 153 markets, according to the new edition of "Investing in Radio Ownership Report" from BIA/Kelsey. CBS Radio had revenues of nearly \$1.3 billion from 130 stations in 29 markets and Citadel/ABC had revenues of \$595 million from 229 stations in 57 markets.

**TOWERS/BIRDS:** There's a settlement in the migratory bird saga that participants urged the FCC to adopt as interim standards. The agency hopes to move towards final rules that promote a communications network that complies with environmental laws. NAB is optimistic the commission will endorse the agreement. The association says the compromise protects a significant percentage of broadcast towers from having to submit to environmental assessment at the time of application/public notice.

**COPYRIGHT FEES:** A judge reached a decision on interim fees to be paid by stations pending the conclusion of the industry's ASCAP rate case. Radio Music License Committee Executive Director Bill Velez announced that the decision by U.S. District Court Judge Denise Cote would reduce the annual industry-wide fees payable to ASCAP by some \$40 million from 2009. The interim fee replaces a previous temporary decrease and the new rate is retroactive to Jan. 1. The new fees will remain in place until final fees are either negotiated or determined by the rate court.

**CES:** The Consumer Electronics Association says some 126,600 people attended its Consumer Electronics

**Award-Winner:  
RDL EZ Series**

These modules demonstrate what you can accomplish with a family of affordable utility boxes, another example of our "Cool Stuff" judges recognizing not only top-end transmitters and processors but value-oriented problem solvers as well.

The versatile line from Radio Design Labs includes stereo DAs, audio format converters, switchers, headphone amps, mic preamps, audio mixers, video DAs and switchers.

Each has a high-efficiency power supply, locking DC power jack and blue front-panel power LED; all carry a three-year warranty. Built-in brackets allow surface mounting.

Each unit is labeled front and rear for use as a finished product or as a utility module; and you can install multiple units easily using EZ rack mounts, chassis, bezels, drawers and accessories. They are made in Prescott, Ariz.

Shown, Jeff Mason and Mark Timpany get modular.

*Price:* Varies

*Shipping:* Now

*Info:* Mark Timpany, (800) 281-2683, [www.rdlnet.com](http://www.rdlnet.com)



Photo by Jim Peck

Show in January, a 12 percent increase from 2009. The figures come from Veris Consulting, which conducted an independent audit of the Jan. 7-10 show. Veris is certified by the Exhibition and Event Industry Audit Commission to perform audits. Each CES attendee is counted once, and show size is calculated using exhibit space actually sold, not hallways or bartered space, CEA said. Show organizers further say that 12,000 retail buyers, 8,000 manufacturers and 3,000 engineers came.

**IBOC**

(continued from page 10)

lege, when buying habits typically are being formed.

The HD2 channel of KNDE(FM), College Station, Texas, programs "Rock Candy" on its HD2 and uses its HD3 station for its own product. "Play & Replay" airs original coach interviews and other station-produced sports material.

A station representative, speaking to attendees via a video, said they have to promote the multicast station with limited resources and without hurting their main channel. The station targets college students and had an apartment complex that's an advertiser sponsor a mouse pad featuring the "un-academic" calendar, which highlights holidays.

Utah Public Radio in Logan, Utah, features "Fusion HD3." It has new underwriters that only want to buy on the HD3 channel, according to Greenhut. Students run this college station.

And finally the Pittsburgh Penguins believe they have the first HD Radio station devoted to a professional sports team. The HD2 slogan is "All Penguin hockey, all the time."

BIA/Kelsey predicts U.S. radio organizations will bring in \$500 million revenue in 2010 from digital sources including the Web, mobile apps, streaming and HD Radio, Greenhut noted. The stations discussed in the session provide incentives to sales people to sell the multicast channels. "They place a dollar value on HD Radio spots, [they're] not just throwing them in."

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High-speed Internet connections are everywhere. Wouldn't it be great to use them for broadcast remotes? Telos Zephyr/IP makes it possible.

The heart and soul of Z/IP is the amazing Agile Connection Technology from FhG. ACT combines state-of-the-art loss detection and concealment with dynamic buffering and adaptive bitrates. Your Z/IP will intuitively use every digital trick in the book to ensure audio gets to your studio with the lowest possible delay.

Not only is the audio incredible, but using it couldn't be easier. Z/IPs can find each other, even behind firewalls and NATS, thanks to a network of distributed servers. Z/IP can even connect to calls from PBXs that use the SIP standard. And users love the big, color display that can even show their connection being routed around the world.

Unless you're broadcasting from the moon, you'll probably find Internet just about everywhere you'll want to do a remote. IP is everywhere. And Z/IP is the best way to hear from everywhere.

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# A Marti Whip for About Ten Bucks

Have the Whip of Your Dreams for Little More Than a Trip to the Junk Box

So your manager has been bugging you to “do more with less” these days? Here’s a slick solution from consulting engineer Buc Fitch.

## WORKBENCH

by John Bisset

Read more Workbench articles online at radioworld.com

He recently had to replace a whip antenna for a Marti 160 MHz RPU transmitter. Buc has used this technique before with satisfactory results, and offered to share the construction details with *Workbench* readers.

The advantages of this construction project are quick fabrication, the ability to optimize the antenna for a specific frequency, rugged construction and the capability to re-use the whip on new frequencies by changing the top section.

Essentially the antenna is made up of off-the-shelf, one-foot-long, 6/32-inch continuous threaded screw stock. Typically known as “all-thread,” it is available at any hardware store.

The coupler is a 1-inch-long, 6/32-inch threaded aluminum coupling section, also known as a spacer or standoff, pictured in Fig. 1.

Buc grinds a few thousandths of an inch off the bottom one inch of the lower section of all-thread. This slides comfortably into a PL-259 RF connector. Back up the all-thread about 1/8-inch from the end of the center

(continued on page 16)

Fig. 2: Grind a bit off the stock, making for a nice fit into the PL-259, which is then soldered.



Fig. 3: A rubber bumper protects the sharp end of the whip from injuring someone.

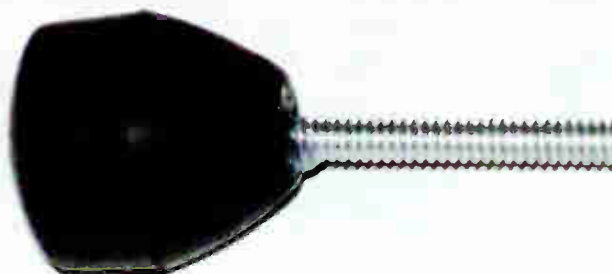


Fig. 4: The completed whip.



Fig. 1: Threaded steel stock forms the basis of this RPU antenna.



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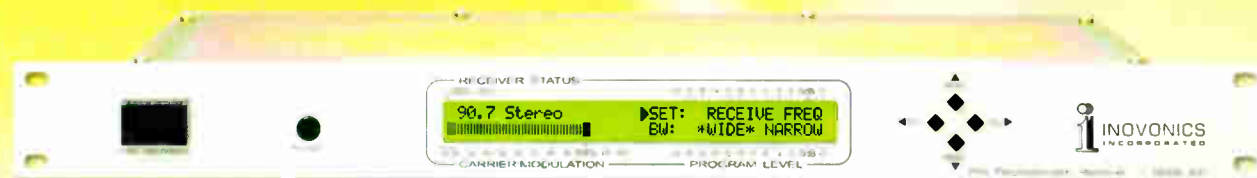
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Turn your iPhone\* into a IP audio codec with Tieline's Report-IT Live App. Connect Live to our affordable Bridge-IT codec in the studio and deliver FM-quality wireless remote broadcasts today!

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- Economical studio IP audio codec.
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## WHIP

(continued from page 14)

conductor to allow a nice solder weld. Set the iron for about 600 degrees and flow the solder into the center conductor pin, with a result seen in Fig. 2.

Screw on the coupler to the opposite end of this bottom section of the all-thread. Screw the coupler down about a half-inch onto these threads. Put your Bird Thru-line wattmeter on its side and attach the whip to the output side. It should be pointing up in the air and free from nearby metal objects as you prepare to tune.

**The antenna can be built quickly, and you can re-use it on new frequencies by changing the top section.**

Prepare a suitable but longer length of something like #12 bare copper solid wire, and stick that in the open top of the coupler to bring the antenna length near resonance. In this case, where we are trying to achieve the highest efficiency and lowest VSWR, Buc started out with a 7-inch length of that bare #12 wire.

Ham rigs at 146 MHz traditionally use about 19+ inches, so with an effective 11-1/2 or so inches at the bottom and 7 inches of copper at the top, Buc knew he was below the frequency of 1/4-wave resonance.

Peak your transmitter for the best match into a 50 ohm



Fig. 5: Your new whip is installed on the Marti.

load. Then turn on the transmitter and use it as the RF generator into the Bird, with the antenna connected to the Bird output. Measure and record forward and reverse power. Buc likes to work with 5 watts or less.

Now carefully cut the top of the #12 gauge copper wire in 1/8-inch increments, until you just pass resonance.

Carefully measuring, Buc transfers that length to the second piece of all-thread (plus the 1/8-inch that he overshot in the last cut). Screw this cut-to-length section into the coupler and tighten up both the top and bottom pieces into the coupler.

After a test of the final antenna with the transmitter, Buc adds RTV in the base of the PL-259 with the whip aligned so it is perfectly vertical. Similarly seal the top bumper with RTV. The top bumper, shown in Fig. 3, is just a safety feature so that someone's eye won't come in contact with the bare end of the all-thread.

Here's the best part: the cost. The finished whip consists of the all-thread at a cost of \$1.79 a section, a coupler at 75 cents and the PL-259, which runs about \$2 from MCM ([www.mcmelectronics.com](http://www.mcmelectronics.com)).

The RTV was from The Electronic Goldmine ([www.goldmine-elec.com](http://www.goldmine-elec.com)) and was 10 cents a tube when Buc bought it. The bumper at the top was salvaged from the leg of a kitchen seasoning stand long gone; any rubber bumper will do.

For under \$10, a trip to the junk box and a few hours in the shop, you can have the whip of your dreams, seen installed on the RPU in Fig. 5.

Buc Fitch can be reached at [fitchpe@comcast.net](mailto:fitchpe@comcast.net).

**Y**oung and old time engineers will have some fun at this site: [www.radioshackcatalogs.com/catalog\\_directory.html](http://www.radioshackcatalogs.com/catalog_directory.html).

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### Award-Winner: Telos VX Broadcast VoIP Phone System

Steve Church had a good NAB Show. He was honored with the NAB Engineering Achievement Award for earlier contributions to telco and audio coding, even as he and his company introduced another cool product, what they call the first multi-studio VoIP phone system for broadcast.

The VX System is scalable and uses Ethernet to share phone lines and connect system components. VX works with any VoIP-based PBX or SIP-trunking telco service to direct up to 80 lines of phone traffic. Via gateways,



VX can also connect to traditional telco lines including T1/E1, ISDN and POTS. VX is a robust multi-studio phone system with a minimal price point.

Shown from left are Michael Dosch, Tony Thimet, Oleg Krylov, Maris Sprancis and Ioan Rus.

Price: VX Engine \$6,995, VX Director \$995  
 Shipping: Third quarter  
 Info: (216) 241-7225 or www.telos-systems.com/vx/

Photo by Jim Peck

The site archives old Radio Shack catalogs all the way back to 1939. The tip is contributed by Jim Johnson, Charlie Wooten and Chuck Kelly.

It's scary to recognize some of the components in the early catalogs from your high school radio class days. Younger engineers can get a good idea of what they missed.

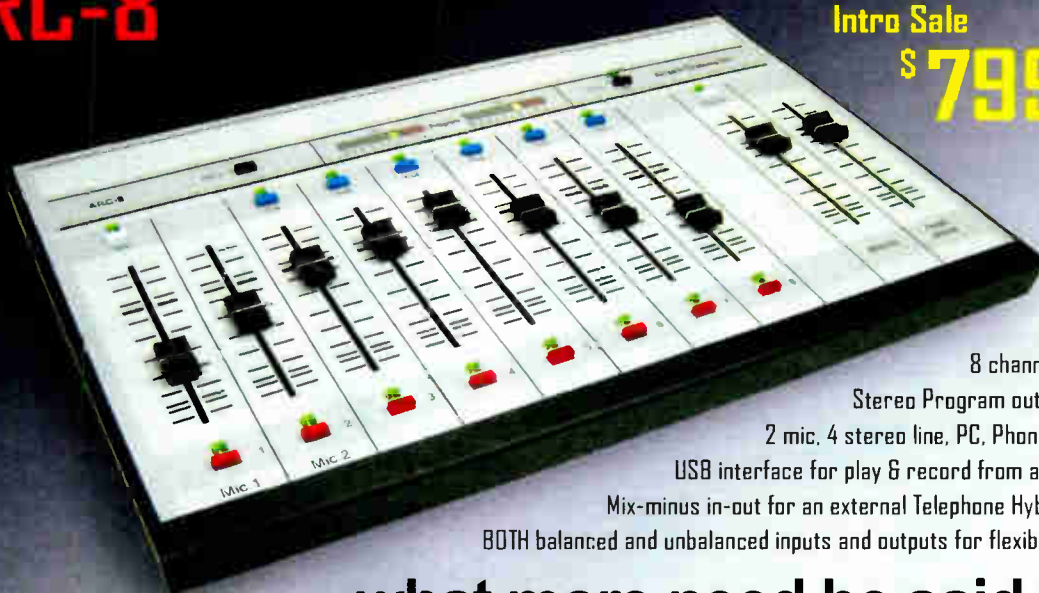
John Bisset marked his 40th year in radio in broadcasting recently. He is international sales manager for Europe and Southern Africa for Nautel and a past recipient of the SBE's Educator of the Year Award. Reach him at johnbisset@myfairpoint.net. Faxed submissions can be sent to (603) 472-4944.

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

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Fig. 6: Remember when.



**Award-Winner: ENCO Systems  
iDAD App & interchange**



From ENCO Systems, iDAD and the accompanying interchange network appliance allow remote send of audio cuts directly from an iPhone or iPad without having to expose your DAD network to the Internet.

The application also features the ability to control a station's DAD system using an array of buttons that run ENCO's DAD Control Language.

Interchange is a new platform from ENCO that also includes the ability to support updating of iTunes audio tagging (when used with PADapult or RAMA) while still keeping your studio audio network secure.

Don Backus, Dave Turner, Gene Novacek, Ken Frommert and Patrick Campion show it off on their iPad and iPhones.

**Price:** iDAD is a no-charge download from the Apple App Store. Interchange is \$2,995 and can support any number of iDAD clients.

**Shipping:** Now

**Info:** Don Backus, (248) 827-4440 or [www.enco.com](http://www.enco.com)

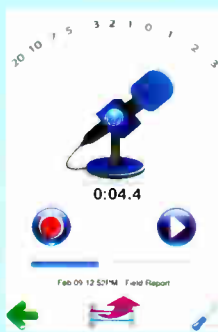


Photo by Jim Peck

**Award-Winner: Kintronic Labs  
Express Radio Transmission System**



Tom King and his team in Bristol, Tenn., took home the gold for their new Express Radio package, which aims to reduce your capital expenditures for FM and AM systems, allow rapid installation and customization, and reduce operating expenses.

The system does away with buried line to the antenna and maybe even a transmitter building. Your specified equipment can be integrated into the rack and will be pre-wired.

Typical equipment includes main and/or aux transmitters up to 10 kW, audio processing, STL, remote control, satellite receivers, Internet service router, dummy load and, for AMs, an antenna tuning unit.

Systems are in an outdoor weatherproof aluminum enclosure that is nifty all on its own, incorporating adjustable-depth rack space, sun shield, magnetic door sensors, pad or wall/pole mounting options and neat options like generator hookup, laptop shelf and a secondary walk-in enclosure to let you work on the gear in bad weather.

Shown from left: Dr. Bobby Cox, Tom King, Eric Miramontes, Jim Moser.

**Price:** Varies; system shown was \$65,000 including Nautel Jazz 1 kW transmitter, Kintronic ATU and dummy load, Omnia One AM processor, Burk remote control and Moseley STL receiver

**Shipping:** June

**Info:** Eric Miramontes, (423) 878-3141, [emiramontes@kintronic.com](mailto:emiramontes@kintronic.com), [www.kintronic.com](http://www.kintronic.com)



Photo by Jim Peck

**Desktop Delivery**



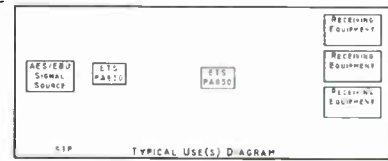
**Radio World Engineering Extra**, the radio industry's top resource for credible, high-tech engineering information, has gone high-tech itself! Subscribers can now choose to receive their issues in a digital format, delivered right to their desktop. The digital edition contains all the same great articles of the printed edition, with bonus live web links and rich media content. To start receiving your digital edition of Radio World Engineering Extra, fill out the form at <http://www.myweemag.com>.

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**MARKETPLACE**



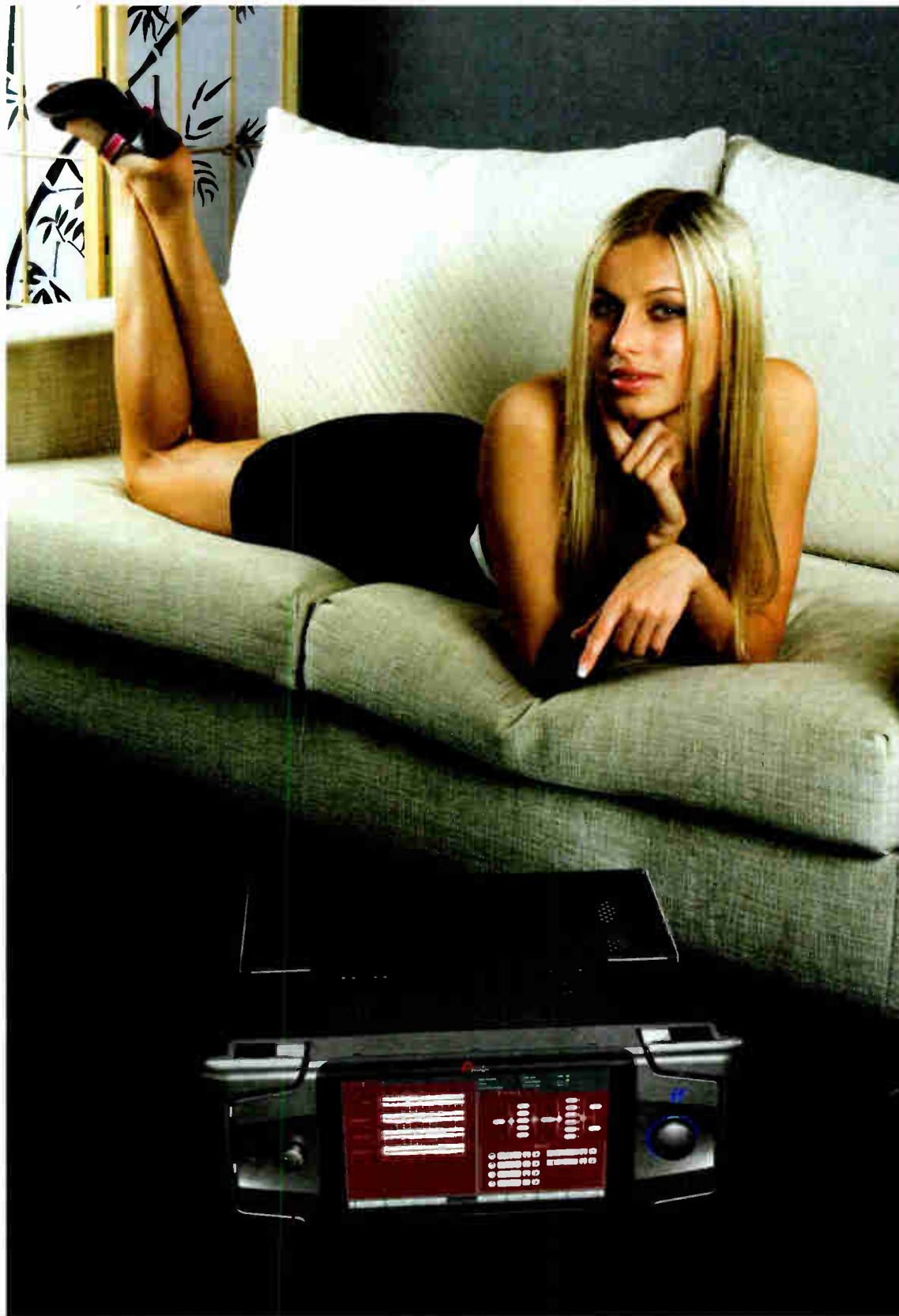
**ETS SPLITS THE AUDIO:** One signal cable and two destinations, what to do? Split the signal! Yet signal splitting involves signal degradation. Even with digital AES/EBU, degradation can become an issue down the chain. Attempting to minimize THAT, the PA830 family from Energy Transformation Systems is a non-powered system AES/EBU splitter with a 3 dB signal loss at each generation/stop. The nominal PA830 unit is a female XLR-in to two male XLR-outs while the PA832 is the opposite with a male XLR-in to two female XLR-outs. A panelized version has four in channels split for a total of eight outs following the PA830 configuration. Prices for the PA830 and PA832 are \$84.60, while the rackmounted PA835 goes for \$360. **Info:** [www.etslan.com](http://www.etslan.com)



**QUIET REMOTES:** Acoustic treatment specialist RealTraps has a prospective solution to noisy field audio environments: the RealTraps Carrel. It consists of three hinged sound-absorbing panels, each measuring 2 by 2 feet. Placed on a tabletop, the Carrel forms three sides of a square, while the talent occupies the fourth. The folding metal frame has felt on the bottom to prevent scratches. Available colors for the panels are black, white, wheat and gray. The RealTraps Carrel will also work for cramped home studios to create a small, temporary, isolated area for broadcast work. **Price:** \$379.99. **Info:** [www.realtraps.com/p\\_carrel.htm](http://www.realtraps.com/p_carrel.htm)







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World Radio History



**Award-Winner: Moseley Rincon Digital Audio Transporter**



Photo by Jim Peck

Moseley calls Rincon the broadcast industry's first software-defined audio transport product optimized to deliver multichannel digital audio over IP, TDM or radio links and networks simultaneously.

Rincon 200 conveys four AES stereo audio channels in 2X2, 4X0 or 3X1 configurations. It operates linear uncompressed, MPEG Layer 2 and MP3, AAC LC & LD, G.711,

G.722. It has a trio of RS-232 data ports. It includes a SD card slot for emergency fill audio. Control is by GUI on browser and Smartphone. The Rincon is housed in a 1RU chassis with standard 19-inch rack mount.

"Rincon's ability to leverage low-cost network choices and its low purchase price give broadcasters excellent return on investment," Moseley says, and our judges agreed.

David Chancey, Bill Gould and Kelli Martony celebrate their "Cool Stuff" Award.

*Price:* \$1,750 (Rincon 200)

*Shipping:* Now

*Info:* (805) 968-9621 or [www.moseleysb.com](http://www.moseleysb.com)

**Award-Winner: Burk Technology AutoPilot 2010 with Jet Active Flowcharts**



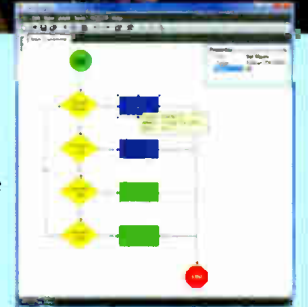
Photo by Jim Peck

Burk's AutoPilot 2010 enables multi-site, PC-based facilities management for the line of Burk remote controls, including ARC Plus, ARC-16, GSC3000 and VRC2500.

It has a customizable interface that helps you manage remote sites. Reports can be tailored to individual needs, and can be printed automatically or e-mailed as a PDF. AutoPilot 2010 includes network management functionality, "bridging the gap between broadcast and IT by including SNMP and ping with traditional I/O," as Burk puts it.

Our judges loved Burk's Jet Active Flowcharts, which are available as an extension to AutoPilot 2010. Broadcasters can design a range of automatic functions by drawing simple flowcharts to describe how the remote control should respond to different conditions.

Celebrating are Stephen Dinkel, Barbara Roche, Jonathan Burk and Peter Burk.



*Price:* Varies

*Shipping:* June

*Info:* (978) 486-0086 or [www.burk.com](http://www.burk.com)

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## Award-Winner: Comrex Access Reporter Codec for Android

Smart companies were all about the apps this year. Comrex weighed in with its Access Reporter Codec, or ARC, a simple, free utility that allows certain Android-based mobile phones to make wideband audio calls to Comrex Access and BRIC-Link codecs.

"Once installed on an approved phone, the app displays the familiar Access interface and outgoing call directory," the company explains.

"ARC makes an IP call over the phone's 3G or Wi-Fi



Photo by Jim Peck

channel to the selected Access or BRIC-Link codec in the studio using a high-quality wideband, full-duplex audio channel between the two devices."

Jim Godfrey, Kelly Clark, Chris Crump and Tom Hartnett call in.

Price: Free

Shipping: Now

Info: Chris Crump, (800) 237-1776 in U.S. or [www.comrex.com](http://www.comrex.com)

## PEOPLENEWS



John Harding

The North American Broadcasters Association named **John Harding** its new secretary general. He had been executive director since 2008.



Tom Deyo

**Tom Deyo** was named director of domestic television and international sales for **ERI**. He held business development and management positions with Harris Broadcast Communications Division as director of North American sales, where he was involved with the DTV transition, and Sony Broadcast and Professional Products Division; he's a former television DOE.



Sarah Heil

**Sarah Heil** was named president of **Heil Sound Ltd.**, which her husband Bob Heil, the company CEO, founded in 1966. She began working at Heil Sound, first in IT, in

1999 and has played in increasingly active role in the company's activities.

**Pandora Media** hired **George Lynch** as vice president of automotive business development. He worked for 11 years at Sirius/XM Satellite Radio, where he held the positions of director of OEM accounts and, since 2004, vice president of automotive partnerships. He has worked at Panasonic Automotive Electronics Company, Aisin World Corporation of America and United Technologies Automotive Group.

**International Datacasting Corp.** appointed **Fred Godard** as president and CEO. He replaced **Ron Clifton**. Godard founded Qstream Corp. and served as its executive chairman, chief executive officer and president until February 2009. He is also former president and COO of Leitch Technology Corp.

# Where Great Radio Begins Scalable, Affordable VistaMax™



"PR&E® NetWave™ consoles and the VistaMax™ audio management system have long offered the premier platform for radio studios. For many smaller facilities, however, digital audio networking has been cost-prohibitive.

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*Joe Marshall, Product Line Manager for Radio Studio Solutions at Harris Broadcast Communications, is a key member of the PR&E product design team — and is also on the front line, helping customers choose the best systems for their needs.*

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**WEEL.COM***(continued from page 23)*

Murphy. "To meet this need, we have launched a feature on mobile called 'This Just In.' Anytime anything happens that is related to Boston sports — be it a press conference, player announcement, game results, anything — we get it onto 'This Just In.' This keeps our users right up to date and keeps them tuned to us first."

**DRIVING AD REVENUES**

Using an integrated approach is a great way to drive advertising sales.

"We do a promotion where we sell local products and restaurant gift certificates for 50 percent off through our website," says Murphy. "This is a real win-win: We recently moved 3,000 cards

them all, you have take an inclusive, integrated approach."

This attitude extends to applying revenue against budgets. "It is still early days for digital media, which is why it makes no sense to insist that digital content lives solely on its own revenues. If you don't integrate everything and instead cut back on digital to save money, you are cutting yourself out of a growth market, where radio's future lies.

"Entercom knows this, which is why they have invested in WEEL.com. You can't get caught up in short-term problems, if you are going to make it in the long run."

Murphy says WEEL.com's immediate goals are to reach the 1 million monthly unique visitor mark, add more unique video — "we like to do a mashup between ESPN and 'The Daily Show,' to

**Visitors are consuming about 400,000 unique units of Audio & Video on Demand content monthly — that's podcasts and audio and video played on-site — and the numbers keep climbing.**

— Tim Murphy

in two days for two of our advertisers. They got the business and our customers got a great deal."

Musing on the power of revenue-building power of integration, Murphy says that sticking to the multiplatform perspective is the biggest mistake being made by radio stations today.

"They waste time and lose revenues by doing radio first, and then talking about digital content," he says. "The users are not segmented: They listen to radio and use the Web as well. To reach

keep it fun for our users," he says — and just provide increasing amounts if timely, relevant content.

"We just want to win," he concludes. "We want to be the prime source of sports news for Boston sports fans, and we want to keep pushing the envelope when it comes to delivering integrated sports content in new and different ways."

*Tell Radio World about your organization's online, mobile and new media strategies. Write to radioworld@nbmedia.com.*

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**Award-Winner: Axia Audio  
iQ Console + Router System**

IP audio and low cost are a powerful combo.

Axia Audio says its iQ console/routing system can help you get started with IP audio.

The package includes control surface, DSP-based mixing engine, analog, AES and Livewire audio I/O, machine-control logic, Ethernet switch and optional backup power supply.

"Connect the iQ surface to the Core with a single cable, add audio inputs, perform some fast Web-based configuration, and your iQ system is ready to broadcast," suitable for standalone studios and ready to connect to a network, Axia says.

Sizes are 8 to 24 faders. The console has three dedicated stereo program busses plus a fourth for phone calls, off-air recording or utility mixing. There's automatic mix-minus on every fader, Show Profiles that recall talent settings, Record Mode one-touch recording and Talkback.

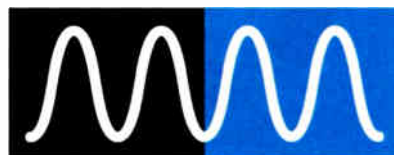
**Price:** 8-fader console, \$6,995; 14-fader system with telco controls + 6-line iQ6 Phone system, \$11,980

**Shipping:** Third quarter

**Info:** Mike Dosch, (216) 241-7225 or [www.axiaaudio.com/iq/](http://www.axiaaudio.com/iq/)

**MARKETPLACE**

**YOU PEG MY METER:** British audio equipment maker Sonifex has new additions to its line of Reference Monitor digital audio meters. Totalling eight new models, the group offers free standing and rack-mounted boxes. Single through four-stereo channel options are available. AES/EBU, BBC, EBU, Nordic, DIN and standard/extended VU are the ballistics, determined by DIP switches. RS232 port allows for alarm signals such as silence, phase errors, etc. All utilize 53- or 106-segment tricolor bar graph LEDs. Info: [www.sonifex.co.uk](http://www.sonifex.co.uk)

**MEDIA MONITORS**

**PPM DATA:** The Media Monitors radio spot monitoring service recently announced a quicker distribution of updated Arbitron PPM data to users of the Mscore and Audience Reaction services. Updated data had been arriving from Arbitron 21 days after the end of a measured week (that was based on preliminary data). The new turnaround is only five days. Mscore is an index describing the switching behavior of Arbitron PPM panelists measured to individual songs. Its thumbs up/thumbs down data can be downloaded to the GSelector music scheduler for playlist modification. Audience Reaction monitors panelist behavior, mapped to the minute. Both are services of Media Monitors. Info: [www.mediamonitors.com](http://www.mediamonitors.com)



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# Vorsis AM-10 HD Scores in Phoenix

Sports in the Valley of the Sun Is Now Louder and Cleaner

BY CLAYTON CREEKMORE

Chief Engineer  
KDUS(AM), KUPD(FM), KDKB(FM)  
Sandusky Phoenix

**PHOENIX** — As anyone who's ever browsed a hardware store can tell you, you often don't realize you need something until it's right there in front of you.

## USERREPORT

Such was the case when I encountered the Wheatstone Vorsis AM-10 HD on-air audio processor.

KDUS is a 5,000 W day, 500 W DA-night AM station on 1060 kHz. It runs an all-sports format. We had a processor in the air chain from one of Vorsis' competitors; as chief engineer I was quite happy with the sound it gave us.

### RESULTS

During the course of normal business I hear from many vendors. Each time I talked to one of these folks, there was a lot of talk about the Vorsis processors and the results stations were getting with them. Finally, I heard from Jay Tyler at Wheatstone Corp., which manufactures the Vorsis AM-10, asking me if I'd like to give it a try.

I had no budget for a new processor



and no plans to purchase one. We do own quite a few Wheatstone consoles, though; and based on the company's reputation I decided to give it a try and see how it sounded.

When the AM-10 arrived here at KDUS, we were more than ready to see what all the hype was about. Surprisingly, no more than 20 minutes after taking the processor out of the box, it was configured and on the air. Vorsis has done an incredible job, not only with the design of the processor but with the manual as well. The user interface is clean and easy to get around in; the manual is clear and easy to follow. Initial setup was a snap, no trouble at all.

The sound of this box is awesome. Immediately we noticed that our signal had become far louder, yet it was clean and undistorted. The day after we installed it, another engineer in town actually called me, asking in colorful terms exactly what I'd done to my signal.

Even the coverage of our AM station is

significantly improved since the AM-10 was installed, the difference being even more noticeable on our night directional array. The response from station staff overwhelmingly has been positive.

Support from Vorsis has been perfect. We've had direct access to the designer of the Vorsis processors, and all of our questions have been answered quickly and completely.

After a few days of comparing our sound to the other two sports stations here in Phoenix, I was amazed at the difference it made in our sound. I can only describe it as awesome. Not only did we keep it, but we're planning to install Vorsis processors on two FM stations in the next quarter, and one of my other AM stations toward the end of this year.

I've been completely satisfied with the AM-10 and would highly recommend it.

For information, contact Jay Tyler at Wheatstone in North Carolina at (252) 638-7000 or visit [www.vorsis.com](http://www.vorsis.com).

## TECHUPDATE

### AUDEMAT INTRODUCES SINGLE-BAND DIGIPLEXER

Audemat has launched a one-band version of the Digiplexer 2/4 unit. It combines an audio processor with several key broadcast functions such as RDS encoding, stereo encoding, audio backup and I/O remote control.

The HQSound algorithm engine, developed by Sound4 for Audemat, offers on average 20 times more power than those commonly used, according to the company. With four bands and no



peripherals in front or behind it, HQSound can rival or surpass processing chains made up of several processors in series.

There are already two versions of the Digiplexer 2/4: a two-band model, suitable as a main processor for soft and medium formats and as a secondary processor at the transmitter site, and a powerful four-band version for all station formats.

The new single-band unit has been designed for transmitter site operation. It combines the traditional features of a "Radio All in One" product with a 1.5 MHz final limiter and automatic gain control on the audio processing side.

The Digiplexer 2/4 is part of Audemat's "Radio All in One" range which, by combining various functions into a single unit, delivers savings in money, rack space and labor. Typically a broadcaster would have to purchase five or six pieces of equipment to achieve what the Digiplexer 2/4 performs in a 1U box.

The Digiplexer 2/4 can be upgraded from one-band to two- or four-band option by means of simple software upgrade.

For information, contact Audemat/WorldCast Systems in Florida at (305) 249-3110 or visit [www.audemat.com](http://www.audemat.com).

## Mixing, Matching & Distribution

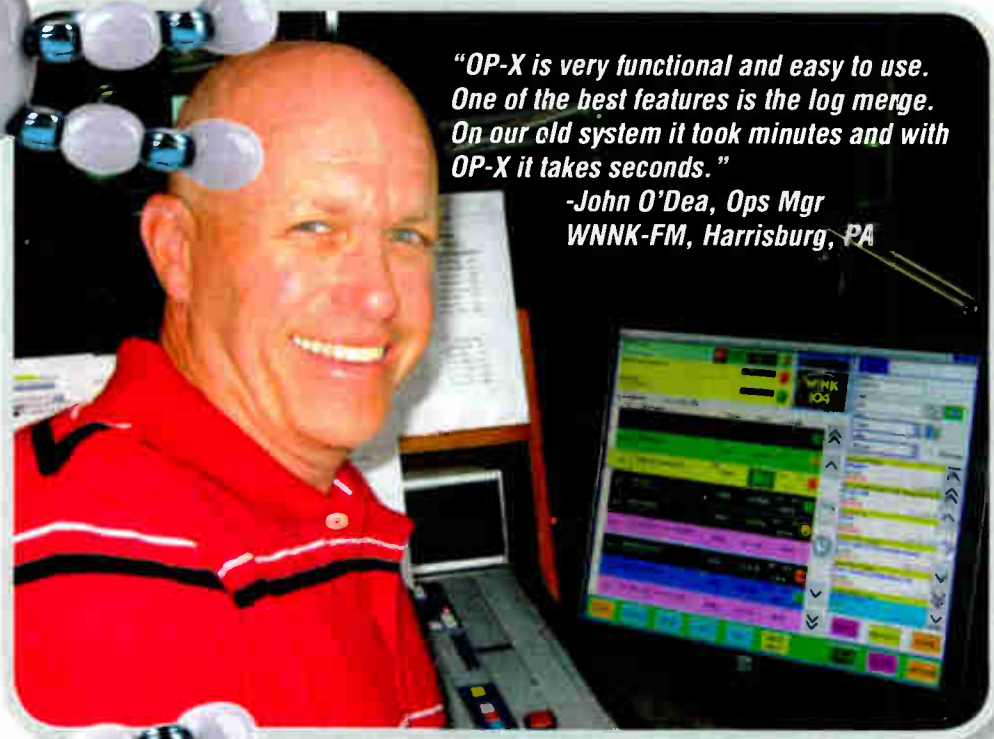
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*"OP-X is very functional and easy to use. One of the best features is the log merge. On our old system it took minutes and with OP-X it takes seconds."*

*-John O'Dea, Ops Mgr  
WNNK-FM, Harrisburg, PA*



- Modular Operation in Op-X allows for a tiered system at a fraction of the cost of it's competitors.
- Each studio client is capable of accessing all Audio Server modules on the network.
- Remote voice-tracking allows for creation of content for remote studios also running Op-X.
- The revolutionary design of Op-X's clock builder turns the previous task of scheduling satellite programming into a few simple clicks.
- Share serial devices from any machine using the Op-X Serial Server.
- Importing logs now gets its own module that takes confusion out of the process.
- Engineers will enjoy Op-X because it's easy to install, maintain, and has automatic backup features.

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*Not since Axia audio-over-IP was introduced to the broadcast industry have we at BGS been so excited! It is with great enthusiasm we'd like to invite you to take a look at the new Op-X Radio Automation delivery system for any single or multi-station cluster. Op-X's versatility allows it to operate seamlessly with either Axia IP-Audio networks or legacy audio consoles.*



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**Award-Winner: Omnia Audio  
Omnia.11 FM Audio Processor**

"Smooth, rich tonality" is the promise made for the new Omnia.11, which its designers call a "complete re-think of broadcast processing to restore the quality and cleanliness to a station's sound that's often lost when ultimate loudness is the end goal."

The signature Omnia sound is present but each stage of processing, as well as the hardware platform, are new.

Chameleon Processing analyzes music in real time, adjusting the AGC, compressors and limiters based upon content density to reveal detail, clarity and quality, maintaining the desired loudness "without over-processing modern squashed source material." A new clipper suppresses harmonic and IM distortion.

The big (10-1/2 inch) screen is not just a display but a touchscreen color GUI that provides access to enhanced metering and diagnostics.

Remote access is via Web browser on a laptop or iPad. An optional built-in Arbitron PPM encoder and confidence monitor is available.

Frank Foti and Cornelius Gould are shown.

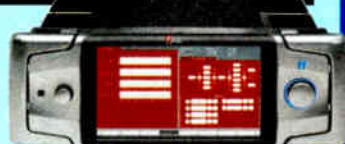
Price: \$12,995

Shipping: Third quarter

Info: (216) 241-7225 or [www.omniaaudio.com/11](http://www.omniaaudio.com/11)



Photo by Jim Peck

**Audessence Helps  
6KCR Find Its Sound**

Community Station Stands Out With Professional Sound From ProCoder-2

BY **POUL KIRK**  
Broadcast Technical Consultant  
6KCR

**KALAMUNDA, AUSTRALIA** — Since my retirement about two years ago from Australian audio equipment manufac-

**USERREPORT**

turer and distributor Elan Audio, I have become involved with a number of projects. One is to give some much needed technical assistance to a local community radio station, 6KCR, in Kalamunda, a suburb of Perth, Western Australia.

tion in the Perth area.

I was impressed by the ProCoder-2, which I feel is the perfect audio processor solution for any FM station regardless of type and market.

Apart from its excellent sound quality, I particularly liked its moderate price: about 25 percent of audio processors commonly used by commercial broadcasters and commonly believed by them to make their station sound "louder" than their competition.

I was impressed by the ease of setting it up. By using a laptop PC, I only had to adjust input level and make a couple of minor changes to the "Oldies" preset to



Due to an inferior audio processor, the station did not sound particularly good on-air, so my first step was to install an Audessence ProCoder-2 in place of the old one.

The ProCoder-2 dramatically changed the sound quality of the station from ordinary, and often absolutely terrible on some music, to possibly the best sounding sta-

get the sound I was looking for.

Having no front-panel controls is perfect, as front control knobs are a bit like a magnet to certain people wishing to "change and improve" the sound of the station.

Having the internal FM multiplex stereo generator directly coupled to the audio processor offers protection against incorrect audio levels and channel balance reaching the MPX generator.

The low processing latency, about 5 milliseconds, allows off-air monitoring of voice by the presenter, an important feature for community and smaller commercial stations as the presenter normally is the person responsible for monitoring the station's broadcast quality.

The RMS-sensing AGC level control preserves perceived dynamic range and has impressive tolerance to incorrect audio input levels. It will correct input levels from 10 dB too low to 20 dB too high without any notable pumping effects, important for community stations.

I was also impressed by the virtually inaudible action of the limiting and clipping stages which are necessary to prevent over modulation.

Without doubt, the clever and effective RMS-sensing levelling, or AGC circuitry, in the ProCoder-2 is responsible for its outstanding sound quality and, unlike multiband processors, does not distort or change the "spectral balance" of music.

For information, contact Graham Sloggett at Audessence in England at 44-144-488-0444 or visit [www.audessence.com](http://www.audessence.com).

**TECHUPDATES****NOISE REDUCTION  
IN A BOX FROM IZOTOPE**

The iZotope ANR-B Adaptive Real-time Noise Reduction processor is a 19-inch, single-rack-unit box that uses advanced noise reduction technology to identify and suppress environmental broadband noise, hum



and phone line artifacts, increasing the quality of radio call-in programs and on-location broadcasting.

It features two-channel or stereo operation, presets, residual noise monitoring, single-knob noise suppression, Adapt Mode and Manual Mode operation.

I/O includes balanced XLR, AES-EBU, DARS, Ethernet, nine-pin RS-422 D-sub.

For more information visit [www.izotope.com](http://www.izotope.com).

**BW BROADCAST DSPX GOES AM**

The DSPX-AM from BW Broadcast is an AM version of its DSPX 24-bit digital processor platform.

The AM edition has a four-band window-gated AGC, wideband window-gated AGC and a four-band limiter



that is followed by an oversampled distortion-controlled clipper. Additionally, a separate look-ahead-type limiter and dual sample rate converters are included.

It also offers an adjustable low-pass filter, high-frequency EQ, asymmetrical clipping, low-frequency transmitter tilt compensation and a tone generator. Included factory presets get the ball rolling.

The DSPX-AM is remote controllable via IP. It is compatible with IBOC and DAB schemes.

The company makes several models of audio processors, and on its website it offers a comparison chart listing the features and intended uses; the chart also can be downloaded in PDF form. Go to [www.audio-processor.com/compare](http://www.audio-processor.com/compare).

For information, contact BW Broadcast in England at 011-44-208-683-6786 or visit [www.bwbroadcast.com](http://www.bwbroadcast.com).



**TECHUPDATE**

**SOUND4 VOICE<sup>L</sup> IS LIVEWIRE-COMPATIBLE VOICE PROCESSOR**



Sound4 Voice<sup>L</sup> from French company Sound4 is built on the HQSound 192 kHz audio processing engine, a patented technology. The processing structure includes a de-esser, a three-band noise gate, a three-band processor, a four-band parametric EQ and a brick-wall limiter.

Sound4 Voice<sup>L</sup> can be used for any live studio application; the company says it can adapt to all kinds of voice, from natural tones to big and structured tones.

The dedicated graphical user interface tracks up to eight mics, status and user names; it can be loaded with presets to fit the needs of production studios.

Recalling a mic to a user is done in two clicks. With "Session Recall" it is possible to save a mic's settings and loaded users presets, then recall them by a click.

Users Presets Centralization allows interviewers, journalists and DJs to have access to their own presets in each studio. Using the Users Presets Centralization, a user preset modification is automatically updated to all studios.

Sound4 Voice<sup>L</sup> is compatible with Livewire input and output voice processors so it can be a resource that can be routed and inserted everywhere in the Livewire chain.

For information, contact Sound4 in France at telephone 011-33-413-415-540 or visit [www.sound4.biz](http://www.sound4.biz).



**Award-Winner: Orban Optimod-FM 8600 Digital Audio Processor**

Over by the big Orban bus at NAB you could find Bob Orban and Jay Brentlinger explaining the features of their latest top-end FM processor.

Featuring versatile five-band and two-band processing for both analog FM transmission and digital media, the 8600 provides consistent sound, track-to-track and source-to-source.

Dramatically improved peak limiter technology decreases distortion while increasing transient punch and high-frequency power handling capacity.

"Compared to the FM-channel peak limiter in Optimod-FM 8500, the new peak limiter typically provides 2.5 to 3 dB more power at high frequencies, which minimizes audible HF loss caused by preemphasis limiting," Orban says. "Drums and percussion cut through the mix. Highs are airy 'Problem material' that used to cause audible distortion is handled cleanly."

Orban President Jay Brentlinger is shown.

Price: \$13,990 (HD Digital), \$10,990 (FM Digital)

Shipping: July

Info: (480) 403-8300 or [www.orban.com](http://www.orban.com)



Photo by Jim Peck



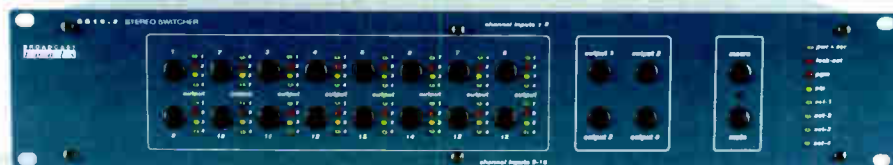
**ACS 8.2 Plus** Audio Control Switcher



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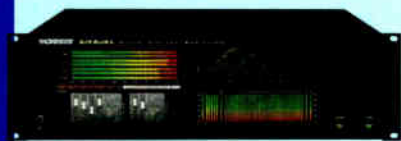
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**INNOVATIVE PROBLEM SOLVING TOOLS FOR BROADCAST**



## Award-Winner: Vorsis AirAura Digital Audio Spectral Processor



Expanding its presence in the audio processing market, Wheatstone's sister brand Vorsis rolled out the AirAura audio processor at the NAB Show. The box caught many an eye from the aisles with its unique displays.

The unit features new proprietary final clipper technology that Vorsis says produces cleaner, clearer, more natural mid and high end detail without smearing, dulling and other artifacts you might associate with managing the FM pre-emphasis curve.

The multiband AGC/SST (Sweet Spot Technology) promises smooth and unobtrusive gain and spectral control during widely varying incoming program levels. The AGC has separately adjustable low and high inter-band coupling algorithms to allow "serious sonic sculpting."

AirAura incorporates Vorsis Bass Management System (VBMS) with new Texture control for fine-tuning on-air low-frequency content. Dual front-panel widescreen displays show real-time detail about the processor's operation. In addition to front-panel control, the AirAura can be operated remotely via wired Ethernet or integrated WiFi connectivity.

Price: \$13,995

Shipping: June 1

Info: (252) 638-7000 or [www.vorsis.com](http://www.vorsis.com)

# Cats FM Purrs With Jünger Audio Processors

## Uneven Transmission Across Malaysia Levelled Out

BY **TERENCE LIM**  
Engineering Manager  
Cats FM

**KUCHING, MALAYSIA** — As one of the primary radio stations in Malaysia, Cats FM is very aware of the need to deliver a high-quality service to our customers. As well as focusing on great content, we are also determined to

## USERREPORT

deliver great sound, which means ensuring that our audio levels remain steady regardless of where our listeners receive their radio signal. Lack of clarity, combined with surprise level changes, can be very tiring — and annoying if it results in the listener having to constantly adjust the volume to achieve a comfortable listening environment.

Cats FM, which is the only private radio station in Malaysia, is based in Kuching and broadcasts in Malay and Iban to a wide-ranging audience via a network of eight FM transmitters that are strategically located across the state of Saravak. Although primarily a 24-hour music and entertainment radio station, we also cover news and local issues. Our reach is so widespread that we can even be heard in parts of neighboring countries such as Brunei and Kalimantan-Indonesia.

As our network of FM transmitters increased, we became aware that we were experiencing irregularities in the audio level at each site. This prompted us to find a solution and we began investigating suitable options to overcome the problem. In 2008 we met Kim Poh Tan, head of Jünger Audio Asia, when he visited us in Kuching. He suggested that we try using Jünger Audio's D07 two-channel digital transmission processors to iron out audio level irregularities throughout our FM transmission chain. The solution seemed like a good one but it wasn't until I attended the Broadcast Asia show in 2009, along with Cats FM's General Manager Mohd Iskandar Mohd Nawawi, that I was able to demo the processors and hear for myself what could be achieved.

### SIGNALS OPTIMIZED

Jünger Audio's D07 is designed to optimize program signals for FM broadcast and TV transmission. The units incorporate the company's well-known Level Magic system — a series of automated level and loudness control devices that adjust the level from any source at any time, with no pumping, breathing or distortion. Level Magic works by simultaneously combining an AGC, a transient processor for fast changes and a look-ahead peak limiter for continuous unattended control of any program material, regardless of its original source.

Kim Poh Tan, in conjunction with Jünger Audio's Malaysian distributor, Salzbrenner Stageteq Mediagroup, arranged for us to audition a D06 Level Magic processor, which is a standalone unit designed for studio use. The difference this unit made was really noticeable. After hooking it up in our studio, there was an immediate improvement in level. We were



Terence Lim and Cats FM General Manager Mohd Iskandar Mohd Nawawi

impressed and felt that if the D06 could work that well in the studio, we couldn't see any reason why the D07 units shouldn't do even better out in the field. We ordered six D07s and these have now been installed at all our transmission sites.

What we like best about these units is their ability to control operating levels quickly and easily — and without the need for a lot of buttons and switches. Users don't need to be rocket scientists to figure out how to operate them. We also like the fact that they offer TCP/IP over Ethernet. As most of our sites are located far away from our office, remote access via TCP/IP makes it easier, faster and more cost-effective for us to maintain the equipment because we don't have to incur the cost of air and land transportation, accommodation, etc.

In theory, we could have gone for either a D06 or a D07 solution, but we felt the D07 was the right option because it offers MPX limiter and pre-emphasis. In our view, its control of the FM signal energy is better — and it offers an enhancement to the signal to noise ratio for FM transmission. We also like the power failure bypass feature because if there is a sudden power failure (i.e., blown fuse) the D07 automatically bypasses the audio information from the MUSICAM codec to the exciter. In other words, this gives us minimal or no down time at all.

We are now considering adding to our Jünger Audio stock by investing in the V02 digital voice processor, which also caught my eye at Broadcast Asia. That could be the next item on my equipment shopping list.

For information, contact Jünger Audio/GMA, LLC in California at (818) 701-6201 or visit [www.junger-audio.com](http://www.junger-audio.com).

## TECHUPDATE

### SACKS TEAM OFFERS OPTIMOD UPGRADES

Bill and Kim Sacks offer expert, factory-authorized, refurbishing, updating and upgrading of legacy analog Optimods. They also sell new Optimods and offer after-the-sale support and service.

The Sacks say they consider the 8100 FM and 9100 AM Optimods to be the pinnacle of analog broadcast processing; in their eyes, a refurbished 8000 is cherished for its invisibility and purity on fine arts formats.

The benefits of Bob Orban's design is even more audible once the processors are fortified with modern low-distortion op amps, new-generation film dielectric power supply improvements with better bypass caps, and the use of high-fidelity audio coupling capacitors. The result is a smoother, very open and transparent sound. "We always preserve the original Orban character and polish," according to Bill Sacks.

The Sacks also offer a proprietary XT bass EQ modification, a \$250 revision upgrade that provides two separate pure L + R bass controls at two frequencies. The existing separate left and right bass EQ controls can produce undesirable exaggerated L-R low frequency information that is caused by imprecise balance of the two bass controls when adjusting LF EQ on the fly, Sacks says. This upgrade eliminates LF EQ imbalances and any need to renul the low-frequency L-R with a tone to prevent unnecessary low frequency L-R modulation and its attendant potential intermodulation distortion of the 38 kHz subcarrier each time the EQ is adjusted; thus permitting on-the-fly tuning.

For information, contact Bill Sacks, CPBE, in Maryland at (301) 880-7109 or visit [www.optimod.fm](http://www.optimod.fm).





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Looking for a broadcast excerpt of a San Francisco Giant's taped off of KSF radio from 1959, interviews with Willie Mays, Dusty Rhodes & some play by play excerpts, also features a homerun by Willie Mays and Felipe Alou stealing second base, running time is 18:02, also looking for SF Giants games and/or highlights from 1958-1978 also taped off KSF radio. Ron, 925-284-5428 or ronwtamm@yahoo.com.

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**READER'S FORUM**

**THANK YOU, BERNIE**

Thanks to Bernie Wise of Energy-Onix for having the fortitude to speak out against IBOC ("A Vote of No Support," March 24 Letters).

Bernie skipped the NAB Show this year to protest the way things are headed technically. Other manufacturers should do the same. Mr. Wise has been in the business of manufacturing equipment longer than many of your readers have been alive. He has seen a lot of changes and adapted to them. However, when he says there's a problem, I believe him.

I have been using an Energy-Onix transmitter for the past 12 years and have had a few opportunities to talk to Bernie when ordering parts or making a repair (although it hasn't happened often because it's a great transmitter). We have discussed IBOC a time or two. Bernie will tell you there are other ways to achieve a digital signal, methods that are much less complex and much less expensive.

I can't believe so many broadcasters are willing to adopt a technology that requires them to pay for its invention. The current IBOC system is the equivalent of Thomas Edison inventing the light bulb, selling it to you, then charging you a licensing fee to use it! It's ridiculous. If it's a great technology, iBiquity would make a big profit with it because we'd all be flocking to use it. This apparently is not the case.

Let's hope the FCC is smart enough to see that it would be a huge mistake to endorse any particular manufacturer by requiring use of its product.

My 40 years of experience in the industry tells me the broadcast world would be a better place

if everyone spent more time worrying about content and less time worrying about the technology through which it is delivered. Analog FM sounds great and delivers a big signal over a large area much more efficiently and economically than IBOC ever will. If it ain't broke, don't fix it.

*Maynard R. Meyer  
General Manager/Engineer  
KLQP(FM)  
Madison, Minn.*

**TAKEN IN BY THE 'LEASH'**

Thanks for the April Fools piece on the "RF Leash." I understand I'm not the only one who took it seriously.

I don't know anything about particle physics, really, but it wouldn't surprise me if such a particle existed that could do what the article claims, because good antenna design does perform like a "leash." A good antenna system performs as if there were such a phenomenon.

Wouldn't it be cool, though, if we could harness the vector energy in magnetic waves? It would be possible to invent super-precise radio waves that could target an audience, or be used to communicate efficiently in space over long distances. I know lasers and masers attempt to do this, but their energy is still not as cohesive as they could be.

I always thought gravity modulation would be an effective radio source; if one could manipulate the gravity modulation of an entire planet or solar system, imagine how far you could transmit!

*Marvin Walther  
Chief Engineer  
Carroll Broadcasting  
Tawas City, Mich.*

**IP EVERYTHING**

*(continued from page 34)*

IP network. All you need to access it is a small network appliance (node).

Cooler yet is the ability to push USB through the IP platform so that you can plug in thumb drives, touchscreens or other devices into the node and have it operate just like it is connected directly to the computer.

One platform called PC over IP, offered by Dell, even integrates an audio device into the platform. By simply dropping a card into the PC, you can even do a point-to-point direct extension without a formal network, just a piece of Cat-6 cable between the workstation and the node. This direct extension is ideal for smaller implementations where only a couple of workstations make up the entire system.

And the icing on the cake, the dual-monitor operation can be extended over a single Cat-6 cable. That's right; dual monitors, keyboard, mouse USB all over a single cable. Now that's efficient.

Let's not forget about the routability of the signals, too. Once on the IP network, you can use a node anywhere on the network to pick up the signal. No dedicated point-to-point limitations. If you experience a failure, just point the node to a backup or alternate workstation and you are back in business without leaving the studio.

I could go on and on about legacy platforms that have moved over to IP — intercom, transmitter telemetry, phone systems — but for some readers this is old news; you've probably already jumped into the deep end of the pool, drank the Kool-Aid, been there/done that to one degree or another.

No matter your level of adaptation, it is hard to deny the benefits of hitching onto the IP bandwagon. It's cheaper, cleaner, more powerful and dare I say even simpler in many cases than previous legacy platforms.

I can say without a doubt that we are looking forward to this migration to IP. Bring it on, bring it all on IP. We are ready!

*Comment on this or any article. Write to radioworld@nbmedia.com.*

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# Not Just Audio Over IP, But All of It

## It's Cheaper, Cleaner, More Powerful, Even Simpler Than Legacy Platforms

BY JEFF ZIGLER

*The author is senior sales engineer of RCS.*

It seems so long ago that audio over IP was "the dream."

Think of it: The highest-quality digital audio flowing around the station just like the Internet, waiting

## COMMENTARY

for us to tap into or to source. No more custom audio cabling running upwards of several dollars a foot to pull, attempting to manage pair counts in and out of studios and so on.

That was the dream, but this time the dream came true. Now it's reality and it really works.

With most of the major console manufacturers now offering their own "flavor" of AoIP, there is no doubt that there is a solution for almost any platform. Most even have integrated singling (virtual GPIO) that travels right along with the affiliated audio so parallel control paths are either obsolete or at least the exception to the rule.

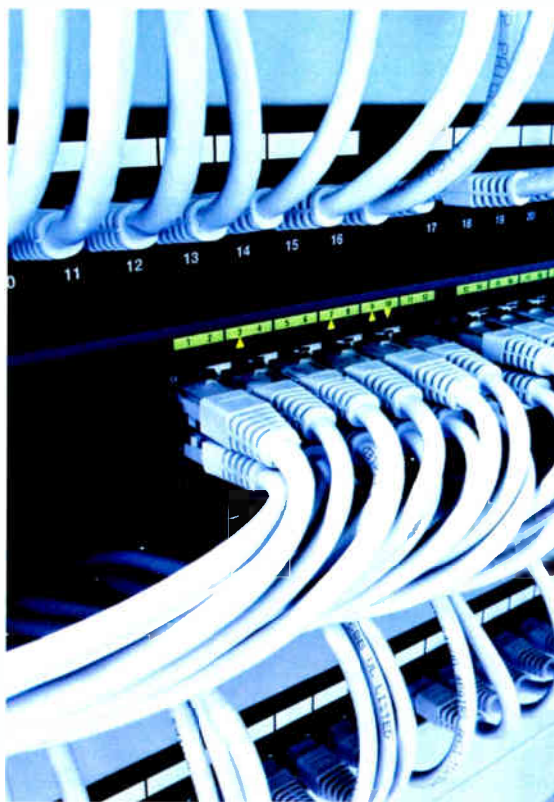
Since IP communication was designed to work with and for computers, it is an excellent choice for integrating with computer-based automation systems. Most automation systems easily can be interfaced using an AoIP platform. Worried about the stability of the AoIP platform? Don't be. RCS has installed hundreds of automation workstations using AoIP over several years and the technology has proven itself over and over in even the most demanding broadcast environments.

### AWAY YOU GO

The success of AoIP begs the question: Are dedicated professional audio cards as we know them today a dead technology? No I don't think so, but they are and will be changing to adapt to the IP platform.

I can't tell you how many times I have had the question posed to me, "Why would I buy an audio card for a software-based driver/platform?" or "Why would I spend money on dedicated hardware when I can simply buy a software driver?"

The answer boils down to resources. It is true that you absolutely can simply load a single- or multi-channel AoIP software driver and route the audio in and out an available network card; however you are relying on the available horsepower of the computer and operating system to handle



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and manage your audio connection.

Depending on your needs and available horsepower (both hardware and software), simply using a software driver may be fine. However if you have come to love and need some of the advanced digital signal processing-based tricks that our industry's audio card manufacturers have created, that DSP becomes a valuable resource.

At least some major broadcast audio card manufacturers (AudioScience and Digigram, to name two) have embraced the AoIP platform to offer solutions to broadcasters that combine some of the powerhouse features we have come to depend on while directly interfacing with these new platforms.

Features like pitchless time compression/expansion, on-card audio stream mixing and digital gain stage transformations are among the features DSPs bring to the party. Typically the DSP is paired up with a dedicated network card so that it looks and performs just like the audio adapters we have come to know and love, but instead of discrete audio in and out ports, it uses the AoIP platform for external interfacing. RCS offers you the choice to use software drivers or DSP hardware-based broadcast cards; in fact both methods are supported by many premier automation manufacturers.

What will become of dedicated routers that we use for routing signals to air and background records in an AoIP world?

As you might expect, RCS will still

support and interface with them; but they aren't your only option. Now that all of your audio can be pumped out onto an IP network, you just need to have a way to pick out the stream you want. Several AoIP platform manufacturers have software tools for doing that. Simply browse the available audio streams on your network, click to select and away you go.

How does the automation handle this process for route access? We simply have an interface that effectively "maps out" the sources and destinations that you designate necessary for the automation to have access to, and then the interface creates a virtual router for each station. All of the routing commands are translated and passed on to the AoIP platform for source and destination association, and then the AoIP network does the rest. Mixing sources that need to be on the air at the same time is often platform-specific, so confirm with your AoIP platform manufacturer the ability and methodology for doing so.

## No matter your level of adaptation, it is hard to deny the benefits of hitching onto the IP bandwagon.

Once the implementation is complete, you will have a dynamic routing solution that typically integrates and forwards the associated GPIO control functions right along with the audio routing.

### DIRECT CONNECTION

Speaking of complex routing platforms, remember the challenges of wanting to place a workstation in an IT rack or utility room and extending the keyboard, video and mouse (KVM) signals back into the studio, while still having access to them in the rack room too?

Then add workstations set up with dual screens to make things more complicated. The amount of copper is nothing short of building an AM radial ground system for a multi-tower array and a rack full of cascaded components. Now there is an easier way, similar to AoIP.

KVM-over-IP solutions push the keyboard, video and mouse signals onto an

(continued on page 33)





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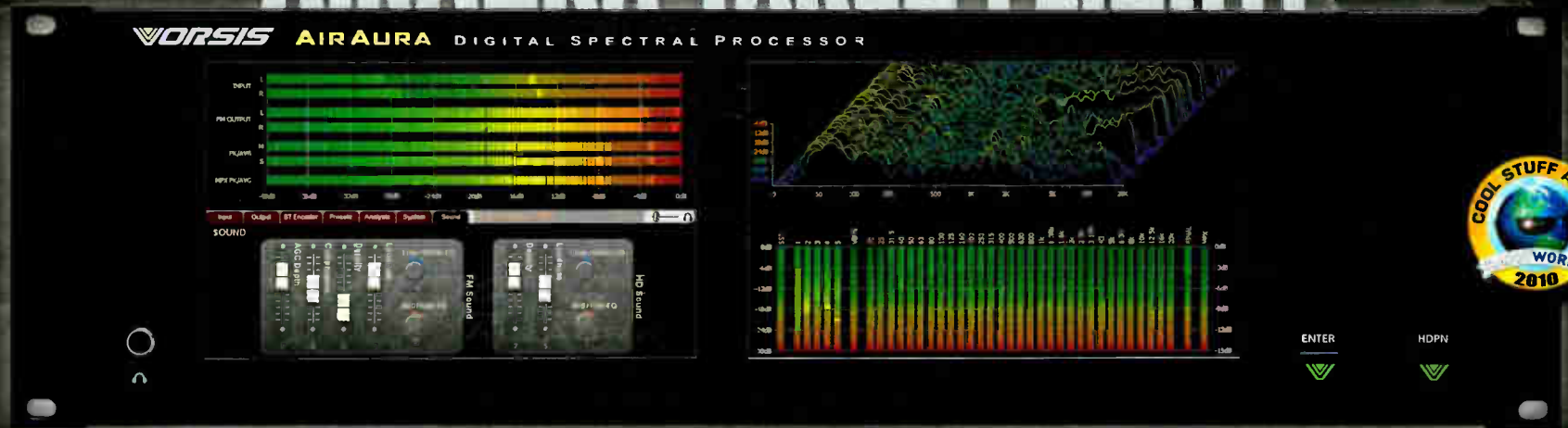
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